Summit Woods Residential Subdivision
Draft Environmental Impact Statement

Location: NY State Route 52 and Interstate 84
Town of East Fishkill, Dutchess County, New York

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Hopewell Junction, New York 12533

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1.0 EXECUTIVE SUMMARY

1.1 Description of the Proposed Action

The Applicant, ABD Fishkill LLC, intends to develop a property consisting of 325.22 (+/-) acres for the creation of a 175 lot single-family residential development. As shown in Figure 1.1-1 *Existing Conditions*, the project consists of five separate parcels, located on State Route 52 near the intersection of Route 52 and Primrose Lane, Southern Drive, and Stormville Road. The Applicant intends to develop 100% of the site, disturbing approximately 45% of the property and leaving the remaining land (steep slopes and wetlands) as open space (see Figure 1.1-2 *Open Space*). The Applicant anticipates that construction will begin in 2004 and full build out will be completed in 2008.

The Applicant intends to cluster the development in accordance with the Town of East Fishkill Zoning Ordinance[1]. The Summit Woods development plan was designed so that the number of dwelling units does not exceed the number that would be permitted if the land were subdivided according to the conventional zoning regulations for the R-1 and R-2 zoning districts that govern the property. In order to determine the maximum number of lots that could be constructed based on a cluster design, the Applicant was required to submit a conventional subdivision sketch layout for the property. The Planning Board approved the plan showing 175 lots as the maximum number of lots on the property.

Local Law "B" which was enacted as part of the newly adopted *November 2002 Master Plan* provides for reduction of lot areas containing environmentally sensitive lands. In consideration of these new requirements an analysis has been prepared in section 2.2 of this document that demonstrates compliance to this newly adopted law.

Access to the parcel will be from two points on State Route 52, one point across from Primrose Lane (also known as Strawberry Hill) and one point to the south on Route 52 at the base of Stormville Mountain Road. Circulation through the subdivision shall be made via an internal roadway system that will be offered to the Town of East Fishkill for eventual dedication. The Applicant does not wish to utilize private roads. The water and sewer facilities will be accessed from an existing farm lane from Collarbark Road. The Applicant has purchased the 4.61-acre parcel located at the southwest corner of the project site. The parcel was purchased to ensure access to the water and sewer facilities. There are no other development plans for this parcel at this time.

The Town of East Fishkill Police Department, Dutchess County Sheriff's Department, and the New York State Police provide security to the residents of the Town of East Fishkill including the proposed residents in the Summit Woods residential subdivision.

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[1] *Town of East Fishkill Zoning Ordinance dated November 14, 2002 – Chapter 194.*

According to the District Fire Chief[2], the East Fishkill Fire Department provides fire protection for the project area. School age children residing in the development attending public schools will attend Gayhead Elementary School, Van Wyck Junior High, and John Jay High School. Private water and sewer corporations will service the subdivision.

The Applicant is proposing to provide approximately 177 acres of open space on the property (See Figure 1.1-2 *Open Space Map*). Only the proposed road network will be dedicated to the Town of East Fishkill.

[2] *See correspondence from the East Fishkill Fire District dated April 29, 2002 from Steven Conti in Appendix C - Correspondence.*

Figure 1.1-1
Existing Conditions & Zoning Map

Figure 1.1-2
Open Space Map

Potential Controversy

Some of the controversial issues with this proposed subdivision may include the following:

- Cumulative impacts caused by other developments may become a controversial issue with this project. This project, like other projects, will generate school-aged children, additional traffic volumes and other town wide growth concerns.

- Access onto NYS Route 52 may become controversial with this project. A few neighboring landowners have raised concerns about the access points, being proposed for this project. In order to create two access points a second access has been proposed toward the south side of the site on NYS Route 52. There is a substantial road grade immediately to the south of the Summit Woods site that has prompted concern about the second access point.

- Groundwater may become controversial for this project. The applicant is proposing the use of a central water supply for this project. Adjoining property owners may be concerned with their well capacities when this project is developed.

- Sanitary sewage disposal may be a potential controversial issue with this project. The applicant is proposing the use of a central sewage collection and treatment system which will discharge into the stream at the west end of the project site.

Cumulative Impacts

At this time there are other projects that are at various stages of development in the Town of East Fishkill. These projects are:

Meadow Creek Corporate Park
Hopewell Glen
Lake Walton Park
Twin Creeks
Somerset Crossing
Stoneridge
The Moore Farm
Crooked Oaks
The Legends at the Beekman Country Club

Development of the Summit Woods property in conjunction with the other developments in the Town may create cumulative impacts in the immediate area and throughout the Town. Proper site design shall minimize some of these impacts.

Full development of the Summit Woods residential project shall create 175 new homes. The residential portion of the project would increase population in the Town of East Fishkill by approximately 633 residents or 2.4%. No further development of the site would take place.

Traffic

Future developments have been considered in vicinity of this site which would affect the intersections studied in this traffic report. The other developments which were included in this report consist of:

Stoneridge Subdivision
Hopewell Glen
Somerset Crossing
Twin Creeks
Lake Walton Park
Crooked Oaks
Moore Farm

Utilizing traffic studies previously prepared for these developments and the ITE Trip Generation Manual, Other Development Volumes & Moore Farm volumes were projected and overlaid on the existing roadway network (see Figures 6, 7, 8 and 9). See the traffic study in the appendices.

Intersection Capacity Analyses were computed with Synchro software in accordance with the previously stated methodologies presented in the 2000 Highway Capacity Manual. The capacity analyses are included within the traffic study (Appendix G). A summary of the 2002 Existing, the 2008 No-Build and the 2008 Build intersection capacity analyses can be seen on Tables 2 and 3 (Intersection Operations). These summary tables show some worsening of intersection operations between the 2002 Existing Volumes and the 2008 No-Build Volumes and minor changes in operation between 2008 No-Build Volumes and 2008 Build Volumes. The analyses indicate acceptable Levels of Service will remain and no significant delays or changes in levels of service will occur due to the proposed development.

Recreation

The project will involve the creation of 175 lots.

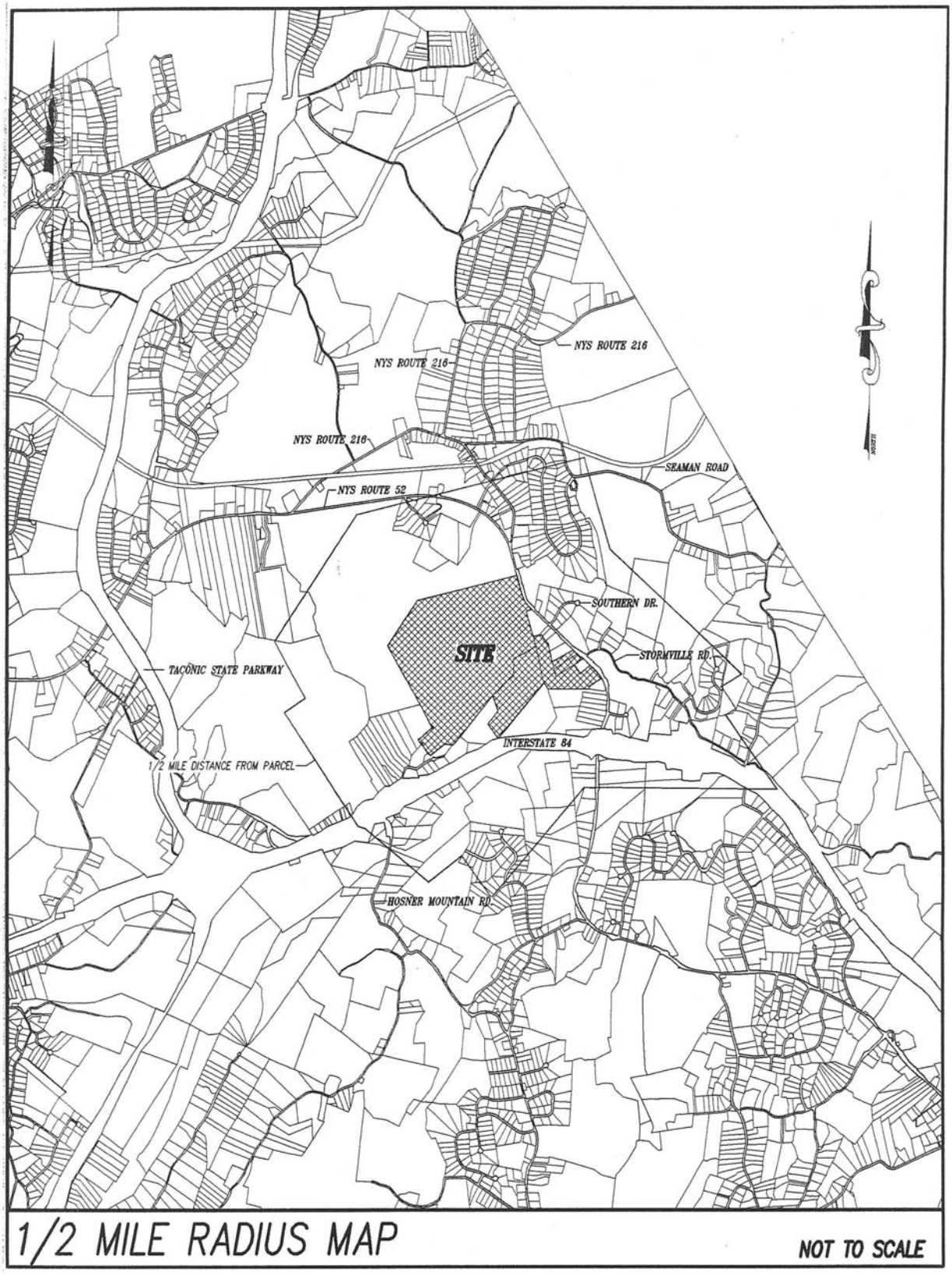
The site is limited with respect to recreational lands. There are no significant areas of interest on the site that could be utilized for recreation. The project is centrally located in the Town and has access to the Town of East Fishkill Recreation Center located in the Hopewell Junction Hamlet. The site is also approximately 3 miles from the Town of East Fishkill Soccer Fields. The Applicant is requesting to pay recreation fees in lieu of dedicating lands to the Town.

Since lands are not going to be dedicated to the Town for recreation purposes, the Applicant will be responsible to pay a recreation fee of $2,000 per lot at the time when Final Approval is granted to the Summit Woods project. This equates to $350,000 that the Applicant would pay to the Town of East Fishkill in lieu of dedicating recreation lands.

Zoning

The cumulative impacts with respect to Zoning are minimal since there are no other applications within ½ mile of the site. See figure 1.1-3 on the next page.

Figure 1.1-3 - ½ Mile Radius Map



Soils

The cumulative impacts with respect to soils are also minimal since there are no other applications within ½ mile of the site.

Surface Waters

The cumulative impacts shall be kept to a minimum since all projects in development and all projects from this point forward will need to comply with the new Phase II stormwater runoff guidelines. The Summit Woods project will be designed to conform to these new guidelines.

Permits and Approvals

In order to obtain Final Subdivision Approval for the Summit Woods project, the Applicant will need the following permit and approvals:

- Town of East Fishkill Town Board
  - Establishment of the Transportation Corporations for Water and Sewer
  - Establishment of Sewage Rates

- Town of East Fishkill Planning Board
  - Subdivision Approval
  - Site Plan Approval for Water and Sewer Treatment Facilities
  - Floodplain Development Permit

- Dutchess County Health Department
  - Water and Sewer System approvals

- New York State Department of Health
  - Approval of Water Supply System

- NYSDEC
  - Water Supply Application for the central water supply system;
  - SPDES Permit for the discharge of domestic sanitary sewage;
  - Stream Crossing Permit
  - Wetland Disturbance Permit
  - General Stormwater SPDES Permit

- NYSDOT
  - Entrance Permits for proposed entrances onto NYS Route 52.

- NYS Public Service Commission
    - Establishment of Water Rates

1.2 Involved Agencies

- Town of East Fishkill Planning Board
- Town of East Fishkill Town Board
- Dutchess County Health Department
- New York State Department of Environmental Conservation
- New York State Department of Transportation
- New York State Department of Health

1.3 Interested Agencies

- Town of East Fishkill Conservation Advisory Council
- Town of East Fishkill Fire Advisory Board
- Dutchess County Planning Department
- US Army Corps of Engineers

1.4 Required Referrals/Approvals/Permits

Town of East Fishkill Planning Board

- Subdivision Approval
- Floodplain Development Permit
- Site Plan Approval for water and sewage treatment facilities

Town of East Fishkill Town Board

- Establishment of Transportation Corporations (Water and Sewer)
- Sewer Rates

New York State Department of Environmental Conservation

- Stormwater SPDES Notice of Intent
- Article 24 Freshwater Wetland Permit
- SPDES Permit for Sewage Treatment Plant Discharge
- Water Supply Application

New York State Department of Transportation

- Curb Cut Permits

Dutchess County Health Department and New York State Department of Health

- Water and Sewer System Approval

New York State Public Service Commission

- Water Rates

1.5 Potential Impacts

Zoning and Surrounding Land Use

- Potential that the proposed residential subdivision in the R-1 and R-2 zones is not consistent with the Town of East Fishkill Master Plan and local laws.
- The Proposed Action has been designed in accordance with the *November 2002 Master Plan* for the Town of East Fishkill, as well as local laws that implement the Master Plan. The local laws to implement the Plan, as well as the Master Plan itself, have recently undergone an environmental review and public comment process pursuant to Town Law and SEQRA.

Soils and Topography

- Disturbance to 148 acres of land (45.4% of the property).
- Excavation to obtain suitable grades for the residential units,

roadways, and the installation of sanitary, water, drainage and utility lines.

- Possible removal of bedrock (blasting) in areas that contain Stockbridge – Farmington complex soils and erosion of on-site soils during grading of the site.

- A maximum cut of 13.5 feet on the proposed roadway.

Surface and Groundwater Resources

- Installation of water lines and 2 production wells to obtain adequate water supply to service the subdivision.

- Placement of sanitary sewer lines to an onsite sewer plant.

- Removal of vegetative covers and topsoil.

- An increase in impervious surface resulting in stormwater from roads and parking areas.

- Erosion of soils and sedimentation into drainage discharge points, including wetland areas.

Wetlands

- Disturbance within the NYSDEC wetland 100' Adjacent Area on the site for the installation of stormwater detention ponds.

- Installation of underground utility lines through NYSDEC wetlands or Adjacent Area.

- Potential for erosion of soils and sedimentation into drainage discharge points, including wetland areas.

Terrestrial and Aquatic Ecology

- Removal of existing vegetation for grading and the construction of roads and buildings on 147.92 acres (45.4% of the property).

- Loss of vegetation and wildlife habitat and the replacement of vegetative cover by impervious surfaces that can lead to:

- Reducing the available on-site vegetative habitat;
- Compaction of site soil layers;
- Increasing the velocity of stormwater runoff;
- Preventing the infiltration of water, and;
- Removal of the ability of the site soil to retain nutrients.

- Replacement of native vegetation with cultivars and ornamental plants by residents of the subdivision.

Vehicular Traffic and Roadways

- Creation of two new access points, on State Route 52, and potential improvement of the existing farm lane access to the water and sewer facilities from Collarbark Road.

- Addition of vehicles on the surrounding roadway network.

Socioeconomic

- The addition of approximately 137 school age children to the overall student population in the School District.

Community Services

- According to Chief Steven Conti, the East Fishkill Fire District would have no difficulty providing fire protection to the proposed subdivision.

- The ambulance corps is part of the East Fishkill Fire District. There is no anticipated difficulty in providing ambulance service to the proposed subdivision.

- It is not anticipated that the station will have any difficulties providing police protection for the proposed 175 residences to be created by the Summit Woods Subdivision.

Utilities

- Installation of underground utility lines through NYSDEC wetlands or Adjacent Area.

- Potential for dewatering the wetlands as a result of pumping groundwater to service the subdivision.

- Potential for erosion of soils and sedimentation into drainage discharge points, including wetland areas.

Visual Quality

- A change in the density of land use and character of the project area.

Air Resources

- Addition of pollutants into the air as a result of the change in the density of land use and character of the project area.

1.6 Proposed Mitigation

Zoning and Surrounding Land Use

- The Proposed Action has been designed in accordance with the *2002 Master Plan* for the Town of East Fishkill, as well as local laws that have been proposed to implement the Plan. The Proposed Action is consistent with the Plan and the local laws.

Soils and Topography

During construction, erosion will be controlled through the implementation of various erosion control methods consistent with the Soil and Water Conservation Service[3] recommendations including:

- After proper grading and preparation of the lots for residential dwelling units, the grade for each driveway will not exceed 15% and the grade for the internal roads will not exceed 10% with side slopes not exceeding 2:1. Efforts will be made to achieve

[3]*New York Guidelines for Urban Erosion and Sediment Control, Empire State Chapter Soil and Water Conservation Society, October 1991.*

3:1 side slopes wherever possible; side slopes of 2:1 may be used in the event that competent rock is encountered.

- The contractor on a weekly basis and following each rainfall event shall inspect all erosion control measures used during the construction process. Erosion controls shall be repaired and maintained as necessary by the contractor;

- During construction, as the road subgrade is formed by fill, work shall proceed quickly and the side slopes seeded with a quick germinating rye (10 to 15 pounds per 1000 square feet). During this time any gullies or washes that develop are to be filled and the surface graded to prevent wash in the same location;

- Temporary drainage swales with a minimum grade of one percent, to direct runoff away from excavated areas, will be provided. Swales will be installed with staked and secured straw bale berms to prevent downstream siltation. Location of the drainage swales and straw bales will be at the direction of the Project Engineer;

- Straw bales will be placed in a row with ends tightly abutting the adjacent bales. Each bale will be embedded in the soil a minimum of 4". Bales will be securely anchored in place by stakes or re-bars driven through the bales. The first stake in each bale should be angled toward the previously laid bale to force the bales together. Inspection should be frequent and repair or replacement should be made promptly as needed. The bales should be removed when they have served their usefulness so as not to block or impede storm flow or drainage;

- Reverse slope benches or diversion swales will be provided wherever the vertical height of any 2:1 slope exceeds twenty feet; thirty feet for slopes of 3:1; and forty feet for slopes of 4:1. Benches or swales will be located to divide the slope face into equal sections to convey runoff to stable outlets. Benches will be a minimum of six feet wide to provide for maintenance. Benches will be designed with a reverse slope of not more than 6:1. Bench gradient to the outlet will be between two and three percent. The flow length of any bench or swale will not exceed 800 feet;

- If the construction process exposes significant soil areas for any length of time, increased potential for erosion and dust creation will occur. The contractor shall provide, at the Project Engineer's direction, supplemental surface treatments (such as strawbale lines, temporary swales and/or rip-rap intercept pools, and dust control measures) as may be required;

- Subsurface drainage will be provided where required by the Highway Superintendent or the Project Engineer to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions;

- Erodible material temporarily stockpiled on the site during the construction process shall be located in an area away from storm drainage and shall be properly protected from erosion by a surrounding silt fence barrier;

- The storm drainage system will be installed and rendered functional as soon as possible with silt traps provided around each inlet. The catch basins grates shall be will be set flush with the binder course of pavement.

- Grading will be finalized, topsoil added, and seeded as quickly as possible;

- All grass seed will contain at least 25 percent rapid germinating perennial rye grass;

- Erosion controls shall be removed at the end of the site construction process only as approved by the Project Engineer, and will be done so only when upgrade surfaces are properly stabilized and all stormwater management systems are in place and operable;

- At the completion of the project, the temporary silt basins will be cleaned and restored with fill, topsoil, and vegetation that are most appropriate to the individual areas.

- During construction, all erosion control measures should be inspected weekly and after every rain. Any silt buildup will be cleaned, and shifted straw bales will be reinforced.[4]

[4]*New York Guidelines for Urban Erosion and Sediment Control, Empire State Chapter Soil and Water Conservation Society, October 1991.*

- Either at the beginning or at the end of each working day, all damages to erosion control areas caused by soil erosion and construction equipment shall be repaired.

- After construction, the erosion control measures should be consistent with the recommendations in the *New York Guidelines for Urban Erosion and Sediment Control,*[5] including:

    - The stormwater collection system will be inspected quarterly to ensure proper operation;

    - All catch basin sumps should be cleaned when they are full to 50% of their capacity;

    - All rip-rap at outfalls should be either cleaned or replaced when it becomes overburdened with silt or sediment;

    - All drainage areas damaged by erosion should be repaired;

    - All silt or sediment accumulations should be cleaned from ponds;

    - All drainage swales should be kept free of debris and the vegetation should be maintained to allow unobstructed flow of stormwater;

    - Any slopes or embankments that have damaged vegetation should be re-seeded as necessary;

    - All grass swale areas should be mowed so that they facilitate unobstructed flow of stormwater.

If blasting is found necessary, all blasting operations will adhere to New York State ordinances governing the use of explosives. The State regulations are contained in 12 NYCRR 39 and include such requirements as licensing of operators, magazine (explosive storage) certification, and rules for conducting operations in a safe manner.

Proper program guidelines will be established between the State, the Town, and the blasting contractor prior to undertaking this activity. In addition to obtaining

[5] *Ibid.*

applicable blasting certifications and complying with all blast safety requirements a blast-monitoring program will be implemented. The elements of such a program include, but are not limited to the following:

- Use of a seismograph to monitor each blast attempt and measure the particle velocity of the ground at the location of the instrument probe;
- Use of blast matting to minimize lifting of rock and debris during blasting and;
- Notification of adjacent residents and landowners.

All pertinent safety regulations and standards shall be applied as required for safety, security and other related details for any blasting deemed necessary. Applicable safety regulations are:

- 29 CFR 1910 OSHA Standards;
- U.S. Army Corps of Engineers Safety Manual EM 385-1-1;
- Code of Federal Regulations A.T.F. Title 27;
- Institute of Makers of Explosives Safety Library Publications No. 22;
- 12 NYCRR 39.

No storage of any explosive materials shall be done on the site in accordance with typical Town policy.

Delivery and transportation of explosives to the blast area will be by vehicles specifically designed for this use by the criteria outlined in the safety requirements. Only authorized persons will transport and handle the explosives as designated by the authority of those licensed for this purpose. At all times federal, state, and local ordinances will be followed concerning the transportation of explosives. The explosive transporting vehicles, and areas where explosives are being used shall be clearly marked and shall display the required warning signs. A daily tally of all explosives delivered and used shall be maintained.

- Prior to blasting, necessary precautions for the protection of persons, adjoining property, and completed work shall be established, including:
    - Appropriate signs shall be erected in the area of blasting activities;
    - All adjoining property owners shall be mailed notification of the anticipated blasting schedule;
    - Notification of blasting at the site shall be published in local newspapers prior to the blasting schedule;
    - A storm alert monitoring device shall be used by the blasting contractor to detect any electrical build-up in the atmosphere at the blast area while using electrical caps;
    - Special care shall be taken with detonating cords and connectors to protect from the impact of falling rocks or other impeding objects;
    - Vehicles equipped with radio transmitters and portable 2-way radios will not be permitted within 250 feet of blasting operations;
    - A pre-blast survey and, where necessary, a post-blast survey will be completed.

Surface and Groundwater Resources

The Applicant will implement the following mitigation measures for installation of utilities within the floodplain area:

- All utilities including the water supply system, are located, elevated, and constructed to minimize or eliminate flood damage;
- Adequate drainage will be provided so as to reduce exposure to flood hazard;
- Utilities will be designed to minimize or eliminate infiltration of floodwater into the systems.

At stormwater discharges, the pipe outlets will be constructed in accordance with the following guidelines to limit the introduction of sedimentation into the discharge area:

- An apron will be placed in rip-rap with a depth of 6";
- The length of the riprap will be no less than 14' and no less than 16' wide.

Stormwater quality will be controlled utilizing a series of sedimentation basins to facilitate purification (first flush) of the point and non-point sources, including increased contamination from roads, driveways and other impervious surfaces and stormwater movement.

Stormwater Quality Management Basins will be designed to discharge to the existing wetlands via a controlled outlet structure and will incorporate landscaping to enhance biological activity for pollutant removal.

- All silt or sediment accumulations should be cleaned from detention ponds;
- All drainage swales should be kept free of debris and the vegetation should be maintained to allow unobstructed flow of stormwater;
- Any slopes or embankments that have damaged vegetation should be re-seeded as necessary;
- All grass swale areas should be mowed so that they facilitate unobstructed flow of stormwater;
- Construction of Stormwater Quality Management Basins and surface swales to facilitate stormwater movement and purification (first flush) of the point and non-point sources, including increased contamination from roads, driveways and other impervious surfaces;
- Maintenance of the net post-development peak stormwater discharges at or below the pre-development peak level for all storm events analyzed including the 100-year design storm;
- Use of open-channel/wetland filtration, absorption, and

evaporation to clean and pre-treat stormwater prior to it entering the existing wetland.

Wetlands

- Analysis of several alternative layouts including a conventional design and alternate cluster/mixed-use design;

- Redesign of the internal road layout such that the impacts to wetlands have been avoided when compared to the original cluster design that anticipated a wetland crossing.

- Construction of Stormwater Quality Management Basins and surface swales to facilitate stormwater movement and purification (first flush) of the point and non-point sources, including increased contamination from roads, driveways and other impervious surfaces;

- Enhancement of the 100' Adjacent Area and Stormwater Quality Management Basins through the planting of wetland species common to this area. Typical plants will include:

  Cornus stolonifera - Red Osier Dogwood

  Viburnum dentatum - Arrowood

  Viburnum trilobum - Highbush Cranberry

  Aronia arbutifolia - Chokeberry

  Clethra alnifolia - Sweet Pepperbush

  Ilex glabra - Inkberry

  Ilex verticillata - Winterberry

  Lindera benzoin - Spicebush

  Vaccinium corymbosum - Highbush Blueberry

Plantings shall include those that are deer resistant.

Terrestrial and Aquatic Ecology

- Utilization to the maximum extent practicable of existing cleared areas (old farmland) for development;

- Areas proposed for landscaping after being disturbed by construction activities should have the soil scarified and aerated prior to hydroseeding;

- Trees that are to remain and are located near construction activities will be protected from harm for both trunk and root systems by the erection of physical barriers, such as orange snow fencing, along the tree's drip line. The location of such fencing will be subject to examination by the Project Engineer or the Environmental Monitor, if utilized.

- All trees proposed for removal will be marked by the contractor and reviewed by the Project Engineer or the Environmental Monitor to ensure preservation of as many existing trees as possible with specific attention paid to significant trees;

- At least 55.2% of the site will remain undisturbed open space;

- Maintain the existing trees along Route 52 that will provide screening for the residents adjacent to and for those traveling along Route 52;

- Provision of street trees within the subdivision inside of the street right-of-way that will be spaced approximately 50 feet on center as sight distance and driveway obstruction allows. All attempts shall be made to vary the spacing to prevent a uniform distribution throughout the site.

Vehicular Traffic and Roadways

- No significant deterioration of operating conditions at any of the studied intersections;

- The entrance road will operate at an excellent Levels of Service with "Stop" sign control;

- Analysis of alternative access locations;

- Construction of a stabilized construction entrance at the proposed entrance road utilizing the following measures:

    - Two inch crushed stone or a reclaimed/recycled concrete equivalent will be provided for a length as required by the Town of East Fishkill Town Engineer, Highway Superintendent, Zoning Administrator or the Project Engineer but not to be less than 50 feet;

    - The depth of the stone or concrete equivalent will be as required by the Town of East Fishkill Town Engineer, Highway Superintendent, Zoning Administrator or the Project Engineer but not to be less that 6 inches;

    - The width of the construction entrance will be a minimum of 24 feet and no less than the full width of the proposed ingress/egress points;

    - A filter cloth will be placed over the entire area prior to placing of stone;

    - All surface water flowing or diverted toward the construction entrance will be piped across the entrance;

    - The entrance will be maintained in a condition that will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately;

    - Vehicle wheels will be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it will be completed on an area stabilized with stone and that drains into an approved sediment trapping device;

    - Periodic inspection and needed maintenance shall be provided after each rainfall;

    - Construction equipment will be removed from the edge

of pavement during non-working hours;

- No material is to be placed on the shoulder except material to be used that day;

- Private vehicles owned by the contractor or his workers, are not to be parked on the pavement or shoulders of Route 52, or any other areas deemed by the Project Engineer to be hazardous locations;

- Diamond shaped Advance Warning Signs shall be used for all advance warning signs that may be either diamond or rectangular shaped according to Part 238 of the New York State Manual of Uniform Traffic Control Devices (NYS MUTCD);

- On Route 52, traffic shall be maintained and protected through Work Zones in accordance with Figures 302-6, 302-7, 302-14 and 302-9 of the NYS MUTCD, together with any additional control devices or methods required by the Town Engineer, Highway Superintendent, Zoning Administrator or the Project Engineer;

- The contractor shall coordinate work so there is no conflict with construction signing in overlapping work areas, and so that lane continuity is maintained between work areas. The contractor shall coordinate work with any contractors, public maintenance, or utilities company operations in the area to ensure proper maintenance of traffic;

- All cones, drums and markers are to be placed so as to provide a minimum 2' clearance to the traveled way, unless otherwise shown on the plans. The contractor shall make certain placement of the cones, drums and markers or barricades will not interfere with sight distance. Typical longitudinal spacing shall be approximately one foot per mile per hour of approach speed;

- On Route 52, taper lengths for closures and lateral shifts of travel lanes shall conform to Table 262-2 of the NYS

MUTCD using an approach speed of 55 m.p.h.;

- The correct sequence and spacing of signs, whether permanent, temporary or construction, must be maintained at all times, in accordance with the NYS MUTCD;

- Prior to the start of any construction phase, all proposed Maintenance and Protection of Traffic related work for that phase, as determined by the Town of East Fishkill Engineer, Highway Superintendent, Zoning Administrator or the Project Engineer, shall be complete;

- The contractor shall provide flaggers where sight distances are impaired by construction operations or as ordered by the Project Engineer;

- On Route 52, the contractor will provide Property Owners with proper access to their driveways according to the NYSDOT policy and standards. The contractor will maintain them through all phases of work and will delineate them by means of signs, cones, and/or drums;

- The contractor shall minimize movements in and out of designated travel lanes with construction vehicles and equipment. Only necessary or authorized vehicles, as determined by the Project Engineer, shall be allowed to enter any phase work area;

- Protection and restoration of property shall be in accordance with the NYSDOT Standard Specifications and shall be to a condition equal to or better than prior to construction, with the Project Engineer being the sole judge of the quality of all the work. To assist in this, the contractor will be required to take pre-construction photographs to document existing conditions;

- The contractor shall contact all the appropriate parties with jurisdiction over the utilities entering on, or near the project area prior to initiation of construction activities and will provide those agencies with 48 hours notification;

- All disturbed non-pavement areas shall be raked, topsoiled, seeded, and mulched;

- All construction and traffic control will be subject to review by the Project Engineer and New York State DOT.

Socioeconomic

- Although there is sufficient building and transportation space available in the three educational facilities that service the project area, construction of the housing units will be market driven that will result in phased introduction of additional students into the school system.

Community Services

- There will be no impacts to the ability of the Town of East Fishkill Police Department, New York State Police Department or the Dutchess County Sheriff's Department to protect the proposed resident of the Summit Woods subdivision and therefore, no mitigation measures are required or proposed.

- The ambulance corps is a function of the East Fishkill Fire District. There shall be no difficulty in providing ambulance service to this project.

- Additionally, a consistent lot numbering system will be implemented to aid emergency services personnel in responding to fire or other emergencies;

- There will be no impacts to the East Fishkill Fire Department's ability to protect the proposed subdivision from fires and therefore, there are no other mitigation measures proposed.

- The proposed plan provides for the preservation of approximately 177 acres of permanently dedicated open space that relates to at least 55.2% of the property;

Utilities

- The water distribution system will include fire hydrants located throughout the neighborhood to provide water for fire fighting purposes;

- The 8" water main proposed for the site will service hydrants approximately every 500 feet along the internal roadway;

- All hydrants will have standard hydrant flags to aid in identification of hydrants during snow cover and the tops and nozzle caps of all hydrants will be properly painted to reflect the corresponding capacity;

- Groundwater well testing indicates that 2 production wells drilled on the property have sufficient quantity and quality to provide domestic water to the residents of the proposed Summit Woods subdivision. A third well was drilled and tested but will not be used.

- All utility distribution lines will be constructed underground;

- The proposed project site will be in conformance with the energy conservation regulations of the New York State Energy Conservation Construction Codes;

- Low-flow water conservation plumbing fixtures will be installed in the kitchens and bathrooms consistent with New York State Environmental Conservation Law;

- Permanent lighting fixtures will also utilize energy saving lamps and ballasts;

- Sufficient capacity is available from Central Hudson Gas and Electric for the provision of electric power and gas.

- There shall be permanent lawn sprinklers allowed in the proposed Summit Woods project. They will be prohibited by use of deed restrictions.

Visual Quality

- A design that focuses on the preservation of open space so that aesthetically, the development is incorporated into the natural setting;

- The Summit Woods subdivision has been designed such that it promotes natural resource preservation and conservation and maintains open space whenever possible in order to preserve the aesthetic quality and rural nature of the Town;

- The site has been designed so that it requires the least amount of grading and clearing of vegetation;

- The plan specifically proposes to maintain the existing trees along Route 52 that will provide screening for the residents adjacent to and for those traveling along Route 52;

- Within the subdivision, the Applicant will provide street trees on both sides of the street, inside of the street right-of-way, that will be spaced approximately 50 feet on center;

- The internal street trees will provide a natural blend of colors that aesthetically, will marry the developed areas within the clustered site with the open space areas and natural corridors;

- Residences will be constructed using a combination of architectural features to avoid the creation of a monotonous housing development;

Air Resources

- The proposed Sewage Treatment Plant shall be located approximately 525' away from the proposed residences and has been designed so that odors will be controlled by the treatment process.

- Dust from construction activities will be controlled via a water truck dedicated for this purpose.

1.7 Alternatives

Table 1.7-1
Alternatives Considered

Alternatives Considered	Option Chosen	Benefits	Disadvantages
Subdivision Plan			
"No Build"		No Impacts.	Does not meet the Applicant's objectives.
Conventional		1-2 acre single-family residential lots.	Development of entire site. Potential impacts to the environment
Cluster	X	Development on only a portion of the site, leaving 177.60 acres of open space.	0.5-acre single-family residential lots.
Access			
Opposite Primrose Lane	X	Recommended by the Town of East Fishkill.	Maximum sight distance located across from existing road.
Off-set from Primrose Lane		Poor sight distance for access point.	Does not "T" access opposite existing street.
Sanitary			
Private Corporation	X	Installation of STP and underground sanitary collection system.	Inadequate soils for individual subsurface disposal systems.
Private Individual Septic Systems		No improvements required other than installation of Individual systems.	Difficulty locating Adequate soils for the disposal systems.

The Applicant has submitted three alternative subdivision layouts (see Figure 3.2-1 *Conventional Subdivision Plan*, Figure 3.2-2 *Proposed Cluster Plan* and Figure 3.2.-3 *Mixed-Use Plan*). Initially, the Applicant submitted a conventional subdivision layout and appeared before the Town of East Fishkill Planning Board. This plan proposed 175 (1 and 2 acre) lots on the property and was similar to the current cluster subdivision plan, but proposed a different roadway layout across the wetlands.

Access to the lots is proposed via individual driveway access from the proposed roadway network for each lot. Access to the property is from two access points on Route 52. Access to the water and sewer facilities will be gained over an existing farm lane from Collarbark Road. The proposed subdivision contains 6 internal roads and 3 cul-de-sacs, totaling approximately 14,735 linear feet of roadway that will be dedicated to the Town.

A previous iteration of the current plan included two site accesses from Route 52 and proposed to bridge the NYSDEC regulated wetland at the central portion of the site. This could have connected Collarbark Road with Route 52 and conformed to Figure 8.1 in the recently adopted Master Plan. Like the current proposal, this layout plan also proposed the development of 175 lots. At a Pre-Application meeting with NYSDEC this plan was rejected outright. The Applicant substantially redesigned the internal road layout such that the impacts to wetlands have been avoided when compared to the original design. In further consideration of the connection between Collarbark Road and Route 52, M.A. Day Engineering, determined that the connection was not practicable due to steep slopes (existing topography), excessive regrading, and blasting in order to meet current Highway Specifications for vertical and horizontal alignment.

The alternative, as mentioned above, was rejected by the NYSDEC, and subsequently by the Applicant, in favor of the plan as proposed in this document due to:

- Extensive impacts to wetlands on the site.
- Desire to maintain as much of the original on-site vegetation as possible, and.
- Desire to maintain large areas of open space and native woodland and land features while maintaining an attractive development.
- Steep slopes (existing topography), excessive regrading, and blasting.

Access to the Adjacent Properties

The current plan involves a proposed right-of-way to the adjacent property to the north (Lands of Tucker) between lots number 16 and 17. This right-of-way shall be conveyed to the Town of East Fishkill for access and future utilities to the Lands of Tucker.

The location of the right-of-way was established after consultation with the proposed Developer of the Lands of Tucker. The proposed right-of-way is in keeping with the Town's intent to extend access to adjacent undeveloped parcels of land.

2.0 DESCRIPTION OF THE PROPOSED ACTION

2.1 Introduction

The Applicant, ABD Fishkill LLC, is proposing to subdivide property consisting of 325.22 (+-) acres for the creation of a 175 lot single-family residential development. The purpose of this DEIS is to assess the potential environmental impacts of this proposal and provide mitigation for significant impacts where appropriate. As shown in Figure 1.1-1 *Existing Conditions/Site location Map*, the project consists of five separate parcels, located on State Route 52 in the vicinity of Stormville Road. The Applicant intends to develop 100% of the parcel while disturbing approximately 147 acres, leaving the remaining land as open space (see Figure 1.1-2 *Open Space Map)*. The proposed subdivision (175 single family homes) will be a Cluster Development that has been designed in substantial conformance with the *Town of East Fishkill Zoning Ordinance*.[6] The Applicant is seeking a variance from Section 163-33.D which requires a 50' buffer to new lots lines. The Applicant is not proposing to establish a homeowner's association. The Applicant is proposing to "push" the proposed lot lines to the boundary of the property in order to eliminate the need for common space and a homeowner's association. This was the approach taken on the "Clarinbridge" cluster subdivision near the intersection of NYS Route 82 and the Taconic State Parkway.

Access to the Summit Woods subdivision will be provided from two access points on Route 52. The primary access shall be across from Primrose Lane and the secondary access will be to the south on NYS Route 52 near Stormville Mountain Road. The internal roadway system shall be offered to the Town of East Fishkill for eventual dedication. The Applicant does not wish to utilize private roads. The water and sewer facilities will be served via an existing farm lane to Collarbark Road. A private Water and Sewer Corporation will serve the proposed residences. Stormwater will be collected on-site and discharged consistent with existing drainage patterns to the large

[6] *Town of East Fishkill Zoning Ordinance dated November 14, 2002.*

NYSDEC wetland on the property. Permanently dedicated open space areas totaling over 177.60 acres will exist on-site (see Figure 1.1-2 *Open Space Map).*

2.2 Lot Count

In order to determine the lot count, a conventional subdivision plan was prepared and submitted to the Town Engineer's office for review. The purpose of the conventional lot count was to establish the lot count for the Summit Woods cluster subdivision project. A conventional subdivision plan with a yield of 175 lots was submitted to the Planning Board for review and approval.

Local Law "B" was passed as part of the November 2002 Master Plan. The intent of the law was to protect environmentally sensitive lands defined as 100-year floodplain, floodways, steep slopes , water bodies or wetlands.

The law requires that the area of environmentally sensitive lands be deducted from the total site acreage according to the following percentages:

Type of Land	**Percentage to be Discounted**
Floodway	100%
Floodplain	50%
Steep Slopes (>20%)	50%
Water Bodies	100%
Wetlands	50%

The scoping document for this project is dated May 8, 2002. The Master Plan was adopted on November 14, 2002.

2.2.1 Theoretical Maximum Lot Count

In order to determine the theoretical maximum lot count, the environmentally sensitive lands were subtracted from the total area of the project site. The remaining lands were then divided by the appropriate zoning.

Total Project Area:	325.22 acres
Area in R-1 Zoning:	257.65 acres
Area in R-2 Zoning:	67.57 acres

R-1 Zoning:

Total area in R-1 Zone:	257.65 acres
Area of Floodway:	0.0 acres
Area of Floodplain:	0.0 acres (Part of Wetland)
Area of Steep Slopes:	9.28 acres
Water Bodies:	0.24 acres
Wetlands:	70.20 acres
Balance of Land	177.93 acres
Theoretical Lot Count:	177 lots

R-2 Zoning:

Total area in R-2 Zone:	67.57 acres
Area of Floodway:	0.0 acres
Area of Floodplain:	0.0 acres (Part of Wetland)
Area of Steep Slopes:	25.47 acres
Water Bodies:	0.0 acres
Wetlands:	2.06 acres
Balance of Land	40.04 acres
Theoretical Lot Count:	40 lots

Using this methodology, the theoretical lot count can be estimated at 217 lots.

2.2.2 Conventional Lot Count

The following table illustrates the conventional lot layout compliance with Local Law "B".

Table 2.2.2-1
Conventional Lot Compliance Table

Lot No.	Total Acreage	Floodway	Floodplain	Steep Slopes	Water Bodies	Wetlands	Adjusted Acreage
1	1.01	0.00	0.00	0.00	0.00	0.00	1.01
2	1.01	0.00	0.00	0.00	0.00	0.00	1.01
3	1.01	0.00	0.00	0.00	0.00	0.00	1.01
4	1.01	0.00	0.00	0.00	0.00	0.00	1.01
5	1.01	0.00	0.00	0.00	0.00	0.00	1.01
6	1.02	0.00	0.00	0.00	0.00	0.00	1.02
7	1.04	0.00	0.00	0.00	0.00	0.00	1.04
8	1.01	0.00	0.00	0.00	0.00	0.00	1.01
9	1.02	0.00	0.00	0.00	0.00	0.00	1.02
10	1.02	0.00	0.00	0.00	0.00	0.00	1.02
11	1.01	0.00	0.00	0.00	0.00	0.00	1.01
12	1.02	0.00	0.00	0.00	0.00	0.00	1.02
13	1.03	0.00	0.00	0.00	0.00	0.00	1.03
14	1.02	0.00	0.00	0.00	0.00	0.00	1.02
15	1.04	0.00	0.00	0.00	0.00	0.00	1.04
16	1.01	0.00	0.00	0.00	0.00	0.00	1.01
17	1.07	0.00	0.00	0.00	0.00	0.00	1.07
18	1.07	0.00	0.00	0.00	0.00	0.00	1.07
19	1.46	0.00	0.00	0.00	0.00	0.00	1.46
20	1.45	0.00	0.00	0.00	0.00	0.00	1.45
21	1.76	0.00	0.00	0.00	0.00	0.00	1.76
22	1.83	0.00	0.00	0.00	0.00	0.00	1.83
23	1.09	0.00	0.00	0.00	0.00	0.00	1.09
24	1.03	0.00	0.00	0.00	0.00	0.00	1.03
25	1.01	0.00	0.00	0.00	0.00	0.00	1.01
26	1.05	0.00	0.08	0.00	0.00	0.00	1.01
27	1.04	0.00	0.06	0.00	0.00	0.00	1.01
28	1.01	0.00	0.00	0.00	0.00	0.00	1.01
29	2.00	0.00	0.00	0.00	0.00	0.52	1.74
30	2.00	0.00	0.00	0.00	0.00	0.35	1.83
31	2.76	0.00	0.00	0.00	0.00	1.71	1.91
32	2.15	0.00	0.00	0.00	0.00	1.11	1.60
33	2.21	0.00	0.00	0.00	0.00	1.14	1.64
34	2.36	0.00	0.00	0.00	0.00	1.35	1.69
35	3.18	0.00	0.00	0.00	0.00	2.05	2.16
36	1.93	0.00	0.00	0.00	0.00	0.74	1.56

37	1.05	0.00	0.00	0.00	0.00	0.04	1.03
38	1.49	0.00	0.00	0.00	0.00	0.90	1.04
39	1.16	0.00	0.00	0.00	0.00	0.00	1.16
40	1.01	0.00	0.00	0.00	0.00	0.00	1.01
41	1.09	0.00	0.00	0.00	0.00	0.17	1.01
42	1.62	0.00	0.00	0.00	0.00	0.90	1.17
43	2.00	0.00	0.00	0.00	0.00	1.24	1.38
44	2.80	0.00	0.00	0.00	0.00	1.74	1.93
45	3.43	0.00	0.05	0.00	0.00	2.32	2.25
46	4.06	0.00	0.09	0.00	0.00	2.92	2.56
47	5.67	0.00	0.00	0.00	0.00	4.60	3.37
48	2.51	0.00	0.00	0.00	0.00	1.86	1.58
49	6.21	0.00	0.19	0.00	0.00	4.57	3.83
50	4.14	0.00	0.00	0.00	0.00	2.23	3.03
51	1.02	0.00	0.00	0.00	0.00	0.00	1.02
52	1.05	0.00	0.00	0.00	0.00	0.00	1.05
53	1.01	0.00	0.00	0.00	0.00	0.00	1.01
54	1.27	0.00	0.00	0.00	0.00	0.00	1.27
55	1.02	0.00	0.00	0.00	0.00	0.00	1.02
56	1.04	0.00	0.00	0.00	0.00	0.00	1.04
57	1.30	0.00	0.00	0.00	0.00	0.00	1.30
58	1.09	0.00	0.00	0.00	0.00	0.00	1.09
59	1.04	0.00	0.00	0.00	0.00	0.00	1.04
60	1.03	0.00	0.00	0.00	0.00	0.00	1.03
61	1.03	0.00	0.00	0.00	0.00	0.00	1.03
62	1.03	0.00	0.00	0.00	0.00	0.00	1.03
63	1.03	0.00	0.00	0.00	0.00	0.00	1.03
64	1.52	0.00	0.00	0.00	0.00	0.00	1.52
65	1.02	0.00	0.00	0.00	0.00	0.00	1.02
66	1.04	0.00	0.00	0.00	0.00	0.00	1.04
67	1.07	0.00	0.00	0.00	0.00	0.00	1.07
68	1.09	0.00	0.00	0.00	0.00	0.00	1.09
69	1.22	0.00	0.00	0.00	0.00	0.00	1.22
70	1.41	0.00	0.00	0.00	0.00	0.00	1.41
71	1.10	0.00	0.00	0.00	0.00	0.00	1.10
72	1.12	0.00	0.00	0.00	0.00	0.00	1.12
73	1.01	0.00	0.00	0.00	0.00	0.00	1.01
74	1.06	0.00	0.00	0.00	0.00	0.00	1.06
75	1.12	0.00	0.00	0.00	0.00	0.00	1.12
76	1.17	0.00	0.00	0.00	0.00	0.00	1.17
77	1.19	0.00	0.00	0.00	0.00	0.00	1.19
78	9.28	0.00	0.00	0.00	0.00	4.96	6.80
79	4.50	0.00	0.00	0.00	0.00	2.60	3.20
80	1.42	0.00	0.00	0.00	0.00	0.16	1.34
81	2.20	0.00	0.00	0.00	0.00	1.30	1.55
82	2.33	0.00	0.00	0.00	0.00	1.49	1.59
83	2.46	0.00	0.00	0.00	0.00	1.69	1.62

84	1.31	0.00	0.00	0.00	0.00	0.57	1.03
85	1.11	0.00	0.00	0.00	0.00	0.10	1.06
86	2.02	0.00	0.00	0.00	0.00	0.94	1.55
87	2.42	0.00	0.00	0.00	0.00	1.23	1.81
88	2.51	0.00	0.00	0.00	0.00	1.16	1.93
89	3.81	0.00	0.00	0.00	0.00	1.99	2.82
90	3.36	0.00	0.00	0.57	0.00	0.59	2.78
91	1.61	0.00	0.00	0.54	0.00	0.00	1.34
92	1.47	0.00	0.00	0.00	0.00	0.00	1.47
93	1.01	0.00	0.00	0.00	0.00	0.00	1.01
94	1.08	0.00	0.00	0.00	0.00	0.00	1.08
95	1.03	0.00	0.00	0.00	0.00	0.00	1.03
96	1.63	0.00	0.00	0.00	0.00	0.00	1.63
97	1.42	0.00	0.00	0.00	0.00	0.00	1.42
98	1.01	0.00	0.00	0.00	0.00	0.00	1.01
99	1.03	0.00	0.00	0.00	0.00	0.00	1.03
100	1.01	0.00	0.00	0.00	0.00	0.00	1.01
101	1.05	0.00	0.00	0.00	0.00	0.00	1.05
102	1.03	0.00	0.00	0.00	0.00	0.00	1.03
103	1.56	0.00	0.00	0.23	0.00	0.00	1.45
104	2.09	0.00	0.00	0.36	0.00	0.00	1.91
105	2.27	0.00	0.00	0.39	0.00	0.19	1.98
106	3.69	0.00	0.00	0.00	0.00	0.50	3.44
107	4.14	0.00	0.00	0.00	0.00	2.29	3.00
108	3.60	0.00	0.00	0.00	0.00	2.38	2.41
109	3.21	0.00	0.00	0.00	0.00	1.92	2.25
110	2.97	0.00	0.00	0.00	0.00	1.68	2.13
111	2.86	0.00	0.07	0.00	0.00	1.27	2.19
112	2.87	0.00	0.17	0.00	0.00	1.24	2.17
113	3.00	0.00	0.00	0.00	0.00	1.37	2.32
114	2.80	0.00	0.37	0.00	0.00	0.98	2.13
115	3.02	0.00	0.79	0.00	0.00	1.07	2.09
116	2.10	0.00	0.00	0.00	0.00	1.09	1.56
117	2.14	0.00	0.00	0.00	0.00	1.13	1.58
118	2.04	0.00	0.00	0.00	0.00	1.03	1.53
119	2.07	0.00	0.00	0.00	0.00	0.87	1.64
120	2.21	0.00	0.00	0.00	0.00	0.64	1.89
121	2.03	0.00	0.00	0.00	0.00	1.02	1.52
122	2.02	0.00	0.00	0.00	0.00	0.83	1.61
123	2.02	0.00	0.00	0.73	0.00	0.00	1.66
124	2.04	0.00	0.00	1.36	0.00	0.00	1.36
125	2.01	0.00	0.00	0.89	0.00	0.00	1.57
126	2.02	0.00	0.00	0.73	0.00	0.00	1.66
127	2.02	0.00	0.00	0.53	0.00	0.00	1.76
128	2.02	0.00	0.00	0.49	0.00	0.00	1.78
129	2.02	0.00	0.00	0.25	0.00	0.00	1.90
130	2.02	0.00	0.00	0.58	0.00	0.00	1.73

131	2.01	0.00	0.00	0.00	0.00	0.00	2.01
132	2.04	0.00	0.00	0.00	0.00	0.00	2.04
133	2.04	0.00	0.00	0.00	0.00	0.00	2.04
134	2.01	0.00	0.00	0.00	0.00	0.00	2.01
135	2.07	0.00	0.00	0.00	0.00	0.00	2.07
136	2.03	0.00	0.00	0.00	0.00	0.00	2.03
137	2.01	0.00	0.00	0.00	0.00	0.00	2.01
138	2.04	0.00	0.00	0.00	0.00	0.00	2.04
139	2.01	0.00	0.00	0.00	0.00	0.00	2.01
140	1.02	0.00	0.00	0.00	0.00	0.00	1.02
141	1.01	0.00	0.00	0.00	0.00	0.00	1.01
142	1.17	0.00	0.00	0.00	0.00	0.00	1.17
143	1.01	0.00	0.00	0.00	0.00	0.00	1.01
144	1.02	0.00	0.00	0.00	0.00	0.00	1.02
145	1.04	0.00	0.00	0.00	0.00	0.00	1.04
146	1.19	0.00	0.00	0.00	0.00	0.00	1.19
147	1.31	0.00	0.00	0.00	0.00	0.00	1.31
148	1.43	0.00	0.00	0.00	0.00	0.00	1.43
149	1.55	0.00	0.00	0.00	0.00	0.00	1.55
150	2.45	0.00	0.00	0.00	0.00	0.00	2.45
151	1.17	0.00	0.00	0.00	0.00	0.00	1.17
152	1.03	0.00	0.00	0.00	0.00	0.00	1.03
153	5.89	0.00	0.00	0.00	0.00	0.00	5.89
154	1.15	0.00	0.00	0.00	0.00	0.00	1.15
155	1.05	0.00	0.00	0.00	0.00	0.00	1.05
156	1.03	0.00	0.00	0.00	0.00	0.00	1.03
157	1.04	0.00	0.00	0.00	0.00	0.00	1.04
158	1.02	0.00	0.00	0.00	0.00	0.00	1.02
159	1.01	0.00	0.00	0.00	0.00	0.00	1.01
160	1.01	0.00	0.00	0.00	0.00	0.00	1.01
161	1.15	0.00	0.00	0.00	0.00	0.00	1.15
162	1.49	0.00	0.00	0.00	0.00	0.00	1.49
163	1.30	0.00	0.00	0.00	0.00	0.00	1.30
164	1.31	0.00	0.00	0.00	0.00	0.00	1.31
165	1.33	0.00	0.00	0.00	0.00	0.00	1.33
166	1.01	0.00	0.00	0.00	0.00	0.00	1.01
167	1.04	0.00	0.00	0.00	0.00	0.00	1.04
168	1.02	0.00	0.00	0.00	0.00	0.00	1.02
169	1.03	0.00	0.00	0.00	0.00	0.00	1.03
170	1.09	0.00	0.00	0.00	0.07	0.00	1.01
171	1.09	0.00	0.00	0.00	0.07	0.00	1.01
172	1.01	0.00	0.00	0.00	0.00	0.00	1.01
173	1.01	0.00	0.00	0.00	0.00	0.00	1.01
174	1.01	0.00	0.00	0.00	0.00	0.00	1.01
175	1.02	0.00	0.00	0.00	0.00	0.00	1.02

Figure 2.2.2-1
Conventional Subdivision Plan

2.2.3 Cluster Lot Count

This Applicant is proposing to cluster the subdivision in order to preserve open space. Therefore, an analysis was prepared for the proposed 175 clustered lots to ensure that the proposed lots complied with Section 194-14.1.

As mentioned earlier herein, this project will utilize central water and sewer facilities. Section 194-14.1 (B) 2 of the Town of East Fishkill Zoning Code states that the minimum buildable area for lots having central water and sewer facilities is 10,000 square feet (0.23 acres) average, with no lot smaller than 7,500 square feet (0.17 acres). As can be seen from Table 2.2.3-1, all lots are in compliance with this section of the Town of East Fishkill Zoning Code.

Table 2.2.3-1
Cluster Lot Compliance Table

Lot No.	Total Acreage	Floodway	Floodplain	Steep Slopes	Water Bodies	Wetlands	Adjusted Acreage
1	1.10	0.00	0.00	0.00	0.00	0.00	1.10
2	0.78	0.00	0.00	0.00	0.00	0.00	0.78
3	0.74	0.00	0.00	0.00	0.00	0.00	0.74
4	0.72	0.00	0.00	0.00	0.00	0.00	0.72
5	0.53	0.00	0.00	0.00	0.00	0.00	0.53
6	1.24	0.00	0.00	0.00	0.00	0.00	1.24
7	1.34	0.00	0.00	0.00	0.00	0.00	1.34
8	0.51	0.00	0.00	0.00	0.00	0.00	0.51
9	0.55	0.00	0.00	0.00	0.00	0.00	0.55
10	0.51	0.00	0.00	0.00	0.00	0.00	0.51
11	0.69	0.00	0.00	0.00	0.00	0.00	0.69
12	0.51	0.00	0.00	0.00	0.00	0.00	0.51
13	0.55	0.00	0.00	0.00	0.00	0.00	0.55
14	0.52	0.00	0.00	0.00	0.00	0.00	0.52
15	0.55	0.00	0.00	0.00	0.00	0.00	0.55
16	0.51	0.00	0.00	0.00	0.00	0.00	0.51
17	0.51	0.00	0.00	0.00	0.00	0.00	0.51
18	0.60	0.00	0.00	0.00	0.00	0.00	0.60
19	0.53	0.00	0.00	0.00	0.00	0.00	0.53
20	0.50	0.00	0.00	0.00	0.00	0.00	0.50
21	0.50	0.00	0.00	0.00	0.00	0.00	0.50
22	0.52	0.00	0.00	0.00	0.00	0.00	0.52
23	0.51	0.00	0.00	0.00	0.00	0.00	0.51
24	0.50	0.00	0.00	0.00	0.00	0.00	0.50
25	0.50	0.00	0.00	0.00	0.00	0.00	0.50
26	0.58	0.00	0.00	0.00	0.00	0.00	0.58
27	0.63	0.00	0.00	0.00	0.00	0.00	0.63

28	0.84	0.00	0.00	0.00	0.00	0.00	0.84
29	0.52	0.00	0.00	0.00	0.00	0.00	0.52
30	0.63	0.00	0.00	0.00	0.00	0.00	0.63
31	0.76	0.00	0.00	0.00	0.00	0.00	0.76
32	0.62	0.00	0.00	0.00	0.00	0.00	0.62
33	0.58	0.00	0.00	0.00	0.00	0.00	0.58
34	0.64	0.00	0.00	0.00	0.00	0.00	0.64
35	0.65	0.00	0.00	0.00	0.00	0.00	0.65
36	0.79	0.00	0.00	0.00	0.00	0.00	0.79
37	0.61	0.00	0.00	0.00	0.00	0.00	0.61
38	0.73	0.00	0.00	0.00	0.00	0.00	0.73
39	1.31	0.00	0.00	0.00	0.00	0.00	1.31
40	1.15	0.00	0.00	0.00	0.00	0.25	1.03
41	1.46	0.00	0.00	0.00	0.00	0.43	1.25
42	0.97	0.00	0.00	0.00	0.00	0.00	0.97
43	1.11	0.00	0.00	0.00	0.00	0.08	1.07
44	1.59	0.00	0.00	0.00	0.00	0.46	1.36
45	1.09	0.00	0.00	0.00	0.00	0.20	0.99
46	0.88	0.00	0.00	0.00	0.00	0.09	0.84
47	0.97	0.00	0.00	0.00	0.00	0.07	0.94
48	0.52	0.00	0.00	0.00	0.00	0.00	0.52
49	0.50	0.00	0.00	0.00	0.00	0.00	0.50
50	0.51	0.00	0.00	0.00	0.00	0.00	0.51
51	0.73	0.00	0.00	0.00	0.00	0.01	0.73
52	1.03	0.00	0.00	0.00	0.00	0.22	0.92
53	1.50	0.00	0.00	0.00	0.00	0.44	1.28
54	1.02	0.00	0.00	0.00	0.00	0.17	0.94
55	0.99	0.00	0.00	0.00	0.00	0.22	0.88
56	1.12	0.00	0.00	0.00	0.00	0.12	1.06
57	1.15	0.00	0.00	0.00	0.00	0.00	1.15
58	1.11	0.00	0.00	0.00	0.00	0.02	1.10
59	1.21	0.00	0.00	0.00	0.00	0.27	1.08
60	1.35	0.00	0.00	0.00	0.00	0.03	1.34
61	1.31	0.00	0.00	0.00	0.00	0.01	1.31
62	1.36	0.00	0.00	0.00	0.00	0.06	1.33
63	0.86	0.00	0.00	0.00	0.00	0.01	0.86
64	0.75	0.00	0.00	0.00	0.00	0.00	0.75
65	0.55	0.00	0.00	0.00	0.00	0.00	0.55
66	0.84	0.00	0.00	0.00	0.00	0.00	0.84
67	0.85	0.00	0.00	0.00	0.00	0.00	0.85
68	1.03	0.00	0.00	0.00	0.00	0.00	1.03
69	1.08	0.00	0.00	0.00	0.00	0.00	1.08
70	1.20	0.00	0.00	0.00	0.00	0.00	1.20
71	1.30	0.00	0.00	0.00	0.00	0.00	1.30
72	1.10	0.00	0.00	0.00	0.00	0.00	1.10
73	0.92	0.00	0.00	0.00	0.00	0.00	0.92
74	0.83	0.00	0.00	0.00	0.00	0.00	0.83

75	0.82	0.00	0.00	0.00	0.00	0.00	0.82
76	0.94	0.00	0.00	0.00	0.00	0.00	0.94
77	0.71	0.00	0.00	0.00	0.00	0.00	0.71
78	0.85	0.00	0.00	0.00	0.00	0.00	0.85
79	1.21	0.00	0.00	0.00	0.00	0.00	1.21
80	1.57	0.00	0.00	0.00	0.00	0.00	1.57
81	1.52	0.00	0.00	0.00	0.00	0.00	1.52
82	0.99	0.00	0.00	0.00	0.00	0.00	0.99
83	0.67	0.00	0.00	0.00	0.00	0.00	0.67
84	0.80	0.00	0.00	0.00	0.00	0.00	0.80
85	0.78	0.00	0.00	0.00	0.00	0.00	0.78
86	0.68	0.00	0.00	0.00	0.00	0.00	0.68
87	0.71	0.00	0.00	0.00	0.00	0.00	0.71
88	0.65	0.00	0.00	0.00	0.00	0.00	0.65
89	0.67	0.00	0.00	0.00	0.00	0.00	0.67
90	0.70	0.00	0.00	0.00	0.00	0.00	0.70
91	0.78	0.00	0.00	0.00	0.00	0.00	0.78
92	0.65	0.00	0.00	0.00	0.00	0.00	0.65
93	0.60	0.00	0.00	0.00	0.00	0.00	0.60
94	0.53	0.00	0.00	0.00	0.00	0.00	0.53
95	0.51	0.00	0.00	0.00	0.00	0.00	0.51
96	0.58	0.00	0.00	0.00	0.00	0.00	0.58
97	0.57	0.00	0.00	0.00	0.00	0.00	0.57
98	0.52	0.00	0.00	0.00	0.00	0.00	0.52
99	0.58	0.00	0.00	0.00	0.00	0.00	0.58
100	0.62	0.00	0.00	0.00	0.00	0.00	0.62
101	0.88	0.00	0.00	0.00	0.00	0.00	0.88
102	0.63	0.00	0.00	0.00	0.00	0.00	0.63
103	0.58	0.00	0.00	0.00	0.00	0.00	0.58
104	0.65	0.00	0.00	0.00	0.00	0.00	0.65
105	0.63	0.00	0.00	0.00	0.00	0.00	0.63
106	0.53	0.00	0.00	0.00	0.00	0.00	0.53
107	2.30	0.00	0.00	0.00	0.00	0.69	1.96
108	1.45	0.00	0.00	0.00	0.00	0.55	1.18
109	1.26	0.00	0.00	0.00	0.00	0.58	0.97
110	1.36	0.00	0.00	0.00	0.00	0.58	1.07
111	4.08	0.00	0.00	0.00	0.00	1.58	3.29
112	1.21	0.00	0.00	0.00	0.00	0.04	1.19
113	0.71	0.00	0.00	0.00	0.00	0.00	0.71
114	1.89	0.00	0.00	0.00	0.00	0.53	1.63
115	1.10	0.00	0.00	0.00	0.00	0.35	0.93
116	1.00	0.00	0.00	0.00	0.00	0.38	0.81
117	1.94	0.00	0.00	0.00	0.00	0.50	1.69
118	1.34	0.00	0.00	0.00	0.00	0.02	1.33
119	1.23	0.00	0.00	0.23	0.00	0.01	1.11
120	1.38	0.00	0.00	0.23	0.00	0.23	1.15
121	1.45	0.00	0.00	0.28	0.00	0.28	1.17

122	1.51	0.00	0.00	0.32	0.00	0.32	1.19
123	1.96	0.00	0.00	0.25	0.00	0.25	1.71
124	2.47	0.00	0.00	0.32	0.00	0.32	2.15
125	2.62	0.00	0.00	0.28	0.00	0.28	2.34
126	2.22	0.00	0.00	0.00	0.00	0.20	2.12
127	2.26	0.00	0.00	0.00	0.00	0.35	2.09
128	0.52	0.00	0.00	0.00	0.00	0.00	0.52
129	0.56	0.00	0.00	0.00	0.00	0.00	0.56
130	0.99	0.00	0.00	0.00	0.00	0.00	0.99
131	2.01	0.00	0.00	0.00	0.00	0.00	2.01
132	2.19	0.00	0.00	0.00	0.00	0.00	2.19
133	1.78	0.00	0.00	0.00	0.00	0.00	1.78
134	1.89	0.00	0.00	0.00	0.00	0.00	1.89
135	1.24	0.00	0.00	0.75	0.00	0.00	0.87
136	0.80	0.00	0.00	0.42	0.00	0.00	0.59
137	1.33	0.00	0.00	0.00	0.00	0.00	1.33
138	1.66	0.00	0.00	0.87	0.00	0.00	1.23
139	1.55	0.00	0.00	0.78	0.00	0.00	1.16
140	1.70	0.00	0.00	0.74	0.00	0.00	1.33
141	1.31	0.00	0.00	0.59	0.00	0.00	1.02
142	2.58	0.00	0.00	0.81	0.00	0.00	2.18
143	2.67	0.00	0.00	0.50	0.00	0.00	2.42
144	0.75	0.00	0.00	0.47	0.00	0.00	0.52
145	0.57	0.00	0.00	0.00	0.00	0.00	0.57
146	0.58	0.00	0.00	0.00	0.00	0.00	0.58
147	0.63	0.00	0.00	0.00	0.00	0.00	0.63
148	0.50	0.00	0.00	0.00	0.00	0.00	0.50
149	0.51	0.00	0.00	0.00	0.00	0.00	0.51
150	0.76	0.00	0.00	0.00	0.00	0.00	0.76
151	0.81	0.00	0.00	0.00	0.00	0.00	0.81
152	0.50	0.00	0.00	0.00	0.00	0.00	0.50
153	0.57	0.00	0.00	0.00	0.00	0.00	0.57
154	0.58	0.00	0.00	0.00	0.00	0.00	0.58
155	0.67	0.00	0.00	0.00	0.00	0.00	0.67
156	0.58	0.00	0.00	0.00	0.00	0.00	0.58
157	0.51	0.00	0.00	0.00	0.00	0.00	0.51
158	0.67	0.00	0.00	0.00	0.00	0.00	0.67
159	0.60	0.00	0.00	0.00	0.00	0.00	0.60
160	0.57	0.00	0.00	0.00	0.00	0.00	0.57
161	1.39	0.00	0.00	0.00	0.00	0.00	1.39
162	1.24	0.00	0.00	0.00	0.00	0.00	1.24
163	1.10	0.00	0.00	0.00	0.00	0.00	1.10
164	1.20	0.00	0.00	0.00	0.00	0.00	1.20
165	1.06	0.00	0.00	0.00	0.00	0.00	1.06
166	0.89	0.00	0.00	0.00	0.00	0.00	0.89
167	1.02	0.00	0.00	0.00	0.00	0.00	1.02
168	0.71	0.00	0.00	0.00	0.00	0.00	0.71

169	0.72	0.00	0.00	0.00	0.21	0.00	0.51
170	0.57	0.00	0.00	0.00	0.02	0.00	0.55
171	1.12	0.00	0.00	0.00	0.00	0.00	1.12
172	0.82	0.00	0.00	0.00	0.00	0.00	0.82
173	0.67	0.00	0.00	0.00	0.00	0.00	0.67
174	0.67	0.00	0.00	0.00	0.00	0.00	0.67
175	1.08	0.00	0.00	0.00	0.00	0.00	1.08

Figure 2.2.3-1
Cluster Compliance Plan

2.2.4 Site Layout and Design Philosophy

The Applicant's goal in proposing the development of the 325-acre project site is to maximize the opportunities offered by the site's natural features in order to create a residential community while preserving and enhancing the significant environmental features and natural beauty of the site. The developer's philosophy for this project is to provide homebuyers with a neighborhood that although not unique to the Town is high quality. The development was engineered to co exist with the existing natural features enjoyed on this property. Steep wooded slopes and large wetlands along with the excellent views of the surrounding wooded landscape beyond the property are attractive to almost any homebuyer. These natural resource features provide an easy lifestyle for homebuyers not found in most residential developments. Typically, the recent developments in and around the Town have been designed to maximize all useable land on a property. Summit woods will conserve 177.60 acres of the 325-acre property as open space via a non-disturbance easement for the passive enjoyment of all of the residents in Summit Woods. Access to the open space shall be provided by access easements between lots 111 and 112, lots 52 and 53 and between lots 44 and 45.

Some of the general principles that guided the design of the proposed development include:

2.2.5 Subdivision Signage

The Applicant will provide a landscape area at each entrance with a sign identifying the subdivision. The sign will be tastefully laid out with earth tone colors. The sign will be placed in a fieldstone planter. The planter will be filled with ground cover landscaping. No lights will be used to illuminate the sign. The developer will install the sign. The signs will be located on the lots adjacent to the entrance roadways outside of the NYSDOT and Town Road R.O.W. It shall be the responsibility of the owner of these lots to remove the signs after the subdivision is completed. The Developer shall make a private arrangement, through easements agreements, etc., to maintain the signs for a period of time to be determined by the lot owner and the Developer.

2.2.6 Homeowner's Association

Although the Applicant is proposing a cluster subdivision, the lots will be sold fee-simple. There shall be no common property. The water and sewer transportation corporations shall own the majority of the wetland area/open space in order to provide for a wellhead protection area. Easements between lots 111 and 112, lots 52 and 53 and between lots 44 and 45 will allow residents of the project to walk through the lands owned by the water and sewer corporation. Persons utilizing the open space shall be

discouraged from entering the pump house and sewage treatment area by use of a chain-link fence.

The Applicant is proposing to incorporate the required 50' buffer part into the proposed lots. This will eliminate the need for a homeowners association and a strip of unpatrolled property.

2.2.7 Homes Front All Streets

The streets in the proposed development have been designed for character as well as capacity. The Applicant will offer the proposed streets to the Town of East Fishkill for dedication once they have been completed in accordance with existing Town practices. Homes will be placed to front onto all the project's streets, while careful attention to architectural detail and landscape design along these streets and a mix of lot sizes will assure a high quality landscape.

2.2.8 Open Space

Approximately 180 acres of open space areas on site would be preserved in its natural state. The preservation of open space would include the existing wetlands and wooded steep slopes on the site. Easements between lots 111 and 112, lots 52 and 53 and between lots 44 and 45 will allow residents of the project to walk through the lands owned by the water and sewer corporation. Persons utilizing the open space shall be discouraged from entering the pump house and sewage treatment area by use of a chain-link fence.

2.2.9 Site Access and Circulation

Access to the development would be provided via Route 52 that fronts the project site. The few cul-de-sacs that are part of the development's street design will be located near its fringes. A loop road is incorporated into the design for easier flow of traffic. Emergency vehicle access will occur from the main entrance road on Route 52 or from an existing farm lane on Collarbark Road. As mentioned before, the roadways will be dedicated to the Town of East Fishkill once they have been completed in accordance with the Town's current practices.

2.2.10 Pedestrian Circulation

Currently, there is no significant pedestrian activity in the area of the project or adjacent side roads. The Applicant is not proposing the use of sidewalks or crosswalks at the site. The roadways will be paved in accordance with Town Highway specifications to allow walking and biking along the streets as in many residential subdivisions in the region.

2.2.11 Housing Design

Important to the overall concept of the proposed development is the character of its architecture. The subdivision will be constructed in architectural styles consistent with traditions of the Hudson Valley. It is believed that the homes will range from 2,800 to 3,600 square feet in size. The majority of the homes will have 4 bedrooms.

It is anticipated that the developer will also construct the homes in the Summit Woods development. The project will be phased. Refer to the phasing plan included in this report. Refer to Figure 2.5-3.

The majority of the homes will be constructed with two-car garages. The homes will be constructed on basement wherever possible. This provides for additional storage not provided in the garages.

In addition, one-sided parallel parking on the streets is also provided and encouraged for its traffic-calming effect.

The majority of the homes will be constructed with oil-fired and gas-fired type heating systems. There are numerous fuel-oil suppliers in the region.

Central Hudson Gas & Electric Company will provide electric. It appears that there is plenty of supply in the region.

Some homeowners may choose to cook with propane in lieu of electric. There are numerous propane suppliers in the region.

2.2.12 Landscape Plan

The existing setting of the property is open fields with hedgerows and forested lands along the perimeter and on the steep slopes. Where appropriate and possible, the naturally occurring vegetation on the property will be preserved and will serve as a buffer between adjacent properties, Route 52, and existing wetlands. If necessary, the preserved woodlands on-site will be supplemented with plants similar to those presently growing on the site.

Provision of street trees within the subdivision inside of the street right-of-way that will be spaced approximately 50 feet on center as sight distance and driveway obstruction allows. All attempts shall be made to vary the spacing to prevent a uniform distribution throughout the site. The street trees will include attractive, locally adapted species. Street trees will be of a consistent species within a given right-of-way, but will vary from street to street, providing individuality to each of the roadways. Tree

selection will be based upon visual appeal, hardiness and the species' ability to benefit wildlife by offering food, protection and nesting sites.

2.2.13 Typical Streetscapes

It is believed that the streetscape for this project will resemble many of the more tasteful subdivisions in town. The Applicant would like to pattern the Summit Woods subdivision after other projects such as The Legends, Sagamor, Forest Hills, Covered Bridge, Taconic Oaks, etc. The Applicant typically provides additional features not included in other subdivisions.

It is the intent of the Applicant to provide a tastefully designed project with landscaping and open spaces. The Applicant provides Belgian block curbing which adds to the streetscape.

The following are typical streetscapes that the Applicant has constructed in cluster subdivisions in Orange County, New York.

It is believed that the Summit Woods project will resemble these projects since the lots in the Summit Woods subdivision will be, for the most part, larger than a typical lot in a cluster subdivision.

Figure 2.2.13-1 -Typical Streetscapes

Utility Plans

The project is currently undeveloped. A central water supply system is proposed to serve the site. Three new wells were installed on the site and yield tests have been completed as part of the Hydrogeological Analysis included in the appendices of this DEIS. Test data indicate that the wells can provide a minimum yield of 63 gallons per minute. The following is a summary of the well data:

	Well #1:	**Well #2:**	**Well #3:**
Depth of Well	425′	500′	400′
Depth of Casing	50′	70′	62′
Diameter of Casing	6″	6″	6″
Stabilized Yield	63 gpm	Not Used	65 gpm

During the hydrogeological testing, it was determined that there is a slight interconnection between well #1 and well #2. Therefore, the yield for well #2 has not been considered.

It has been anticipated that approximately 85,300 gallons of water will be required to meet the average daily demand for the project site. This is based on 175 lots x 3.75 bedrooms per lot x 130 gallons per day per bedroom.

The hydrogeological report states that a conservative recharge estimate of between 118,200 and 137,900 gpd could be expected during extreme drought conditions for the bedrock aquifer underlying the site.

Stormwater

Stormwater Quality Management Basins will be provided to collect, convey and treat stormwater runoff from developed areas of the project. Stormwater collection and conveyance will consist of a combination of catch basins, closed pipe and open channel systems. These systems are designed in accordance with the Town of East Fishkill Highway Specifications, Chapter A 197, dated 2001.

Stormwater Quality Management Basins will be employed to provide treatment of stormwater runoff pollutants associated with land development and will include the installation of vegetated buffers. Stormwater runoff will be treated prior to discharging to the onsite wetlands. These facilities will be designed in accordance with "New York Guidelines for Urban Erosion and Sediment Control" and "NYSDEC Stormwater Management Design Manual."

The Town of East Fishkill shall assume resume responsibility for the stormsewer facilities via stormsewer easements that will surround the proposed stormwater basins. Typically the stormsewer easements shall extend from the stormwater basin to the eventual point of discharge. These easements will be further defined and shown on the subdivision plat. Eventually the easements will be offered and conveyed to the Town of East Fishkill.

Sanitary Sewer

Sanitary sewer service for the site will be provided by a combination of gravity sewer mains and force mains to convey sanitary sewage to an on-site Wastewater Treatment Plant (WTP). Sewer lines will generally run along the proposed interior roadway network or along lot lines to provide sewer service to each of the lots. Two pump stations will be provided in areas that cannot be served by gravity mains and force mains will transmit sewage to the nearest gravity main.

Gravity sewer mains will be eight inch (min.) PVC SDR-35 non-pressure rated pipe with pre-cast concrete manholes. In areas where the sewer line may pass through hydric soils or cross waterlines, a pressure rated pipe may be substituted, as determined at the time of detailed design of the sewer collection system. Force mains will be pressure rated PVC pipe.

Collected sanitary sewage will be conveyed to a new Wastewater Treatment Plant (WTP), located on the southwestern portion of the property. The WTP will be designed in accordance with NYSDEC treatment requirements for discharge to the adjacent NYSDEC wetland.

Soil test pits were excavated on the site in the summer of 2000. It was determined from these soils tests that the site soils are not conducive for the subsurface disposal of domestic sewage. The soils range from clay hardpan to tight clay loams in the deep test pits. Percolation tests yield poor drainage characteristics. Therefore, a wastewater treatment plant shall be constructed on the south side of the site near the NYSDEC wetland.

Access to the proposed wastewater treatment plant will be obtained over an existing unimproved farm roadway from Collarbark Road. This roadway will also allow access to the proposed water treatment/pump house also to be located on the south side of the project site. A portion of the existing roadway will have to be relocated onto the property to the southwest of the site on Collarbark Road. The Applicant owns this parcel of property.

A letter was written to Mr. Thomas Rudolph in September 19 of 2002 requesting permission to use the existing creek as a proposed discharge point. Mr. Rudolph responded on January 24, 2003, with a list of Draft effluent parameters. (See the correspondence in Appendix C.) A sewage treatment plant will be designed and installed so as to meet these Draft effluent limits. A sewage treatment plant utilizing extended aeration treatment is proposed for the project. This system shall be much like the sewage treatment plant constructed for the Sagamor Sewage Transportation Corporation in the Town of East Fishkill.

The treatment plant will be designed to treat approximately 85,300 gallons per day. This number is based on 175 lots with a mix of 3.75 bedrooms per house x 130 gallons per day per bedroom.

Water Supply

The on-site water supply will be provided by two groundwater bedrock wells drilled on the project site, as shown on the Utility Plan and in the Hydrogeology Report prepared by Leggette, Brashears & Graham, Inc. (Appendix D). Each of these wells will be developed to supply a minimum of 90,500 gallons per day (gpd) or approximately 63 gallons per minute (gpm) from each well. Each submersible well pump will provide raw water to a treatment/control building to be located on designated open land near the source wells. The well pumps will be controlled by the water level in the distribution storage tank.

The water treatment/control building will house the control panel for the well pumps, chlorine-metering pumps, piping, valves, flow meter, sample taps, and other equipment that may be required by the Department of Health. Chlorine feed pumps will inject liquid chlorine into the water to provide the required disinfection of the water. Each well will have a dedicated chlorinator. A standby or backup chlorinator will also be provided as a safety precaution. The Applicant is proposing the use of 220,000-gallon "Aquastore" water storage tank. The tank shall be 28 feet tall by 36 feet in diameter. With an average daily flow 85,300 gallons per day, the tank will provide for 134,700 gallons of fire flow volume. There shall be no permanent lawn sprinklers system allowed in the proposed subdivision. They will be prohibited via deed restrictions.

It is assumed that the base of the tank will be set at 481.0. The water level in the tank will be at elevation 509.0 when the tank is full. The well pump controls shall be set so that the average daily flow component of the storage tank shall be above the fire-flow volume. Therefore, the fire-flow volume will occupy the first 16' feet (to elevation 497.0) of the tank height. The average daily demand storage shall be from 16 feet (elevation 497.0) to 28 feet (elevation 509.0).

A 220,000-gallon water storage tank sized in accordance with the Ten States Standards will store a minimum of one day of use, 85,300 gallons, plus required fire flow as specified by the Insurance Services Office, ISO, at a minimum of rate of 1,000 gpm for 2 hours (120,000 gallons). As stated earlier, the actual fire volume shall be 134,700 gallons. The proposed water storage tank will be located on a hill in the southern portion of the site with a base elevation of 481.00 to provide a minimum working pressure of 35 psi throughout the water distribution system. This is in accordance with Section 7.3.1 of the "*Ten States Standards for Water Works*". The proposed distribution storage tank will be an "Aquastore" 28-ft. tall by 36-ft. diameter bolted steel tank. The tank site is large enough to accommodate a second tank to serve future areas of need.

The highest elevation to be served shall be near lot 141, 142 and 143 as shown on the cluster plan. The water main, in front of the house, should be at elevation 416.0. When the storage tank is full, the pressure in the main in front of lot 143 should be 40.2 psi. When the storage tank is at elevation 497, the water pressure in the street should be 35.1 psi.

The lowest elevation to be served shall be near lots 27, 28 and 93 where the water main will be at elevation of 315. The water pressure in the main shall be 84 psi. When the tank is at elevation 497, the pressure in the main shall be 78.8 psi.

The water distribution system will consist of AWWA C-900 PVC water main with a minimum pipe diameter of 8 inches. Restrained joints will be provided in the distribution network as necessary. The distribution piping will have a minimum of 5 feet of cover. Fire hydrants will be placed in the distribution pipe network in accordance with the Ten States Standards; hydrants will be located at intersections and spaced 350 to 500 feet apart. Gate valves will also be provided in the distribution network in accordance with the Ten States Standards with a maximum spacing of 500 feet between valves.

The water main will be adequate to provide minimum flow and pressure to each residence since the water main will be looped throughout the site.

2.2 Involved Agencies and Respective Permits/Approvals

- Town of East Fishkill Planning Board
  330 Route 376
  Hopewell Junction, New York 12533

  Subdivision Approval
  Floodplain Development
  Site Plan Approval – Water and Sewer Buildings

- Town of East Fishkill Town Board
  330 Route 376
  Hopewell Junction, New York 12533

  Establishment of Transportation Corporations (Water and Sewer)

- Dutchess County Department of Health
  387 Main Mall
  Poughkeepsie, New York 12601

  Water and Sewer System Approval

- New York State Department of Transportation
  44 Burnett Blvd.
  Poughkeepsie, NY 12603

  Curb Cuts – NYS Route 52

- New York State Department of Environmental Conservation
  Region 3
  21 South Putt Corners Road
  New Paltz, New York 12561

  Stormwater Management SPDES Notice of Intent
  Article 24 Freshwater Wetland Permit
  SPDES Permit for Sewage Treatment Plant

- New York State Public Service Commission
  3 Empire Plaza
  Albany, New York 12223

  Water Rates

2.3 Interested Agencies

- Dutchess County Planning Department
  27 High Street
  Poughkeepsie, New York 12601

  Review of the DEIS

- Town of East Fishkill Conservation Advisory Council
  330 Route 376
  Hopewell Junction, New York 12533

  Review of the DEIS

- Town of East Fishkill Fire Advisory Board
  330 Route 376
  Hopewell Junction, New York 12533

  Review of the DEIS

2.4 Site Description

Location, Acreage, Zoning, Tax Identification Map Number

The proposed Summit Woods development is located on Route 52 in the Town of East Fishkill, Dutchess County, New York. The property consists of five parcels totaling 325.22 (+-) acres. The parcels are represented by tax identification numbers 132800-6656-00-045715, 132800-6656-00-233608, 132800-6656-00-349637, 132800-6656-00-350690, and 132800-6656-00-361675.[7] According to the Town of East Fishkill Zoning Ordinance,[8] the property is within the R-1 and R-2 zoning districts. The Applicant also owns the 4.61-acre parcel of property to the southwest of the proposed Summit Woods site. This parcel shall be used to provide access to the water and sanitary sewage treatment facilities.

Generally, the site is located east of the Taconic State Parkway, north of US Interstate 84 and south of State Route 52. A private "Water Company" and water distribution system will service the residents of the subdivision. A private "Sewer Corporation" will provide on site service to the residents of the subdivision. The site is within the taxing district of the Town of East Fishkill, Wappingers Central School District, and Dutchess County.

Ownership and Adjacent Properties

ABD Fishkill, LLC, currently owns the project area. The Applicant proposes to develop the site to accommodate 175 new single-family houses.

The property is bounded by Route 52 to the north and a residential subdivision known as Strawberry Hill across Route 52; three single-family residences directly east;

[7] *TRW REDI Property Data Realty Atlas, Dutchess County, New York.*
[8] *Town of East Fishkill Zoning Ordinance dated January 3, 1990.*

undeveloped farmland to the north and west, and Interstate 84 to the south. Access has been provided to the Lands of Tucker.

Easements

The following easements will be provided concurrent with the creation of the subdivision:

- Roads
- 177.60 acres of open space
- Drainage, Electric, Cable and Sanitary Lines

Site Character

As previously stated, the site consists of five parcels that are geographically connected and border Route 52. Although the central portion of the site is relatively flat, the topography of this property generally rises from the center to the eastern portion of the parcel. The topography of this parcel ranges from approximately 314 feet above mean sea level (msl) to 582 feet above msl. The topography of the parcel peaks at the southern boundary where slopes of greater than 48% are common. The vegetation can be characterized as open fields on the eastern and northern portion of the property, scrub/shrub, forested, and wet meadow wetland in the center of the property, and wooded slopes along the southern section of the property. This property was formerly utilized for agricultural purposes that placed limitations on the growth of on-site trees in some areas.

General Site Location

The project area is within the R-1 and R-2 Zoning Districts. The land uses for the parcels in the surrounding one-quarter mile are generally residential. The property immediately north of the parcels comprising Summit Woods is zoned R-1 and is occupied by the Strawberry Hill subdivision; the area to the south is occupied by Interstate 84; the properties to the west are zoned R1; and the property to the east is zoned R2. The surrounding zoning indicates that residential housing on this parcel is completely in character with the nearby community.

The Summit Woods Subdivision is located on the south side of Route 52. Nearby major transportation corridors include U.S. Route 9, State Route 82, and the Taconic State Parkway that intersect with Route 52 west of the project site. The Taconic State Parkway facilitates traffic in a north/south direction and Interstate 84 is south of the site.

According to the *National Wetlands Inventory (NWI) Map, Hopewell Junction Quadrangle*,[9] and NYSDEC Freshwater Wetland Mapping, the property contains a large wetland area in the center of the property.

2.5 Subdivision and Integrated Plot Plans

Description of Subdivision

As shown on Figure 2.5-1 *Cluster SubdivisionPlan*, Summit Woods will be developed to accommodate 175 new single-family homes. Six roads totaling approximately 14,735 linear feet including three cul-de-sacs will provide access throughout this property (road profiles are provided in Figures 2.5-2). The roads will be constructed according to the Town of East Fishkill requirements for public roads as they will be dedicated to the Town of East Fishkill. In accordance with the Town of East Fishkill Highway Specifications, the roads will be 24 feet wide (12 feet for each lane) with a total right-of-way (ROW) width of 50 feet. The roads will be crowned to maximize surface drainage. As the roads will dedicated to the Town of East Fishkill, maintenance of the interior streets will be the responsibility of the Town. In accordance with the Town of East Fishkill Land Subdivision Regulations, the Applicant will provide street trees on both sides of the street, inside of the street ROW, that will be spaced approximately 50 feet on center.

Wappingers Central School District school busses will pick up and drop off school age children at stops throughout the site. The main access to the lots on the property will be provided from Route 52 with secondary or emergency access from Collarbark Road. Utilities will be constructed simultaneously so that all lots will be fully functional.

[9] *U.S. Department of the Interior, Fish and Wildlife Service, 1990.*

Figure 2.5-1
Cluster Subdivision Plan

Figure 2.5-2
Road Profiles

Proposed Action, Purpose, and Public Need/Benefits

The Applicant, ABD Fishkill, LLC, is proposing to subdivide property consisting of 325.22 (+-) acres for the creation of a single-family residential development. As the population in Dutchess County continues to increase, this project is assumed to fulfill the incremental need for housing. The associated roads, utilities, and storm sewers will be constructed in three phases.[10] Construction of the housing units will be market driven and also completed in three phases.[11] Approximately 180 acres of area will remain as permanent open space and the trees that currently exist along the borders of the site and visually screen the property will remain (see Figure 2.1-2 *Open Space Map*).

The benefits of Summit Woods will be increased economic stimulation through the employment of construction workers, the purchase of construction materials, and associated multiplier effects. An influx of construction workers and residents at Summit Woods would stimulate the local network of retailers and service providers. The multiplier effects of employing workers in the construction of Summit Woods and the effect of increased spending by residents would, in turn, stimulate other sectors of the economy. Further, sales, property, and school tax payments will increase for each of these taxing authorities. As proposed, the Summit Woods subdivision will be served by a private water transportation corporation and a private sewage transportation corporation.

Impacts of the project include transforming a currently undeveloped parcel into a developed parcel, necessitating the removal of on-site vegetation, re-grading the on-site soils, and potentially blasting bedrock to construct roads and housing foundations. Impervious surfaces will be increased, requiring stormwater management measures to maintain the quality and quantity of stormwater flowing off-site and prevent erosion of the on-site soils. No wetlands will be filled as a result of development of the subdivision. Traffic on the nearby network of roadways will increase. The population of the Town, and the associated demand for community services including recreation, police, fire, health care, schools and solid waste will increase. During construction, dust and noise generation will increase. As described throughout this document, these impacts are not considered to be significant or can be mitigated through appropriate management of the site.

[10] *See the discussion heading "Construction Scheduling" below in this section.*
[11] *Ibid.*

Design and Layout

The Summit Woods Subdivision has been designed to accommodate the creation of 175 new residential lots on the 325.22 (+-) acre project area. Access to the lots will be from two ingress/egress points on Route 52. The primary access will be near Primrose Lane. A secondary ingress/egress point is proposed at the south side of the property near Stormville Mountain Road. The water and sewer facilities will be accessed by an existing farm lane from Collarbark Road.

Water and sanitary services will be provided to the site via underground utility lines that will generally follow the layout of the internal roads.

Six roads including 3 cul-de-sacs totaling approximately 14,735 linear feet will provide access throughout this property. The Applicant is proposing to dedicate all roads and the appropriate rights-of-way to the Town of East Fishkill. The horizontal road layout is shown on Figure 3.1.2-1 *Schematic Utilities Plan*. Road profiles are provided in Figures 2.5-2. According to the Town of East Fishkill Highway Specifications, the maximum permitted road grade is 10%. As shown on the Road Profiles, the grade of the proposed roads ranges from 1% to 7%. Further, it is required by the Town of East Fishkill that the road intersections provide a grade of 3% within 30' measured from the edge of pavement, or a 12' lane width, on the main road. As shown on the Road Profiles, the proposed intersections meet or exceed this requirement.

After proper grading and preparation of the lots for residential dwelling units, the grade for each driveway will not exceed 15% and the grade for the internal roads will not exceed 10% with side slopes not exceeding 2:1. Efforts will be made to achieve 3:1 side slopes wherever possible. Side slopes of 2:1 or steeper will be used in competent rock.

Stormwater runoff will be maintained to pre-development levels utilizing a series of pre-cast catch basins and connecting "HDPE" plastic pipe placed in the road network and the interior of the site. Other features of the drainage system will be Stormwater Quality Management Basins and surface swales (Appendix E - Stormwater Management Plan) to facilitate stormwater movement and purification (first flush). Land areas that are not collected by the subsurface system will continue to sheet flow to the wetlands at the center of the property through natural patterns and surface conditions.

Total Acreage Owned by Applicant and Proposed Uses

As shown in Figures 2.1-1 *Existing Conditions*, the Applicant currently owns 325.22 (+-) acres of land and does not own any other land contiguous to the project area. Portions

of the property are proposed to use for single-family residential use.

Construction Scheduling

Construction of roads and preparation of the lots on will be completed in three phases with work on phase one commencing in 2003. Because sale of the individual lots will be market driven, it is not known when all of the lots within the subdivision will be constructed. However, it is anticipated that the project sponsor will develop approximately 35 homes a year with full development of the site to be complete in four years.

As shown on *Figure 2.5-3 - Phasing Plan*, the following summarizes each of the proposed development phases:

> Phase one will include the grading and construction of Summit Woods Boulevard in its entirety as well as the installation of utilities and grading for 59 lots and the Sewage Treatment Plant and Water System including the water tank.
>
> Phase two will include the grading and construction installation of utilities and grading of Stony Brook Lane and Old Meadow Road and will include 55 lots.
>
> Phase three will include the grading and construction of Rolling Ridge, Pheasant Run, and Red Tail Court. Phase three will also include the installation of utilities and grading for 61 lots.

The primary construction vehicle access for the property will be at the site access across from Primrose Lane. A secondary construction access will be provided near Stormville Mountain Road. The individual driveways will allow construction vehicle movements onto the residential lots. A construction entrance pad will be constructed at the Route 52 access point. The following general guidelines for pad construction will be followed:

- Stone size will be 2" or a reclaimed or recycled concrete equivalent;
- Pads will be no less than 50 feet long and a minimum of 24 feet wide and will be no less than 6" deep;
- A filter cloth will be placed over the entire area prior to placing of stone;
- All surface water flowing or diverted toward construction entrances

will be piped across the entrance;

- The entrance will be maintained in a condition that will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment;

- All sediment spilled, dropped, washed, or tracked onto public rights-of-way will be removed immediately;

- Vehicle wheels will be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it will be done on an area stabilized with stone and that drains into an approved sediment trapping device;

- Periodic inspection and needed maintenance of the pads will be provided after each rain event.

Environmental Monitor

The Town of East Fishkill Planning Board will decide whether or not to utilize an Environmental Monitor on this project. Typically, the Town of East Fishkill Engineers, monitor construction activity and the placement of the required erosion and sedimentation control devices for projects in the Town. The Town Zoning Administrator has requested that the Project Engineer and the Town Engineer's office inspect the site periodically to ensure that the site is in compliance with the new phase II stormwater regulations.

The Planning Board, in the past, has required developers to utilize a private consultant to act as an Environmental Monitor. This consultant is paid through an escrow account funded by the developer. The Environmental Monitor would report directly to the Town of East Fishkill Planning Board. If the Planning Board chooses to utilize an Environmental Monitor on this project, the Board will define the scope of the Environmental Monitor's responsibilities for this project.

Figure 2.5-3
Phasing Plan

3.0 POTENTIAL ENVIRONMENTAL IMPACTS

Local Law "B" which was enacted as part of the newly adopted *November 2002 Master Plan* provides for reduction of lot areas containing environmentally sensitive lands. In consideration of these new requirements an analysis has been prepared in section 2.2 of this document that demonstrates compliance to this newly adopted law.

3.1 Zoning and Surrounding Land Use

3.1.1 Existing Conditions Land Use and Zoning

The predominant existing land use on the site is open space with an isolated single-family residential site. The large majority of the open space consists of abandoned fields, woodlands, thickets, and a large NYSDEC wetland and stream. The single-family house site located on the site is dilapidated with frontage on Route 52. Several outbuildings also accompany this home. Existing land uses along Route 52 can be broken down into three general but distinct categories. Beginning on the western end of Route 52 off of Old Post Road, land uses are characterized by large fenced meadows and several large farmhouses and barns. Further east on Route 52 is old farmland where the project site is located. In this area, land uses consist of open space areas and formerly agricultural lands that have essentially become open space mixed with some single-family residences and new subdivisions. Route 52 continues east to Stormville Road, with older single-family residences along the southern side of the road and some open space along the northern and southern side of the road.

Land uses adjacent to and within a half-mile radius of the project site consist primarily of single-family residences and some open space, and/or residential subdivisions to the north, west, and east of the site. North and northwest of the project site, single-family residential is the dominant land use, with minimum lot sizes of one acre. Several of the parcels to the north are larger than one acre.

3.1.1-1 Existing Building Inventory:

Currently there is one residence on the property and other outbuildings which were part of the original farm operation.

Refer to figures 3.1-1, 3.1-2 and 3.1-3 for a picture of the existing residence. The house is approximately 26′ long x 20′ wide with an 8′ x 10′ addition on the rear. It appears that the house has had at least two additions. The main part of the house is on a fieldstone foundation. The front addition is on a masonry block foundation. The house is a two-story wood frame structure with a gable roof. The house is in fair condition. It is not

listed as a historically significant structure nor is it architecturally significant. The house is located on proposed lot #1. The Applicant plans on removing the structure as part of the Summit Woods project.

There is an existing garage immediately to the west of the existing house. See Figure 3.1-4. This is a wood-frame structure that shall be removed as part of this subdivision proposal.

There is a small outbuilding just north of the existing house. This appears to be the ruins of a corncrib. Refer to Figure 3.1-5. The Applicant will remove this as part of the subdivision proposal.

There are two barn-type structures remaining on the property that are left from the previous farm activity. These structures are identified as "Barn #1" and "Barn #2" on the attached photographs. Refer to Figure 3.1-6 through 3.1-11 for photographs of these buildings. These buildings are wood-frame structures in poor condition. The Applicant plans to remove these buildings as part of the development plan.

Many of the main barns and farm related buildings have been removed or are in ruins.

Figure 3.1-1 – Existing Farm Residence – Right Front View

Figure 3.1-2 – Existing Farm House – Right Rear View

Figure 3.1-3 – Existing House – Left Rear View

Figure 3.1-4 – Existing Garage – Front Left View

Figure 3.1-5 – Existing Corn Crib – Front View

Figure 3.1-6 – Existing Barn #1 – Right Rear View

Figure 3.1-7 – Existing Barn #1 – Right View

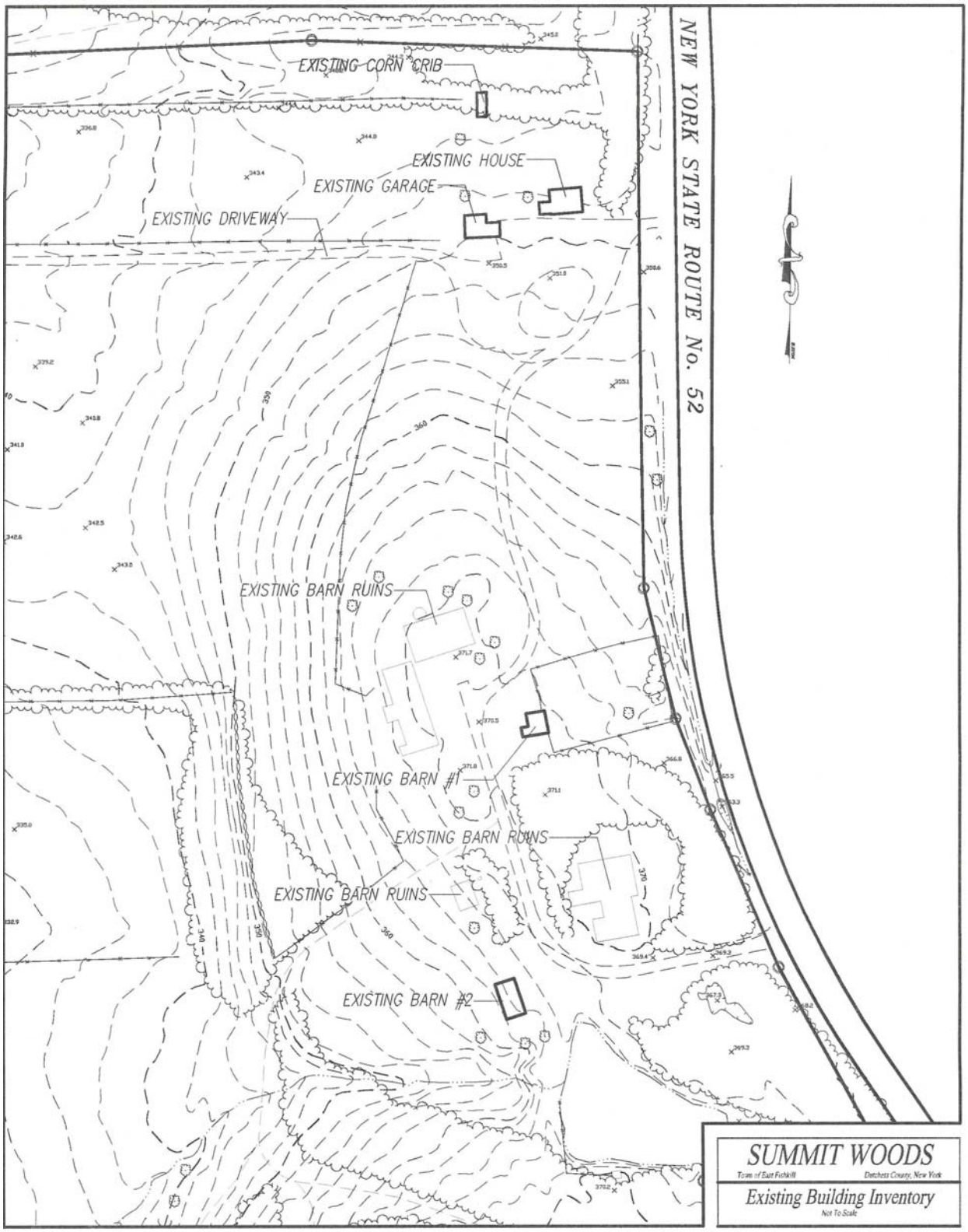
Figure 3.1-8 – Existing Barn #1 – Left Rear View

Figure 3.1-9 – Existing Barn #1 – Left Rear Close-up View

Figure 3.1-10 – Existing Barn #1 – Left Front Close-up View

Figure 3.1-11 – Existing Barn #2 – Left Front Close-up View

Figure 3.1-12 – Map of Existing Structures



Applicable Zoning District

R-l, Single Family Residential

Permitted Uses

Principal uses include: single family dwellings (not to exceed one per lot), farming, nurseries, and greenhouses. Special Permit uses include but are not limited to: stables and riding academies; kennels; recreational developments and camps; cemeteries; nursing homes; hospitals; churches, schools and public uses; hotels and motels; land excavation and filling; historic structures; and day care facilities.

Development Requirements

Min Lot Area:	1 acre
Min. Frontage:	50 feet
Min. Lot Width:	125 feet
Min. Lot Depth:	150 feet
Min. Yard Requirements:	
- Front:	50 feet
- Side:	25 feet
- Rear:	50 feet
Max. Building Coverage:	12% of lot area
Max. Height:	2 stories or 35 feet

R-2, Residential

Principal uses include: Single-family residential; accessory structures; family day-care homes; farming; group family day-care homes; and, satellite dishes. Special Permit uses include but are not limited to: accessory apartments; nursing homes; bed & breakfasts; cemeteries; day-care centers; home offices; keeping of animals; mining; nursery schools; outdoor recreation facilities; wireless telecommunications facilities; public assembly places; stables; school-age child-care facilities.

Min. Lot Area:	2 acres
Min. Frontage:	50 feet
Min. Lot Width:	125 feet
Min. Lot Depth:	150 feet
Min. Yard Requirements:	
- Front:	50 feet
- Side:	30 feet
- Rear:	50 feet

Max. Building Coverage:	8% of lot area
Max. Building Height:	2 stories or 35 feet

November 2002 Master Plan

There are two comprehensive planning documents that have relevance for the proposed project: the Town of East Fishkill *November 2002 Master Plan* (hereafter known as the "*Master Plan*") *and Directions: The Plan for Dutchess County.*

The East Fishkill *Master Plan* is an update of the Town's 1982 Master Plan. Although 20 years separate these two documents, the *Master Plan* is not seeking radical changes from the 1982 Master Plan, but is modifying the earlier plan to better reflect the Town's current planning context and contemporary planning practices. Two of the major underlying concepts presented in the 1982 Master Plan that the *Master Plan* seeks to incorporate are "clusters" and "conservation." The *Master Plan* encourages cluster housing development where appropriate in order to increase energy efficiency, preserve open space and environmentally sensitive lands, and provide for future housing needs. The *Master Plan* states that high intensity clusters should be encouraged near existing centers, along major arterial roads, and near open space and recreational amenities. In addition to clustering, the *Master Plan* seeks to conserve the Town's natural environment by channeling growth into lands that can best accommodate development and careful regulation of environmentally sensitive places in the subdivision process, with the number of lots in a subdivision depending on the suitability of the land as well as the zoning.

Protection of the Town's groundwater resources from contamination through: land along streams and creeks being considered for the possible location of treatment plants; encouraging community water and sewer systems in areas with densities capable of supporting them; and, anticipation of future utility connections and installation of pipes and infrastructure where necessary in new developments.

Maintenance of the Town's suburban and rural character through: subdivision regulations providing greater design standards to offer a variety of housing types and to preserve views, environmental land, community character, and quality of life; inclusion of affordable housing provisions in subdivision regulations; and, preference for cluster designs to standard subdivisions. Expansion of public facilities as needed to meet local service needs, with facilities, schools and churches being sited to support the Town's quality of life.

Acquisition of open space and encouraging land along streams, creeks, and lakes for preservation or incorporation into open space networks. More imaginative planning of new developments should also be pursued to preserve open space, and create open

space buffers. The *Master Plan* also established a number of planning goals and policies for the Town to consider. Several of the proposed goals are relevant to the proposed action:

- Adjustment of allowable densities within the Town while simultaneously providing for a reasonable mix of land uses and ordinances that offer greater design flexibility will enable the Town to better preserve its local character through the careful control of densities and architectural elements.

The *Master Plan* states that both Town officials and citizens prefer lower residential densities overall and the *Master Plan* respects this desire by maintaining one to two acre densities throughout 90 percent of East Fishkill. However, the *Master Plan* also states that lower densities should not be read as an endorsement of sprawl. Rather, development within low-density residential areas should be implemented through cluster development, which allows for flexibility of lot design in order to maintain scenic and natural resources like woodlands, wetlands, and steep slopes.

Local Law "B" was passed as part of the November 2002 Master Plan. The intent of the law was to protect environmentally sensitive lands defined as 100-year floodplain, floodways, steep slopes, water bodies or wetlands.

The law requires that the area of environmentally sensitive lands be deducted from the total site acreage according to the following percentages:

Type of Land	**Percentage to be Discounted**
Floodway	100%
Floodplain	50%
Steep Slopes (>20%)	50%
Water Bodies	100%
Wetlands	50%

The scoping document for this project is dated May 8, 2002. The Master Plan was adopted on November 14, 2002. See the "Lot Count" analysis in Section 2.0 of this DEIS.

As part of the November 2002 modifications, The *Master Plan* adopted the "Greenway Compact" for the Town of East Fishkill. The Greenway concepts shall be used as part of the preparation of the residential subdivision plan. These are as follows:

- Open Space – This project has been designed as a cluster development to conserve as much open space as possible.

- Central water and sewer facilities are proposed for this project. This will allow the ability to cluster the project and to provide open space.

- Wellhead protection areas are being proposed to provide aquifer protection for the aquifer underlying the project site.

- Street trees are proposed for the subdivision. The street trees will be spaced at approximately 50' increments. However, no uniform spacing will be used in order to make the tree placement more natural and to avoid obvious site constraints.

- This project proposes to protect the stream corridor located in the open space.

- This project also proposes to preserve habitat. Approximately 177 acres will remain as undeveloped habitat.

Directions, The Plan for Dutchess County, which was published in 1985, is the most current comprehensive planning document for Dutchess County. On its Land Use Map, *Directions* classified the general vicinity of the project site as an area for rural uses, with the exception of the Fishkill Creek corridor, which was classified as an area for stream and wetland protection. Rural land uses in the County Plan includes residential development with one-acre lots. *Directions* also established several planning goals and priorities for Dutchess County to advocate, many of which have relevance for the project site. Included among these goals are:

- The preservation and maintenance of the quantity and quality of the county's surface and groundwater resources;

- The protection of the county's soils, prime and important agricultural lands, steep slopes, and significant natural areas;

- An adequate long-term supply of clean, reasonably-priced water and environmentally sound disposal of wastes;

- The promotion of a land use pattern that strengthens existing centers, protects important natural resources, maintains an efficient transportation network, provides for economical services and facilities, fosters an orderly pattern of development, and helps each community protect its community values and distinct identity;

- Provision of housing alternatives for all residents that ensure quality in construction and environment, variety, affordability and accessibility. Meeting

the recreational needs of all of the county's residents in a way that fulfills community goals, maximizes accessibility, and minimizes public costs; and,

- Promoting the historic and cultural heritage of Dutchess County and preserving significant artifacts, records, landscapes, structures and sites. Achievement of consistently high-quality site planning in order to promote beauty, order and harmony, to ensure compatibility with surrounding land uses, and to provide a visual and natural environment that will encourage economic stability and growth.

Other Major Developments

A number of other major, single-family residential developments have been proposed or are under construction in East Fishkill. These projects include:

- Hopewell Glen: a 285-1ot subdivision at Fishkill Road and State Route 376.
- The Legends at Beekman Country Club;
- Somerset Crossing: a 71-lot subdivision at Hosner Mountain Road and Brookside Drive;
- Stoneridge: a 52-1ot subdivision at State Route 52 and Palen Road that includes rezoning two existing lots to commercial;
- Moore Farm: a 275-1ot subdivision at Phillips Road; and,
- Twin Creeks: a 240-lot subdivision on State Route 376 near Town Hall.
- Crooked Oak: a 30-lot subdivision on Creek Road off State Route 376.
- Lake Walton Park: a 94-lot subdivision on Lake Walton Road.

3.1.2 Potential Land Use and Zoning Impacts

The proposed development will introduce a new land use for the property. As previously described, the proposed site plan will include the development of 175 single-family residences, with lot sizes ranging between 0.5 and 1.5 acres.

The proposed development will also preserve 177.60 acres of the property's 325 total acres. Preserved open space will include the various Federal and State-designated wetlands on the site and significant areas of steep slopes within the project site.

The proposed cluster subdivision would complement the existing land uses in the area around the project site. The proposed cluster subdivision would provide additional single-family housing in a part of town where this type of housing is fast becoming the predominant land use. At the same time, because of its cluster design, the proposed development would minimize the impacts typically associated with large, conventional residential subdivisions. In addition to families who typically prefer single family homes in East Fishkill, the housing will be marketed to empty nesters, young single professionals, and couples with no or very few children who would be attracted to the site because of the privacy provided by the significant open space buffers on the site.

The project site is located in an accessible area of East Fishkill, with the Taconic State Parkway and Interstate 84 nearby. The proposed development would create a new network of streets on site to service the residents of the proposed development.

Comprehensive Planning and Zoning

The proposed development is consistent with the goals and policies set forth in the two comprehensive planning documents described above. Both plans called for greater use of cluster subdivision development techniques; preservation of wetlands and other natural resources; and protection of local water supplies. The proposed development would accomplish all of these goals.

The proposed development embodies the two major concepts of the Town of East Fishkill's *Master Plan* - cluster subdivision development and conservation. By embracing the cluster development concept, the proposed development will help to preserve about 180 acres of land as open space and keep residential development from infringing upon Federal and State-designated wetlands. In its proximity to the Taconic State Parkway and Interstate 84, the proposed development is also consistent with the *Master Plan's* goal of locating cluster subdivisions near major roads and open space and recreational amenities. Finally, the proposed development complies with the *Master Plan's* goal of protecting the Town's groundwater resources by locating treatment plants along creeks and encouraging community water and sewer systems where densities allow. The proposed development's sewage treatment facility will be located directly adjacent to the NYSDEC wetland and the officially unnamed stream, known as the Van Anden Kill, exiting the wetland.

The proposed development is also consistent with Dutchess County's 1985 comprehensive plan, *Directions.* The project would comply with *Directions'* goal of preserving the quality of surface and groundwater resources, as mentioned above in relation to East Fishkill's similar planning goal. The project would also accord with *Directions'* goal of maintaining an adequate supply of clean, reasonably priced water.

While the project would develop what was once agricultural soil on the property, the project site has not been prime or important agricultural land for many years, and thus, the proposed development would not affect *Directions*' goal of preserving important agricultural land. Because the project is consistent with East Fishkill's stated planning preference for cluster subdivision design, the proposed development would support *Directions*' goal of promoting a land use pattern that strengthens centers, preserves important natural resources, and protects community values. Finally, *Directions* called for the achievement of consistently high-quality site planning to promote beauty and ensure compatibility with surrounding land uses. The site plan proposed for the Summit Woods property development achieves this goal.

Other Major Developments

Estimates for major developments in East Fishkill indicate that these projects will generate a total population of over 2,700 persons, with a school-aged children population of over 800 within the Wappingers Central School District. Nearly 60% of the school-aged children are associated with the Hopewell Glen and Twin Creeks developments.

Traffic generation estimates associated with these developments are based on the average rate of weekday PM Peak Hour trip ends per dwelling unit. For example, Clarinbridge has 39 lots (or dwelling units); the average rate of PM Peak Hour weekday trip ends per lot for single-family detached housing is 1.02. Therefore, the estimated traffic generated by this development is approximately 40, or 39 multiplied by 1.02.

Cumulative Impacts

There are no major developments within one-half mile of the Summit Woods site. However, at this time there are other projects that are at various stages of development in the Town of East Fishkill. These projects are:

Meadow Creek Corporate Park
Hopewell Glen
Lake Walton Park
Twin Creeks
Somerset Crossing
Stoneridge
The Moore Farm
Crooked Oak
The Legends at Beekman Country Club

Development of the Summit Woods property in conjunction with the other developments in the Town, may create cumulative impacts in the immediate area and throughout the Town. Proper site design shall minimize some of these impacts.

Full development of the Summit Woods residential project shall create 175 new homes. The residential portion of the project would increase population in the Town of East Fishkill by approximately 633 residents or 2.4%. No further development of the site would take place.

Traffic

Future developments have been considered in vicinity of this site that would affect the intersections studied in the traffic report included in Appendix G. Other developments which were included in this report consist of:

Meadow Creek Corporate Park
Hopewell Glen
Lake Walton Park
Twin Creeks
Somerset Crossing
Stoneridge
The Moore Farm
Crooked Oak
The Legends at Beekman Country Club

Utilizing traffic studies previously prepared for these developments and the ITE Trip Generation Manual, Other Development Volumes & Moore Farm volumes were projected and overlaid on the existing roadway network (see Appendix G - Traffic Study).

Intersection Capacity Analyses were computed with Synchro software in accordance with the previously stated methodologies presented in the 2000 Highway Capacity Manual. The capacity analyses are included within the traffic study (Appendix G). A summary of the 2002 Existing, the 2008 No-Build and the 2008 Build intersection capacity analyses can be seen on Tables 2 and 3 (Intersection Operations). These summary tables show some worsening of intersection operations between the 2002 Existing Volumes and the 2008 No-Build Volumes and minor changes in operation between 2008 No-Build Volumes and 2008 Build Volumes. The analyses indicate acceptable Levels of Service will remain and no significant delays or changes in levels of service will occur due to the proposed development.

Recreation

The project will involve the creation of 175 lots.

The site is limited with respect to recreational lands. There are no significant areas of interest on the site that could be utilized for recreation. The project is centrally located in the Town and has access to the Town of East Fishkill Recreation Center located in the Hamlet. The site is also approximately 3 miles from the Town of East Fishkill Soccer Fields. The Applicant is proposing to pay recreation fees in lieu of dedicating lands to the Town for recreation.

Since lands are not going to be dedicated to the Town for recreation purposes, The Applicant will be responsible to pay a recreation fee of $2,000 per lot at the time when Final Approval is granted to the Summit Woods project. This equates to $350,000 that the Applicant would pay to the Town of East Fishkill in lieu of dedicating recreation lands.

Zoning

The cumulative impacts with respect to Zoning are minimal since there are no other applications within ½ mile of the site.

Soils

The cumulative impacts with respect to soils are also minimal since there are no other applications within ½ mile of the site.

Surface Waters

The cumulative impacts shall be kept to a minimum since all projects in development and all projects from this point forward will need to comply with the new Phase II stormwater runoff guidelines. The Summit Woods project will be designed to conform to these new guidelines.

3.1.3 Land Use and Zoning Mitigation Measures

Land Use

Given the number of mitigative features that have been incorporated into the design of the proposed cluster subdivision, further mitigation measures for land use are not necessary. The proposed development will preserve 177.60 of the 325-acre project site as open space, thereby preventing development from incurring into sensitive natural areas

like the Federal and State designated wetlands on-site. In addition, these significant natural buffer areas will help to screen the proposed development from adjacent property owners.

Comprehensive Planning and Zoning

As stated above, the proposed development embodies the twin goals of clustering and conservation of the Town of East Fishkill's Master Plan. As such, no further mitigation measures are necessary. Similarly, the proposed development also conforms to other comprehensive planning documents in Dutchess County, thus requiring no further mitigation.

3.2 Soils and Topography

3.2.1 Existing Soil and Topographic Conditions Soils

The field mapping sheets prepared by the United States Department of Agriculture Soil Conservation Service[12] were used to identify the soil types that are found on the Summit Woods property (see Figure 3.2.1-1 *Soils*). Information on the origin and characteristics of these soil types was derived from the *Dutchess County Soil Survey.*[13] Table 3.2.1-1 summarizes the characteristics of the soils on the project site. Although the data contained in the *Dutchess County Soil Survey* is the most accurate available source of information with regard to soil types and soil boundaries, the map units on the detailed soil maps represent an area on the landscape made up mostly of the soil or soils for that the unit is named.[14] In addition, the smallest mapping unit is three acres and a given soil series as mapped may contain small inclusions of other soil types.

[12] *United States Department of Agriculture Soil Conservation Service, Hopewell Junction Quadrangle.*
[13] *Dutchess County Soil Survey, Dutchess County Soil and Water Conservation District, September 1991.*
[14] *Ibid.*

Figure 3.2.1-1
Soils Map

Table 3.2.1-1
Soils Description[15]

Soil Type	Soil Characteristics
Carlisle Muck (Cc)	This is a very deep, nearly level, poorly drained organic soil. Slopes range from 0% to 3%. Permeability is moderately slow to moderately rapid. Depth to the water table is approximately 0.5 to 1.0 foot from September to June. The erosion potential is generally moderate. The construction limitations for roads are wetness and frost action.
Charlton loam (ChB & ChD)	The Charlton soil is a very deep well drained loamy soil formed in till. Slopes are 3% to 8% and 15% to 25%. The erosion potential is generally high. The construction limitations for roads are moderate slope and frost action on slopes of less than 15% and severe slope on areas greater than 15%. The construction limitations for dwellings with basements and shallow excavations are slight to moderate slope on areas less than 15% slope and severe slope on areas greater than 15%.
Copake gravelly silt loam (CuC)	This is a very deep, well-drained sandy gravelly soil formed in outwash. Slopes are 5% to 16%. Permeability is rapid to moderately rapid in the solum and very rapid in the substratum. The erosion potential is generally low. The construction limitations for roads and dwellings with basements are slight to moderate slope on areas less than 15% slope and severe slope on areas greater than 15%. The construction limitations for shallow excavations are severe caving of cutbanks in areas less than 15% slope and severe slope and caving of cutbanks in areas greater than 15%.

[15] *Dutchess County Soil Survey Users Guide, Dutchess County Soil and Water Conservation District, Dutchess County New York, September 1991.*

Farmington - Galway complex (FcD)	This is a shallow to moderately deep, excessively well-drained loamy soil formed in till underlain by folded limestone bedrock. Permeability is moderate. This soil averages 10"-20" over bedrock and the depth to the seasonal high water table is 1.5 to 3.0 feet from March to April. The erosion potential is moderate. The construction limitations for roads, dwellings with basements, and shallow excavations are severe due to depth to rock on slopes of less than 15% and severe slope and depth to rock on areas greater than 15%.
Galway - Farmington complex (GfB)	This soil is about 40% Galway soils, 30% Farmington soils, and 30% other soils and rock outcrop. The erosion potential is moderate. The construction limitations for roads, dwellings with basements, and shallow excavations are severe due to depth to rock on slopes of less than 15% and severe slope and depth to rock on areas greater than 15%.
Hollis – Chatfield – Rock Outcrop (HoD and HoE)	This complex is a steep to very steep, well and excessively drained loamy soil formed in till underlain by granite. Permeability is moderate to moderately rapid. The erosion potential is generally moderate. The construction limitations for roads are severe slopes and frost.
Massena silt loam (MnA and MnB)	This is a very deep, nearly level, well-drained loamy soil formed in till. Permeability is moderate in the surface layer and the subsoil, and moderately slow in the substratum. Slopes are nearly level (0-3% and 3-8%). The depth to the seasonal high water table is 0.5 to 1.5 feet from November to May. The erosion potential is generally moderate. The construction limitation for roads and for dwellings with basements is flooding.

Stockbridge silt loam (SkB)	This is a very deep, well-drained soil formed in till. Permeability is moderately slow to moderate in the surface layer and slow in the subsoil and the substratum. Slopes are (3-8%). This soil is classified as Prime Farmland.
Sun silt loam (Su)	This is a very deep, nearly level, poorly and very poorly drained loamy soil formed in till. Permeability is moderate in the surface layer and slow in the substratum. Depth to the seasonal high water table is 1.0 to 0.5 feet from November to April. This soil is Hydric. The erosion potential is moderate. The construction limitations for roads, dwellings with basements, and shallow excavations are severe due to depth to water.
Stockbridge - Farmington complex (SmB)	This soil is about 50% Stockbridge soils, 30% Farmington soils, and 20% other soils and rock outcrop. The erosion potential is high. The construction limitations for roads, dwellings with basements, and shallow excavations are severe due to depth to rock on slopes of less than 15% and severe slope and depth to rock on areas greater than 15%.
Raynham silt loam (Ra)	This is a very deep, nearly level, poorly and very poorly drained loamy soil formed in lake laid sediments. Permeability is moderate in the surface layer and moderately slow in the substratum. Depth to the seasonal high water table is 0.5 to 2.0 feet from November to May. The erosion potential is moderate. The construction limitations for roads, dwellings with basements, and shallow excavations are severe due to depth to water.

Table 3.2.1-2
Approximate Percentage of Soils on the Property[16]

Soil Type	% of the Property
Cc	0.3
ChB/ChD	12.8
CuC	12.5
FcD	5.9
GfB	4.5
HoD/HoE	7.8
MnA/MnB	10.1
SkB	0.7
Su	11.6
SmB	29.9
Ra	3.9

As proposed, construction will predominantly occur on the Stockbridge Farmington soils (SmB). According to the Dutchess County Soil Conservation Service *Soil Survey Users Guide,* the primary constraint associated with construction within these soils is related to steep slopes.

Earthquake Potential

The potential for earthquakes in this area of the country has been historically low due to the length and depth of the faults that underlie this area. Earthquake potential for this project is a low threat.

History of the Land

The property underlying the Summit Woods project was formerly known as the Van Anden Family Farm. For many years, the farm was in operation as a dairy farm. Crops were also grown on the farm in order to support the farm and the livestock. The farm never supported fruit trees or other crops that may have required the use of pesticides. The property has not been farmed for at least 25 years with the exception of hay. Hay has been collected for the last few years to support the farm. Hay does not require the use of pesticides.

[16] *Dutchess County Soil Survey Users Guide, Dutchess County Soil and Water Conservation District, Dutchess County New York, September 1991.*

Topography and Slopes

A NYSDEC wetland constitutes the central portion of the property, which is generally level with an elevation between 314 feet msl and 324 feet msl. Large areas of steep slopes exist mainly in the southern portion of the site with an elevation between 324 feet msl and 582 feet msl. The remaining areas of the site are generally gently rolling old agricultural field. The majority of the steep slopes is in the proposed open space area and will remain undisturbed under the current proposal.

Figure 3.2.1-2 & 3.2.1-3 depicts the percentages of the slopes on the property. Approximately 92% of the development will occur in the area of the property where the natural slopes are between 0% and 10%. About 6% will occur in the slopes from 10% to 20%. The remaining 2% of development will occur in the areas of the property where the slopes are greater than 20%.

Tables 3.2.1-3 Slopes Analysis

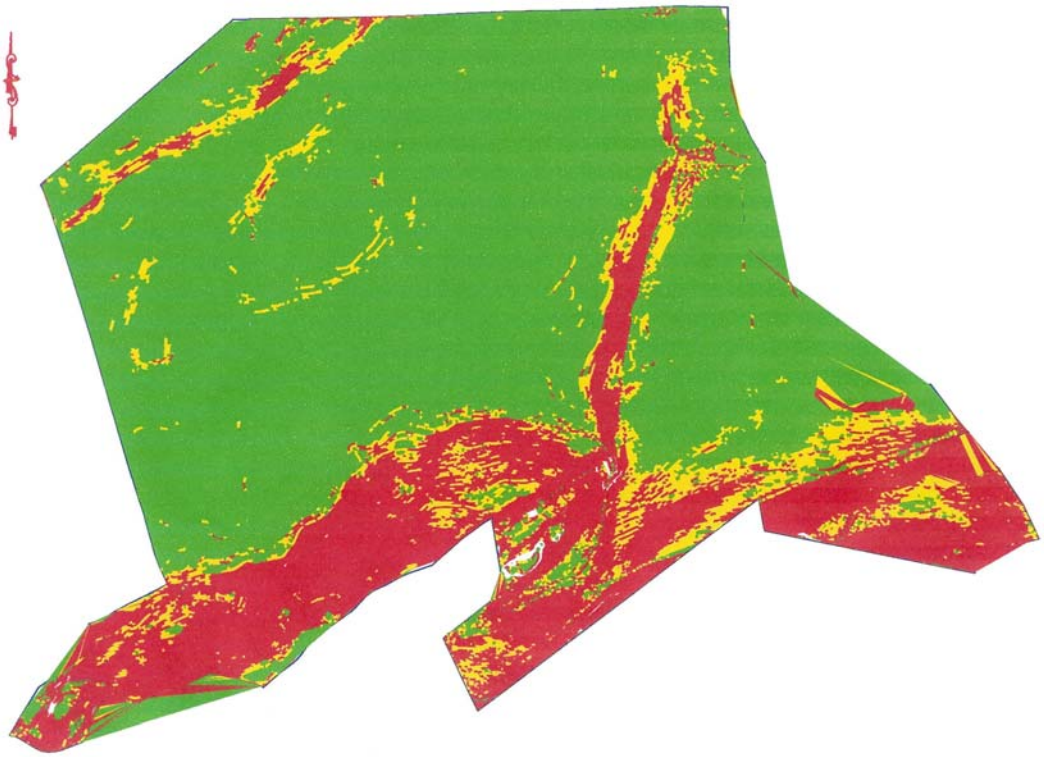
Per Full Environmental Assessment Form Parameters

Slope (percent)	**Acres**
0 - 10%	208 (+-)
10% - 15%	42.6 (+-)
15% - 100%	74.4 (+-)

Per Town of East Fishkill Town Code

Slope (percent)	**Acres**
< 10%	208 (+-)
10% - 20%	69.3 (+-)
20% - 30%	27 (+-)
30%>	20.9 (+-)

Figure 3.2.1-2 – FEAF Slope Analysis



F.E.A.F. SLOPE ANALYSIS

Color	Range Beg.	Range End	Percent
	0.00	10.00	64.1
	10.00	15.00	13.1
	15.00	>100.00	22.8

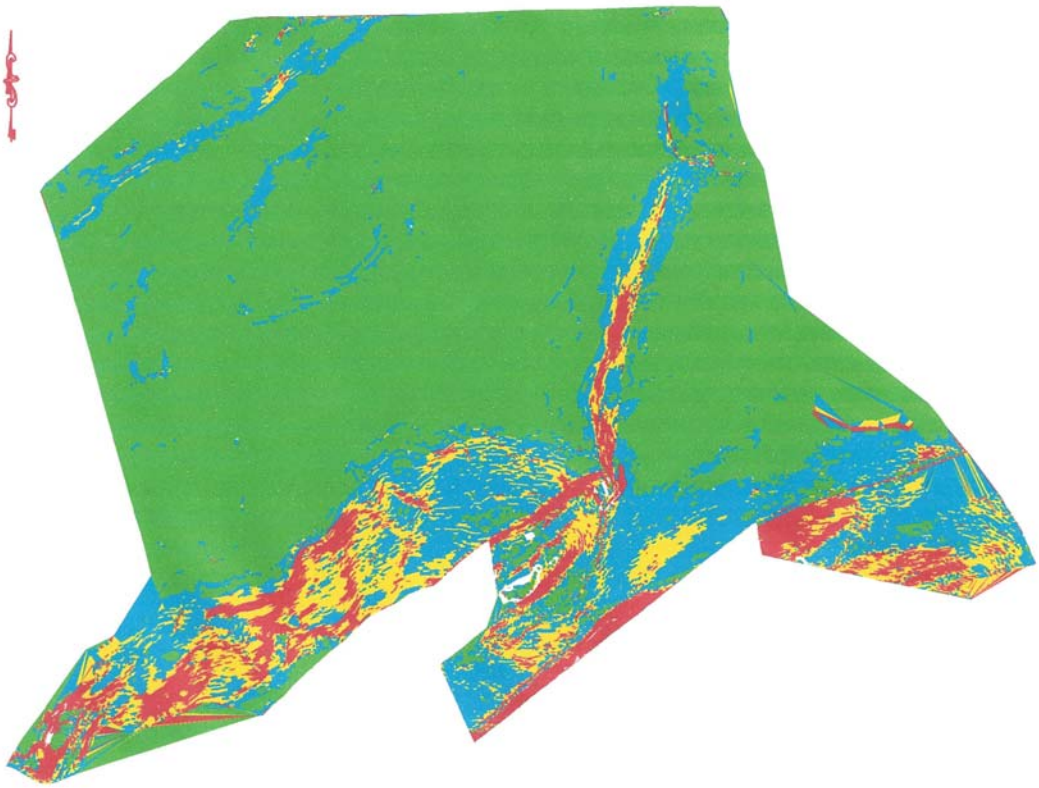
SLOPE ANALYSIS – PER FULL ENVIRONMENTAL ASSESSMENT FORM

NOT TO SCALE

SUMMIT WOODS CLUSTER SUBDIVISION

TOWN OF EAST FISHKILL DUTCHESS COUNTY, NEW YORK

Figure 3.2.1-3 – ESL Slope Analysis



E.S.L. SLOPE ANALYSIS

Color	Range Beg.	Range End	Percent
	0.00	10.00	64.1
	10.01	20.00	21.3
	20.01	30.00	8.3
	30.01	>100.00	6.3

SLOPE ANALYSIS – PER ENVIRONMENTALLY SENSITIVE LAND LAW

NOT TO SCALE

SUMMIT WOODS CLUSTER SUBDIVISION

TOWN OF EAST FISHKILL DUTCHESS COUNTY, NEW YORK

3.2.2 Potential Soil and Geology Impacts

Site Grading

Development of the site will result in the removal of natural vegetative cover material and the disturbance of overburden. Construction of the project will result in the disturbance of 147.92 acres or 45.4% of the property. Without proper design and mitigation, these factors have the potential to alter the natural sediment and stormwater storage capabilities of the site. Site grading and rock removal can potentially cause slopes to become temporarily or permanently unstable if not performed properly.

The proposed grading of the site is shown on Figure 2.5-1 *Cluster Subdivision Plan.* The preparation of the 175 building lots, utilities, and roadways will require disturbance of 147.92 acres (45.4% of the project area). Excavation will be necessary to obtain suitable grades for the residential units and roadways and the installation of sanitary, water, drainage, and utility lines. Depending on the location of final grades, roads, and utility lines, excavation and removal of bedrock may be required. According to the soil characteristics provided in the *Dutchess County Soil Survey Users Guide,*[17] the Stockbridge Farmington soils are described as having shallow depth to bedrock and it is therefore assumed that these areas will require blasting.

The predominant development will occur on slopes that range from 0 - 10%. Impacts related to construction in such areas are blasting and erosion of the on-site soils during grading of the site.

Increased Impervious Surface

The project site is currently undeveloped with the exception of existing farm roads and a home site. The proposed development will result in an increase of impervious areas associated with roadways, driveways, and rooftops on 147.92 acres or 45.4 percent of the property.

Cut and Fill Impacts

The site will be designed in a manner to try to best balance the quantity of cut or excavated material with the quantity of fill material on the site. The proposed roadways will be constructed to generally follow the existing grades of the site. In accordance with the Town Code Section 194-75, the applicant can import or export 375 cubic yards per annum per proposed lot or 7,500 cubic yards per annum for the entire subdivision, whichever is less.

[17] *Dutchess County Soil Survey Users Guide, Dutchess County Soil and Water Conservation District, September 1991.*

The earthwork required for the construction of the roadway and drainage structures are excluded from 194-75.

A cut and fill analysis was performed on the proposed cluster subdivision plan. The following is a summary of the results:

Roadway Earthwork:

The following table demonstrates the earthwork that can be anticipated for the proposed roadways.

Road Name	**Cut**	**Fill**
Summit Boulevard	0 yd3	1,918 yd3
Rolling Ridge	0 yd3	2,996 yd3
Stony Brook	10,054 yd3	0 yd3
Old Meadow	3,567 yd3	0 yd3
Red Tail Court	0 yd3	585 yd3
Pheasant Run	380 yd3	0 yd3
Totals	**14,001 yd3**	**5499 yd3**

There shall be a net cut surplus of 8,502 cubic yards.

Sedimentation Basin Earthwork:

The following table demonstrates the earthwork that can be anticipated for the proposed stormwater basins.

Pond No.	Cut
#1	183 yd3
#2	2,382yd3

#3	1,543 yd3
#4	4,985 yd3
#5	618 yd3
#6	1,039 yd3
#7	4,286 yd3
#8	1,283 yd3
#9	632 yd3
#10	3,002 yd3
#11	974 yd3
#12	8,684 yd3
#13	5,123 yd3
#14	900 yd3
Total	**35,634 yd3**

There shall be a net cut surplus of 44,136 cubic yards between the roadways and the sedimentation basins. It is the intent of the Applicant to utilize this material on site. The soil will be used on site as part of the general site grading requirements. The majority of the material will be used for driveways and grading around the proposed homes.

Cumulative Impact - Soils

The cumulative impacts with respect to soils are also minimal since there are no other applications within ½ mile of the site.

3.2.3 Soil and Geology Mitigation Measures

Conversion of the existing grade of the site is an irreversible impact of the site development. However, all construction and development will be completed utilizing

erosion control measures as described below. The proposed erosion control measures are outlined in the next section. After proper grading and preparation of the lots for residential dwelling units, the slopes for each driveway will not exceed a 15% grade and the internal roads will not exceed 10% with side slopes not exceeding 2:1. Efforts will be made to achieve 3:1 side slopes wherever possible.

Erosion Controls

During construction, erosion will be controlled through the implementation of various erosion control methods consistent with the Soil and Water Conservation Service[18] recommendations including:

- After proper grading and preparation of the lots for residential dwelling units, the grade for each driveway will not exceed 15% and the grade for the internal roads will not exceed 10% with side slopes not exceeding 2:1. Efforts will be made to achieve 3:1 side slopes wherever possible. Side slopes of 2:1 or steeper will be used in competent rock.

- The contractor and Project Engineer on a weekly basis and following each rainfall event to measure proper performance shall inspect all erosion control measures employed during the construction process. Erosion control shall be repaired and maintained as necessary by the contractor;

- During construction, as the road subgrade is formed by excavation, drainage ditches will be cut on the downhill side of the street at intervals of fifty feet so that rainwater falling on exposed soils will drain off at frequent interval into the underbrush instead of being allowed to accumulate as it travels down to a central discharge point;

- During construction, as the road subgrade is formed by fill, work shall proceed quickly and the side slopes seeded with a quick germinating rye (10 to 15 pounds per 1000 square feet). During this time any gullies or washes that develop are to be filled and the surface graded to prevent wash in the same location;

- Temporary drainage swales with a minimum grade of one

[18]*New York Guidelines for Urban Erosion and Sediment Control, Empire State Chapter Soil and Water Conservation Society, October 1991.*

percent, to direct runoff away from excavated areas, will be provided. Swales will be installed with staked and secured straw bale berms to prevent downstream siltation. Location of the drainage swales and straw bales will be at the direction of the Project Engineer;

- Straw bales will be placed in a row with ends tightly abutting the adjacent bales. Each bale will be embedded in the soil a minimum of 4". Bales will be securely anchored in place by stakes or re-bars driven through the bales. The first stake in each bale should be angled toward the previously laid bale to force the bales together. Inspection should be frequent and repair or replacement should be made promptly as needed. The bales should be removed when they have served their usefulness so as not to block or impede storm flow or drainage;

- Reverse slope benches of diversion swales will be provided wherever the vertical height of any 2:1 slope exceeds twenty feet; thirty feet for slopes of 3:1; and forty feet for slopes of 4:1. Benches or swales will be located to divide the slope face into equal sections to convey runoff to stable outlets. Benches will be a minimum of six feet wide to provide for maintenance. Benches will be designed with a reverse slope of not more than 6:1. Bench gradient to the outlet will be between two and three percent. The flow length of any bench or swale will not exceed 800 feet;

- If the construction process exposes significant soil areas for any length of time, increased potential for erosion and dust creation will occur. The contractor shall provide, at the Project Engineer's direction, supplemental surface treatments (such as hay bale lines, temporary swales and/or rip-rap intercept pools, and dust control measures) as may be required;

- Erodible material temporarily stockpiled on the site during the construction process shall be located in an area away from storm drainage and shall be properly protected from erosion by a surrounding silt fence barrier;

- The storm drainage system will be installed and rendered functional as soon as possible with silt traps provided around each inlet;

- Grading will be finalized, topsoiled, and seeded as quickly as possible;

- Stockpiled topsoil will be temporarily seeded and the piles enclosed with silt fencing;

- All grass seed will contain at least 25 percent rapid germinating perennial rye grass;

- Erosion controls shall be removed at the end of the site construction process only as approved by the Project Engineer, and will be done so only when upgradient surfaces are properly stabilized and all stormwater management systems are in place and operable;

- At the completion of the project, the temporary siltation basins will be cleaned and restored with fill, topsoil, and vegetation that are most appropriate to the individual areas;

- Prior to construction, stabilized construction entrances will be installed, to reduce the tracking of sediment onto public roadways;

- Construction operations will be scheduled in order to minimize the amount of disturbed areas at any one time during the course of work. Existing vegetation will be preserved where possible; and temporary soil stabilization practices, such as mulching, seeding, and spraying (water), will be utilized to control dust;

- Prior to the initiation of construction activities, riprap outlet sediment traps will be constructed. The purpose of these structures is to intercept sediment-laden runoff and allow it to settle out of the surface runoff prior to being discharged from the site. The outlets for the traps will be lined with riprap, which will discharge onto a stable area. The riprap outlet sediment traps will be designed in accordance with the New York State Guidelines for Urban Erosion and Sediment Control.

Environmental Monitor

The Town of East Fishkill Planning Board will decide whether or not to utilize an Environmental Monitor on this project. Typically, the Town of East Fishkill Engineers monitor construction activity and the placement of the required erosion and sedimentation control devices for projects in the Town. The Town Zoning Administrator has requested that the Project Engineer and the Town Engineer's office inspect the site periodically to ensure that the site is in compliance with the new phase II stormwater regulations.

The Planning Board, in the past, has required developers to utilize a private consultant to act as an Environmental Monitor. This consultant is paid through an escrow account funded by the developer. The Environmental Monitor would report directly to the Town of East Fishkill Planning Board. If the Planning Board chooses to utilize an Environmental Monitor on this project, the Board will define the scope of the Environmental Monitor's responsibilities for this project.

During construction, all erosion control measures should be inspected weekly and after every rain. Any siltation buildup will be cleaned, and shifted straw bales will be reinforced.[19]

- Either at the beginning or at the end of each working day, all damages to erosion control areas caused by soil erosion and construction equipment shall be repaired.

After construction, the erosion control measures will be maintained by the Town of East Fishkill and should be consistent with the recommendations in the *New York Guidelines for Urban Erosion and Sediment Control,*[20] including:

- The stormwater collection system will be inspected quarterly to ensure proper operation;
- All catch basin sumps should be cleaned when they are full to 50% of their capacity;
- All rip-rap at outfalls should be either cleaned or replaced when it becomes overburdened with silt or sediment;
- All drainage areas damaged by erosion should be repaired;

[19]*New York Guidelines for Urban Erosion and Sediment Control, Empire State Chapter Soil and Water Conservation Society, October 1991.*
[20]*Ibid.*

- All drainage swales should be kept free of debris and the vegetation should be maintained to allow unobstructed flow of stormwater;

- Any slopes or embankments that have damaged vegetation should be re-seeded as necessary;

- All grass swale areas should be mowed so that they facilitate unobstructed flow of stormwater.

Blasting

If blasting is found necessary, all blasting operations will adhere to New York State ordinances governing the use of explosives. The State regulations are contained in 12 NYCRR 39 and include such requirements as licensing of operators and rules for conducting operations in a safe manner.

Proper program guidelines will be established between the State, the Town, and the blasting contractor prior to undertaking this activity. In addition to obtaining applicable blasting certifications and complying with all blast safety requirements a blast-monitoring program will be implemented. The elements of such a program include, but are not limited to the following:

- Use of a seismograph to monitor each blast attempt and measure the particle velocity of the ground at the location of the instrument probe;

- Use of blast matting to minimize lifting of rock and debris during blasting and;

- Notification of surrounding residents and landowners.

All pertinent safety regulations and standards shall be applied as required for safety, security and other related details for any blasting deemed necessary. Applicable safety regulations are:

- 29 CFR 1910 OSHA Standards;

- U.S. Army Corps of Engineers Safety Manual EM 385-1-1;

- Code of Federal Regulations A.T.F. Title 27;

- Institute of Makers of Explosives Safety Library Publications No. 22;

- 12 NYCRR 39.

No storage of explosive materials shall be allowed on the site. Caps or other detonating devices will not be stored on-site.

Delivery and transportation of explosives to the blast area will be by vehicles specifically designed for this use by the criteria outlined in the safety requirements. Only authorized persons will transport and handle the explosives as designated by the authority of those licensed for this purpose. At all times federal, state, and local ordinances will be followed concerning the transportation of explosives.

The designated explosive transporting vehicles, and areas where explosives are being used shall be clearly marked and shall display the required warning signs. A daily tally of all explosives delivered and used shall be maintained.

- Prior to blasting, necessary precautions for the protection of persons, adjoining property, and completed work shall be established, including:

- Appropriate signs shall be erected in the area of blasting activities;

- All adjoining property owners shall be mailed notification of the anticipated blasting schedule;

- Notification of blasting at the site shall be published in local newspapers prior to the blasting schedule;

- A storm alert monitoring device shall be used by the blasting contractor to detect any electrical build-up in the atmosphere at the blast area while using electrical caps, special care shall be taken with detonating cords and connectors to protect from the impact of falling rocks or other impeding objects;

- Vehicles equipped with radio transmitters and portable 2-way radios will not be permitted within 250 feet of blasting operations;

- A pre-blast survey and, where necessary, a post-blast survey will be completed.

The proposed roadways will be constructed to generally follow the existing grades of the site. The characteristics of the site design are such that, in general, material excavated for lots on the upgrade side of the roadways, will be filled on the downgrade lots to prepare building pads. This will limit the transportation of excavated material over long distances within the project site, therefore, minimizing dust.

Stormwater Management Plan

A Stormwater Management Plan has been prepared (see Appendix E). This Plan identifies and details the measures proposed to reduce the impacts of soil erosion as a result of the proposed project. A number of erosion and sediment control measures have been incorporated into the design of the project to minimize soil erosion and to control sediment transport off-site during construction. The Plan include limitations on the duration of soil exposure, criteria and specifications for placement and installation of the erosion control measures, a maintenance schedule, and specifications for the implementation of erosion and sediment control practices and procedures.

The site has been designed to maintain vegetated buffers adjacent to the on-site wetlands to the fullest extent possible.

The erosion control measures incorporated into the plan will contain and trap the sediment as close to its place of origin, preventing it from reaching off-site watercourses or lands. This goal is consistent with the guidelines set forth by the NYSDEC.[21]

Erosion control measures, designed to minimize soil loss, and sediment control measures, devised to retain eroded soil and prevent it from reaching water bodies, wetlands or adjoining properties, have been developed in accordance with standard practice.

The goal of the Stormwater Management Plan is to minimize the impact of the quality of run-off exiting the site into watercourses, wetlands and off-site properties during construction and after development is complete. This objective will be met by several methods. Stormwater Basins will function as sediment basins during construction and remain to treat the "first flush" pollutants after development is complete. Temporary and permanent erosion control measures, including structural and non-structural methods, will be installed prior to and during construction to minimize erosion and control sediment transport.

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[21] *"Reducing the Impact of Stormwater Runoff from New Development" manual, New York State Guidelines for Urban Erosion and Sediment Control (April, 1997) New York State General Permit for Stormwater Discharges, GP-93-06 (General Permit) Appendices D, E, and F (Stormwater Pollution Prevention Plan) Reducing the Impacts of Stormwater Run-off from New Development, NYSDEC (April, 1992) New York State Stormwater Design Manual (2002)*

Forebays and Stormwater Basins

Forebays will be used in the stormwater basins to intercept sediment-laden run-off and reduce the amount of sediment leaving the site during construction. The proposed basins will be employed to control pollutants generated from impervious areas after development is complete. The basins will be cleaned of sediment after construction to restore the volume required to perform as designed after construction. The basins will be designed to capture the "first flush" runoff volume from the site's impervious areas. The basins will provide proper pollutant treatment in accordance with the NYSDEC "Guidelines for Reducing the Impacts of Stormwater Runoff."

The site will be designed to minimize the disturbance of existing slopes in excess of 25 percent. Excavation operations will proceed in a manner to maintain the slopes of excavations to the soil's angle of repose or less. Existing steep slopes that are disturbed during construction and steep slopes created by earthwork operations will be stabilized quickly to minimize excessive soil erosion and slope instability. Methods may include the temporary or permanent installation of vegetation, riprap armoring or matting. Stormwater runoff from upgrade areas will be directed away from the steep sloped areas during disturbance.

Temporary Construction Access

Temporary construction signage will be provided to alert motorists of potential construction traffic and the location of the construction access. The Phasing Plan identifies the proposed construction accesses for each phase of construction. Construction accesses will be stabilized in accordance with NYSDEC requirements and will provide anti-tracking measures to minimize soil loss from the site.

Debris Disposal

Construction and demolition debris that is not appropriate for use as fill on the site will be removed and disposed of off-site at a licensed facility.

Topsoil

Topsoil stripped during clearing and grading activities will be stockpiled on-site for restoration and landscaping of the project.

Disturbance of Non-Construction Areas

Disturbance of areas of the property that are not proposed for the construction of buildings, roadways, utilities, landscaping and other developments will be minimized to preserve areas intended for visual and noise buffers and to reduce the potential of erosion.

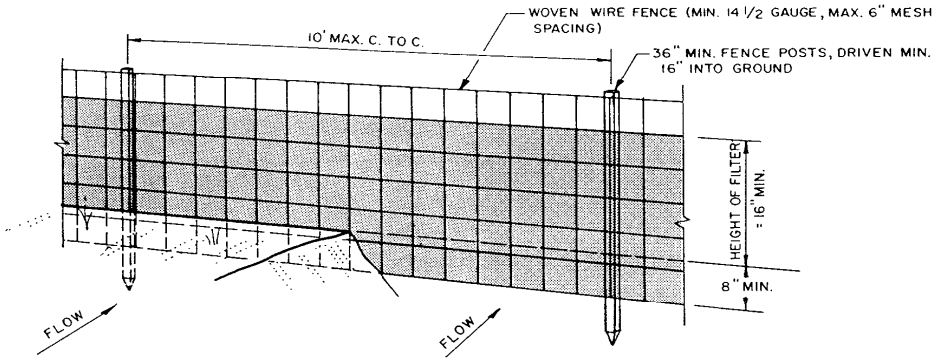
Steep Slopes

The project will be designed to minimize construction on steep slopes. Existing steep slopes that are disturbed during construction and steep slopes created by earthwork operations will be stabilized quickly to minimize excessive soil erosion and slope instability. Methods will include the temporary or permanent installation of vegetation, riprap armoring or matting. Stormwater runoff from upgrade areas will be directed away from the steep sloped areas during disturbance.

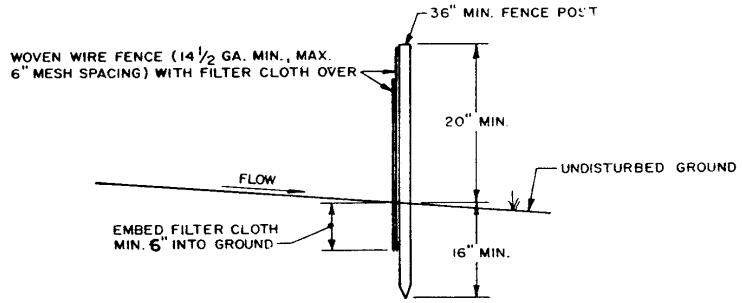
Figure 3.2.3-1
Erosion Control Plan

Figure 3.2.3-2
General and Erosion Control Details

Figure 5A.9
Silt Fence Details



PERSPECTIVE VIEW



SECTION

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE

POSTS: STEEL EITHER "T" OR "U" TYPE OR 2" HARDWOOD

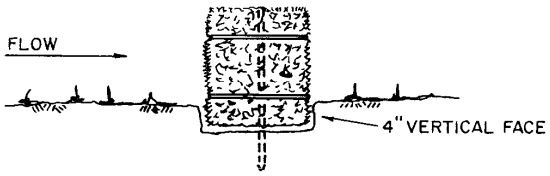
FENCE: WOVEN WIRE, 14 1/2 GA. 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

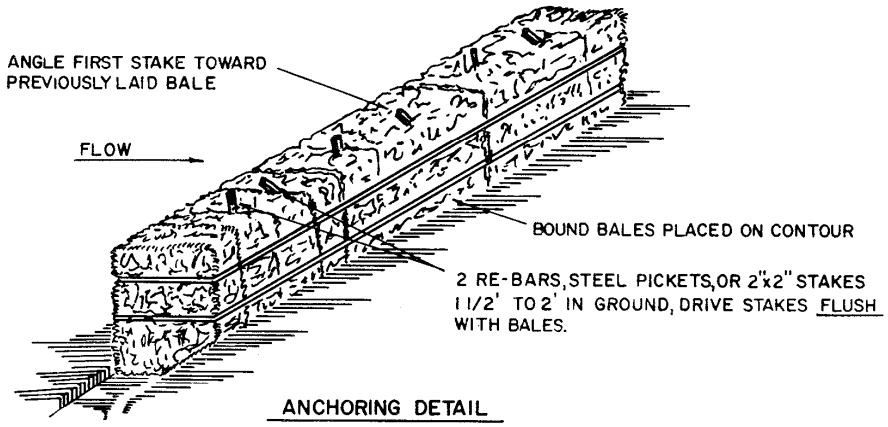
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	SILT FENCE	STANDARD SYMBOL

Figure 5A.8
Straw Bale Dike Details



BEDDING DETAIL

DRAINAGE AREA NO MORE THAN 1/4 ac. PER 100 FEET OF STRAW BALE DIKE FOR SLOPES LESS THAN 25%



ANCHORING DETAIL

CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	STRAW BALE DIKE	STANDARD SYMBOL SBD

Fgure 5A.22 (1)
Riprap Outlet Sediment Trap: ST-VI

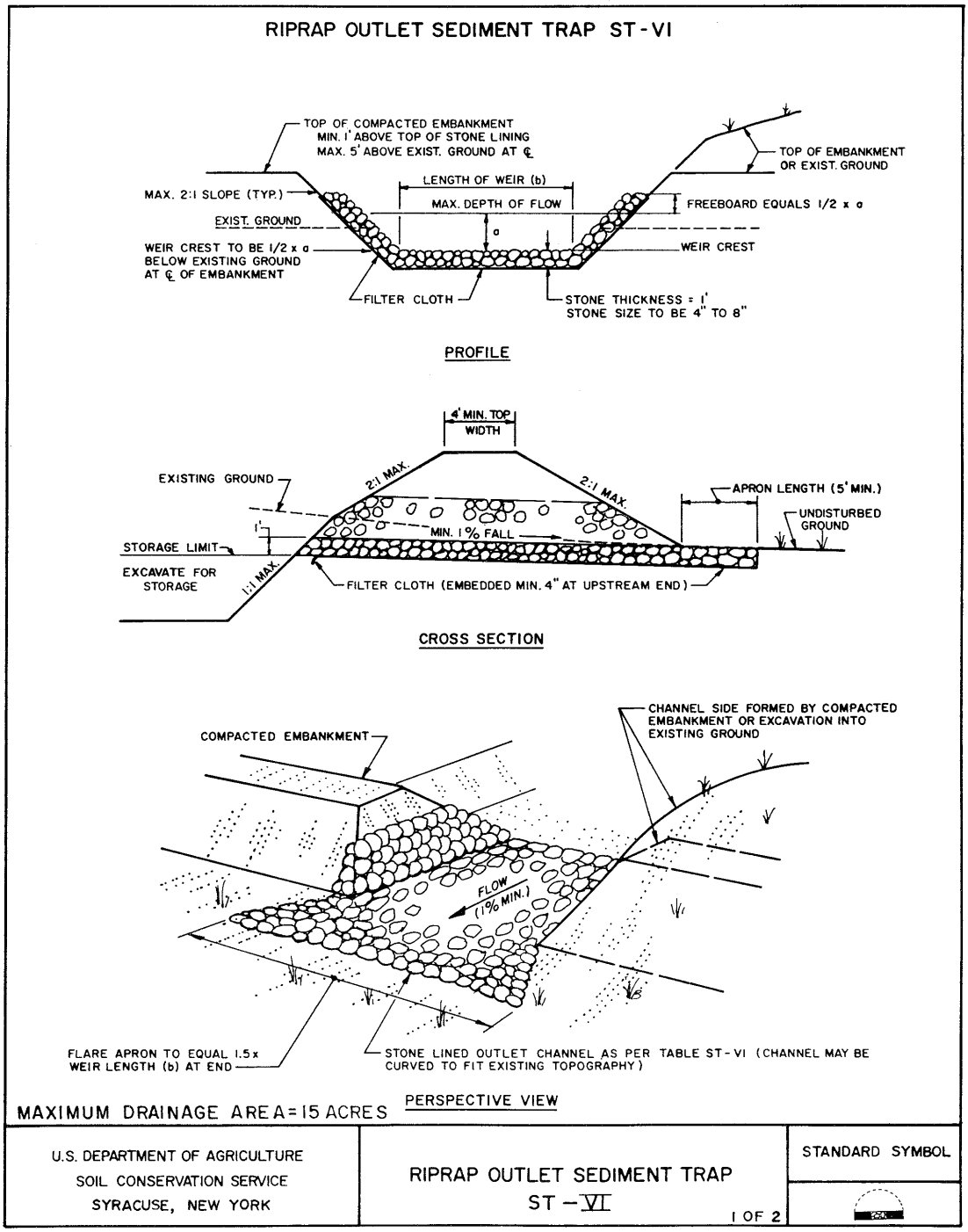
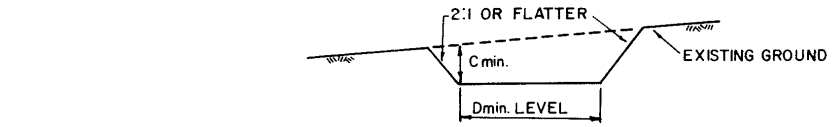
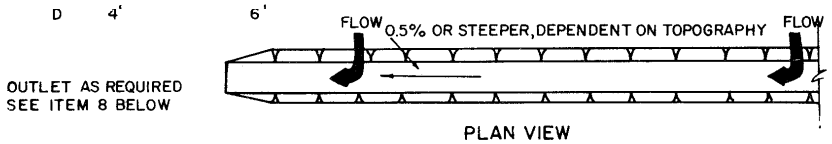


Figure 5A.2
Temporary Swale Details



CROSS SECTION

	SWALE A	SWALE B
C	1'	1'
D	4'	6'



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED ON CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. STABILIZATION SHALL BE AS PER THE CHART BELOW:

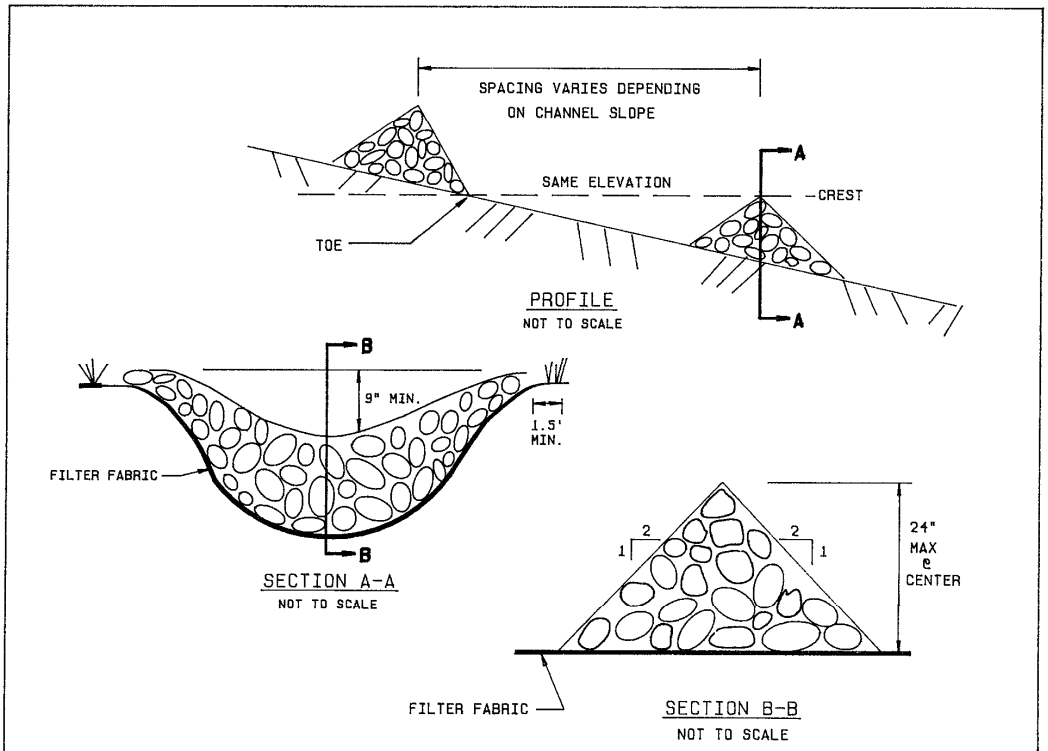
FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	A (5 AC OR LESS)	B (5 AC - 10 AC)
1	0.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE OR EXCELSIOR
3	5.1-8.0%	SEED WITH JUTE OR EXCELSIOR; SOD	LINED RIP-RAP 4-8" RECYCLED CONCRETE EQUIVALENT
4	8.1-20%	LINED 4-8" RIP-RAP	ENGINEERED DESIGN

9. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	TEMPORARY SWALE	STANDARD SYMBOL A-2 / B-3

Figure 5A.10
Check Dam Details



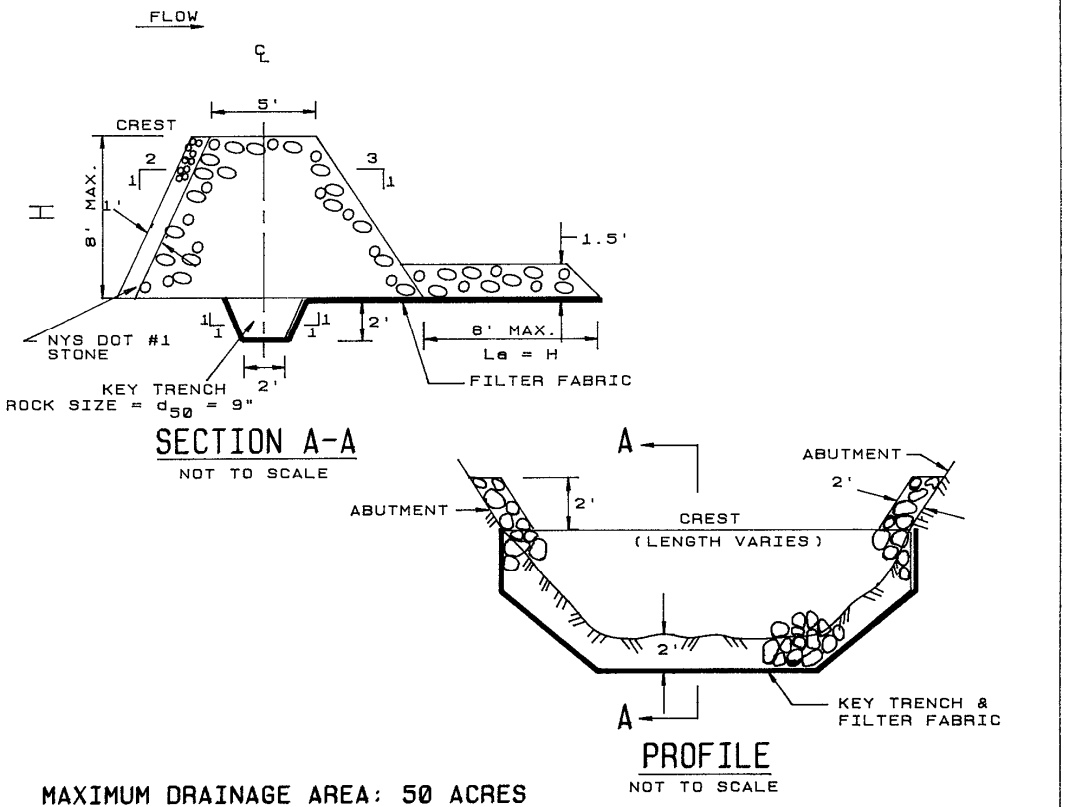
CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

MAXIMUM DRAINAGE AREA 2 ACRES.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	CHECK DAM	STANDARD SYMBOL

Figure 5A.11
Rock Dam Details

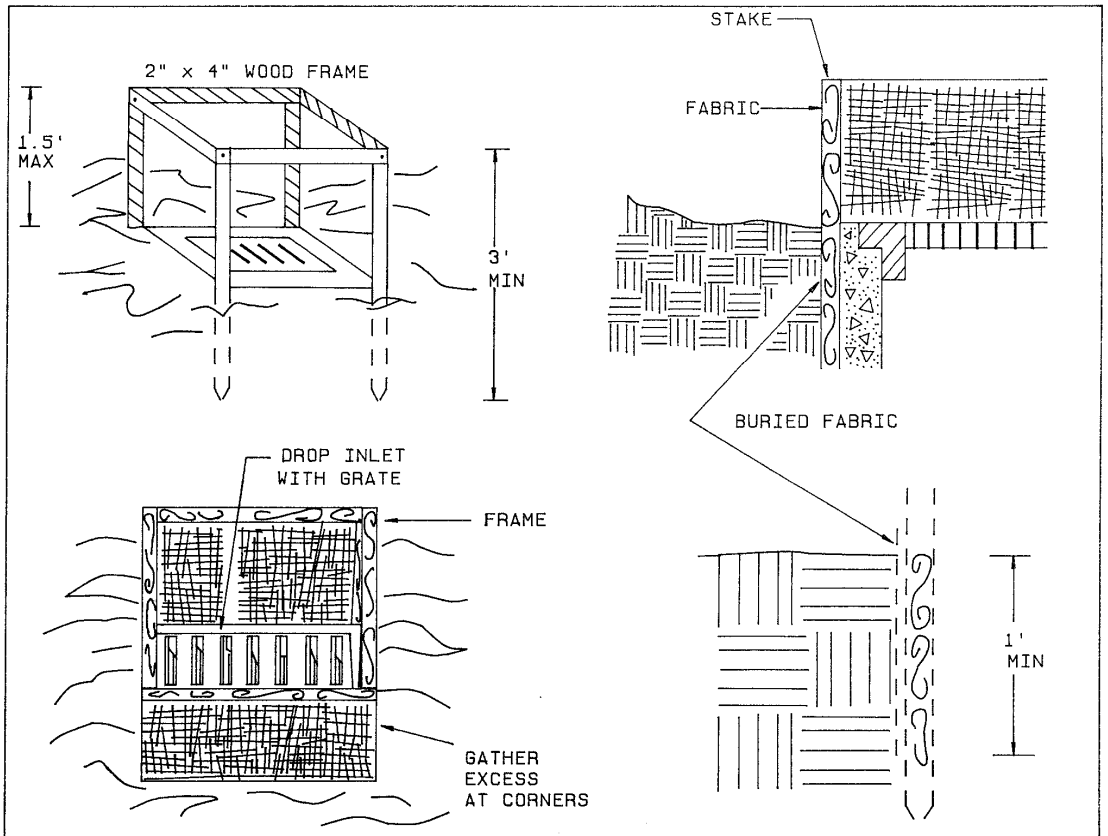


CONSTRUCTION SPECIFICATIONS

1. THE AREA UNDER THE ROCK DAM SHALL BE CLEARED AND STRIPPED OF ROOTS AND OTHER OBJECTIONABLE MATERIAL. THE RESERVOIR SHALL BE CLEARED AS NEEDED TO FACILITATE SEDIMENT REMOVAL.
2. DIMENSIONS SHOWN ARE MINIMUM. TRENCH SHALL BE EXCAVATED FROM ABUTMENT TO ABUTMENT ON THE DAM CENTERLINE. FILTER FABRIC SHALL BE PLACED FROM UPSTREAM EDGE OF KEYTRENCH TO DOWNSTREAM EDGE OF APRON. JOINTS WILL LAP A MINIMUM OF 1 FT. WITH UPSTREAM STRIP ON TOP.
3. CONSTRUCT THE ROCK EMBANKMENT TO THE DIMENSIONS SHOWN ON THE DRAWING. ROCK ABUTMENTS SHALL BE MAINTAINED 2 FT. ABOVE THE CREST.
4. THE ROCK DAM SHALL BE CONSTRUCTED PRIOR TO CLEARING THE BASIN AREA. STABLIZE ALL DISTURBED AREAS, EXCEPT THE BASIN AREA, WITH TEMPORARY SEEDING.
5. FENCES AND WARNING SIGNS SHOULD BE PLACED AS APPROPRIATE.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	ROCK DAM	STANDARD SYMBOL

Figure 5A.13
Filter Fabric Drop Inlet Protection Details



CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	FILTER FABRIC DROP INLET PROTECTION	STANDARD SYMBOL

3.3 Surface Water Resources

3.3.1 Existing Surface Water Resources

An officially unnamed watercourse (herein called Van Anden Kill) flows through the existing NYSDEC wetland on the property and exits the southwest portion of the property. The Van Anden Kill is a tributary to the officially unnamed Shenandoah Creek. Shenandoah is a tributary to the Fishkill Creek. The Fishkill Creek has a New York State Department of Environmental Conservation water identification number of H-95-10[22] and is classified[23] as having a "C" standard.[24] The Van Anden Kill is also a "C" watercourse and receives most of the surface (and subsurface) runoff from the Summit Woods property. The Fishkill Creek discharges into the Hudson River near Beacon, New York.

3.3.1.1 Chemical and Biological Conditions of Existing Stream

The existing stream was sampled and analyzed to determine the physical properties of the stream water in the month of October of 2002. The dissolved oxygen was measured as 9.8 ppm. The pH was measured as 6.9. The water temperature was measured at 21°C. These conditions are favorable for aquatic life. However, the stream does not appear to be defined enough or deep enough to support fish. The stream flow velocity was measured as being approximately 1.5 fps. This changes at various points in the stream due to the geometry of the channel and location along its bed.

A central sewage collection and treatment system is proposed for this project. The sewage treatment plant will be designed to meet intermittent stream standards per the draft SPDES limits referenced in Mr. Tom Rudolph's letter in the appendix.

3.3.1.2 Floodplain

As a part of the National Flood Insurance Program, the Federal Emergency Management Agency (FEMA) produces maps of the 100-year flood boundary. According to FEMA mapping, the central portion of the site is within an area identified as a FEMA Zone "A" flood boundary.[25] A numbered "A" Zone refers to "an area of 100-year flood where base flood elevations and flood hazard factors have been determined".[26] An un-numbered "A" Zone refers to an area of 100-year flood where

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[22] *New York State Department of Environmental Conservation Stream Maps, Hopewell Junction Quadrangle.*
[23] *According to 6 NYCRR Article 2, Classifications and Standards of Quality and Purity. The classification of a stream defines the level of purity or quality for any waters in relation to their reasonable and necessary use with a Class A being the highest quality water with the most restricted uses and a Class D stream being the lowest quality water with the least restrictions on use. According to 6 NYCRR 608.1, a 'C' stream is not a protected stream and therefore, disturbance to this stream for installation of the utility lines does not require a permit.*
[24] *6NYCRR 862.6*
[25] *Flood Insurance Rate Map, Town of East Fishkill, New York, Dutchess County, Federal Emergency Management Agency Community Panel Number 361336 0025 B - Panel 25 of 30.*
[26] *Ibid.*

base flood elevations and flood hazard factors has not been determined.

The flood boundary on the Summit Woods project site is generally associated with the NYSDEC wetland and Van Anden Kill.

As stated earlier, there is a portion of floodplain on the property located in the wetland area. This is an un-numbered "A" zone meaning that no base flood elevation has been calculated for the floodplain.

A HEC-RAS study was prepared (Appendix F) through the property to determine the 100-year base flood elevations in the un-numbered "A" Zone. The study is included in the appendices of the report.

Per Town Code requirements, no wells or sewage treatment facilities will be constructed in the floodplain as determined by this office.

The Applicant will need to obtain a floodplain development permit to install the utility lines across the floodplain near the proposed sewage treatment plant.

3.3.2 Potential Surface Water Resource Impacts

The extension of the sanitary lines to the Sewage Treatment Plant and water lines to Well House and water supply will require the placement of approximately 14,735 lf of gravity sewer main and water lines including a force main section to cross Van Anden Kill and the NYSDEC wetland.

The short-term impacts for the creek and wetland area are those that can result from the erosion potential of exposed soils. Construction activities would remove vegetative cover and topsoil. Vegetative cover binds the soil and prevents erosion. Erosion of the soil surface can lead to siltation build-up, increased stream temperatures, reduced dissolved oxygen levels, increased turbidity, and decreased light penetration to submerged aquatic flora in wetland areas.

3.3.2.1 Stormwater Management

Currently, stormwater runoff follows the topographical contours of the property. Stormwater from the non-point sources is generally collected at the wetland area and is discharged in a southerly direction toward Interstate 84.

The stormwater discharge points or watershed discharge points are the areas that the surface runoff leaves the property and proceeds onto abutting lands. Table 3.2.1-1 - *Pre-Development Stormwater Runoff*, provides a summary of the existing site stormwater runoff. The following provides a brief of the design discharge points associated with the property:

Design Point #1: There are 13 proposed basins to be constructed to mitigate quality and quantity impacts at design point #1. The following table outlines these basins:

	Drainage Area	Volume, ft^3
Basin #1	15.04 acres	4,976
Basin #2	14.29 acres	39,302
Basin #3	2.47 acres	41,438
Basin #4	20.93 acres	144,112
Basin #5	0.86 acres	10,612
Basin #6	5.7 acres	38,804
Basin #7	2.79 acres	115,504
Basin #8	5.37 acres	34,630
Basin #9	1.68 acres	26,076
Basin #10	14.2 acres	81,062
Basin #11	2.25 acres	26,206
Basin #13	8.06 acres	106,276
Basin #14	1.57 acres	24,115
Totals	95.21 acres	585,845

Each basin discharges into the drainage area for DP#1. At the point of discharge the hydrographs are routed through the drainage area to DP#1. All hydrographs were then added together in order to determine the composite benefit to the watershed. In order to analyze the quality and quantity benefits of these basins, the ponds were analyzed as one composite basin.

Design Point #2:

As mentioned in the Stormwater Management Report (Appendix E), there is one proposed basin to be constructed to mitigate quality and quantity impacts at design point #2. Basin #12 will mitigate the quantity and quality at Design Point #2.

Table 3.3.2-1
Pre-Development Stormwater Runoff

Design Point	2 Yr.	10 Yr.	25 Yr.	100 Yr.
	3.5 in.	**5.0 in.**	**6.0 in**	**8.0 in.**
#1	82.54	164.80	224.57	350.12
#2	18.71	37.70	51.52	80.49
#3	7.03	13.41	17.94	27.27

Design Point #3:

There is a third design point not affected by the proposed development. The design point is located on the northerly side of the project site. The construction of the proposed roadway will divert post-development water away from this design point. Therefore, there is no significant impact at this design point.

Although currently roadway pollutants, such as oil and salt, may enter the site from Route 52 via stormwater runoff, there are no existing stormwater point sources or point pollutant sources that are directed off of the project area.

As a result of the proposed action, the increase in impervious surfaces will result in a minimal increase in stormwater wash from roads and parking areas that could cause some limited pollutant loading into the local stormwater systems (See Table 3.3.2-1 - *Post-Development Stormwater Runoff*). Those potential pollutants include oil and grease, heavy metals, and chloride from salts used to control icing of pavements. This pollution is typical of all pavement areas designed for use by automobiles and trucks. Additional impacts resulting from stormwater runoff can lead to erosion of soils and sedimentation into drainage discharge points, including wetland areas.

Table 3.3.2-2
Post-Development Stormwater Runoff

Design Points	2 Yr.	10 Yr.	25 Yr.	100 Yr.
	3.5 in.	**5.0 in.**	**6.0 in**	**8.0 in.**
#1	71.61	140.61	189.61	294.24
#2	11.06	22.43	28.85	39.83
#3	5.05	9.78	13.15	20.13

Impacts to Van Anden Kill

The Van Anden Kill may be impacted by an increased volume of stormwater runoff due to the development of the Summit Woods site. However, the water quality will be maintained by use of the proposed sedimentation basins. These basins shall be designed to attenuate the increased peak stormwater rates and to treat the stormwater by removing pollutants typically attributed to stormwater runoff. The water quality of the Van Anden Kill will be maintained in a pristine condition by use of the proposed sedimentation basins and soil erosion control measures.

Cumulative Impacts - Surface Waters

The cumulative impacts to the Van Anden Kill, Shenandoah Creek and the Fishkill Creek shall be kept to a minimum since all projects in development and all projects from this point forward will need to comply with the new Phase II stormwater runoff guidelines. These guidelines were established to prevent further degradation of stream water quality. The sedimentation basins to be constructed in the Summit Woods project have been designed to conform to these new guidelines.

3.3.3 Surface Water Mitigation Measures

The Applicant will implement the following mitigation measures for installation of utilities within the Van Anden Kill area:

- Adequate drainage will be provided to reduce exposure to flood hazard;

- Utilities will be designed to minimize or eliminate infiltration of floodwaters into the systems.

During construction, erosion will be controlled through the implementation of various

erosion control methods consistent with the U.S. Soil and Water Conservation Service recommendations including:

- The contractor on a weekly basis and following each rainfall event to measure proper performance shall inspect all erosion control measures employed during the construction process. Erosion control shall be repaired and maintained as necessary by the contractor;

- During construction, as the road subgrade is formed by excavation, drainage ditches will be cut on the downhill side of the street at intervals of fifty feet so that rainwater falling on exposed soils will drain off at a frequent interval into the underbrush instead of being allowed to accumulate as it travels down to a central discharge point;

- During construction, as the road subgrade is formed by fill, work shall proceed quickly and the side slopes seeded with a quick germinating rye (10 to 15 pounds per 1000 square feet). During this time any gullies or washes that develop are to be filled and the surface graded to prevent wash in the same location;

- Temporary drainage swales with a minimum grade of one percent, to direct runoff away from excavated areas, will be provided. Swales will be installed with staked and secured straw bale berms to prevent downstream siltation. Location of the drainage swales and straw bales will be at the direction of the Project Engineer;

- Straw bales will be placed in a row with ends tightly abutting the adjacent bales. Each bale will be embedded in the soil a minimum of 4". Bales will be securely anchored in place by stakes or re-bars driven through the bales. The first stake in each bale should be angled toward the previously laid bale to force the bales together. Inspection should be frequent and repair or replacement should be made promptly as needed. The bales should be removed when they have served their usefulness so as not to block or impede storm flow or drainage;

- Reverse slope benches of diversion swales will be provided wherever the vertical height of any 2:1 slope exceeds twenty feet; thirty feet for slopes of 3:1; and forty feet for slopes of 4:1. Benches or swales will be located to divide the slope face into equal sections to convey runoff to stable outlets. Benches will be a minimum of six feet wide to provide for maintenance. Benches will be designed with a reverse slope of not more than 6:1. Bench gradient to the outlet will be between two and

three percent. The flow length of any bench or swale will not exceed 800 feet;

- If the construction process exposes significant soil areas for any length of time, increased potential for erosion and dust creation will occur. The contractor shall provide, at the Project Engineer's direction, supplemental surface treatments (such as strawbale lines, temporary swales and/or rip-rap intercept pools, and dust control measures) as may be required;

- Subsurface drainage will be provided where required by the Project Engineer or Highway Superintendent to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions;

- Erodible material temporarily stockpiled on the site during the construction process shall be located in an area away from storm drainage and shall be properly protected from erosion by a surrounding silt fence barrier;

- The storm drainage system will be installed and rendered functional as soon as possible with silt traps provided around each inlet;

- Grading will be finalized, topsoiled and seeded as quickly as possible;

- Stockpiled topsoil will be temporarily seeded;

- All grass seed will contain at least 25 percent rapid germinating perennial rye grass;

- Erosion controls shall be removed at the end of the site construction process only as approved by the Project Engineer, and will be done so only when upgradient surfaces are properly stabilized an all stormwater management systems are in place and operable;

- At the completion of the project, the temporary siltation basins will be cleaned and restored with fill, topsoil, and vegetation that are most appropriate to the individual areas.

Where stormwater discharges, pipe outlets will be constructed in accordance with the following guidelines to limit the introduction of sedimentation into the discharge area:

- An apron will be placed in rip-rap with a depth of 6";
- The length of the riprap will be no less than 14' and no less than 16' wide.

After construction, the erosion control measures will be maintained by the Town of East Fishkill and should be consistent with the recommendations in the *New York Guidelines for Urban Erosion and Sediment Control,*[27] including:

- The stormwater collection areas should be inspected quarterly to ensure proper operation;
- All catch basin sumps should be cleaned when they are full to 50% of their capacity;
- All rip-rap at outfalls should be either cleaned or replaced when it becomes overburdened with silt or sediment;
- All drainage areas damaged by erosion should be repaired;
- All silt or sediment accumulations should be cleaned from ponds;
- All drainage swales should be kept free of debris and the vegetation should be maintained to allow unobstructed flow of stormwater;
- Any slopes or embankments that have damaged vegetation should be re-seeded as necessary;
- All grass swale areas should be mowed so that they facilitate unobstructed flow of stormwater.

A Stormwater Management Report is included as Appendix E of this document. The hydrologic evaluation and subsequent stormwater management design for this project, that analyzed the potential volumes for the 2, 10, 25, and 100 - year storm events, focused on the locations where collected stormwater leaves the property. The proposed stormwater runoff quantities for each storm event are provided in Table 3.3.2-1 - *Post-Development Stormwater Runoff* (and in the Stormwater Water Report contained in Appendix E). As previously stated, there are three watershed discharge areas associated with the property. These watershed discharge points become the point where the degree and type of mitigation is determined, as it is at this point that the surface runoff leaves the property and proceeds onto abutting lands.

[27] *Ibid.*

Stormwater drainage will be accomplished on-site by a series of pre-cast catch basins and connecting "HDPE" pipe placed in the road network and the interior of the site. The pipe sizes will be a minimum of 18". Other features of the drainage system will be earth detention areas and surface swales (see Appendix E - Stormwater Management Report) to facilitate stormwater movement and purification (first flush) of the point and non-point sources, including increased contamination from roads, driveways and other impervious surfaces.

Stormwater quality will also be controlled utilizing a series of pre-cast catch basins with a 12" deep sump. Sedimentation basins shall be used to facilitate purification (first flush) of the point and non-point sources, including increased contamination from roads, driveways and other impervious surfaces and stormwater movement. The earth detention areas will be designed to discharge via a controlled outlet structure and will incorporate landscaping to enhance biological activity for pollutant removal. Land areas that are not collected by the subsurface system will sheet flow off the property through natural patterns and surface conditions.

Further, the Applicant will enhance the wetland buffer area through the planting of wetland species that are common to this area. All of the following species are readily available from local nurseries and can tolerate periods of drought and are considered species that provide wildlife habitat and food. Typical plants include:

Cornus stolonifera - Red Osier Dogwood

This shrub is an understory species that typically ranges in size from 3-7' tall and usually sprouts from the base. Branches or twigs are red in color; fruit is berrylike and white in color. This species is often used as a landscaped species.

Viburnum dentatum - Arrowood

This shrub is also an understory species and has approximately the same growth form as Red Osier Dogwood. Branches are very straight and the fruit is berrylike and purple in color.

Viburnum trilobum - Highbush Cranberry

This shrub is an understory species that ranges in size from 4-10' tall. Red berries persist long after leaves have dropped and are considered a good food source.

Aronia arbutifolia - Chokeberry

This species is predominantly an understory species that may reach up to 12' and is generally covered with red berries.

Clethra alnifolia - Sweet Pepperbush

The branches on this understory shrub species are very low to the ground. The plant generally ranges from 5' - 7' tall and the seed head resembles peppercorns.

Ilex glabra - Inkberry

This understory species is a very low growing shrub that generally grows to approximately 3 - 5 feet in height. Leaves are generally dark green with black (ink) areas.

Ilex verticillata - Winterberry

This understory shrub species generally grows to approximately 5 - 7 feet. Male and female plants must be in close proximity when planted produces persistent red berries considered to a good source of food.

Lindera benzoin - Spicebush

This understory shrub species sprouts early spring flowers that are yellow. The berries produced by this species are considered valuable for a food source.

Vaccinium corymbosum - Highbush Blueberry

This understory species grows to approximately 6 - 8 feet tall. Growth is dense. The species produces fruit that are important to wildlife as a food source.

The following mitigation methods for each of the drainage basins are proposed. As designed, the net post-development peak stormwater discharges will be maintained below the pre-development peak level for all storm events analyzed.

The proposed development is designed to integrate the existing runoff patterns and natural features into the planned residential subdivision with little disturbance. In addition, the natural features on-site will be used to provide environmentally preferred stormwater management mitigation by improving runoff quality through the use of open-channel/wetland filtration, absorption, and evaporation that are efficient

cleansing measures utilized to pre-treat stormwater prior to it entering an existing drainage system. The stormwater analysis illustrates that the proposed system will function properly, provide water quality enhancements, and require minimal maintenance to insure continued performance. As detailed stormwater plans are developed in the subdivision process, specific quality controls will be placed to control the quality of stormwater discharge.

3.4 Groundwater Resources

3.4.1 Existing Groundwater Resources

Leggette, Brashears & Graham, Inc. conducted a 72-hour simultaneous pump test on two wells to determine the quantity of water available to serve the proposed project. Based on the results of the pump test, the long-term yield of Well #1 is 63 gallons per minute (gpm) or 90,720 gallons per day (gpd). Well #3 can independently yield 65 gpm or 93,600 gpd. Both wells had quick recovery times. The New York State Department of Health (NYSDOH) requires a minimum of two sources of supply, each capable of delivering the average daily demand. The Dutchess County Department of Health (DCDOH) has recommended for this project to estimate typical domestic usage at the rate of 130 gallons per day (gpd) per bedroom. Assuming 3.75 bedrooms for the proposed houses, an average daily flow of 85,300 gallons can be expected for the proposed Summit Woods residential development. A factor of 3.75 is typically allowed by the Dutchess County Health Department and the NYSDOH when considering a design for a development of this type when the actual bedroom count is not known.

A ground-mounted "Aquastore" water storage tank will provide domestic and fire flow to the project at minimum pressures of 35 psi designated by Ten States Standards. In accordance with Ten States Standards the storage tank will be designed to store a minimum of one average day use plus required fire flow as specified by the Insurance Services Office (ISO) at 1,000 gpm for 2 hours (120,000 gallons) for this type of development. The most economical tank configuration for this project provides for a total storage volume of 220,000 gallons. Therefore the proposed water storage tank will be 220,000 gallons in size. It should be noted that the proposed tank site is large enough to provide an additional tank to future areas of need.

Deed restrictions will be used on this project to prohibit underground lawn sprinkler systems.

3.4.2 Potential Groundwater Resource Impacts

Offsite Impacts

LBG instituted a groundwater-monitoring program to determine the offsite impacts to neighboring wells from the pump test. From November 19 to November 27, 2002, a water level interference study was conducted on six offsite domestic wells and one onsite-monitoring well. The hydrographs for all of the offsite wells indicated no discernible drawdown interference effects from pumping onsite Wells #1 and #3 during the 72-hour pump test in November 2002.

Onsite Impacts

Piezometers located on the site indicated no discernible water level interference during the test on Well #1 and Well #3 in November 2002.

Water Quality

Near the end of the 72-hour pumping test conducted in November 2002, ground-water samples were collected from Wells 1 and 3. The samples were analyzed for parameters specified in the New York State Department of Health (NYSDOH) Sanitary Code, Part 5, Subpart 5-1. In addition, Wells 1 and 3 are located within 200 feet of a surface-water body, which required the wells to be sampled for microparticulate analysis (MPA) to determine if the well is under the direct influence of surface water. The Surface Water Treatment Rule is applied to any well under direct influence of surface-water bodies. Samples were taken after nearly 72 hours of pumping, to ensure that the samples were clear and representative of the ground water from the formation in which the wells are completed. The results of the analyses for Wells 1 and 3 are included in Appendix D.

The water quality for both wells (1 and 3) meet all New York State drinking water standards, with the exception of combined radium -226 and radium -228 for both wells. The combined radium -226 and radium -228 for Wells 1 and 3 were reported at 6.0 and 6.9 pCi/l (picoCuries per liter), respectively. The reported results for Wells 1 and 3 slightly exceed the combined radium -226 and 228 NYSDOH MCL of 5 pCi/l. Wells 1 and 3 reported trace hits of toluene at 0.6 and 0.9 ug/l which is significantly under the NYSDOH MCL of 5.0 ug/l. The temporary test pumps installed in each well during the test utilizes "new" electrical wire which has been reported to produce trace hits of toluene in well water as it seasons over a short period of time. Well 3 reported a radon

concentration of 9,060 pi/l. The radon sample for Well 1 exceeded the holding time at the laboratory and was subsequently not reported.

Wells 1 and 3 were resampled for toluene (EPA Method 502.2) and radiological parameters. The results are included in Appendix D. The wells were resampled in February 2003 and the results indicate the combined radium -226 and radium -228 for Wells 1 and 3 were reported at 3.6 and 5.3 pCi/l. respectively. The reported results for the combined radium -226 and radium -228 for Well 1 are below the MCL and Well 3 is marginally exceeding the MCL. The resampling event reported a radon level in Well 1 and 3 at 3,856 and 8,302 pi/l, respectively. In addition, non-detection of toluene in both wells. For radium -226 and radium -228 the NYSDOH requests a composite view of four quarterly samples or the average of the analysis of four quarterly samples to determine if the MCL is exceeded. LBG recommends additional sampling be conducted to determine if the radium -226 and radium -228 require treatment. Remedial technology for the removal of radium -226 and radium –228 is cation exchange treatment units. If required, these units will be incorporated in the water-treatment design.

The USEPA may be setting an MCL for radon in the near future. It is expected that the MCL for radon will be set between 200 pi/l and 1,000 pi/l. The USEPA has designated aeration as the best available technology for radon removal. Aeration is the most effective and economical technology achieving removal rates in excess of 99 percent (Chandler, 1989). Wells 1 and 3 will require aeration units to treat the elevated radon levels.

Temperature and specific conductance for the surface water of the wetland immediately adjacent to PZ-1 and Wells 1 and 3 were monitored by LBG personnel throughout the pumping test. The parameters were monitored to evaluate if induced ground-water flow from the wetland area directly recharged Wells 1 and 3 during pumping conditions. Temperatures and specific conductance data are summarized on table 1. The ranges of the temperature and specific conductance in Wells 1 and 3 are different from the value ranges of the wetlands. In addition, the values remained relatively unchanged for Wells 1 and 3 during the test suggesting that the production wells were not directly recharged from the adjacent wetland area. If the wells had been under the direct influence of water from the wetland, the temperature and specific conductance values of the wells at the end to this test would have changed to be more similar to temperatures and conductance values of the wetland. In addition to water quality data the well completion reports indicate Wells 1 and 3 encounter clayey unconsolidated material from land surface to 30 feet below grade, which acts as a confining layer between the adjacent surface water bodies (wetland) and the deep bedrock tapped by the wells. Spring is not the best time to sample for MPA due to the increase rainfall (recharge) in the watershed during the spring seasons, which results in a surplus of

groundwater and under these conditions surface-water bodies and wetland become discharge locations for surplus ground water. Periods of low (lower) precipitation typically in the summer and fall are more ideal to conduct MPA considering periods of low precipitation result in a significant decrease in recharge in the watershed and wetland and surface water can act as recharge source for underlying aquifer system. Unconfined shallow sand and gravel wells are typically more of a concern to potentially be under the direct influence of surface water and bedrock wells are considering much less of a concern. Well 1 and 3 are bedrock wells and the water-quality data and geologic data present strong conclusions that the bedrock wells are not under the direct influence of surface water.

In addition, the surface water of the wetland adjacent to the wells was monitored to evaluate if groundwater flow from the wetland was affected by the 72-hour pump test. It was concluded that neither well was influenced by surface water.

Known Areas of Contamination

The closest area of known contamination to the Summit Woods site is the former Town of East Fishkill Landfill located on the Bailey property (a.k.a. the Bailey Landfill). This site is approximately 1.2 miles to the southwest from the Summit Woods site. There is no indication that this site will have any impact on the Summit Woods water supply.

LBG, the hydrogeological consultant, has stated "…the landfill on the Bailey property presents no significant environmental concerns to the proposed water supply sources on the Summit Woods parcel."

3.4.3 Groundwater Resource Mitigation Measures

NYSDOH guidelines require that a public water supply have a 100-foot radius of ownership and a 200-foot radius of sanitary control. Wells #1 and #3 meet the regulatory guidelines of 100-foot radius of ownership and 200-foot radius of sanitary control.

Dutchess County Department of Health (DCDOH) guidelines assumes water demand estimates of 130 gpd (gallons per day) per bedroom for detached single-family homes. Therefore, the total potable water demand for the project is estimated to be about 90,500 gpd, or about 63 gpm (gallons per minute).

For new community water supplies, the NYSDOH requires a minimum of two sources of supply, each capable of delivering the average daily potable water demand (63 gpm). The NYSDOH guideline would require development of double the daily demand, with the best well out of service if the well yields are less than 50 gpm. The yield of both

successful wells exceeds 50 gpm so elimination of the best well does not apply. Therefore, the proposed project is likely to require the development of a water supply from two sources, each capable of delivering the average daily potable water demand (59.2 gpm).

The data from the pumping test indicate Wells 1 and 3 can be pumped at rates of 63 and 65 gpm, respectively, for a combined yield of about 128 gpm (184,320 gpd). The proven capacity of Wells 1 and 3 meets the delivery requirement of a minimum of sources, each capable of delivering the average potable water demand of the proposed project. The November 2002 pumping tests met the SEQRA requirements of demonstrating a satisfactory water supply for the proposed project.

A conservative recharge estimate to the bedrock aquifer within the property boundary of the site would be between 118,200 and 137,900 gpd during extreme drought conditions. This amount is more than the total water demand (90,500 gpd) of the proposed Summit Woods project. The proposed project has adequate recharge to the property under normal and drought conditions to support the estimated water demand. The onsite recharge exceeds the proposed water demand of the proposed subdivision and the water supply should be reliable and will not likely affect the water supply in neighboring wells in the area.

It should be noted, ground water available at a site is not restricted only to recharge from precipitation falling directly on the site. Ground water flowing toward and beneath the site that can be accessed by wells on the site without adversely impacting other users is considered available. Consequently, the area which supports the water supply of a site typically extends beyond the property boundary to include the natural recharge area contributing water to the site.

The pumping tests conducted on Wells 1 and 3 to date demonstrate that an adequate water supply has been developed to serve the proposed Summit Woods project, and that this well supply did not adversely impact neighboring wells during the test at rates slightly above twice the average water demand of the project.

Surface bodies of water on the study property, such as wetlands, are expected to exhibit no significant effects from the ground-water supply withdrawals from deep bedrock wells. The water-level data and the hydrographs for the piezometers installed in the onsite wetland indicate no direct hydraulic connection with the bedrock aquifer. In addition a comparison of the temperatures and specific conductance values for the wetland and Wells #1 and #3 suggest no direct recharge from the adjacent wetland under pumping conditions of the bedrock aquifer.

Well Yields

Well 1

Substantial yield and drawdown stabilization was achieved for the last 34 hours of the test on Well 1. The final pumping water level was 50.5 feet just prior to shutdown of the 72-hour test for a total drawdown of only 48.4 feet. The water-level data measured during the test and plot showing the "flattened" stabilized pump water-level trend is given in Appendix D.

Well 3

Substantial yield and drawdown stabilization was achieved for the last 36+hours of the test for Well 3. The final pumping water level was 36.4 feet just prior to shutdown of the 72-hour test for a total drawdown of only 34.4 feet. The water-level data measured during the test and the plot showing the stabilized pumping water-level trend are shown in Appendix D.

The data from the pumping test indicate Wells 1 and 3 can be pumped at rates of 63 and 65 gpm, respectively, for a combined yield of about 128 gpm (184,320 gpd). The proven capacity of Wells 1 and 3 meets the delivery requirement of a minimum of sources, each capable of delivering the average potable water demand of the proposed project. The November 2002 pumping tests met the SEQRA requirements of demonstrating a satisfactory water supply for the proposed project.

The two existing wells are located 1,300 feet apart and not directly hydraulically connected as demonstrated by the pump test. At this time, there is no consideration to drill a fourth well.

Yield Measurements

The flow rate for the wells were measured with a flow meter and yield confirmed with a 15-gallon bucket and stopwatch. The bucket and stopwatch was periodically used to confirm the accuracy of the flow meter. Historically flow meter can be slightly off in accuracy. This is a standard practice.

It should be noted that the level of the water in the wells never stabilized during the pump testing. This is, however, common for rock wells. This is factored in when determining the potential yield of wells of this type.

Off-Site Water Demand

The pump tests demonstrate adequate water for the proposed project as required by the scoping document for the DEIS and SEQRA requirements for demonstrating a satisfactory water supply for the proposed project. The scoping document for the DEIS did not require the applicant to pump test the wells at maximum safe yield rates to determine potential surplus water for the Town. The data does, however, indicate surplus water is likely available from the site from existing wells or from the development of additional wells on the study parcel. To determine the higher sustainable safe yield of existing Wells 1 and 3 , if feasible, additional 72-hour pump test would be required. It would be more practical to pump test Wells 1 and 3 once the wells are placed into service at a later date. The yield potential of additional well location(s) could only be determined by conducting an additional drilling and pump test program. Finally, pumping the proposed wells at significantly higher rates than the required water demand estimate for this project could potentially demonstrate offsite water-level interference effects on neighboring homeowner wells.

3.5 Wetlands

3.5.1 Existing Wetlands

One large wetland area totaling 99.7 (including the 100-foot adjacent areas) acres exists on the property. This wetland area contains three habitat types; forested, scrub/shrub, and wet meadow. The wetland on the site is regulated by both the United States Army Corps of Engineers (USACOE) and New York State Department of Environmental Conservation (NYSDEC).

The wetland is described in greater detail below:

NYSDEC-HJ - 49

NYSDEC wetland HJ-49 encompasses 99.7 acres of regulated area including the 100-foot Adjacent Area located on the project site. This wetland is a nearly level swamp area associated with Van Anden Kill through the central portion of the site. It serves as a significant floodplain area for the creek, which meanders in a westerly flow direction through the southern portion of the wetland. It is subject to periodic shallow flooding during the spring thaw, particularly adjacent to the small creek channel. The soil in this wetland area is Carlisle muck soil, which is frequently flooded. It forms the headwaters of a perennial drainage outlet, which flows northwesterly from the wetland, and flows off-site, ultimately converging with Fishkill Creek.

The well-developed micro-topography and vegetative structure in the wetland provides many important wildlife habitat opportunities for small reptiles and amphibians. Small and large mammals may utilize the wetland, in drier portions, for browsing. The tree canopy may support nesting sites for small birds and nests for squirrels. Adjacent steeply sloped woodland to the southwest and field buffer areas permit wildlife corridor access between wetlands and uplands.

The wetland has very well developed micro-topography and vegetative structure. It serves as an important local groundwater recharge site and as an effective sediment trap and filtering site for runoff directed into the wetland from surrounding uplands. The well-developed micro-topography of the core portions of the wetlands provides significant opportunities for amphibian and reptile habitats. An explanation of the specific types of tree and vegetative growth in the wetland can be found in the Flora and Fauna report in Appendix I. Given that this project area is predominantly undeveloped, the wetland is typical of most wetlands in that it provides the following functions:

Maintain flood, erosion and storm control.[28]

> *Most freshwater wetlands are basins with spongy soil that supports dense vegetation with extensive root systems... Water from surface runoff and stream overflow will spread out over the wetland as it fills, slowing the force of the water. This results in a reduction of erosion and flooding downstream. Therefore, wetland areas provide a buffer between the storm and the upland area behind them, helping to reduce storm damage in these areas.*

Control Pollution and Sedimentation.

> *Wetlands serve as settling and filtering basins. As the incoming water is slowed down, most suspended solids fall to the bottom to become part of the wetland soil. Many dissolved chemicals including many considered being pollutants, are also trapped in wetland soil, taking up by wetland vegetation, or transformed by bacteria for plant growth. As a result, water flowing out of a wetland is lower in sediment and dissolved chemicals than the water entering it.*

[28] *Dutchess County Environmental Management Council, 1984.*

Wildlife Habitat. According to *Freshwater Wetlands of Dutchess County, Inventory and Guide for Local Officials:*

> *Perhaps the best-known wetland function is as habitat for a diversity of wildlife. The high productivity and dense vegetation provide a habitat that serves as feeding, cover and breeding ground for both wetland and non-wetland species.*

Recreation/Education/Scientific Study. According to *Freshwater Wetlands of Dutchess County, Inventory and Guide for Local Officials:*

> *Wetlands possess recreation values for such diverse activities as fishing, bird watching, photography, and hiking ... and serve as living laboratories free to the users.*

Figure 3.5.1-1
NYSDEC Mapped/Delineated Wetland Area

3.5.2 Potential Wetland Impacts

The proposed development involves only some minor potential impacts to wetland areas or 100 foot Adjacent Area. The wetland area will continue to perform its existing functions including maintenance of flood, erosion and storm control; control of pollution and sedimentation; providing areas for wildlife habitat; and provide areas for recreational/educational/scientific study. Table 3.5.2-1 providing a summary of the existing and proposed acreages for the mapped wetlands.[29]

Table 3.5.2-1
Pre and Post-Development Wetland Area

Wetland	Pre-Development Size (Acres)	Area Impacted by Proposed Development (Acres)	Post-Development Size (Acres)
HJ-49	99.7	0	99.7
Total Site	325.22		325.22

It is anticipated that the project will temporarily impact approximately 0.10 acres of the wetland area as a result of the installation of utility lines. Construction of one Stormwater Quality Management Basin is also proposed within the 100-foot Adjacent Area and will require an Article 24 Freshwater Wetland Permit from NYSDEC.

A meeting with Mr. Roy Jacobson of the NYSDEC occurred in early February 2003 to determine whether impacts proposed in the Adjacent Area are permittable. Mr. Jacobson reviewed the current proposal and stated that all disturbances, as proposed, would be permittable under various permits.

As shown on Figures 3.5.2-1 no fill is proposed in any wetland segment on the property.

3.5.3 Wetland Mitigation Measures

Possibility of Complete Avoidance

Construction in wetlands has been avoided by the design of the proposed project. Disturbances to USACOE wetlands will be limited to the installation of utility lines and the WTP outfall. Therefore, the outfall from the WTP has to cross USACOE wetlands to discharge to the Van Anden Kill. This disturbance is permitted by the USACOE via Nationwide Permit #12 (Utility Lines) without further authorization. Mitigation, if

[29] *As identified on the National Wetlands Inventory Map, Hopewell Quadrangle, U.S. Department of the Interior Fish and Wildlife, 1990.*

required by USACOE, will be provided.

The project has been designed in a manner to reduce impacts to wetlands to the largest extent practical. The USACOE wetland boundary coincides with NYSDEC wetland boundary as validated by Roy Jacobson from NYSDEC Region 3.

A Stormwater Management Plan prepared by M.A. Day Engineering, P.C. (Appendix E) details the steps necessary to control stormwater generated on-site as a result of increased impervious surfaces. According to the report, the site has been designed to facilitate stormwater movement and purification. Land areas that are not collected by the subsurface system will sheet flow off the property through natural patterns and surface conditions. The creation of detention basins, a slight increase in lowland areas, and central collection of stormwater will function to maintain post-development peak stormwater discharges to at and below their pre-development levels.

The proposed development is designed to integrate the existing runoff patterns and natural features into the planned residential subdivision with little disturbance. In addition, the natural features on-site will provide environmentally preferred stormwater management mitigation by improving runoff quality through the use of open-channel/wetland filtration, absorption, and evaporation. The stormwater analysis illustrates that the proposed system will function properly, provide water quality enhancements, and require minimal maintenance to insure continued performance.

During construction, as discussed in Section 3.2 Soils and Topography, appropriate soil erosion and sediment control measures will reduce any potential impacts to this area. In addition, proposed erosion control and stormwater measures are outlined in the stormwater management plan, and erosion control details provided in Figure 3.2.3-1 *General Erosion Control Details*.

NYSDEC Requirements

The project will disturb NYSDEC Wetland 100 foot Adjacent Area and will require an Article 24 Permit. The NYSDEC requires as part of the New York State General Permit for Stormwater Discharges from Construction Projects, GP-93-06 (General Permit) the preparation of a Stormwater Management Plan to minimize impacts to all surface waters and wetlands. This Plan can be found in Appendix E.

USACOE Requirements

The USACOE requires that an applicant minimize disturbances to wetlands under USACOE jurisdiction. However, if complete avoidance is not possible, the proposed work associated with the disturbances can be permitted as part of the USACOE

Nationwide Permitting and by Individual Permits. The required permits are determined based on the type and amount of disturbance. Depending on the permit and amount of disturbance, the USACOE could require the creation of wetlands as mitigation to the filling of existing wetlands. Should this be required by USACOE during the permitting, sufficient areas, suitable for the creation of new wetlands, exist on the project property.

The federal wetland assessment conducted for this project followed the methodology outlined the Routine Onsite Determination Method prescribed in the 1987 United States Army Corps of Engineers (USACE) Wetlands Delineation Manual[30]. The proposed project would impact less than 0.10 acres of Federally regulated wetland and would meet all of the other conditions of Nationwide Permit #39 for development of residential subdivisions, therefore, a Jurisdictional Determination is **not** required by the USACE. [31]

No further consultation or authorization is required from the USACE for development on the property.

Further, the Applicant will enhance the 100 foot regulated Adjacent Area through the planting of wetland species that are common to this area. Typical plants will include:

Cornus stolonifera - Red Osier Dogwood

Viburnum dentatum - Arrowood

Viburnum trilobum - Highbush Cranberry

Aronia arbutifolia - Chokeberry

Clethra alnifolia - Sweet Pepperbush

Ilex glabra - Inkberry

Ilex verticillata - Winterberry

Lindera benzoin - Spicebush

Vaccinium corymbosum - Highbush Blueberry

[30] Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," TR y-87-1, US Waterways Experiment Station, Vicksburg, Miss.
[31] According to Brian Orzel USACE (212)-264-0183.

3.6 Terrestrial and Aquatic Ecology

3.6.1 Existing Conditions

Vegetation

Ecological Solutions, LLC conducted flora and fauna surveys to identify species that are present on the subject property and to evaluate the potential impacts of the project development on these species and communities. The ability of the site to support endangered, threatened or special concern status species was also evaluated. The surveys were conducted during the months of March, April, and June 2002. Therefore, with the exception of actual observations of vegetation, the species lists and potential impacts are based upon examination of on-site habitats, and probable species that are likely to be observed within these habitats, on the subject parcel.

Investigations were conducted throughout the major habitat types including deciduous forest, fields and meadows, and wetlands. The primary survey method involved time-constrained, systematic physical searches along transects throughout each of the habitat types.

All of the flora and fauna surveys involved direct field identification of every plant and animal observed within the project study area. Flora and fauna that could be visually observed and identified were recorded. Unless noted, the plant list contains species that were observed to be present on the site. The New York State Department of Environmental Conservation's (NYSDEC) publication "New York State Endangered, Threatened and Special Concern Species 1998", was used as the definitive list for determining whether any plants or animals observed on the property would be considered Endangered, Threatened or Special Concern status. In addition, a letter of inquiry regarding the presence or absence of endangered and threatened species on the project site was sent to NYSDEC.

Plant Communities

The predominant plant communities present on the subject parcel consist of fields and meadows, wetlands, and a deciduous forest community, see *Figure 3.6.1-1, Existing Vegetation Map*.

Fields and Meadows

A significant percentage of the property's acreage consists of post agricultural fields and meadow plant communities that have been allowed to revert to more native conditions. The fields/meadows are representative of several early successional serial stages

ranging from fields regularly mowed and dominated principally by grasses and forbs, to fields dominated by dense scrub-shrub thickets, to areas with younger trees becoming established. Remnant hedgerows that mainly are dominated by trees separate the fields/meadows. In addition, large forested wetlands are present which create natural corridors that separate forest, and fields and meadows. Wetland acreage makes up a large percentage of the middle of the property.

Grasses and forbs dominate vegetation within the fields/meadows area. Representative species of grasses and flowering plants include several varieties of goldenrods (Solidago spp.), broom sedge (Andropogon virginicus), barnyard grass (Echinochloa crusgalli), Japanese millet (Echinochloa crusgalli var.), pokeweed (Phytolacca americana), smartweed (Polygonum spp.), thistle (Cirsium spp.), wild aster (Aster spp.), milkweed (Asclepias syriaca), bee-balm (Monarda didyma), spotted knapweed (Centaurea maculosa), black-eyed susan (Rudbeckia hirta), queen anne's lace (Daucus carota), daisy fleabane (Erigeron annuus), showy goldenrod (Solidago speciosa), rough-stemmed goldenrod (Solidago rugosa), Canada goldenrod (Solidago canadensis), reed canary grass (Phalaris arundinacea), ox-eye daisy (Chrysanthemum leucanthemum), Kentucky bluegrass (Poa pratensis), bindweed (Convolvulus spp.), common yarrow (Achillea nudifolium), Canada wild rye (Elymus canadensis), bedstraw (Galium spp.), Little bluestem (Andropogon scoparius), garden phlox (Phlox paniculata), timothy (Phicum pratense), wild strawberry (Fragaria virginiana), whorled milkweed (Asclepias verticillata), butterfly weed (Asclepias tuberosa), maiden pink (Dianthus deltoids), deer-tongue grass (Panicum clandestinum), crab grass (Digitaria sanguinalis), smooth brome (Bromus inermis), meadow fescue (Festuca elatior).

Several shrub species of varying degrees of density have become successfully established within the fields/meadows and wetland. Gray-stemmed dogwood (Cornus racemosa) is represented by several age classes and by far is the most dominant shrub species. Other species observed include meadowsweet (Spirea alba), arrowood viburnum (Viburnum recognitum), staghorn sumac (Rhus typhina), brambles (Rubus spp.), honeysuckle (Lonicera spp.), and multiflora rose (Rosa multiflora). Scattered tree species consist of red cedar (Juniperus virginiana), black locust (Robinia pseudocacia), gray birch (Betula populifolia), sugar maple (Acer saccharinum) and white pine (Pinus strobus).

Some of the fields are shifting to a more scrub-shrub habitat with open pockets of field/meadow. The shrub layer ranges from 6 feet in height to over 15 feet in height. Other field areas have been mowed in the past, and others are representative of a younger plant succession stage that is predominately grasses and forbs, with minimal shrub thickets, and occasional clumps of tree species.

Wetland

The wetland and watercourse present on the subject parcel is the second largest habitat represented and comprises 99.7 acres. The wetland is classified as a palustrine forested wetlands complex with some representation of scrub-shrub habitats and wet meadow areas. This wetland complex includes an intermittent watercourse that generally flows from north to south. The intermittent watercourse, (Van Anden Kill), originates from surface water runoff and groundwater seeps and meanders through the wetland.

The forested wetland complex is similar to the red maple - hardwood swamp community common to the Northeast. Red maple is the dominant tree and sapling species within the wetland on the property. Other tree species observed included American elm, green ash (Fraxinus pennsylvanica) and swamp white oak. Several upland tree species were also observed along the outer edges of the wetlands. The shrub layer consisted predominately of spicebush, arrowood viburnum, and witch hazel. Ground layer species observed included skunk cabbage (Symplocarpus foetidus), sensitive fern (Onoclea sensibilis), sphagnum moss (Sphagnum spp.), cinnamon fern (Osmunda cinnemomea), garlic mustard, and various sedges (Carex spp.), and rushes (Juncus spp.). The canopy coverage for the red-maple dominated swamps is fairly uniform and closed with some scattered pockets that allow for successful establishment of shrubs and herbaceous vegetation.

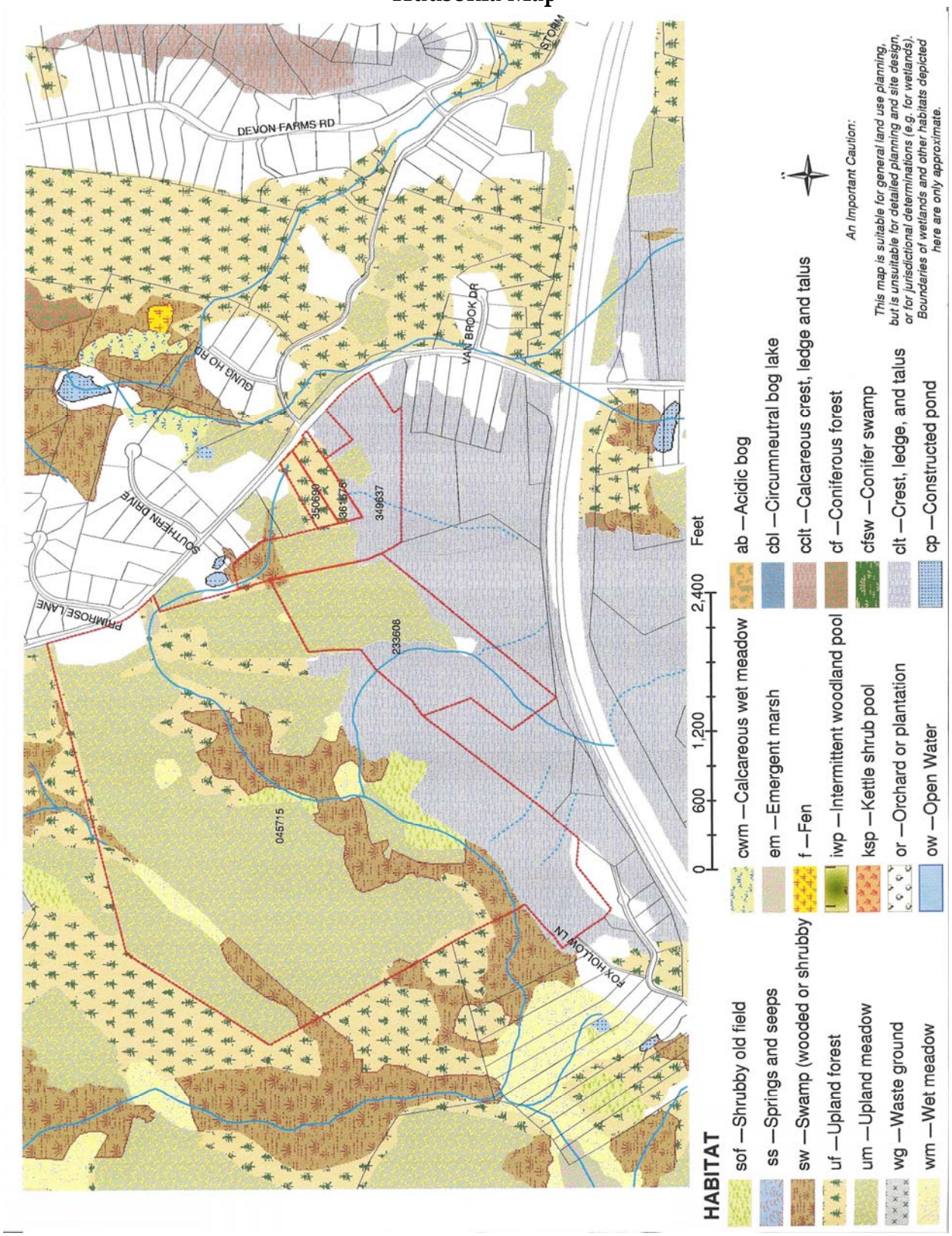
Deciduous Forest

The deciduous forest community that is present occurs on relatively well-drained, rocky soils on the steep slopes at the southern section of the property. This habitat type would be classified as a mesophytic hardwood forest that occurs on well-drained soils. A minor percentage of the building portion of the property consists of forested habitat. Dominant tree species observed include red oak (Quercus rubra), red maple (Acer rubra), tulip tree (Liriodendron tulipifera), white ash (Fraxinus americana), shagbark hickory (Carya ovata), pignut hickory (Carya glabra), American beech (Fagus grandifolia), black birch (Betula lenta), and American elm (Ulmus americana). Understory trees that were present consisted of smaller individuals of the same species as the dominant trees. Ironwood (Carpinus carolinana) and scattered white pine (Pinus strobus) were other understory trees identified. The shrub layer consisted primarily of spicebush (Lindera benzoin), witch-hazel (Hamamelis virginiana), burning bush (Euonymus atropurpureus), Japanese barberry (Berberis thunbergii) and mulitflora rose (Rosa multi flora). Oriental bittersweet (Celastrus scandens), poison ivy (Rhus radicans) and wild grape (Vitis spp.) were also present. Common groundlayer species observed include Christmas fern (Polystichum acrostichoides), garlic mustard (Aliaria petiolo), Virginia creeper (Parthenocissus quinquefolia), wood ferns (Dryopteris spp.), and white wood aster (Aster divaricatus).

The findings of the flora and fauna surveys were similar in almost all respects, with exception to the forest community on site, which is generally second growth and consists of mixed age classes. The survey indicated that the average diameter at breast height (DBH) ranges from 8 inches to 18 inches. Several larger trees of greater diameter (20-36 inch DBH) are also scattered throughout the forested areas. The forest floor consists of a good level of leaf litter, and numerous fallen logs and tree limbs. Boulders and rock outcrops, and sporadic stonewalls are present.

The plant list of actual species identified during the vegetative survey is found in Appendix I. Some or all of these species can be expected to occur on the subject property over the course of a year.

Figure 3.6.1-1
Hudsonia Map



Wildlife

Like the study of vegetation on the project site, separate surveys were conducted to explore potential wildlife present on site and evaluate potential impacts of development of the site on wildlife species and their habitats. The potential for endangered and threatened species on the project site was also examined during the wildlife surveys. The surveys were conducted during the months of April, May, and June of 2002.

Direct observation for wildlife species included visual as well as auditory observation, and evidence of animal signs such as feathers, tracks, droppings, and bones. No animals observed during the investigation were collected as specimens. Mammals were surveyed by active ground searches looking for evidence of any animal activity. Tracks, scat, feathers, bones were examined and recorded where possible. Birds were surveyed by direct visual sightings or auditory responses in the form of songs and calls. Amphibians and reptiles were inventoried by direct ground searches of downed logs, stumps, leaf litter, and rock piles to determine the presence or absence of individual species. All animals observed were identified and recorded to genus and species name.

The survey of the project site was conducted by Ecological Solutions, LLC and yielded an inventory of 42 species, including 27 avian species, 10 mammalian species, one reptile, 3 amphibians, and one invertebrate. This list includes only species actually observed on the site. The relatively low diversity of observed species is primarily a function of the time of year of the survey. A list of wildlife species either present on the site or potentially present on the site during a typical year is found in Appendix I.

Endangered and Threatened Species

None of the species identified and potentially identifiable on the site was identified as an endangered, threatened, or state-listed species of special concern. Specific surveys for Blanding's Turtle (Emydoidea blandinghii) habitat yielded no sign of suitable habitat for species on the building portion of the site.

Birds

The surveys estimated that a total of approximately 100 different species of birds are likely to be observed throughout the property during the course of a year. Of this total approximately 65-70 species are likely to be summer residents and utilize the habitats for breeding and rearing of young. The majority of these species are relatively common species that would be expected to utilize the subject parcel. The extensiveness of the old fields and meadow habitat, the variety of age classes, and the amount of "edge habitat" available make this habitat very attractive to a variety of bird species. The fields and meadows provide sufficient diversity of nesting and escape cover, plus food and water

resources that are quite attractive to resident and migratory species of birds. As a result, several species that depend almost exclusively on old fields and meadow environments should be present during either spring/fall migration, during the summer breeding season, or during the fall and winter.

Aquatic Wildlife

Ecological Solutions, LLC conducted aquatic habitat assessments at two sampling locations on Van Anden Kill on June 15, 2002. These tests included a standard visual assessment and tests measuring the health of macroinvertebrates in the Creek, organisms that are an important link in the aquatic food web and indicators of point and non-point pollution sources. The standard visual assessment of the Creek indicated habitat conditions ranging from poor to fair and unable to support trout populations. Macroinvertebrate sampling at the two tested locations indicated minimal life in the Creek.

3.6.2 Potential Impacts to Terrestrial and Aquatic Ecology

Vegetation

As shown in Figure 2.5-1 *Cluster Subdivision Plan* and in Table 3.6.2-1 - *Existing and Proposed Vegetative Cover Types*, the proposed project would cause the removal of the existing vegetation for grading and the construction of roads and buildings on 147.92 acres (45.4% of the project area). No wetlands will be impacted as a result of the development. Loss of vegetation and wildlife habitat is the unavoidable result of the removal of topsoil and the replacement of vegetative cover by impervious surfaces. These areas will be replaced with cultural cover types, such as mowed lawn with trees, paved road, and other impervious surfaces.

The construction of impervious surfaces has several impacts that including reducing the available on-site vegetative habitat; compaction of soil layers; increasing the velocity of stormwater runoff; preventing the infiltration of water. An additional impact is the potential increase water temperature from runoff coming from the paved surfaces.

Loss of topsoil and vegetative cover removes the ability of the soil to retain nutrients. This can result in a reduction of the area's ability to recover from disturbances. Removal of upland and lowland plants can also directly and indirectly alter the composition wetland vegetation. Habitation of the proposed project site can have additional long-term impacts. Residential landscaping practices usually tend to replace native species with cultivars and ornamental plants. These species require more management than native species and may result in an unstable habitat. The resulting new community types tend to favor non-native plants and wildlife.

The proposed development would have several potential impacts on vegetation on the project site. Development activities have been planned to avoid wetlands and steep slopes the most sensitive areas on the property. These areas will also be provided with significant no-build buffers and a conservation easement to provide protection against impacts. Thus, no significant impacts to these resources are anticipated.

Wildlife

All Species

Direct impacts to wildlife from the proposed development will primarily be displacement. Since much of the site will be set aside for open space and the developed portion will not be completely cleared, all wildlife will not be displaced from the site. Some species found on the site are typically found in suburban settings and adapt well to proximal human habitation. These species will remain on the developed portion of the site, though likely in fewer numbers as availability of basic habitat features may decrease in the developed area.

Some wildlife species currently found on the site are intolerant of human disturbance or habitation and may be displaced from the developed portion of the site. Some of these individuals may attempt to move to adjacent habitats, where they will have to compete with resident individuals of the same species for the remaining habitat. Thus, secondary impacts from actions on the developed portion of the site may have a ripple effect that could extend to areas beyond the developed portion or beyond the project boundaries.

Although some wildlife impacts may result from the proposed development, there will still be sufficient wildlife habitat in, on, and surrounding the development area to allow for some relocation and resource reallocation by wildlife because all habitat on the site will not be eliminated. Therefore, the extent of mortality is not expected to significantly impact regional wildlife populations.

3.6.3 Terrestrial and Aquatic Ecology Mitigation Measures

Removal of existing vegetation is an unavoidable impact of developing this site. The proposed plan utilizes to the maximum extent practicable, existing cleared areas for development. As proposed 177.60 acres of vegetation on the 325-acre parcel will remain. The following construction and landscaping methods will mitigate the impacts of the removal of vegetation:

- Areas proposed for re-landscaping after being disturbed by construction activities should have the soil scarified and aerated prior

to hydroseeding. This would eliminate the effects of soil compaction and facilitate seed germination and seedling survival.

- Trees that are to remain and are located near construction activities would be protected from harm for both trunk and root systems by the erection of physical barriers, such as orange safety fencing, along the tree's drip line. The location of such fencing will be subject to examination by the Project Engineer.

- All trees proposed for removal will be marked by the contractor and reviewed by the Project Engineer to ensure preservation of as many existing trees as possible.

At least 55.2% of the site would remain undisturbed open space. (See Figure 1.1-2 *Open Space Map*.) Open space areas include a variety of vegetation types including evergreen and deciduous trees, brush areas, and various species of grasses including wetland grasses. Specifically, the plan proposes to maintain the trees that currently exist along the borders, including the existing trees along Route 52, that will providing screening for the residents adjacent to the site and for those traveling along Route 52. Within the subdivision, the Applicant will provide street trees on both sides of the street, inside of the street right-of-way that will be spaced approximately 50 feet on center. Street trees will include a combination of the following trees:

Acer saccharum - Sugar Maple

Acer rubrum - Red Maple

Quercus rubra - Red Oak

Quercus palustris - Pin Oak

Tilia americana - Redmond Linden

Fraxinus americana greenspire - Greenspire American Ash

Catalpa speciosa – Northern Catalpa

Gleditsia Triacanthos – Honey Locust

Platanus occidentalis – Sycamore

Liriodendron Tulipifera – Tulip

Carya ovata – Shagbark Hickory

Fagus grandifolia – American Beech

3.7 Vehicular Traffic and Roadways

3.7.1 Existing Conditions

Roadway Network

Excellent regional access to the site is provided via the Taconic State Parkway and Route 52. The Taconic State Parkway provides access to Poughkeepsie to the north as well as Interstate 84 and Westchester County to the south. Route 52 provides access to Putnam County to the east and Fishkill to the west.

The Taconic State Parkway northbound and southbound ramps intersect Route 52 at two signalized intersections. These intersections are coordinated daily from 3:30 pm to 6:30 pm and uncoordinated at all other times. The southbound ramp intersects Route 52 across from a State DOT access driveway. The DOT driveway is part of the signalized intersection but has minimal traffic volume. The parkway off-ramp consists of a 10 foot left turn only lane and a 12-foot thru right lane. A 12-foot lane for the on ramp is separated from the off ramp by metal guide rail. Westbound traffic on Route 52 accesses the southbound on-ramp via a 10 foot left turn lane, eastbound traffic access the on ramp via an 11-foot thru/right lane. Thru traffic at both Taconic ramps travels in 11-foot lanes with 3 foot paved shoulders. Traffic on the eastbound approach is separated by a painted median. The signal at this intersection is a three-phase signal with a 90 second cycle length, there is a north/south cycle an east/west cycle and a protected westbound left/thru cycle.

The northbound Taconic State Parkway ramps intersect Route 52 across from a commuter park-and-ride lot east of the intersection of the Taconic southbound ramps. The northbound off ramp consists of a 10-foot left thru lane and an 11-foot right turn lane. The on ramp consists of one 11-foot wide lane accessed by an 11 foot eastbound thru right lane and a 10-foot westbound left turn lane off of Route 52. The commuter Park & Ride lot is accessed by an eastbound 10 foot left turn lane and a westbound 11-foot thru right lane. Traffic exits the commuter lot via a 12 foot left thru right lane. A painted double yellow line separates Route 52 traffic. The Parkway exit and enter ramps are separated by metal guide rail. The signal at this intersection

is a four-phase signal with an east/west left turn advance, a north south split and a cycle length of 90 seconds. The posted speed limit for Route 52 at the parkway intersections is 45 miles per hour.

East of the Taconic State Parkway, Carpenter Road intersects Route 52 as an unsignalized T-intersection. Eastbound and westbound entering and exiting traffic for Carpenter Road is separated by a triangular raised median. Vehicles traveling to and from the east use the right side of the intersection. Vehicles traveling to and from the west use the left side of the intersection. Thru traffic on Route 52 travels in 11 foot thru lanes and is separated by a painted double yellow line. Both sides of the road have 3 foot paved shoulders. Carpenter Road consists of 10-foot lanes separated by a painted double yellow line. The condition of the pavement and painted markings at this intersection is good.

Route 216 intersects Route 52 east of Carpenter Road as an unsignalized T-Intersection. Route 216 approaches Route 52 from the north and east, intersecting diagonally with Route 52. Route 216 provides 11-foot lanes that have 2 foot paved shoulders and are separated by a painted double yellow line. Route 52 consists of 12 foot thru lanes that have 4 foot painted shoulders and are separated by a painted double yellow line. Pavement and painted markings at this intersection are in good condition.

The intersection of Route 52 and the northern site roadway can be seen in Figures 15 and 16 (2008 Build Volumes). The site roadway will intersect Route 52 as an unsignalized T-Intersection. At this intersection Route 52 consists of 12-foot thru lanes that have 4 foot paved shoulders and are separated by a painted double yellow line.

Stormville Mountain Road intersects Route 52 in two places. The first intersection we will refer to as the west intersection of Stormville Mountain Road and Route 52, and is located between the two site driveways. The second intersection is located between the intersections of Route 52/Leetown Road and Route 52/Milltown Road. This intersection will be referred to as the eastern intersection of Stormville Mountain Road/Route 52.

The west intersection of Stormville Mountain Road/Route 52 is an unsignalized T-Intersection with Stormville Mountain Road joining Route 52 from the north. Stormville Mountain Road is small paved road with no pavement markings and is in fair condition. The approach to Route 52 has a 10% grade. At this intersection Route 52 consists of a 15-foot eastbound lane and an 11-foot westbound lane that have 5 foot paved shoulders separated by

a painted double yellow line. Route 52 slopes westbound with a 9% grade. Pavement condition and painted markings are good.

The southern site roadway intersects Route 52 southeast of the western intersection of Stormville Mountain Road/Route 52 in an unsignalized T-Intersection. The site roadway will approach from the south. At this intersection Route 52 consists of two 11-foot eastbound lanes and one 11-foot westbound lane that have 5 foot paved shoulders and are separated by a painted double yellow line. Pavement and painted markings are in good condition. Route 52 slopes west with a 9% grade.

Route 52 continues east from the southern site roadway as a three-lane road with two eastbound lanes and one westbound lane that have paved shoulders and are separated by a painted double yellow line. The pavement and painted markings are in good condition, slopes vary from 6% to 0% the posted speed limit is 55 miles per hour.

Leetown Road intersects Route 52 from the south as an unsignalized T-Intersection. Leetown Road is small paved road with no markings. Where Leetown Road intersects Route 52 it is 50 feet wide and has a 3% grade. At this intersection Route 52 consists of one 12-foot eastbound lane, one 11-foot eastbound lane and one 11-foot westbound lane that have paved shoulders and are separated by a painted double yellow line.

Route 52 continues east form Leetown Road to the eastern unsignalized T-Intersection of Stormville Mountain Road/Route 52. Stormville Mountain Road is paved, has no painted markings and approaches Route 52 from the north with a 9% grade. At this intersection Route 52 consists of an 11-foot eastbound lane and 11-foot westbound lane that have 3 foot paved shoulders and are separated by a painted double yellow line. The condition of pavement and painted markings at this intersection is good.

Milltown Road consists of a 12-foot northbound lane and an 11-foot southbound lane that have 1 foot paved shoulders and are separated by a painted double yellow line. Milltown Road intersects Route 52 from the south with a 2% grade. Route 52 consists of one 11-foot eastbound lane and one 11-foot westbound lane that have 3 foot paved shoulders and are separated by a painted double yellow line. The pavement and painted markings at this unsignalized intersection are in good condition.

Continuing southbound along Route 52, Ludingtonville Road intersects this route at an unsignalized T-intersection. The Northbound lane of Route 52 has

a grade of 1%, while the southbound lane has roughly a 3% grade, intersected by a 2% grade on Ludingtonville Road. Route 52 at this intersection consists of a single 11-foot northbound lane with roughly 8-foot shoulders and a single 11-foot southbound lane with roughly 10-foot shoulders, all of which are separated by a double yellow line. Ludingtonville Road consists of a single 12-foot lane and a 12-foot shoulder on either side for both its eastbound and westbound movements, and is also separated by a painted double yellow line.

Turning onto Ludingtonville Road, this roadway intersects Interstate 84 at two unsignalized intersections, namely I-84's eastbound and westbound entrance and exit ramps.

Ludingtonville Road first intersects Interstate 84's eastbound ramps, where the off-ramp provides a southbound egress, and the on-ramp a wide "northbound" ingress. I-84 eastbound off-ramp is a single 11 foot lane with a 10 foot paved right shoulder and a 5 foot paved left shoulder, which also applies conversely to the on-ramp. Ludingtonville Road consists of a single 12-foot lane in both the eastbound and westbound direction, yet has different "paved" shoulder widths, varying from 3 to 12 feet. Both directions of Ludingtonville Road yield 1% grades, whereas both ramps have a 3% grade, which increases until they intersect I-84, where they level-out.

Going under the overpass, Ludingtonville Road again intersects Interstate 84, at the westbound on/off ramps. Arriving off the ramps at a 3% grade, both the "southbound" on-ramp and "northbound" off-ramp have similar lane attributes, while Ludingtonville Road holds similar results. The northbound off-ramp consists of a 13-foot single lane, with roughly 12-foot paved left shoulder and a 5 foot paved right shoulder. The southbound on-ramp is conversely the same. Ludingtonville Road provides a single lane, roughly 12-foot in both the westbound and eastbound directions, with varying widths of "paved" shoulders, which overall, is roughly 12 feet each.

Existing Traffic Volumes

Existing Traffic Volumes were determined based on manual turning movement counts performed at the following intersections on June 4 and 5, 2002, with some field verification performed on 06/26/2003.

- Route 52/Taconic State Parkway southbound ramps
- Route 52/Taconic State Parkway northbound ramps
- Route 52/Carpenter Road

- Route 52/Route 216
- Route 52/Stormville Mountain Road (east end)
- Route 52/Leetown Road
- Route 52/Stormville Mountain Road (west end)
- Route 52/Milltown Road (CR 30)
- Route 52/Ludingtonville Road
- Ludingtonville Road/Interstate 84 Eastbound Ramps
- Ludingtonville Road/Interstate 84 Westbound Ramps

For the purpose of this analysis peak hours of 7:30-8:30 AM and 4:30-5:30 PM on a weekday have been considered. These hours represent the two busiest times of a normal weekday. The counted volumes were balanced conservatively between the Taconic Parkway Northbound and Southbound ramps and between Taconic Parkway Northbound ramp and Carpenter Road and most other intersections that did not have significant traffic activities between the analyzed intersections. These balanced volumes and the other counted volumes have been used as existing volumes and can be seen on Figures 2 and 3 (2002 Existing Volumes).

Existing Intersection Operations

2000 Highway Capacity Manual Methodology

Analysis of the existing roadway network has been prepared utilizing Synchro software in accordance with the methodologies presented in the 2000 Highway Capacity Manual (HCM). The analysis considers the busiest 15 minutes within the peak hour period. Accordingly, the intersection operations during the entire peak hour are generally better than presented.

Signalized Intersections

The capacity of signalized intersections is based on an ideal saturation flow rate of approximately 1900 passenger vehicles per hour per lane. Adjustments are then made for lane width, grade, heavy vehicles, buses, left and right turns, on-street parking and pedestrians. The phasing of the traffic signals directly impact the capacity of individual lane groups. More complex traffic signals provide vehicular detectors which activate and extend phases as required based on varying vehicular demands. The coordination of traffic signals also impacts the delays experienced by motorists.

The results of the signalized analysis are summarized in delay which relates to level of service, as well as volume/capacity ratios. The delay is identified as control

delay, which includes deceleration, stops and acceleration. Levels of service range from A thru F. Level of service A is less than or equal to 10 seconds delay per vehicle. Level of service B is between 10 seconds and 20 seconds, level of service C is between 20 and 35 seconds. Level of service D is between 35 and 55 seconds. Level of service E ranges from 55 thru 80 seconds and level of service F exceeds 80 seconds.

The volume/capacity ratio shows the portion of capacity used, thereby indicating the available unused capacity. While many individuals and reviewing agencies identify traffic operations and impacts solely with levels of service, it is important to recognize the volume/capacity ratio. A lane group may have a 'poor' level of service while ample capacity is provided for the movement. This phenomenon can be experienced when a minor roadway intersects an arterial roadway and the cycle length is relatively long. If the minor roadway volumes are relatively low, the vehicles will have to wait a considerable time until a green indication is provided. Once the signal turns green, the few vehicles could have more than ample capacity to clear thru the intersection. Thus, the level of service does not directly relate to capacity.

Unsignalized Intersections

Unsignalized intersection analysis is based on analyzing gaps in opposing traffic. The operations of unsignalized intersections are impacted by vehicle types, grades, truck composition, opposing traffic and other factors. The unsignalized level of service ranges are lower than those associated with signalized intersections since it is felt that driver discomfort is greater when vehicles are waiting to be processed and searching for gaps in opposing traffic. For example, level of service E begins at 35 seconds and the level of service F is greater than 50 seconds for unsignalized intersections as compared to 80 seconds for signalized intersections.

A summary of existing intersection analyses can be seen in Tables 2 and 3 (Intersection Operations). While most intersections operate without lengthy delays, the Ludingtonville Road approach to Route 52 and the I-84 northbound ramp at Ludingtonville Road are shown to have significant delays during the Peak PM hour. Field observations indicate the delays are less than shown since the approaches often times operate as two lanes.

Site Access Analysis

As previously stated the north and south site access roadways will be unsignalized 'T' intersections off of Route 52. Intersection capacity analyses for the two site roadways were computed using Synchro software in accordance with the previously

stated methodologies. A summary of these analyses can be seen on Tables 2 and 3 (Intersection Operations). Upon review it can be seen that these two intersections will operate very smoothly with minimum delays and acceptable levels of service.

Sight Distance Analysis

Based on the Route 52 posted speed limit of 55 miles per hour, an 850-foot sight distance in each direction is desirable for the two proposed site roadways. An analysis of the sight distances at both roadways indicated some line of sight obstructions within 850 feet of the driveways caused primarily by vegetation. The desirable sight distance can be achieved by removing vegetation and performing minor grading in the vicinity of the site roadways. The 850 feet sight distance does not require grade adjustment since the Route 52 vehicles are not required to slow significantly within the intersection sight distance criteria. A stopping sight distance of 686 feet reflects the 9% down grade and a design speed of 60 miles per hour.

Accident History

An accident history of the intersections listed above and roadways between them has been included in the Transportation appendix (Appendix G). Review of the accident history has shown no major problem intersections or areas of roadway. Typical accidents consist of cars on Route 52 overtaking or making left turns off of Route 52, cars backing out of driveways onto Route 52, cars turning onto Route 52 from side roads and collisions with animals.

Pedestrian Environment

There is no significant pedestrian activity in the study area. Route 52 and the side roads considered in this study do not have sidewalks or crosswalks.

Public Transportation

Small-scale public transportation is provided by the Dutchess County LOOP Bus System. The LOOP 4 bus route travels from the Dutchess mall to Hopewell Junction gap, with two stops in the AM and two stops in the PM at Hopewell Junction and the IBM Office Park. Commuter buses leave from Poughkeepsie and Fishkill to take commuters south to New York City and White Plains. A commuter park-and-ride lot exists across from the Taconic State Parkway northbound ramp.

3.7.2 Potential Traffic and Transportation Impacts

Site Generated Traffic

The total site generated volumes for the proposed development are projected based on information published by the Institute of Transportation Engineers (ITE). The ITE publication Trip Generation, provides a variety of trip generation characteristics for numerous development types based on studies conducted throughout the United States. The projected site generated volumes for a land use of 175 single family homes are illustrated on Table 1 below (Site Generated Volumes).

Table 3.7.2-1 Site Generated Volumes

LAND USE	PEAK AM HOUR			PEAK PM HOUR		
	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
175 Single Family Homes	33	98	131	113	64	177

Origin and Destination Distributions

Anticipated origin and destination distributions associated with the proposed development have been determined based on existing traffic volumes, the distributions used by other proposed developments and major roadways in the vicinity of the site. It is anticipated that the distribution percentage will result in approximately 35% of the site generated traffic traveling east down Route 52 while 65% of the site generated traffic will travel north and south on the Taconic Parkway and west on Route 52. A full breakdown of these distributions can be seen on Figure 12 (Site Generated Distributions). The routing of the site generated volumes in accordance with the distributions percentages can be seen on Figures 13 and 14 (Site Generated Volumes).

Other Development Volumes

Future developments have been considered in vicinity of this site which would affect the intersections studied in this traffic report. The other developments which were included in this report consist of:

Stoneridge Subdivision
Hopewell Glen
Somerset Crossing
Twin Creeks
Lake Walton Park

Crooked Oaks
Moore Farm

Utilizing traffic studies previously prepared for these developments and the ITE Trip Generation Manual, Other Development Volumes & Moore Farm volumes were projected and overlaid on the existing roadway network (see Figures 6, 7, 8 and 9).

No-Build Traffic Volumes

To derive the 2008 No-Build Volumes the existing volumes were increased by a general growth rate of 2% per year to arrive at the 2008 General Growth Volumes (see Figures 4 and 5). Adding the 2008 General Growth Volumes to the Other Development Volumes and Moore Farm volumes results in the 2008 No-Build Volumes (see Figures 6, 7, 8 and 9). The 2008 No-Build volumes represent conditions without the development of the Summit Woods Subdivision.

Build Traffic Volumes

Adding the 2008 No-Build Volumes and Site Generated Volumes results in the 2008 Building Volumes (see Figures 15 and 16). The Build Volumes represent conditions anticipated upon the completion of the proposed project.

Findings

Intersection Capacity Analyses were computed with Synchro software in accordance with the previously stated methodologies presented in the 2000 Highway Capacity Manual. The capacity analyses are included within the traffic appendix. A summary of the 2002 Existing, the 2008 No-Build and the 2008 Build intersection capacity analyses can be seen on Tables 2 and 3 (Intersection Operations). These summary tables show some worsening of intersection operations between the 2002 Existing Volumes and the 2008 No-Build Volumes and generally minor changes in operation between 2008 No-Build Volumes and 2008 Build Volumes.

Impact of Construction Traffic

The majority of site contractors will arrive at the site prior to the Peak AM hour and depart prior to the Peak PM Hour. Heavy equipment will typically be brought to the site when earthwork activities are commenced and will remain on the site until the earthwork is completed, rather than brought to and from the site each day. Maintenance and protection of traffic will be provided to minimize disruptions to the motoring public.

Mitigation Measures

A direct comparison of the 2008 No-Build Condition and the 2008 Build Condition using the summary of intersection operations (Tables 2 and 3) generally shows no significant changes in delays or levels of service in the study area. Based on the capacity analyses performed in this report, no off-site improvements are recommended to be implemented directly as a result of the Summit Woods traffic. Consideration should be given to installing traffic signals at the Ludingtonville Road intersections with Route 52 and the I-84 ramps regardless of the subject development.

Figure 3.7.2-1
Existing Volumes AM Peak Hour

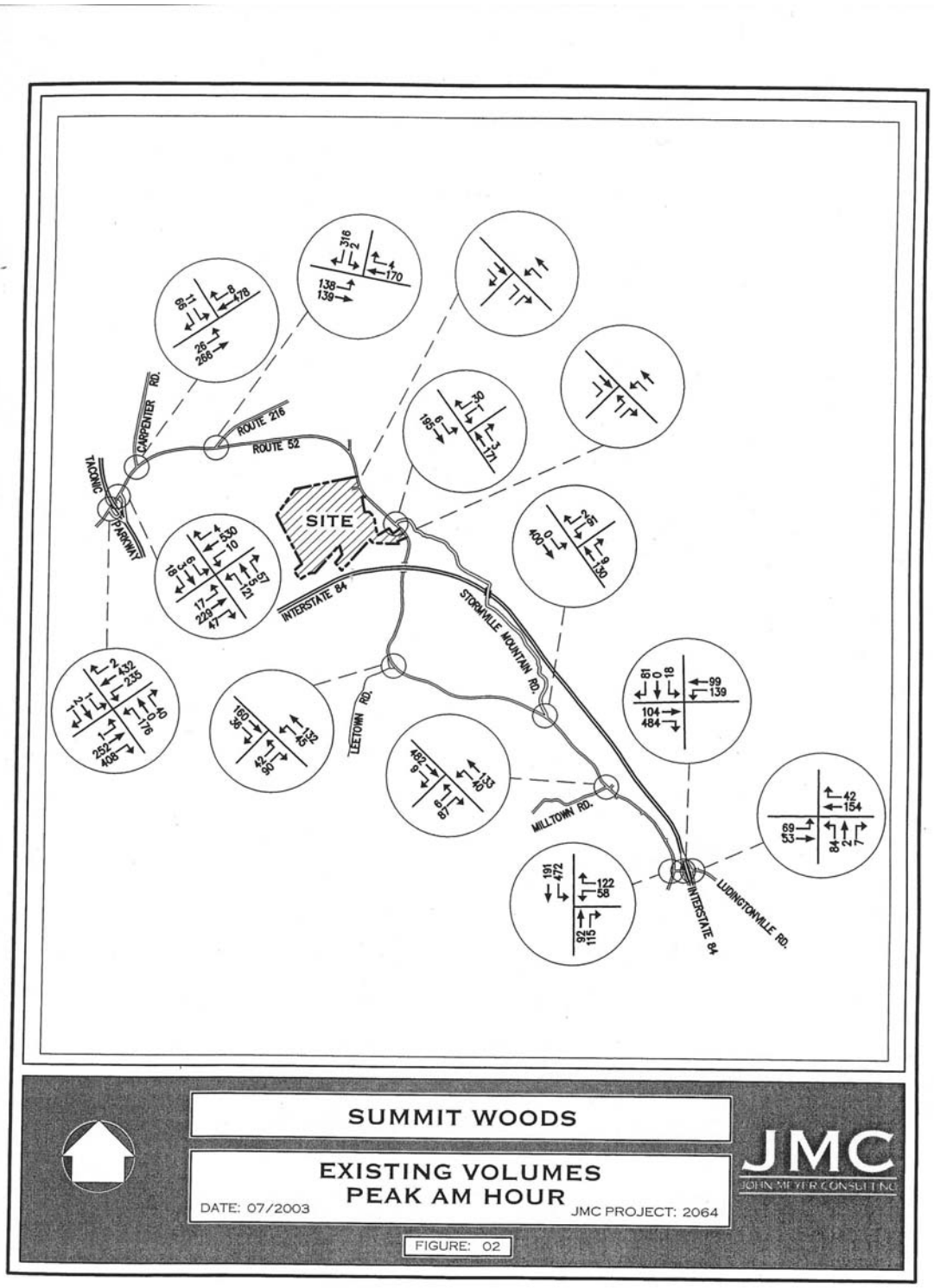

SITE
ROUTE 216
ROUTE 52
CARPENTER RD.
TACONIC PARKWAY
INTERSTATE 84
STORMVILLE MOUNTAIN RD.
LEETOWN RD.
MILLTOWN RD.
LUDINGTONVILLE RD.
SUMMIT WOODS
EXISTING VOLUMES
PEAK AM HOUR
DATE: 07/2003
JMC PROJECT: 2064
FIGURE: 02
JMC
JOHN MEYER CONSULTING

Figure 3.7.2-2
Existing Volumes PM Peak Hour

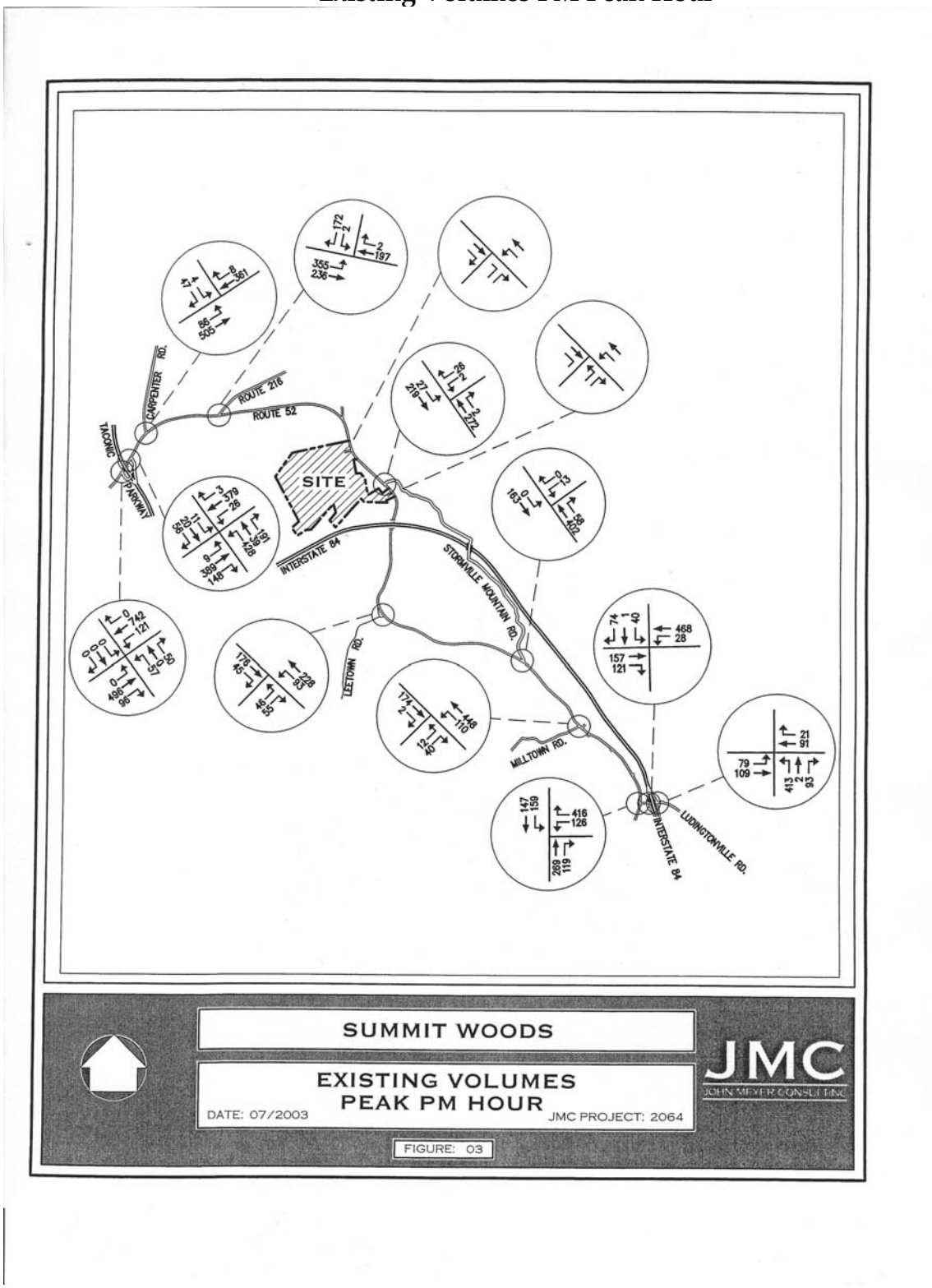


Figure 3.7.2-3
2008 General Growth AM Peak Hour

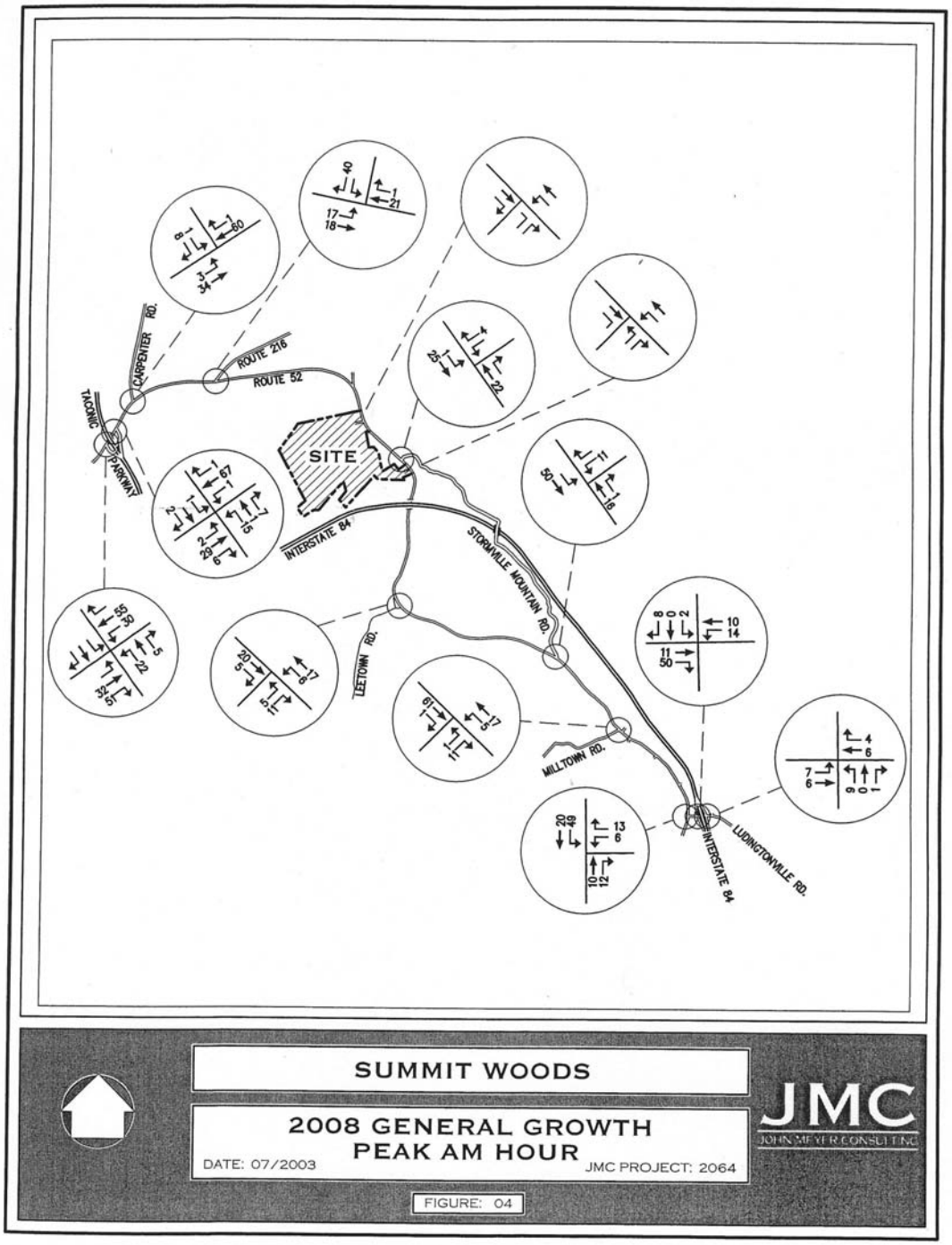


Figure 3.7.2-4
2008 General Growth PM Peak Hour

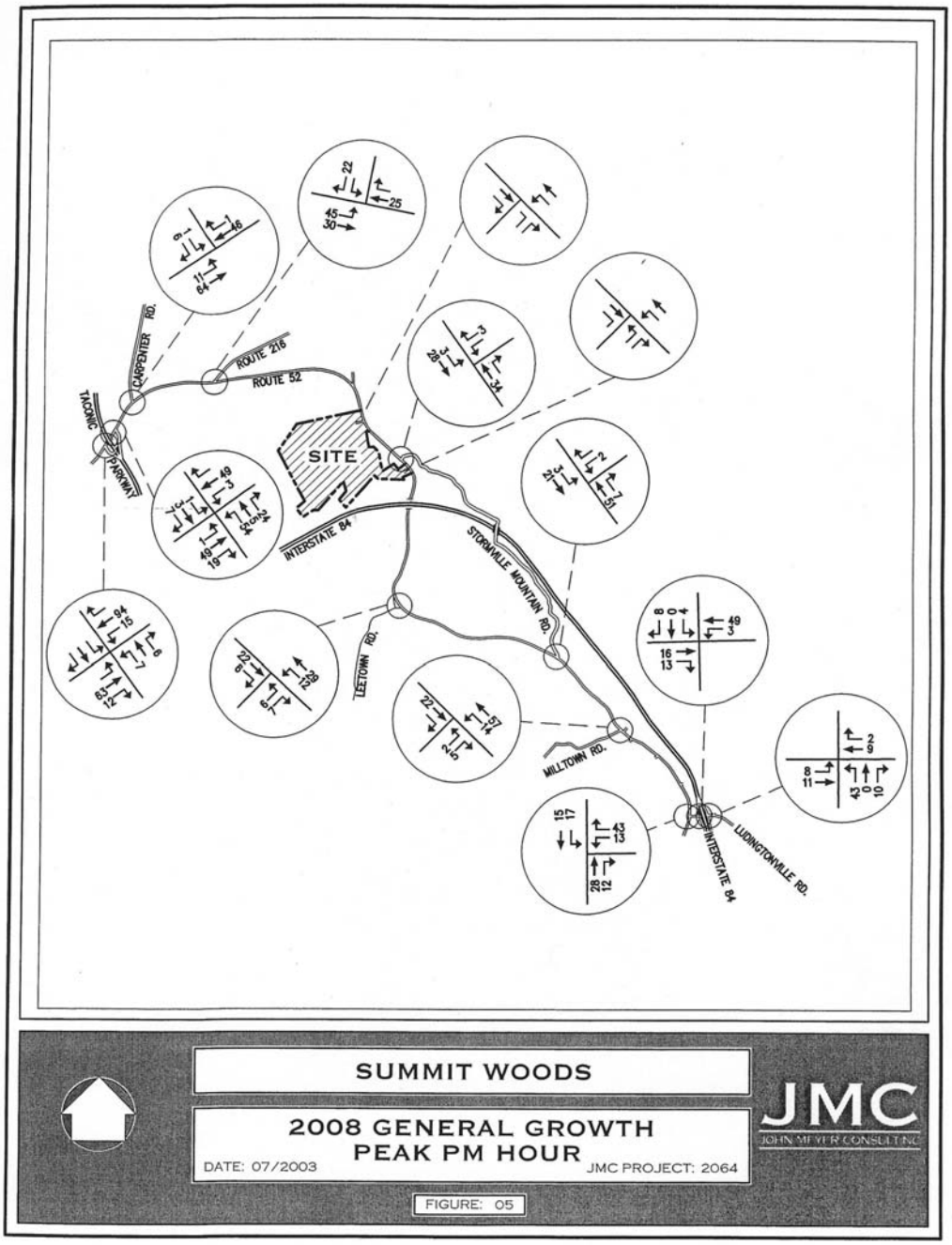


Figure 3.7.2-5 - Moore Farm Volumes AM Peak Hour

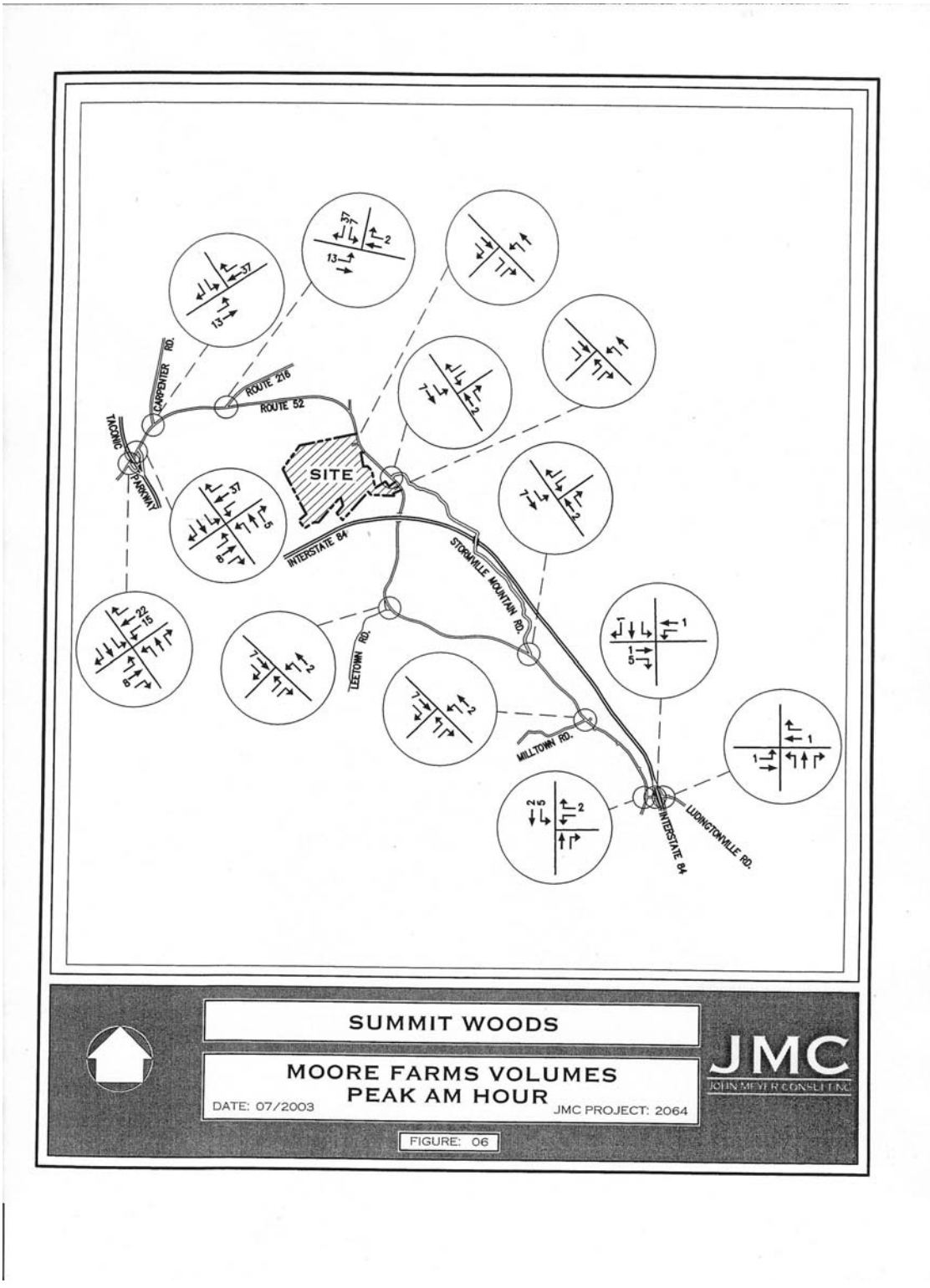


Figure 3.7.2-6 - Moore Farm Volumes PM Peak Hour

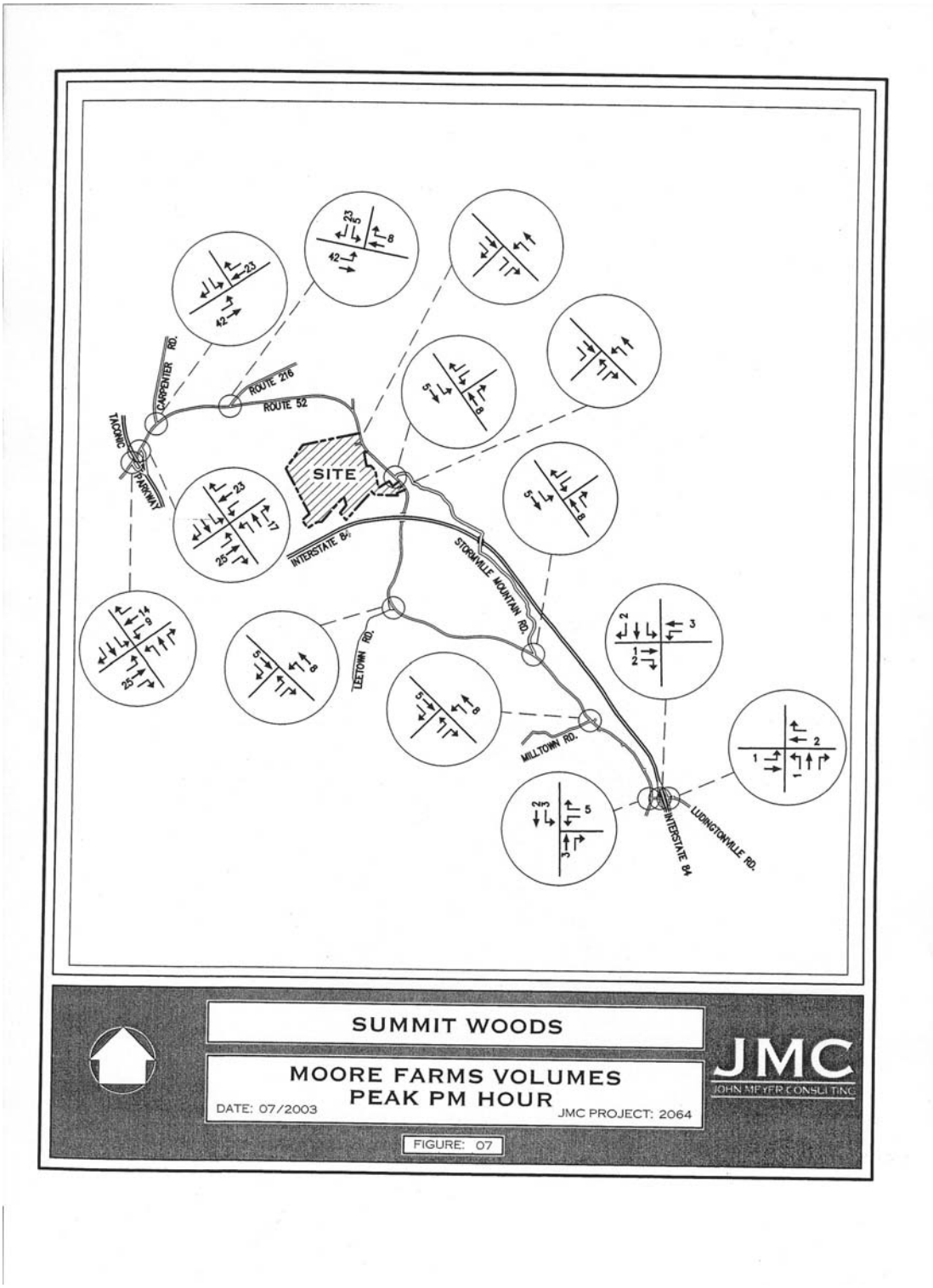


Figure 3.7.2-7- Other Development Volumes Peak AM Hour

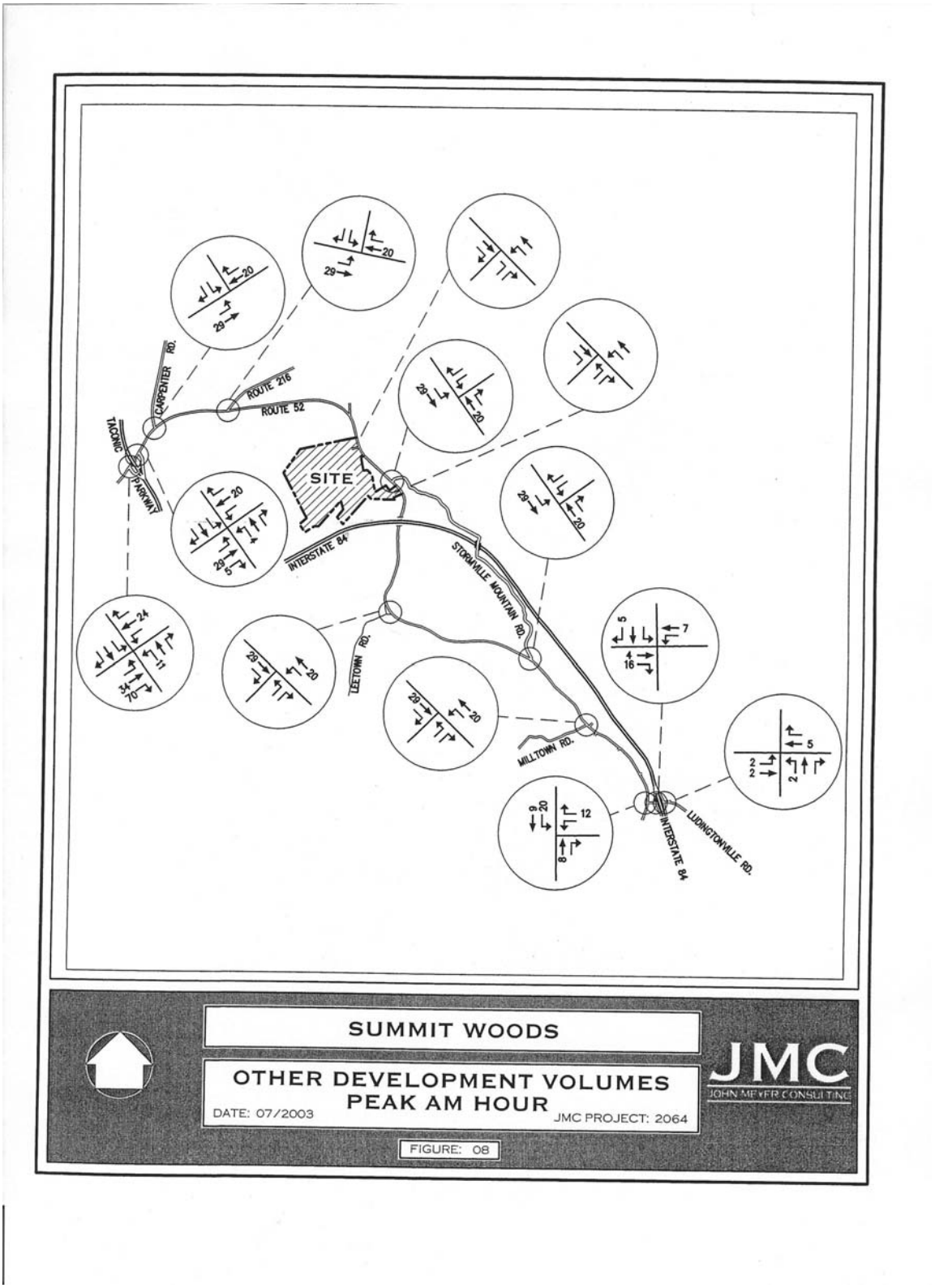


Figure 3.7.2-8
Other Development Volumes Peak PM Hour

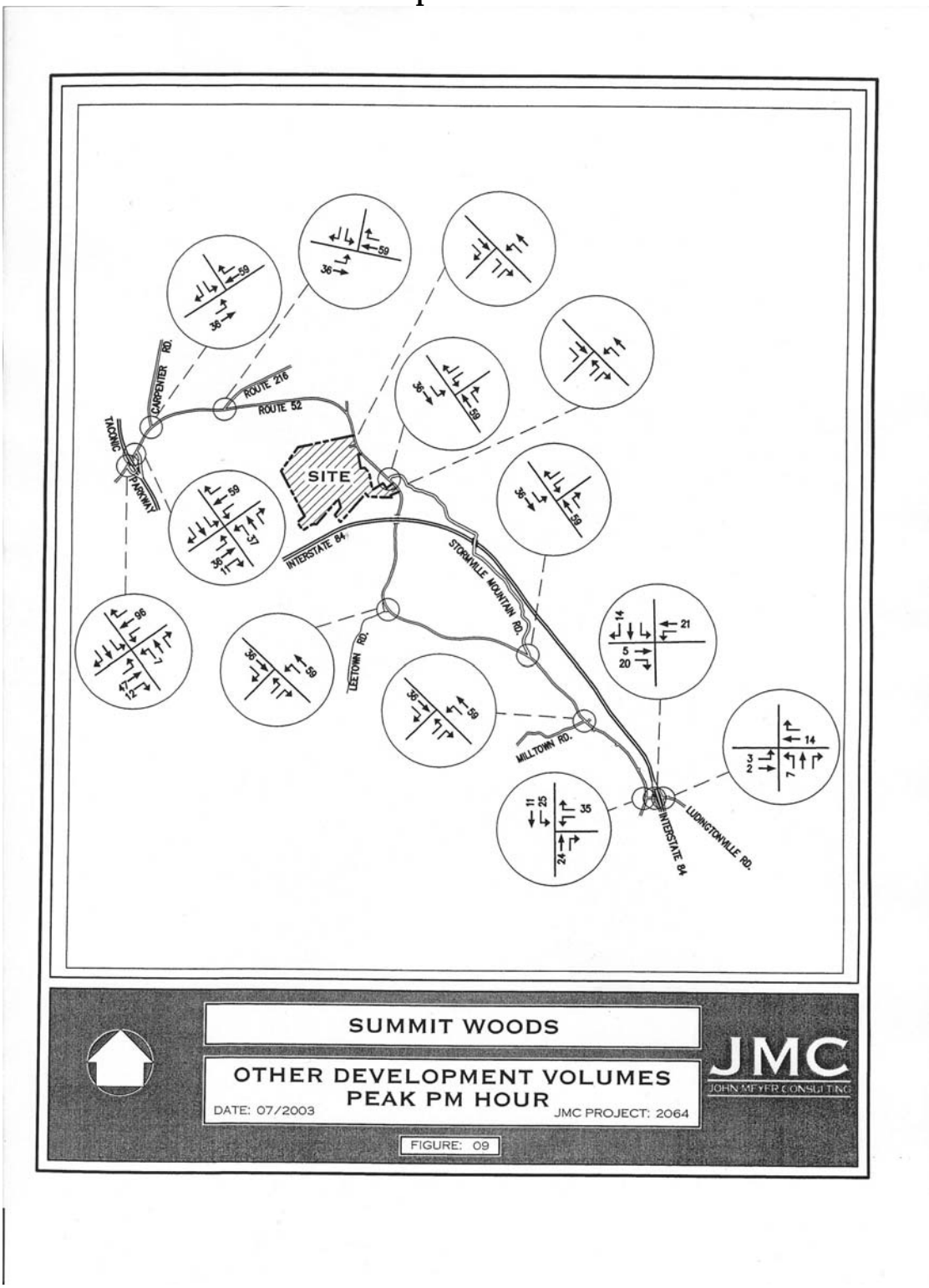


Figure 3.7.2-9
2008 No-Build Volumes Peak AM Hour

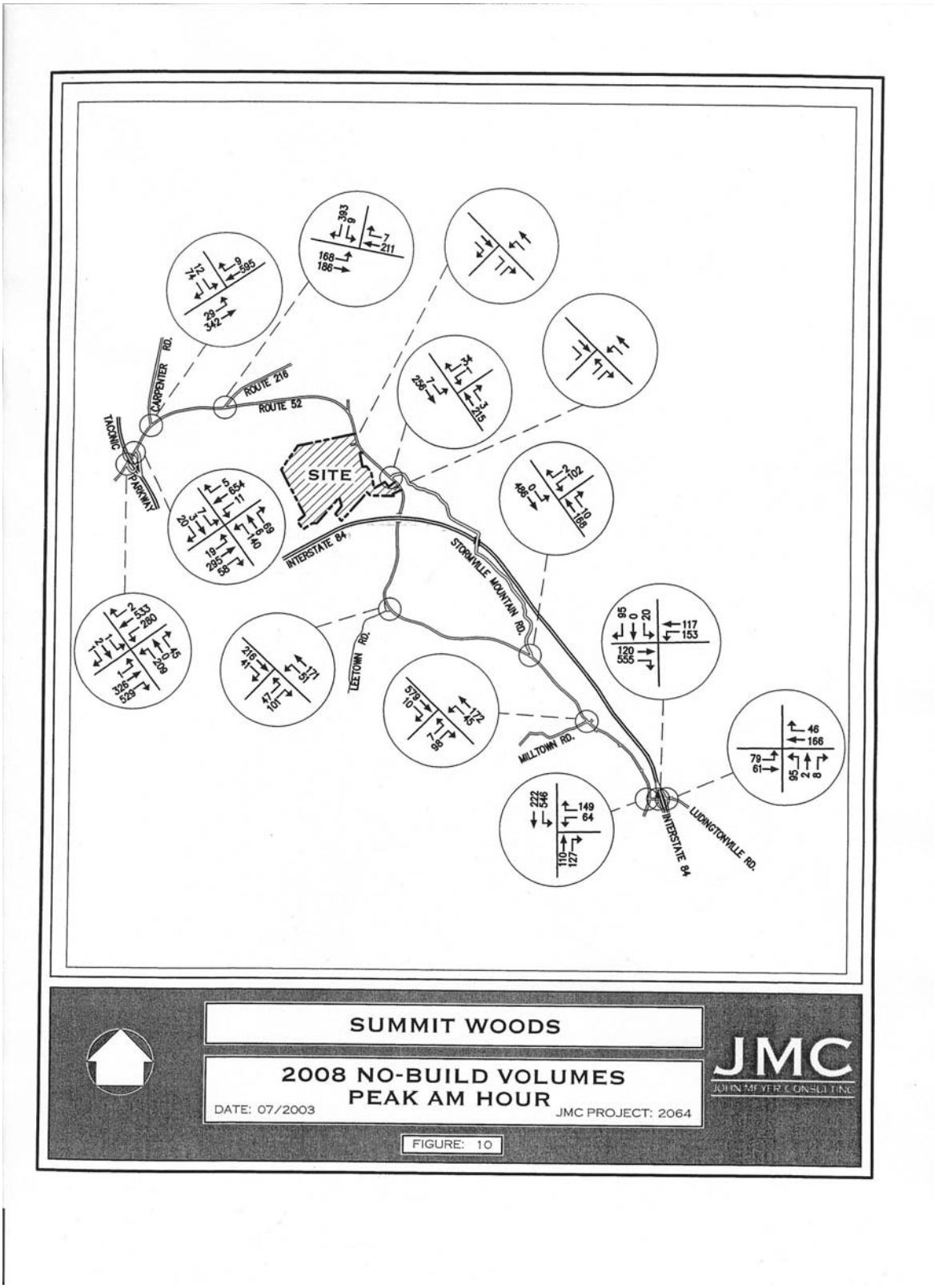


Figure 3.7.2-10
2008 No-Build Volumes Peak PM Hour

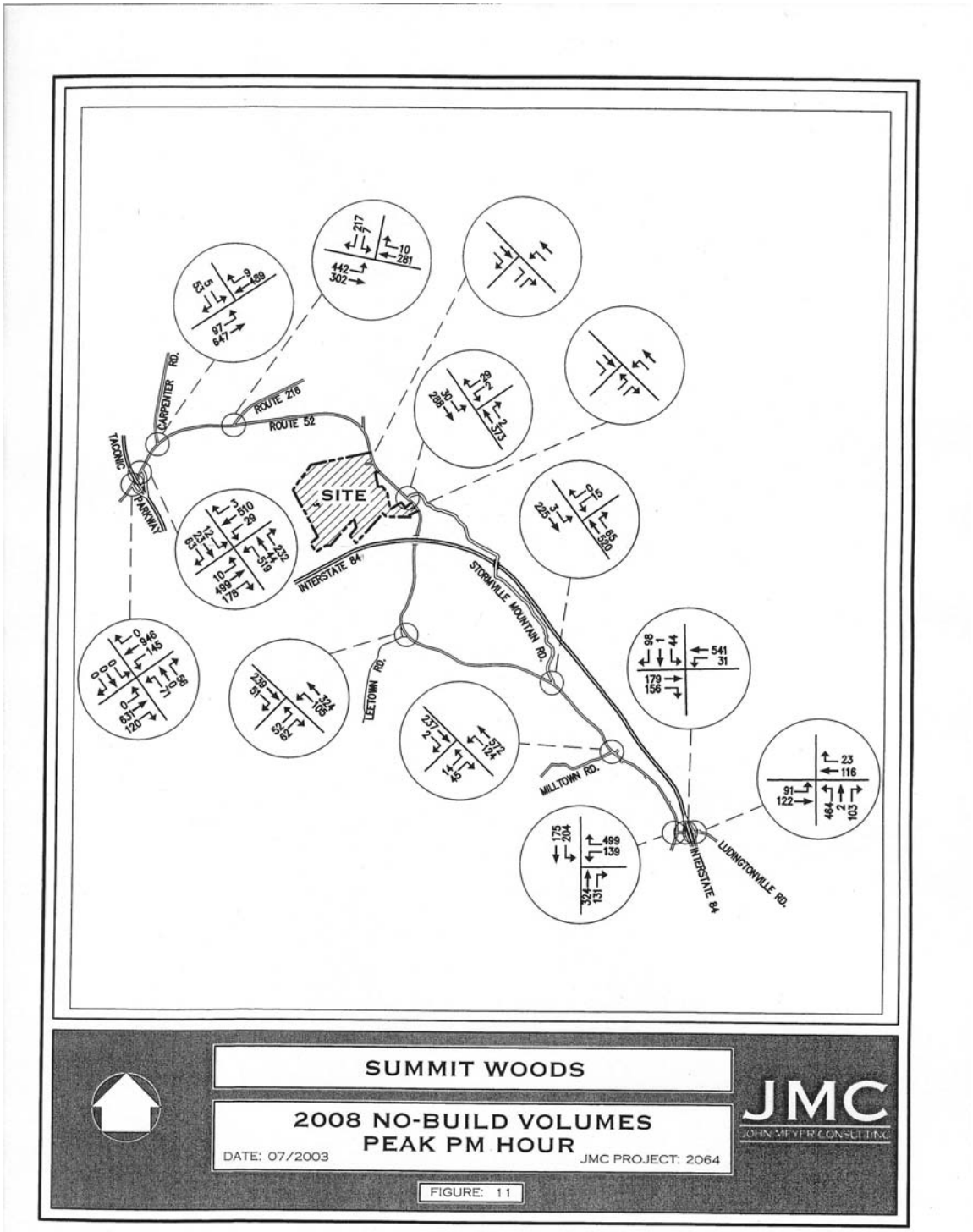


Figure 3.7.2-11 - Site General Distribution

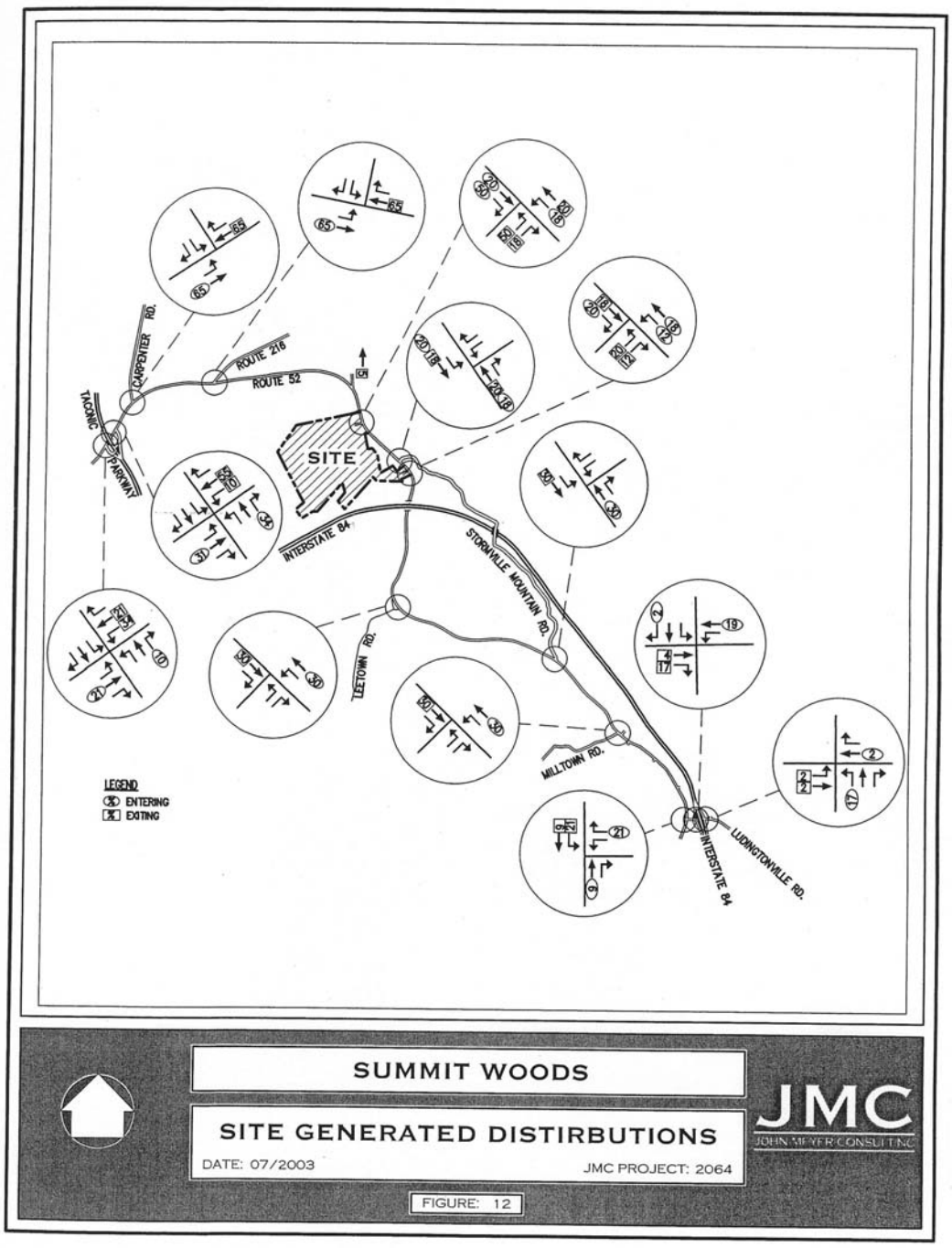


Figure 3.7.2-12
Site Generated Volumes Peak AM Hour

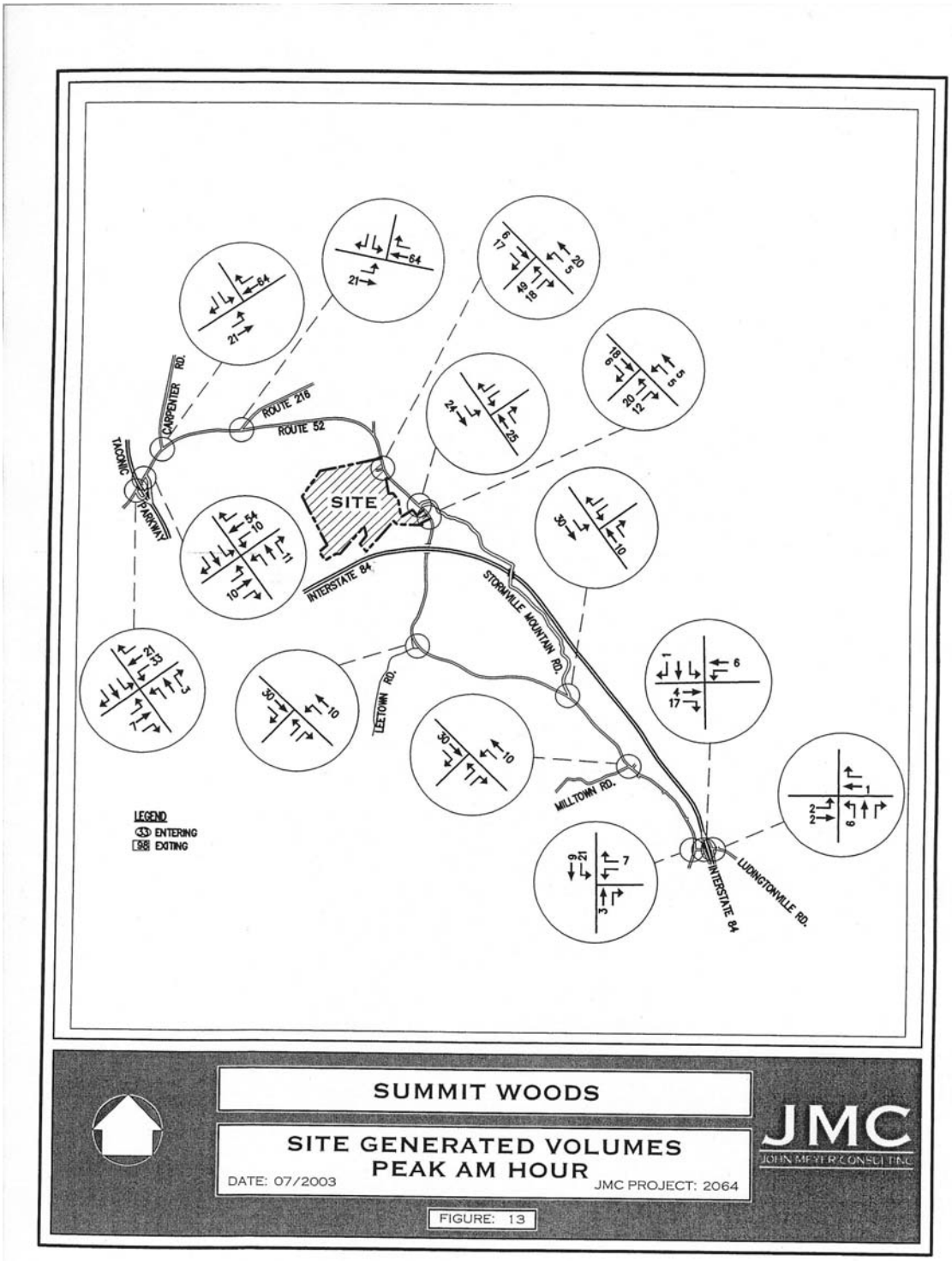


Figure 3.7.2-13
Site Generated Volumes Peak PM Hour

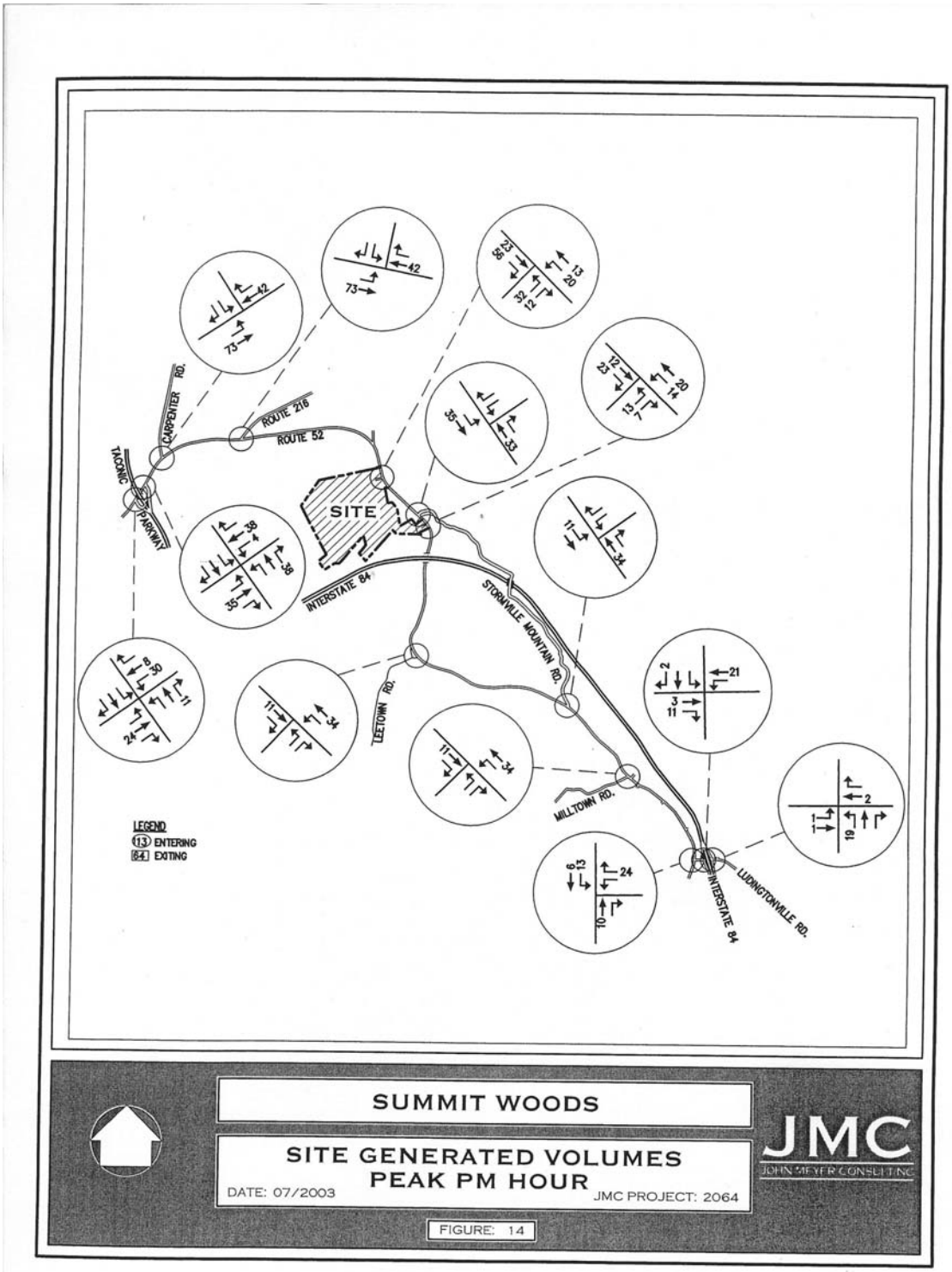


Figure 3.7.2-14
2008 Build Volumes Peak AM Hour

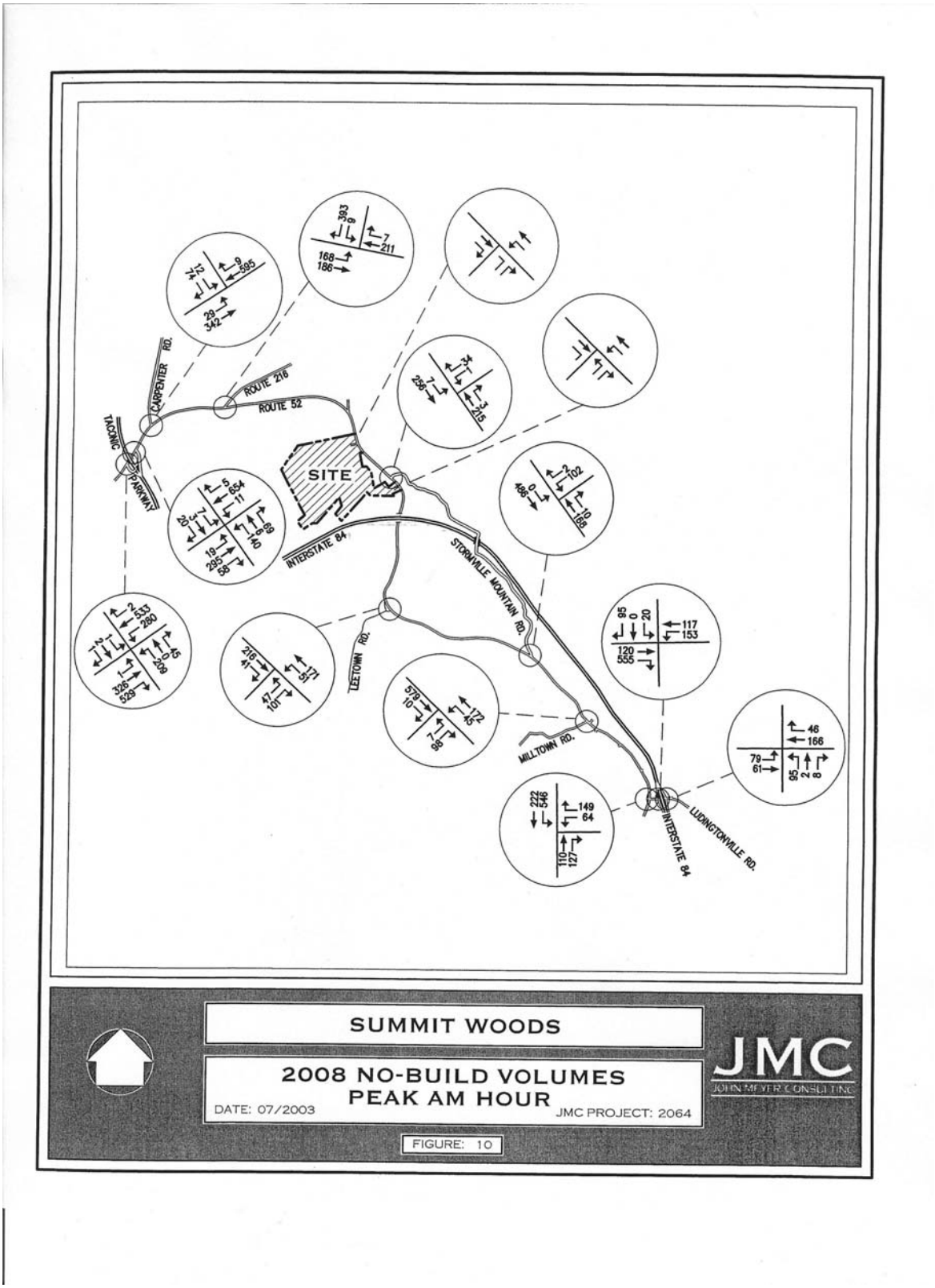


Figure 3.7.2-15
2008 Build Volumes Peak PM Hour

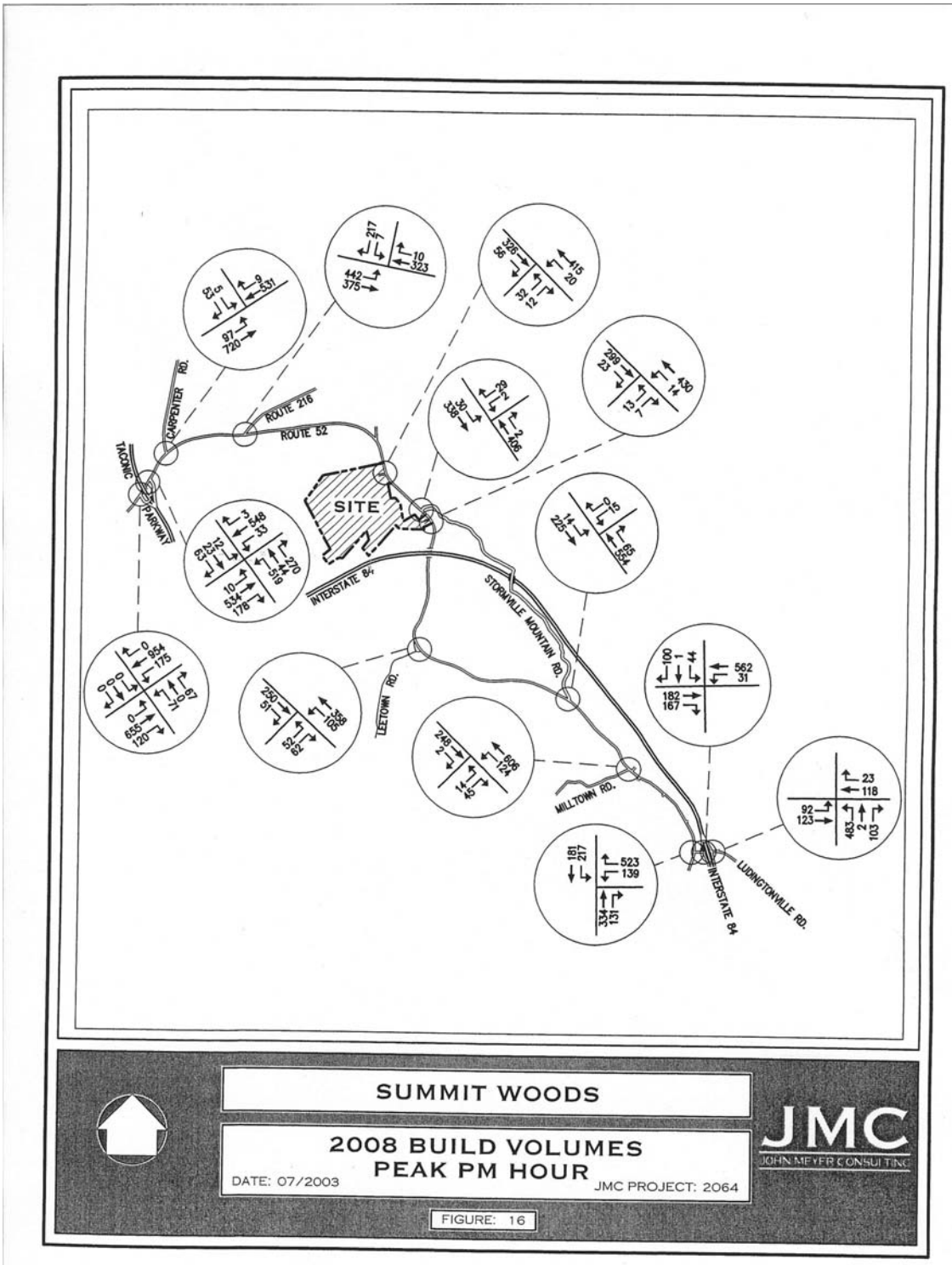


Table 3.7.2-1
Sight Distance Analyses for both Proposed Entrances

Item Analyzed	Required by New York State Department of Transportation	Provided
Posted Speed (Miles Per Hour)	55 mph	55mph
Downgrade Approach Stop Sight Distance	850 feet	850 feet with removal of existing vegetation and regrading at proposed intersection
Sight Line Stopping Distance Left	575 feet	575 feet
Stop Sight Distance	540 feet	540 feet

3.7.3 Traffic and Transportation Mitigation Measures

A direct comparison of the 2008 No-Build Condition and the 2008 Build Condition using the summary of intersection operations (Tables 2 and 3) generally shows no significant changes in delays or levels of service in the study area. Based on the capacity analyses performed in this report, no off-site improvements are recommended to be implemented directly as a result of the Summit Woods traffic. Consideration should be given to installing traffic signals at the Ludingtonville Road intersections with Route 52 and the I-84 ramps regardless of the subject development.

3.8 Socioeconomic

3.8.1 Existing Conditions

Taxes

In 2001, the full-assessed valuation for the Summit Woods property is $127,878. Using the 2001 tax rate of 105.44 per $1,000, total School and Town taxes amounted to $13,483. Of that total amount, Town taxes in 2001 amounted to approximately $2,047. School taxes for the Wappingers Central School District amounted to approximately $8,580. Taxes paid to the County amounted to approximately $2,262, while taxes for the local

fire district amounted to approximately $594.

School Costs

The adopted school budget for 2001-2002 had a total of $119,017,863 in revenues and expenditures. With an enrollment of 11,906, this computes to approximately $10,000 in overall school costs per student per year. The general instruction or marginal costs per pupil are less, representing about 63 percent of the total costs, or $7,000 per student per year.

Revenues from a variety of sources, including local property taxes and State-aid, met these costs. According to the Town's Comprehensive Plan, approximately $5,000 is the amount of dollars needed per student. This would equate to the local property tax dollars necessary to cover education costs associated with each public school student generated by new development in the District.

3.8.2 Potential Impacts

Tax Revenues

The estimated tax yield for the proposed development was determined in consultation with the Town Tax Assessor during July 2002. Based upon this meeting, it was assumed that each house on the Summit Woods property would pay approximately $7,000 in taxes to the Town, County, and School District.

175 Market rate units X $7,000 per unit = $1,218,000 Total

Of the total annual taxes generated by the proposed development, 16.1 percent or $196,098 would be provided to the Town and 63.5 percent, or $773,430 would be provided to the School District. Approximately 15.5 percent, or $188,790 would be provided to the County and 4.9 percent, or $59,682 would be provided to the local fire district.

3.8.3 Mitigation Measures

No mitigation measures are proposed.

3.9 Community Services

3.9.1 Existing Conditions

Public Safety

As of February 2000, the East Fishkill Fire District had a total of 400 enrolled Volunteers, with up to 130 active members. Headquartered approximately four miles from the project site at 2502 Route 52 in Hopewell Junction, the District includes firefighting, rescue squad, and fire police protection services. The Town of East Fishkill has four firehouses, each serving a specific district. These districts are Hopewell Hose, Stormville, Hillside Lake, and Wiccopee. The Hopewell Hose Company is located approximately four miles from the project site. It has approximately 40-50 volunteers on-staff.

The Fire District's equipment includes: 11 pumpers, each carrying approximately 1000 gallons of water; three tankers, each carrying approximately 2500 gallons of water; one aerial truck with a 95-foot ladder; four utility trucks; one hose truck; one squad truck; one rescue van; one fire investigation van; one fire police van; two ambulances; one District van; and, one Hazmat trailer. Of this equipment, the Hopewell Hose Company has two engine trucks, one ladder truck, one hose truck, and one utility truck which is primarily used for brush fires.

The East Fishkill Rescue Squad is a specified organization within the Town Fire District. The Squad shares its headquarters with the Fire Department and operates out of the four firehouses on a rotation basis. The Squad will operate out of only one firehouse at a specific time. It has two ambulances, one of which rotates among the different firehouses, depending upon which location is on call.

The East Fishkill Police Department is headquartered at the intersection of Route 52 and Route 376 in Hopewell Junction. The Department currently employs 25 sworn officers, including a Chief, two lieutenants, four sergeants, two detectives, and 16 patrol officers. Of the Police Department's 25 officers, there are eight certified police instructors, six bicycle patrol officers, four certified DARE instructors, two certified EMTs, three scuba qualified officers, and all are trained to operate the Department's defibrillators. Also, nine civilian employees deal with 24-hour dispatching and administrative activities.

The Police Department uses 10 marked patrol vehicles, two unmarked patrol vehicles, two marked 4-wheel drive patrol vehicles, four unmarked 4-wheel drive patrol vehicles, and an emergency services vehicle that is capable of providing crime scene, accident scene and disaster support. The Police Department receives an average of 1,800 service

calls per month, which are tracked and maintained by an updated computerized network.

Schools

The Summit Woods property is located within the Wappingers Central School District, a large school district that encompasses all or part of, the Town of East Fishkill, the Town of Fishkill, the Village of Fishkill, the Town of Poughkeepsie, the Town of Wappinger, and the Village of Wappingers Falls.

Enrollment

Although leveling off, School District enrollments for the past six years have experienced moderate increases, with a low of 11,291 students in 1997 and a high of 11,906 in 2001. The increase of 615 students in 6 years represents a growth rate of 5.5 percent. Of the various grade levels, the most significant increases in enrollments were at the high school level where an eight percent increase was realized from 1996 to 2001, when enrollments increased from 3,165 to 3,461 students. The middle school-junior high enrollments (6-8) increased from 2,597 to 2,772, a 6.7 percent growth rate. In the District's elementary schools, enrollments (K-5) were 5,159 in 1996 and 5,283 in 2001, representing a 2.4 percent growth rate. Enrollments in kindergarten were at a peak in 1996, with 839 students. In 2001, kindergarten enrollment was down by about nine percent with 762 students enrolled. In the four preceding years, kindergarten enrollment ranged from 770 to 799 students.

These figures show a pattern of past increases that are currently moving through the upper grades. This pattern, often called a mini-boom, is also reflected in projections, which show anticipated growth at the high school level in the short term, before declines are projected there as well.

Enrollment projections developed for the District in 2001 as shown on Table 3.9.1-1 *Enrollment Projection Summary*, suggest future declines at the lower grade levels, including a projection of 707 kindergarten students in 2005 through 2011. Similar declines in enrollment are projected for the elementary and junior high school age groups. The high school enrollment is projected to continue to increase to 2006 when a peak of 3,746 is projected. After 2006, a decline in high school enrollment is also projected. On an overall basis, enrollments are projected to decrease by 5.38 percent over the next 10 years.

Table 3.9.1-1
Enrollment Projection Summary[32]

Grade	2006 % Change				
Kindergarten	762	707	-7.2	707	Same
K-4	4,351	3,954	-9.12	3,948	-9.26
K-5	5,283	4,837	-8.44	4,767	-9.77
5-8	3,704	3,656	- 1.30	3,303	- 10.83
6-8	2,772	2,773	0.04	2,484	-10.39
9-12	3,461	3,796	9.68	3,600	4.02
K- 12	11,516	11,406	-0.96	10,851	-5.77
Grand Total	11,906	11,820	-0.72	11,265	-5.38

In preparing these projections, the School District examined demographic information and new construction activity. The projections include an average of 240 new residential units per year, district-wide.

School District Facilities in East Fishkill

Within the Town of East Fishkill, the Wappingers Central School District has four school buildings: the John Jay High School, the Van Wyck Junior High School, the Gayhead Elementary School and the Fishkill Plains Elementary School. Current enrollments and capacities at each of these schools is indicated below:

Table 3.9.1-2
School Enrollment and Capacities[33]

School	2002 Enrollment	Capacity
John Jay High School	1,874	1,865
Van Wyck Junior High School	1,237	1,369
Gayhead Elementary	1,096	1,l11
Fishkill Plains Elementary	672	620

Each of these schools is located to the west of the Taconic State Parkway. An expansion program is currently underway at the high school.

[32] *Enrollment Projections, 2002 to 2011, Wappinger Central School District, Facts, November 2001.*
[33] *Comprehensive Plan, 2002, Buckhurst, Fish, et. al*

Superintendent Wayne Gersen indicated that a school site east of the Taconic Parkway would be desirable. Without such a location, increased enrollment at the existing elementary schools would probably require redistricting for some East Fishkill students, moving them to school sites further to the west and increasing the amount of time that students spend on school buses in the morning and after school hours.

Currently there are 26 buses and four vans that transport students to and from John Jay High School. The morning commute averages 39 minutes with the return afternoon commute averaging 37 minutes. Van Wyck Junior High School uses 28 buses and five vans, with an average morning commute of 36 minutes and 33 minutes in the afternoon. Gayhead Elementary School has average morning and afternoon commute of 34 minutes with 18 buses and three vans. Fishkill Plains Elementary School uses 10 buses and four vans for transport, with an average morning commute of 30 minutes and an average afternoon commute of 32 minutes.

Public Recreation and Youth Activities

East Fishkill has a variety of public and quasi-public recreational facilities and programs. Public facilities include neighborhood parks and public recreational areas that serve the whole town, while quasi-public facilities include those operated by the Wappingers Central School District. Of the public facilities, there are three area parks within five miles of the Summit Woods property. The Hopewell Recreation Area, located on Route 376 in Hopewell Junction, is one of the most utilized parks in the Town's park system. Hopewell Recreation Area's facilities include ball fields, basketball and tennis courts, an ice skating pond, in-line skating rink, playgrounds and picnic areas. The Recreation Area also has a Community Center with programs for seniors and meeting space for community groups. Various sporting leagues utilize the Recreation Area throughout the year, while other programmed activities such as fishing and Friday entertainment nights are held seasonally.

Red Wing Park is the only park within East Fishkill that contains a public swimming pool. Located on Old Farm Road off of Route 82 in Hopewell Junction, the park has an eight-acre lake with a swimming beach. The Park also has a bathhouse, picnic areas, a playground, volleyball and basketball courts, and parking for more than 200 vehicles. Open between late May and early September, seasonal individual or family passes to the park are required. Programs at the park include swimming instruction; the Snappers youth swim team, occasional summer concerts, and summer fishing groups on Wednesday nights and Sunday mornings.

The Leetown Road Recreation Area is a five-acre neighborhood park in the southeastern part of the Town. The Recreation Area has one baseball field, one soccer field, one basketball court, and a playground.

Between five and ten miles from the project site, the Town's other parks include: Brettview Recreation Area, Wiccopee Recreation Area, and Whitepond Recreation Area. Located in the northwestern part of the Town, Brettview Recreation Area has four baseball fields, two of which have been set aside for youth use; two basketball courts; and, a playground. Fishkill Creek runs along the western border of the Recreation Area and provides opportunities for fishing and walking. Wiccopee Recreation Area is a four-acre park located on West Hook Road. The Recreation Area has one softball field with bleachers and scenic views of Honness Mountain.

Located in the southwestern portion of Town on Route 52, the 40-acre Route 52 Recreation Complex is the main facility in Town for adult and youth soccer programs. The Complex is divided into three areas of soccer fields, which surround an old farmhouse. The farmhouse will be deeded to the Town in the future and converted for recreational use. Among the three separate areas are six full-size soccer fields and several micro-fields used by children between five and eight years of age. Five of the six soccer fields are not irrigated and are used on a rotating basis. The Complex has a parking capacity of approximately 130 vehicles. The not for profit East Fishkill Soccer Club operates a seasonal intramural youth soccer league at the Complex, which currently enrolls more than 850 children per year. The Soccer Club also sponsors an annual youth soccer camp at the Route 52 Complex.

In addition to the Town's parks system, the Appalachian National Scenic Trail, a 2,100-mile trail running between Georgia and Maine, also meanders through East Fishkill. Until 1991 the trail was a patchwork of local roads, but today a new trail with a 500-foot wide protected corridor exists. Finally, the Wappingers Central School District provides limited youth recreational opportunities, including usage of playground equipment, ball fields and sports courts.

Like the East Fishkill Youth Soccer Club, a number of other clubs and associations operate both youth and adult sports programs and activities in the Town at different times of the year, including: girls softball; Little League baseball; youth and adult basketball; roller hockey; field hockey; lacrosse; golf and tennis instruction and camps; men's and women's softball; and Pop Warner football.

Library

The East Fishkill Library is located on Route 376, in Hopewell Junction. The Library recently underwent an expansion and now totals 12,000 square feet and contains over 60,000 books, 150 magazines subscriptions, seven newspapers, audiocassettes, records, and videotapes. The Library has a meeting room for the public to use and has also made Internet access available to the public. The Library serves a population of over 22,000

persons and as of the year 2000 was the second largest library (based on book holdings) in Dutchess County.

Highway Department

The Town of East Fishkill maintains approximately 186 miles of roads. To help maintain the quality of these roads, the Town's Highway Department provides a number of services, including: winter maintenance activities such as snow plowing and road sanding; street sweeping; repairing potholes and other road deficiencies; and road sign maintenance. The Highway Department also provides residents a six-week long brush pickup in the spring; year-round tire drop-off; and, "Dumpster Days," a program that allows residents (for a fee) to dispose of certain bulk types of debris with Royal Carting, a private service.

Health Care

Although there are no major health care facilities in East Fishkill, residents of Dutchess County can partake of a full range of emergency, medical, surgical, outpatient diagnostic, and therapeutic health care services. There are three major hospitals that serve the County - two in Poughkeepsie and one in Rhinebeck. In addition, Putnam Hospital Center in Carmel in Putnam County could provide service to residents of East Fishkill. Vassar Brothers Hospital in Poughkeepsie is Dutchess County's largest hospital, with 315 beds. Its services include surgery, oncology, a Special Care Nursery, and a Center for Laser Surgery. Northern Dutchess Hospital in Rhinebeck is affiliated with Vassar Brothers Hospital. Northern Dutchess Hospital has 68 beds and services that include cardiac rehabilitation, a speech and hearing clinic, an eye clinic, the Neugarten Birthing Center, a Wellness Center, and the Thompson House, a new 100-bed skilled nursing home. St. Francis Hospital and Health Centers in Poughkeepsie is a 295-bed facility affiliated with the New York Medical College. Offering an array of medical and surgical services, St. Francis also operates a Medical Walk-In Center and Turning Point, an alcohol and chemical dependency treatment center, both at the same location in the Village of Beacon. Finally, Putnam Hospital Center, located approximately 12 miles from the project site in Carmel in Putnam County, is a 164-bed acute care facility offering a variety of services, including emergency care, radiology, physical therapy, surgery, orthopedics, and intensive care. Reflecting its location in one of New York State's fastest growing counties, Putnam Hospital Center has recently embarked upon a fundraising campaign to pay for expanded facilities.

Solid Waste Disposal

The residents of the Town of East Fishkill employ a private carrier, Royal Carting as their garbage collector (who may in turn subcontract to other private companies). They

provide weekly pick-up for domestic household solid waste, and separate weekly pick-up for recyclables, which generally include glass, newspaper, aluminum, tin and # 1 and #2 plastic. For bulk pick up (i.e. - refrigerator, couch, etc.) residents are required to buy permits from the Town Clerk. These permits allow residents to bring these items to Royal Carting on specified dates for disposal.

Burnable solid waste is disposed of at the Dutchess County Resource Recovery Agency (DCRRA) in Poughkeepsie, New York. This facility incinerates solid waste and uses it to generate steam and electricity for consumers in the community. The Department of Environmental Conservation has categorized the ash by-product with a "Beneficial Use Designation". It is non-hazardous and is used as a cover at the Sullivan County landfill. (Modern landfill technology requires that solid waste be covered with a series of layers of various materials designed to secure solid waste and minimize the effects of rainwater leaching through it. One such approved layer is the ash from the DCRRA facility).

Designated recyclables are disposed of at the Dutchess County Materials Recovery Facility, in Poughkeepsie, New York. Non-burnable waste items are disposed of at a variety of outlets, depending on the particular item. Disposal sites change depending on the markets and waste volumes. The Sullivan County Landfill, in Monticello, New York is also utilized.

Potential Impacts

The estimated population for the proposed development is 626 persons, based upon a ratio of 3.6 persons per dwelling[34] unit for 175 four-bedroom units. The 626 persons represent an increase in total population for the Town of East Fishkill of 2.4 percent, based upon a 2000 total of 25,589 persons as provided by the U.S. Census.

Public Safety

The East Fishkill Fire District will be responsible for providing service to the proposed development. The two main impacts of the project on the Fire District involve the capacity of the Fire District to serve the proposed development, and once at the proposed development, the ease with which the Fire District's vehicles would be able to access different parts of the development.

On the first point, at a distance of approximately four miles, the Hopewell Hose Company is the Fire District's nearest fire station to the proposed development. Two other major developments have been proposed within the service area of the Hopewell Hose Company: Hopewell Glen, a 285-1ot subdivision at Fishkill Road and State Route

[34] *Source: Urban Land Institute (ULI)*

376; and, Lake Walton Park, a 94-1ot subdivision on Lake Walton Road.

As with the Fire District, the East Fishkill Police Department will be responsible for providing service for the proposed 263 single-family home subdivisions. Similar concerns exist, such as sufficient access to the site and the design of an acceptable internal street layout to accommodate police vehicles in emergency situations.

Schools

Enrollment trends in East Fishkill Central are reported in the Town' s Comprehensive Plan:

The Wappingers Central School District has fewer students than it did fifteen years ago. Although there has been a rise in enrollment since 1996, the school population appears to be leveling off, growing only 2% in past three years. These enrollment increases are in agreement with the population projections of the school districts and the projected trends for the school district is for enrollments to decline over the coming years. Although there has been steady residential growth within the District over the past fifteen years, the census data shows that the average number of people per household has fallen. Many people moving to East Fishkill are commuters with few, if any children.

The number of students likely to be generated by the proposed development is based on pupil generation rates established by the Urban Land Institute (ULI). For a four-bedroom house in East Fishkill, ULI's generation rates would suggest a student ratio of 0.8738 students per home. Of this amount, a reduction of approximately 10 percent would be applied to reflect public versus private school enrollment, resulting in a ratio of 0.7864 students per home[35]. For a 175 unit single-family subdivision, this would amount to approximately 137 public school students.

The proposed development has a variety of house and lot sizes that will appeal to empty nester families. The anticipated resident population will probably be varied with young families with pre-school children, as well as families whose children have grown. Using the Wappingers Central School District public versus private school reduction rate of 10 percent mentioned above, approximately 168 school age children would attend public schools over the first several years after the project is built. Although some older students would finish high school during that period, the 168 students can be utilized as a conservative estimate for a lower end of the range of projected students.

As previously noted, the estimated school tax revenue to be derived from the proposed development is $773,430 per year. This represents $5,645 in local tax dollars per public

[35] *Source: Superintendent of Schools, interview July 2002*

school student, which exceeds the $5,000 cost per pupil.

The range of 137+ students generated by the proposed development represents an approximate 1.2 percent increase in the overall school district enrollment (2001-2002) of 11,906 students. The proposed development's impacts on the individual schools that would service the site would depend on the actual number of students realized at each grade level.

It is noted that the Wappingers Central School District provides bus transportation throughout the District with student pick-ups in close proximity to their homes, particularly for kindergarten and elementary school students. Although bus routes are determined each year, the Superintendent of Schools did indicate that bus access through the public roads in the proposed development was possible. The roads have been designed to accommodate all types of vehicles, including school buses. Assuming that 80 percent of students are bussed to school (the balance utilizing private cars) it is estimated, based on information about school bus capacity provided by the School District's Transportation Department, that three school busses would be required to service the proposed development. The amount of time students are on the buses would depend on the number of stops required prior to reaching the various schools.

Library

It is assumed that the proposed subdivision would increase the number of users of the existing East Fishkill Library as newly expanded. The library currently serves the entire Town. With an increase in Town population of 3.6 percent, it could be anticipated that library use could increase at this same ratio.

Highway Department

The project, as proposed, would not have any significant impacts to the Highway Department. The total amount of new public roadways within the proposed development is 14,735 Linear Feet. It is noted that the tax revenues generated by the proposed development would amount to approximately $196,098 per year for the Town of East Fishkill. Portions of this revenue would address highway, library and recreation costs associated with this development.

Other Community Facilities

No significant impacts are anticipated with regard to additional demand on hospitals, solid waste collection or utility services. None of these facilities are publicly owned and dependent on tax dollars.

Mitigation Measures

Street widths and the layout of the street pattern within the development will be designed in such a way as to accommodate school buses, fire vehicles and equipment. Fire hydrants are located as needed to service the proposed subdivision.

The proposed development will pay $2,000 per lot in recreation fees to the Town of East Fishkill for improvements to existing or creation of new off-site recreation facilities that serve this portion of the Town.

The potential exists for off-site users to be connected to the proposed water and sewer systems of this project. Should significant development occur in nearby properties, the water supply system could be connected to these projects' water systems to provide improved pressures and service. Sewage conveyance systems would have to be pumped to reach the proposed WTP and the WTP may have to be upgraded to accommodate increased flows.

3.10Utilities

Correspondence was sent to Verizon Telephone, Central Hudson Gas & Electric and Cablevision. CHG&E responded, indicating that it serviced the project area and possess sufficient resources to supply the project. Cablevision also responded, indicating that it too serviced the project area and possess sufficient resources to supply the project.

3.10.1Existing Conditions

3.10.1.1 Water

The project is currently undeveloped. A central water supply system is proposed to serve the site. Three new wells were installed on the site and yield tests have been completed as part of the Hydrogeological Analysis included in the appendices of this DEIS. Test data indicates that the wells can provide a minimum yield of 63 gallons per minute. The following is a summary of the well data:

	Well #1:	**Well #2:**	**Well #3:**
Depth of Well	425′	500′	400′
Depth of Casing	50′	70′	62′
Diameter of Casing	6″	6″	6″
Stabilized Yield	63 gpm	Not Used	65 gpm

During the hydrogeological testing, it was determined that there is a slight interconnection between well #1 and well #2. Therefore, the yield for well #2 has not been considered.

It has been anticipated that the approximately 85,300 gallons of water will be required to meet average daily demand for the project site. This is based on 175 lots x 3.75 bedrooms per lot x 130 gallons per day per bedroom.

Permanent underground lawn and garden sprinkler systems will be prohibited by deed restrictions.

The hydrogeological report states that a conservative recharge estimate of between 118,200 and 137,900 gpd could be expected during extreme drought conditions for the bedrock aquifer underlying the site.

3.10.1.1.1 Approvals

The Town of East Fishkill Town Board grants approval for the establishment of a water transportation corporation. The Applicant will apply to the Town Board to establish the Transportation Corporation.

The water rates will be approved the NYS Public Service Commission.

The NYSDEC is charged with the responsibility of approving the Water Supply Application. The permit allows the water company to remove an approved amount of water from the aquifer.

The Dutchess County Health Department reviews and approves the design of the proposed water treatment process, plant design, system layout and system design.

The water lines will be installed in the NYSDEC wetland and adjacent area. They will also cross the stream. All necessary permits will be obtained in order to perform this work in the NYSDEC wetland and adjacent area. The Applicant met with the NYSDEC prior to the submission of the first draft of this DEIS to discuss these points. Mr. Roy Jacobson, from the NYSDEC office in New Paltz, stated that the plan, as proposed, met with expectations. He felt the plan met the objectives of his office through avoidance.

A floodplain development permit will also be required in order to install the utility lines in the floodplain. All requirements of the floodplain ordinance will be met in the design of the facilities in or near the limits of the floodplain. No wells or sewage treatment structures will be installed in the 100-year floodplain.

It is anticipated that the approval process shall take 12 to 18 months.

3.10.1.2 Sewer

Soil test pits were excavated on the site in the summer of 2000. It was determined from these soils tests that the site soils are not conducive for the subsurface disposal of domestic sewage. The soils range from clay hardpan to tight clay loams in the deep test pits. Percolation tests yield poor drainage characteristics. Therefore, the Applicant is proposing the use of a wastewater treatment plant to be constructed on the south side of the site near the NYSDEC wetland.

3.10.1.2.1 Approvals

The Town of East Fishkill Town Board grants approval for the establishment of a sewer transportation. The Applicant will apply to the Town Board to both establish the Transportation Corporation and the sewer rates.

The NYSDEC is charged with the responsibility of approving the location of proposed sewage treatment plant effluents as well as the effluent limits of the proposed sewage treatment plant. A letter was written to Mr. Thomas Rudolph in September 19 of 2002 requesting permission to use the existing creek as a proposed discharge point. Mr. Rudolph responded on January 24, 2003, with a list of draft effluent parameters. (See the correspondence in Appendix C). A sewage treatment plant will be designed and installed so as to meet these draft effluent limits. The Applicant is proposing the use of an extended aeration type disposal system much like the sewage treatment plant constructed for the Sagamor Sewage Transportation Corporation in the Town of East Fishkill.

Currently two sewage lift stations are being proposed. At the south end of the site, a lift station is being proposed at station 37+00 on Rolling Ridge to convey sewage for approximately 5 homes to the gravity manhole at station 32+00 on Rolling Ridge. The second lift station is being proposed at station 36+50 on Summit Woods Boulevard. This station will convey sewage directly to the proposed sewage treatment plant.

The Dutchess County Health Department reviews and approves the design of the proposed sewage treatment process, plant sizing and effluent treatment.

The sewer lines will be installed in the NYSDEC wetland and adjacent area. They will also cross the stream. All necessary permits will be obtained in order to perform this work in the NYSDEC wetland and adjacent area. The Applicant met with the NYSDEC prior to the submission of the first draft of this DEIS to discuss these points. Mr. Roy

Jacobson, from the NYSDEC office in New Paltz, stated that the plan, as proposed, met with expectations. He felt the plan met the objectives of his office through avoidance.

A floodplain development permit will also be required in order to install the utility lines in the floodplain. All requirements of the floodplain ordinance will be met in the design of the facilities in or near the limits of the floodplain. Per Town Code, no wells or sewage treatment facilities will be installed in the floodplain.

It is anticipated that the approval process shall take 12 to 18 months.

3.10.1.2.2 Existing Stream Conditions

The existing stream was sampled and analyzed to determine the physical properties of the stream water in the month of October of 2002. The dissolved oxygen was measured as 9.8 ppm. The pH was measured as 6.9. The water temperature was measured at 21°C. These conditions are favorable for aquatic life. However, the stream does not appear to be defined enough or deep enough to support fish. The stream flow velocity was measured as being approximately 1.5 fps. This changes at various points in the stream due to the geometry of the channel and location along its bed.

The sewage treatment plant will be designed to meet intermittent stream standards.

3.10.1.2.3 Costs of Sewage Treatment

It is anticipated that a sewage treatment plant that will serve this subdivision will cost approximately $1.1 million. The collection system may add an additional $250,000 to $350,000 due to the need for two sewage lift stations.

Estimated annual operating and maintenance costs for the sewage treatment plant and collection system could be as much as $35,000.

Using these figures, it is estimated that each homeowner will pay between $500 and $600 annually for sewage service.

3.10.2 Potential Impacts

3.10.2.1 Water

Water will be provided to the proposed 175 lots via two new rock wells installed in October of 2002, and an internal distribution system. The treatment/pump house, storage tank and distribution system shall be designed and constructed in accordance

with New York State and Dutchess County Health Department standards. The new wells can adequately provide the anticipated average daily demand for the project site. One of the conclusions of the Hydrogeological Report states "Conditions are favorable for the development of additional high-yield wells onsite from both the sand and gravel and bedrock aquifers." (See the Hydrogeological Report in Appendix D.)

The water distribution system shall be looped throughout the site with 8" diameter AWWA C-900 PVC pipe. A 220,000-gallon "Aquastore" water storage tank shall be provided to provide for fire-flow volume storage and average daily demand flow. These tanks have been installed in other water companies throughout the Town. The system shall be installed so that the well pumps maintain the average daily demand above the fire-flow volume.

Samples of water were taken from the wells after the 72-hour pump test was completed. No treatment or mitigation other than disinfection is required because water quality meets the NYSDOH standards for drinking water.

The proposed treatment/pump facility shall be constructed in accordance with the requirements of the Town of East Fishkill Architectural Review Board.

Access to the pump house and wells will be gained from Collarbark Road. The Applicant has purchased the property that abuts this project and Collarbark Road.

A water storage tank is proposed on the south side of the project. This tank will serve the proposed Summit Woods project site. There is additional acreage at the proposed tank site for additional tanks to serve future areas of need.

3.10.2.2 Sewer

The treatment plant will be designed to treat approximately 85,300 gallons per day. This number is based on 175 lots with a mix of 3.75 bedrooms per house x 130 gallons per day per bedroom.

The proposed sewage plant will be designed as a modular plant with expansion capabilities for future areas of need. There is plenty of acreage in the area of the proposed sewage treatment plant to allow for expansion. It is beyond the scope of this document to discuss the impacts of future expansion of the sewage treatment plant. It shall be the responsibility of the future Developer to address any impacts to the Van Anden Kill and the NYS Freshwater Wetland HJ-49. Any expansion of the sewage treatment plant will require that the Applicant of the proposed development obtain approval from the NYSDEC as well as the Town of East Fishkill.

Access to the proposed wastewater treatment plant will be obtained over an existing unimproved farm roadway from Collarbark Road. This roadway will also allow access to the proposed water treatment/pump house also to be located on the south side of the project site.

The proposed sewage treatment will be constructed inside a building to enhance treatment potential and avoid odor problems. The building will be constructed in the likeness of a rural barn structure.

Sewer service to the site will be provided by a proposed central sewage collection and treatment system. The sewage collection system shall be generally installed along the centerline of the proposed roadways in order to ensure proper separation from the storm sewer and water lines. The pipes shall be comprised of SDR-35 PVC gravity pipe. Pre-cast concrete manholes shall be used. Whenever the sewer pipe crosses over or within 10' of the water line, a pressure rated PVC pipe may be substituted. This will be determined at the time of construction in conjunction with the Dutchess County Health Department.

Currently two sewage lift stations are being proposed. At the south end of the site, a lift station is being proposed at station 37+00 on Rolling Ridge to convey sewage for approximately 5 homes to the gravity manhole at station 32+00 on Rolling Ridge.

A second pump station is being proposed at station 36+50 of Summit Woods Boulevard. This pump station shall convey sewage from the entire project site to the proposed sewage treatment plant on the south side of the NYSDEC Wetland.

The force mains for the pump station shall be SDR-21 PVC pressure pipe. The proposed treatment plant will discharge to NYSDEC Wetland HJ-49 that is a class "C" waterway. An inquiry was made to Mr. Thomas Rudolph from the Tarrytown office of the NYSDEC for permission to discharge effluent from the proposed sewage treatment plant to the waterway. On January 10, 2003, Mr. Rudolph forwarded the Draft SPDES effluent parameters to M.A. Day Engineering, PC.. (See the correspondence in Appendix C.)

The sewage treatment plant will, more than likely, be an activated sludge type system. This type of system is effective in treating wastewater in the northeast region with a minimum of waste by-product. This type of system is very effective in reducing biochemical oxygen demand (BOD). The plant shall be designed to meet the draft SPDES effluent limits established by the NYSDEC.

The existing stream is considered to be an intermittent stream with typically low flows. Current technology has produced sewage treatments that can practically remove all

wastes from sewage prior to discharging into a waterway. Current treatment standards called intermittent stream effluent limits (ISEL) require that treatment plants effectively treat wastes that will be discharged into intermittent streams. The NYSDEC has established the Draft SPDES effluent limits for the proposed treatment plant. The effluent from the proposed sewage treatment plant will not adversely affect the of Van Anden Kill or other downstream water bodies.

Access to the pump house and wells will be gained from Collarbark Road. The Applicant has purchased the property that abuts this project and Collarbark Road.

3.10.3 Mitigation Measures

3.10.3.1 Water

As outlined in the Hydrogeological Report (Appendix D), the proposed Summit Woods subdivision shall require up to 63 gallons per minute for domestic use. A 72-hour pump test was performed on the newly installed test wells in accordance with NYSDOH requirements. The results of the pump test prove that the aquifer can sustain the proposed subdivision utilizing well #1 and well #3 without the need for additional wells. The report concluded that "Conditions are favorable for the development of additional high-yield wells onsite from both the sand and gravel and bedrock aquifers". The water and sewer transportation corporations will retain ownership of the open space in order to provide for a wellhead protection area. The additional space can be used to provide for additional wells if the need should arise.

Underground sprinkler systems shall be prohibited on this project via deed restrictions.

No wells or treatment facilities will be constructed in the 100-year floodplain.

3.10.3.2 Sewer

The proposed plant shall be designed to meet the Intermittent Stream Effluent limits (ISEL's). The proposed treatment plant will be designed to meet and maintain the Draft Effluent limits as outlined in Thomas Rudolph's January 10, 2003, letter (Appendix C). The proposed treatment plant is to be placed on the south side of the property approximately 525' away from the nearest proposed residence.

The proposed plant will be installed on the south side of the NYSDEC wetland to provide a vegetative buffer between the treatment plant and the proposed subdivision. This is being proposed in accordance with the NYSDEC's "*Design Standards for Wastewater Treatment Works, 1998"* which states "Treatment plants should be located as far as possible from human habitation." The plant will be located farther than the 500'

from any dwellings, public roads or other areas of substantial public use as suggested in Table 1, Page 5 of the NYSDEC publication for aeration tanks. The plant will not be constructed in the floodplain. The lowest slab elevation shall be constructed above 325.0 which is 9' above the floodplain elevation of approximately 316.0 (as determined by M.A. Day Engineering, PC).

The treatment plant will be installed below grade and covered with a steel frame building. The building will be constructed using a gambrel roof to resemble a rural structure. This will provide efficient treatment during the winter months. The building will be constructed in accordance with requirements of the Town of East Fishkill Architectural Review Board. Odor control will be installed if required by the Dutchess County Health Department or the NYSDEC.

The treatment plant will be located in a remote area of the property. Landscaping shall be sparsely used around the treatment plant.

No sewage treatment facilities will be constructed in the 100-year floodplain.

3.11Visual Resources

3.11.1 Existing Visual Resources

On-site Residential Structures

The land surrounding the project area is primarily used for residential purposes with the nearest subdivision being Strawberry Hill, located on the northeast side of Route 52, across from the project area. Access to and from Strawberry Hill is via Primrose Lane. Primrose Lane intersects Route 52 across from the project area. As shown in Figures 3.11.1-1 through 3.11.1-7 *Existing Views,* during leaf-off season, vehicles exiting the Strawberry Hill subdivision from Primrose Lane, residents of Southern Drive, and travelers on Route 52 currently see a thicket of deciduous trees along the Summit Woods property line. Views of the remainder of the property are restricted due the existing tree line and the topography in this area.

And as shown in Figure 3.11.1-2 *Existing Views Looking South From Strawberry Hill*, during leaf-off season, vehicles exiting the Strawberry Hill subdivision from Primrose Lane currently see, through a row of deciduous trees, the open field on the eastern portion of the site as well as the northern side of the hill situated in the center of the property. Views of the remainder of the property are restricted due to the topography of the center of the site that generally rises to the south.

Figure 3.11.1 – Area Map Showing Picture Locations

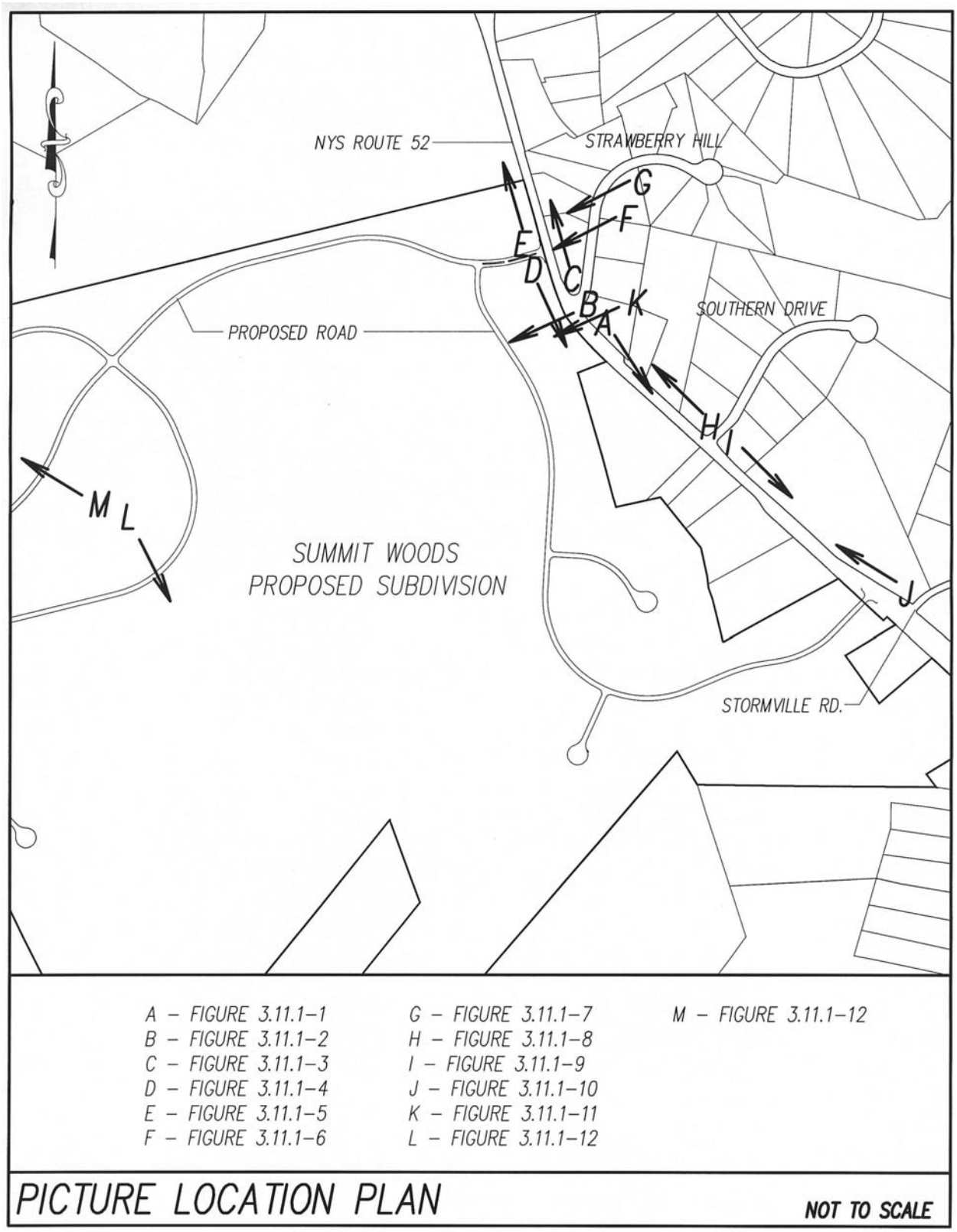


Figure 3.11.1-1 - View Looking South from Strawberry Hill

Figure 3.11.1-2 - View Looking Southwest from Strawberry Hill

Figure 3.11.1-3 - View Looking North from Strawberry Hill

Figure 3.11.1-4 - View Looking South along Route 52 at the Proposed North Entrance Road Location for Summit Woods Subdivision

Figure 3.11.1-5 – View Looking North along Route 52 at the Proposed North Entrance Road Location for the Summit Woods Subdivision

Figure 3.11.1-6 - View Looking Southwest from Strawberry Hill Subdivision

Figure 3.11.1-7 - View Looking Southwest from Strawberry Hill Subdivision

Figure 3.11.1-8 - View Looking North from Southern Drive

Figure 3.11.1-9 - View Looking South from Southern Drive

Figure 3.11.1-10 - View Looking North from Stormville Mountain Road

Figure 3.11.1-11 - View Looking North from Stormville Mountain Road

Figure 3.11.1-12 - View of Summit Woods – Steep Slopes/Wetlands

3.11.2 Potential Visual Impacts

Potential impacts associated with development of the site are associated with a change in the density of land use and character of the project area. Development of the subdivision, as proposed, will require grading, construction of residences, and construction of two access points on Route 52. Potential visual impacts associated with development of the site are related to a change in the open space character of the site from an undeveloped site to a site developed with 175 residential houses. See Figure 3.11.3-1 through 3.11.3-7 for architectural elevations of the proposed homes to be built in the proposed Summit Woods subdivision.

Another visual impact would be the construction of a water storage tank on the hillside to the south of the property. Due to the elevation of the hillside, the height of the tank will be limited to approximately 30'. This tank will be lower than the trees that will surround it. The Planning Board can select the tank color which it feels is the most appropriate for the area. It should be noted that this tank would be similar in height to the water storage tank located in the Covered Bridge (a.k.a. Brandt's Farm) subdivision. This tank is not typically visible from surrounding areas since it is hidden behind the surrounding trees.

The water and sewage treatment facilities will be constructed in an area of the subdivision not adjacent to any existing or proposed houses. There will be a large vegetative buffer between the proposed houses and these facilities.

Figure 3.11.3-1
Architectural Elevations

Figure 3.11.3-2
Architectural Elevations

Figure 3.11.3-3
Architectural Elevations

Figure 3.11.3-4
Architectural Elevations

Figure 3.11.3-5
Architectural Elevations

Figure 3.11.3-6
Architectural Elevations

Figure 3.11.3-7
Architectural Elevations

3.11.3 Visual Resources Mitigation Measures

The Summit Woods subdivision has been designed to promote natural resource preservation and conservation and to maintain open space whenever possible in order to preserve the aesthetic quality and rural nature of the Town.

The Open Space Development alternative does not result in the development of more single-family dwellings than would be allowed under a conventional subdivision. Rather, the site will accommodate the same number of dwelling units situated on lots smaller than required under the Conventional Subdivision regulations and the design will promote the preservation of more open space corridors. This design focuses on the preservation of open space so that aesthetically, the development is incorporated into the natural setting. As shown in Figure 1.1-2 *Open Space Plan*, the Applicant is proposing the permanent dedication of 177.60 acres of open space area.

The Applicant has designed the site so that the least amount of grading and clearing of vegetation will be required. Specifically, the plan proposes to maintain the trees that currently exist along the borders, including the existing trees along Route 52, that will providing screening for the residents adjacent to the site and for those traveling along Route 52.

Within the subdivision, the Applicant will provide street trees on both sides of the street, inside of the street right-of-way that will be spaced approximately 50 feet on center. All attempts shall be made to plant the street trees so that there will be no distinct uniform spacing between the trees. The internal street trees will provide a natural blend of colors that aesthetically, will marry the developed areas within the clustered site with the open space areas and natural corridors.

The Applicant intends to develop the site with a variety of architectural designs within the development. The examples illustrate that the Applicant proposes to construct the majority of the homes as two-story homes with attached two-car garages.

Residences will be constructed using a combination of architectural features within the development. Use of multi-leveled gables, ornamental cornices, arches, decorative windows, architectural roof materials and landscaping will provide a residential development that exceeds the architectural design of most of the existing and new developments within the region. Again, the combination of natural corridors and street trees will further join developed areas with open space areas. Street trees will include a combination of the following trees:

Acer saccharum - Sugar Maple

Acer rubrum - Red Maple

Quercus rubra - Red Oak

Quercus palustris - Pin Oak

Tilia americana - Redmond Linden

Fraxinus americana greenspire - Greenspire American Ash

Catalpa speciosa – Northern Catalpa

Gleditsia Triacanthos – Honey Locust

Platanus occidentalis – Sycamore

Liriodendron Tulipifera – Tulip

Carya ovata – Shagbark Hickory

Fagus grandifolia – American Beech

3.12 Air Resources

3.12.1 Existing Conditions

Since the site and immediate adjacent area has only limited development, with abutting roads carrying modest levels of traffic, air quality is acceptable. Dutchess County as a whole is designated by the EPA as an "attainment" area for carbon monoxide, which indicates that air quality for this pollutant is below the National Ambient Air Quality Standards.

There are no microclimate features in the immediate vicinity of the site that would affect air quality.

3.12.2 Potential Impacts

Traffic-Related Impacts

Air quality impacts associated with additional traffic generation are based upon EPA screening criteria as set forth in the Environmental Procedures Manual. Intersections with an overall Level of Service (LOS) of A, B or C are excluded unless they are proximate to sensitive receptors such as schools or hospitals. For intersections with an LOS of D, E or F a 10% factor of increased traffic volume is utilized to determine

whether an intersection requires detailed air quality analyses. All analyzed intersections passed this screening.

Cumulative Impacts with other Developments

The traffic impact analysis includes a no-build analysis that accounts for additional traffic generation. The level of service analysis reflects that growth as well as traffic from the proposed development.

Impact from Wastewater Treatment Plant (Odors)

The potential exists for the emission of odors from the WTP if not properly designed and operated. Odor control will be installed if required by the Dutchess County Health Department, the NYSDEC or the Town of East Fishkill.

Construction Impacts

During construction, temporary short-term ambient air quality impacts may result. Construction activities can temporarily degrade air quality due to the following two impacts:

- Fugitive dust (particulate) emissions from land clearing construction materials or debris handling, excavation, demolition, compaction, short-term storage, and vehicle motion over unpaved areas.

- Mobile source emissions from internal combustion engine-powered construction equipment at the site, construction worker vehicles, traffic diversions or detours.

3.12.3 Mitigation Measures

Fugitive Dust Control

Fugitive dust will be controlled during construction by employing specific measures described in the Preliminary Stormwater Pollution Prevention Plan. Construction operations will be scheduled in order to minimize the amount of disturbed areas at any one time during the course of work. Existing vegetation will be preserved where possible; and temporary soil stabilization practices, such as mulching, seeding, and spraying (water), will be utilized to control dust.

Maintenance of Construction Equipment

Construction equipment will be maintained and operated properly to minimize

pollution to air resources.

Emission Odor Control Devices

Odors at a sewage treatment plant are caused by a number of different factors. Some of these factors may include hydrogen sulfide in the raw wastewater, organically overloaded biological treatment process, industrial wastes in the raw wastewater, unwashed grit and general housekeeping measures.

With proper attention paid to design details, the routine development of odors should not be a problem. However, it must be recognized that odors will occasionally develop.

Odor at the sewage treatment plant is best controlled by prevention through proper design and operation rather than by treatment. Odor prevention by design includes the selection of the extended aeration process and provisions for building ventilation, proper air in the aerobic digester and automatic transfer of power to a stand-by generator during a power outage.

Odor can also be controlled by the use of chemical injection such as hydrogen peroxide, lime, ozone, etc.

The raw wastewater entering the treatment facility will be fresh due to the relatively short collection system. The pump stations will be designed so that the wastewater does not remain in the wet well longer than 24 hours. Odor control may become an issue at start-up of the lift stations since flow will be somewhat less than the design. A chemical odor-control agent may be used during the time when the lift station is operating below the design flow capacity. Aeration will occur as the wastewater passes through the static screens and again in the RBC process, both by the nature of the treatment process itself and added air. The only potential cause of significant odors would be from a lack of aeration in the digester for an extended period of time. However, stand-by emergency power generation and a back-up blower will be provided to minimize this potential problem.

The treatment process shall be covered in order to maintain a more constant treatment process throughout the calendar year. Keeping the treatment process temperature as close to constant as possible will provide for a more positive treatment process thus eliminating significant odor problems.

4.0 ALTERNATIVES

Local Law "B" which was enacted as part of the newly adopted *November 2002 Master Plan* provides for reduction of lot areas containing environmentally sensitive lands. An analysis was prepared in Section 2.0 which justifies the proposed 175-lot count. See the section entitled "Lot Count" in Section 2.0.

4.1 The No Action Alternative

The No Action alternative would eliminate the effects of development on the subject site, including the additional traffic generation, additional school age children, additional impervious surfaces, the loss of vegetation and wildlife habitat, etc. This alternative would also eliminate the beneficial impacts of the proposed cluster plan, including additional tax revenues and the preservation of important environmental features. Since the proposed plan meets the objectives of the Town's Comprehensive Plan, the No-Action alternative would also result in a lost opportunity to achieve a superior cluster development that provides an array of housing types, thereby implementing a variety of Comprehensive Plan proposals.

Notwithstanding the above, the No-Action alternative is not considered to be realistic, since the site is privately owned property that is zoned for 1-acre residential development and is relatively suitable for development.

4.2 Lower Density

For the purpose of this DEIS, the Conventional "Lot Count" subdivision was analyzed as an alternative approach to development. This plan calls for 175 lots, each on parcels of 1/2-acre or larger. Each lot has sufficient area outside wetlands and steep slopes for development.

The second alternative subdivision layout was a cluster plan that was similar to the cluster subdivision plan, but proposed a different roadway layout and site access. The design of the previously proposed cluster plan included two site accesses from Route 52 and proposed one main internal road with three cul-de-sacs stemming from this main road totaling approximately 14,735 linear feet of road. Like the current proposal, the previously submitted cluster plan also proposed the development of 175 lots and also proposed the preservation of open space through the clustering of lots. The Applicant substantially redesigned the internal road layout such that the impacts to the large NYSDEC wetland have been significantly reduced and almost completely avoided when compared to the original cluster design that included a bridge crossing of the wetland area.

The Summit Woods project, as currently proposed, is laid out using current zoning considerations for R-1 and R-2 zoning districts. A "278" lot count of 175 lots was established using a conventional lot layout. Lower density has not been considered since the development of the project will not create significant adverse impacts on the existing traffic patterns, schools, community services, etc.

A hydrogeological study has been completed which demonstrates that there is adequate water supply to serve the subdivision.

A sewage treatment plant can be designed and constructed which will not adversely impact the quality of the Van Anden Kill or other downstream water bodies. The draft SPDES effluent limits are easily met using modern technology in the sewage treatment industry.

4.3 Detached and Semi-detached housing

A mixed-use plan was submitted to the Planning Board for consideration of different alternatives. The plan involves the construction of detached and semi-detached housing. The Planning Board selected the cluster plan. The mixed-use plan would have required a change in zoning from the Town of East Fishkill Town Board or a variance from the Town of East Fishkill Zoning Board. Further consideration of this plan was abandoned once the Planning Board selected the cluster development plan.

4.4 Water and Sewer Treatment Alternatives

It is anticipated that the proposed water supply will be treated using chlorine in lieu of a newer technology. Chlorine is an inexpensive method of disinfection for potable water treatment. Ultra-violet disinfection is expensive when trying to treat the peak hourly demand flow rates required for the potable water supply Summit Woods subdivision. Chlorine concentrations are also easier to control in a potable water supply.

It is not practical to disinfect wastewater using Ultra-violet disinfection. In order for proper disinfection of the wastewater, the lenses for the UV lights must remain clean. This is very difficult in a wastewater treatment facility. Chlorine contact is the preferred method to disinfect wastewater when dealing with peak flows as high as those that can be expected from the Summit Woods project site. Dechlorination may be required by the NYSDEC as part of the final SPDES effluent limits. This will be determined during the review of the treatment process by the NYSDEC and the local Department of Health.

4.5 Water Storage

As currently proposed, the Summit Woods water supply system involves the use of an at-grade water storage tank at elevation 481. This tank will provide a gravity-feed distribution system throughout the site. A gravity-feed system is considerably less expensive than system that requires booster pumps to maintain a minimum pressure in the distribution system. A gravity-feed system can also provide a less expensive and more reliable fire protection water supply system.

Fire pumps are required to feed fire-rated water systems with the required amount of water when there is no elevated water storage tank. These pumps are very expensive to install and maintain, require continuous maintenance and are not very reliable.

The topography of this site provides for the use of an elevated water storage tank that will be constructed in an area where it will not be seen. The tank is being proposed in an area where the trees are mature enough to hide the tank even in the winter months.

A water storage tank is proposed on the south side of the project. This tank will serve the proposed Summit Woods project site. There is additional acreage at the proposed tank site for additional tanks to serve future areas of need.

4.6 Affordable Housing

The Town of East Fishkill Town Board has recently passed an affordable housing law that provides for construction of affordable housing in the town. In the R-1 and R-2 zoning districts, affordable housing is optional. The Applicant has not made application to the Planning Board for affordable housing and is not proposing to construct affordable housing in this project. Refer to figure 4.2-3 for a an affordable housing alternative plan.

4.7 Access to Adjacent Properties

The current plan involves a proposed right-of-way to the adjacent property to the north (Lands of Tucker) between lots number 16 and 17. This right-of-way shall be conveyed to the Town of East Fishkill for access and future utilities to the Lands of Tucker.

The location of the right-of-way was established after consultation with the proposed Developer of the Lands of Tucker. The proposed right-of-way is in keeping with the Town's intent to extend access to adjacent undeveloped parcels of land.

This proposed connection will serve the property to the north and east. There is no benefit to provide access to any other adjacent properties as these properties cannot be developed due to environmental constraints.

Figure 4.2-1
Conventional Subdivision Plan

Figure 4.2-2
Mixed Use Cluster Plan

Figure 4.2-3
Affordable Housing Alternative Plan

5.0 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

Local Law "B" which was enacted as part of the newly adopted *November 2002 Master Plan* provides for reduction of lot areas containing environmentally sensitive lands. An analysis was performed in order to justify the proposed 175-lot count. See the section entitled "Lot Count" in Section 2.0.

The proposed project would have adverse impacts on the environment that cannot be avoided. Some of these are short-term impacts that would occur primarily during the construction phases. Most of these impacts arise from the alteration of existing site conditions. There are, however, other adverse impacts that would have permanent or long-term environmental effects. Most of these are an unavoidable consequence of the urbanization process.

The following adverse impacts that cannot be avoided if the project is implemented are identified:

- Replacement or disturbance of on-site soils during the course of development, including blasting;
- Disturbance to agricultural land and forest through site grading, construction of infrastructure and residences, and habitation of the site;
- An increase in impervious surfaces and alteration of stormwater runoff;
- Removal of existing vegetation on 145.69 acres;
- Replacement of native species with cultivars and ornamental plants by new residents;
- Creation of two new access points on Route 52 and generation of additional traffic;
- Introduction of approximately 137 school age children to the overall student population in the Wappingers Central School District School District;
- An increase in the usage of water, the generation of wastewater, and in energy usage; and,

- Change in the existing land use and character of the project area

6.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Local Law "B" which was enacted as part of the newly adopted *November 2002 Master Plan* provides for reduction of lot areas containing environmentally sensitive lands. An analysis was performed which justifies the proposed 175-lot count. See the section entitled "Lot Count" in Section 2.0.

6.1 Natural Resources Made Unavailable for Future Use

Some areas of existing undeveloped land will be committed to development of residences, roads, and landscaped areas. Some existing soils will be altered and replaced with paving. Some wildlife habitat, as it presently exists, will be irretrievably lost or altered. The existing natural resources that could be made unavailable for future use include forest areas and old agricultural field.

Resources will be consumed during construction of the site, including fossil fuels and construction materials.

Non-renewable fossil fuels will be irretrievably lost through the use of gasoline and diesel powered construction equipment during demolition and construction.

Development of the site will generate an increased demand for electricity and natural gas.

Increased commitments will be made for the use of central water and sanitary sewage disposal, solid waste disposal and municipal services such as police and fire protection.

Commitments will also be made for the use of renewable and/or recyclable resources such as construction and building materials including timber, steel, concrete, and glass. The need for demolition/construction jobs and related service-oriented industries will be an irretrievable commitment of labor resources.

7.0 GROWTH INDUCING IMPACTS

Local Law "B" which was enacted as part of the newly adopted *November 2002 Master Plan* provides for reduction of lot areas containing environmentally sensitive lands. An analysis was prepared to justify the proposed 175-lot count.

See the section entitled "Lot Count" in Section 2.0.

7.1 Future Growth Potential

The site is within the R-1 and R-2 zoning districts. The development potential of the site is limited to those activities permitted by the Town of East Fishkill Zoning Ordinance. Permitted and specially permitted uses include but are not limited to single-family residences, mobile home parks, schools, cemeteries, veterinarian offices, or kennels. The proposed project is consistent with the currently allowed use of the property, and will therefore be in conformance with the Town of East Fishkill Zoning Ordinance.

7.2 Impact on Local Roadways and on Future Development

The land in the surrounding area is predominantly residential and the proposed project, therefore, does not represent a precedent setting action for development in this area. The corridor along US Route 9 is intensively developed with a variety of commercial uses that support the existing residences and will likewise provide commercial services for the residents of the Summit Woods subdivision.

Major transportation corridors near the site include Route 9, Route 82, and the Taconic State Parkway that all intersect with Route 52 west of the project site. The Parkway facilitates traffic in a north/south direction and connects with Interstate 84 southwest of the project site. The conclusions of the *Traffic Impact Study* are that the studied intersections within the immediate area of the site are not significantly deteriorated by the proposed residential development. Overall, operating characteristics will remain acceptable with the construction of the proposed development.

8.0 EFFECTS ON THE USE AND CONSERVATION OF ENERGY RESOURCES

Local Law "B" which was enacted as part of the newly adopted *November 2002 Master Plan* provides for reduction of lot areas containing environmentally sensitive lands. An analysis was prepared to justify the proposed 175-lot count. See the section entitled "Lot Count" in Section 2.0.

8.1 Energy Sources To Be Used If The Project Is Implemented

The existing and proposed primary energy sources for the project are electricity, fuel oil, and natural gas. Electricity and natural gas will be provided by Central Hudson Gas and Electric Corporation for lighting, cooling, cooking and operating internal equipment/appliances.

Alternatives for heating individual dwelling units are liquefied petroleum gas, or as appropriate, passive or active solar designs. At the present, none of these alternatives are planned. Some dwellings may supplement heating requirements with wood, coal, or pellet burning stoves depending on individual homeowner preferences.

8.2 Increased Energy Consumption

Central Hudson Gas and Electric is able to provide sufficient electric and gas service to the proposed subdivision. In addition, lighting fixtures will utilize energy saving lamps and ballasts.

8.3 Energy Conservation Measures

All dwelling units will be built in conformance with the energy conservation regulations of the New York State Energy Conservation Construction Codes.[36] In addition, low-flow water conservation plumbing devices will be installed on all showerheads and faucets consistent with the New York State Environmental Conservation Law.[37] The impact of these water conservation devices is a reduction in the demand water, particularly for hot water, therefore reducing energy demand to heat water.

[36] *9 NYCRR 7810-7816.*
[37] *New York State Environmental Conservation Law, Article 15, Section 15-0314.*