UPDATED COMPREHENSIVE PLAN FOR THE TOWN OF GOSHEN

GOSHEN, NEW YORK

Prepared for:
Town of Goshen

January 2009

UPDATED COMPREHENSIVE PLAN

Town of Goshen, New York
41 Webster Avenue
Goshen, NY 10924

Prepared by:
Town of Goshen Town Board
Douglas Bloomfield, Supervisor
Kenneth Newbold
Louis Cappella
George Lyons
Philip Canterino

Legal Counsel
Dennis Caplicki, Attorney for the Town
Richard B. Golden, Planning Board Attorney
Kelly M. Naughton, Planning Board Attorney

And

Edwin Garling, Planner for the Town

Prepared with the assistance of:
BFJ Planning:
Frank Fish, FAICP, Principal
T. 212.353.7474

And

Riddick Associates, P.C.
Dennis Lindsay, Town Consulting Engineer
T. 845.357.7238

January 2008

TABLE OF CONTENTS

1.0	**Introduction**		**1**
	1.1	What is a Comprehensive Plan?	3
	1.2	Goals and Objectives	4
	1.3	The Planning Process	4
	1.4	Planning in Goshen	4
	1.5	Regional Planning Context	10
2.0	**Existing Conditions**		**15**
	2.1	Geography	15
	2.2	Water Supply	15
	2.3	Political Structure	17
	2.4	Demographics	22
	2.5	Existing Land Uses	24
	2.6	Review of Existing Zoning	30
	2.7	Traffic Analysis	33
3.0	**Comprehensive Plan**		**50**
	3.1	Goals and Objectives	50
	3.2	Key Elements	51
	3.3	Land Use Recommendations	55
	3.4	Open Space and Recreation Plan	57
	3.5	Economic Plan	64
	3.6	Other Plan Recommendations	66
4.0	**Implementation**		**67**
	4.1	State Environmental Quality Review (SEQR)	67
	4.2	Adapting the Plan	67
	4.3	Maintaining the Plan	67
	4.4	Zoning/ Town Regulations	68
	4.5	Official Town Map	70
	4.6	Capital Improvements Program/ and Transactions	70
	4.7	Recreation/ Open Space Fees	71
	4.8	Private Development and Philanthropy	71
	4.9	Town-Village Cooperation	71
	4.10	Town Cooperation with County and State Agencies	72
	4.11	Summary	72
5.0	**Potential Zoning Map Changes**		**73**

Appendix A Town of Goshen Historic Sites
Appendix B Goshen Town Wide Traffic Study

LIST OF FIGURES AND TABLES

FIGURES

1.1 Historic Town of Goshen, 1875
1.2 Residence of N.J. Kelsey, 1875
1.3 Residence of Alfred B. Post, 1875
1.4 Regional Location Map
1.5 Orange County Municipalities, Town of Goshen & Incorporated Village of Goshen
1.6 USGS Map

2.1 Aerial Photograph
2.2 School Districts
2.3 Fire Districts
2.4 Wetlands
2.5 Land Use Zoning
2.6 Overlay Districts
2.7 Existing Roadway Classification
2.8 Average Annual Daily Traffic, 2006
2.9 Town of Goshen Traffic Accidents, January 2004-October 2007

3.1 Streams and Lakes
3.2 Floodplains
3.3 Wetlands
3.4 Wetlands and Floodplains

5.1 Potential Zoning Map Changes
5.2 Proposed Zoning Map

TABLES

2.1 Yearly Enrollment by School District
2.2 Comparative Population Data: Town of Goshen and Orange County
2.3 Town of Goshen Labor Force Data (Year 2000)
2.4 Number of Reported Vehicular Accidents and Type of Accidents
2.5 Intersection Improvement Priorities

1.0 INTRODUCTION

In 2007 the Town Board engaged BFJ Planning to work with Edwin Garling, the Town's Consulting Planner, the Town's Legal Counsel, and the Town's Consulting Engineer to assist the Town in its review of its 2004 Comprehensive Plan and any associated changes to its zoning code, zoning map, and subdivision regulations. Key elements of this Plan are contained in Section 3.2 of this Plan and are summarized below:

- *Revise Hamlet Residential (HR) and Hamlet Mixed-Use (HM) Districts*

The Town considers the Village of Goshen as the existing and appropriate development center of the Town that ought to be reinforced. Mindful of its affordable/multi-family housing responsibilities, discussed elsewhere, the Town recognizes that it is presently and appropriately a primarily rural community. Further, there is no reason to attempt to force dense and disparate development centers that would compete with the primary focus of the Village of Goshen as the proper center of development for the Town, as is possible with the HM and HR districts mapped within the Town of Goshen pursuant to the 2004 Comprehensive Plan. Therefore, the hamlet concept has been revised to amalgamate the Hamlet Residential and Hamlet Mixed-Use districts to form one district – Hamlet Residential district (HR), and to locate these districts to reflect existing well-established hamlet developments and to allow the Village of Goshen to remain as the Town's village center.

- *Eliminate discretionary density bonuses within the Rural (RU) Zoning District*

All discretionary density bonuses should be eliminated in the RU District, and allow density standards to be set forth as part of the zoning code and subdivision regulations. This elimination also removes the uncertainty regarding the densities permitted for any particular project that was previously dependent on an unnecessarily complex system of Code-dictated Planning Board discretionary decisions that in operation provided few density additions in any event.

- *Omit Transfer of Development Rights (TDR) from the Zoning Code*

The Transfer of Development Rights (TDR) should likewise be eliminated, as the Town believes that TDR is not necessary as a tool to incentivize cluster development.

- *Revise Planned Adult Community (PAC) Provisions*

Residential PACs should no longer be permitted in the Commercial/Office Mixed-Use (CO) zoning district, as the Town believes that they are better suited to residential zones. Therefore,

the parameters within which PACs are permitted to develop should be revised to permit PACs in any residential district, provided they are connected to a Town water district and Town sewer district, or extensions thereof. It is recommended that other changes to PACs include reducing the maximum density from 5 to 3 units per acre of unconstrained land (including roads), and a maximum of 200 units being permitted in any one PAC. A PAC should also be located with direct access to a State or County highway, or arterial or collector road, and should be developed on naturally walkable topography, with no development being permitted on predevelopment slopes over 15%.

- *Revise Multifamily Housing Provisions*

Multifamily housing is allowed under the 2004 Comprehensive Plan and associated zoning provisions only by special permit within the RU, HR, Highway Commercial (HC), and CO zoning districts. To provide a range of housing alternatives that will meet the diverse housing needs of a range of socio-economic groups, multifamily housing, both new and conversions, ought to be allowed as of right in all districts except the HC and I zones, subject only to site plan review by the Planning Board.

- *Increase Impervious Surface Coverage Ratios*

To attract tax positive commercial development and to encourage a diverse economic base that provides tax ratables for the Town, it is recommended that the Town's maximum impervious surface coverage requirements within the CO, HC, and Industrial (I) Zoning Districts be at such a level as to be competitive with other Orange County municipalities on this topic.

- *Revise Town of Goshen Water Testing Protocols*

To address concerns regarding the scarcity of water supply in Goshen and impacts on water quality from natural and manmade sources as well as from the development of subdivisions that do not presently require testing under the existing Zoning Code, revisions to the Town of Goshen Water Testing Protocols [Zoning Code §97-43(B)] are recommended[1]. The recommended revisions to the testing protocols are intended to provide improved protection for existing and future residents of the Town from water quantity and quality problems caused by the increasing number of development proposals for large tracts of land. In summary, the revisions to the Water Testing Protocols are intended to accomplish the following:

- Provide for the drilling of sufficient wells in all subdivisions of three or more lots (after preliminary action) to provide assurance of adequate water supply throughout the subdivision.

[1] The proposed revisions to the Town of Goshen Water Testing Protocols have been prepared by the Town's Consulting Engineer, Dennis Lindsay of Riddick Associates, P.C., in consultation with the Town Board.

- Provide well testing at a rate that will ensure adequate sustainable water supply with consideration of impacts on neighboring wells and properties. In accordance with the Town-Wide Potable Water Planning Study this will not be less than 200% of maximum day demand.
- Requirement that test pumping be extended at the discretion of the Town to 96-hours or more if stabilization is not achieved after the 72-hour test is completed.
- Analysis of data that includes consideration of adjacent existing wells and potential subdivisions based on existing zoning.
- Installation of monitoring wells at site boundaries or use of existing wells to confirm impacts on adjacent wells and property.
- Bonding requirement to ensure all drilled wells are either adequately capped until they are made production wells or are abandoned properly in accordance with health department standards.

This Plan update accepts much of the work done in 2003 and 2004 on existing conditions with modest updates as necessary (Chapter 2.0). The 2010 census will provide more complete and updated data for future Plan updates.

1.1 What is a Comprehensive Plan?

A Comprehensive Plan is a statement of a community's land use goals that takes into consideration the growth, scale, location, intensity, and diversity of development desired, and strategies for the location of commercial and industrial uses to improve the local economy. It also sets forth a set of recommendations for achieving these goals. It is a guide to decision making on important land use issues. This Comprehensive Plan lists goals that give the Town a clear sense of direction, derived from the shared views of a varied cross-section of the community. It also contains background information to establish a context for the Plan recommendations. The process by which the Plan was formulated was designed to build consensus and understanding of planning issues in the community. This Comprehensive Plan is intended for use on the desks of Town officials and citizens, and not to sit idly on a shelf.

In reading and using this Comprehensive Plan, it is also important to understand what it is *not.* It is *not* in every respect a detailed instruction manual that identifies exactly what to do or what will happen. It does not predict the future, although it does look ahead and expresses the Town's goals for the future. It does not always prescribe exact courses of action, because certain actions must be developed with care in response to a wide variety of situations that may arise after the Comprehensive Plan is adopted and before its next revision. It would be short-sighted to mandate only one way to accomplish a community's goals in a Comprehensive Plan, when creativity and responsiveness to public input and evolving community needs over time may result in better

solutions. A Comprehensive Plan is also a living document, intended to be reviewed and revised as needed.

A Comprehensive Plan is not *the law*. The Comprehensive Plan sets the direction and goals for the community and recommends in a general way how these can be accomplished. In contrast, the zoning code is a detailed document that translates the goals into law. All too often, communities think they have gained control over their future merely by adopting a Comprehensive Plan. Although they have taken a major step in the right direction, the adoption of a Plan does not change anything. For this reason, the Town of Goshen has undertaken the Comprehensive Plan and revisions to the Zoning Law simultaneously. This will help ensure that the Town's land use regulations are in accordance with the Plan, as required by State law.

1.2 Goals and Objectives

The foundation of this Comprehensive Plan is the recognition that the Town must both preserve its fragile and beautiful rural environment and provide for the needs of its people. To ignore either of these goals, or to pursue one at the expense of the other, is to fundamentally misunderstand what this Plan is all about. The goals of open space and environmental preservation must be pursued at the same time as the goals of providing appropriate rural development involving diverse housing opportunities, supporting local businesses, especially in the Village of Goshen center, and addressing adequate Town infrastructure and facilities.

1.3 The Planning Process

In theory, the planning process for a Comprehensive Plan is linear, with one step following the other in a neat and orderly fashion. Typically, this process begins with an evaluation of existing conditions and trends in a local area. These conditions dictate the necessity for a plan and are integrated with the "vision" of the community regarding its future development.

1.4 Planning in Goshen

The First Fifty Years

Following early surveys by and under the direction of F.W. Beers, the 'Atlas of Orange County', 1875 illustrates some of the earliest mapping and images of the Town of Goshen (see Figures 1.1, 1.2 and 1.3).

Planning and zoning began in the Town of Goshen (see Figure 1.4) over half a century ago after World War II with the development of subdivision and zoning regulations, but no overall

comprehensive plan. Some areas around the Dutchess Quarry and along Route 17M were zoned for industrial development and the balance of the Town was designated for residential development with houses on one-third acre lots.

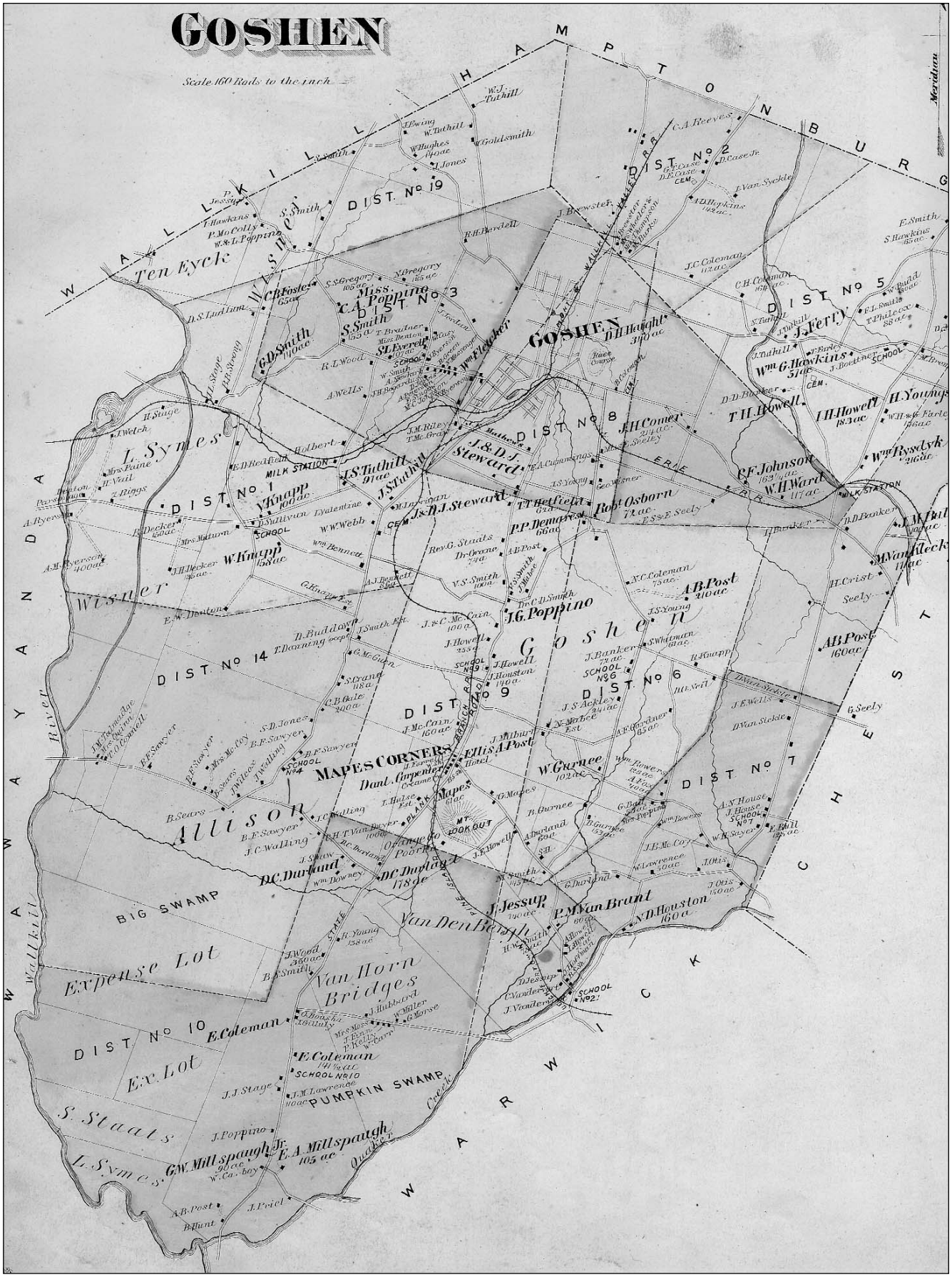
Under Section 701 of the Housing Act of 1954 Federal funds became available through the U.S. Department of Housing and Urban Development (HUD) for the preparation and enactment of community plans and implementing regulations. Like most of Orange County's municipalities, Goshen took advantage of this Federal and State funded program.

In 1963-65 Raymond and May Associates of White Plains, New York was retained to prepare a Master Plan for the Town and Village of Goshen. Due to the Plan's anticipation of major growth and construction of I-84, many high-density residential areas were proposed along 6 ½ Station Road and Phillipsburgh Road. These areas were rezoned to high-density residential, new industrial areas were created and some one-acre zones were added to the extensive one-third acre single-family area.

In the early 1960s Hambletonian Park and Scotchtown Estates were developed. These were the first developments outside the Village since Goshen Hills was built in the 1920s and 1930s. After the Master Plan was prepared in the late sixties, Arcadia Hills began construction of its 240 units. A lack of water, inadequate or poorly designed facilities, lack of oversight and problems with small sewer plants rapidly created a great deal of concern about present and future growth in the early to mid 1970s.

In 1973-74 a new zoning law and Master Plan were put in place. This Plan reflected the growth that was anticipated in the 1960s and began to be realized in the early 1970s. The Town's Plan also took into consideration newly recognized environmental concerns such as hydric or wet soils, steep grades and erosion control, flood plain regulations, agricultural uses and finally, a new and detailed soil survey prepared by the USDA's Soil Conservation Service.

In 1976 the New York State Environmental Quality Review Act (SEQRA) and State freshwater wetland laws became effective, resulting in greater scrutiny during the planning process of the environmental impacts of development. From 1984 to 1989 a flurry of large lot residential development began in small pockets around the Town, including along Hasbrouck and Farmingdale Roads, Craigville Road, the south end of Arcadia Road, Reservoir Road and Houston Road. Due to the soils formula, the change was from half-acre and one-acre lots to two acre and larger lots.

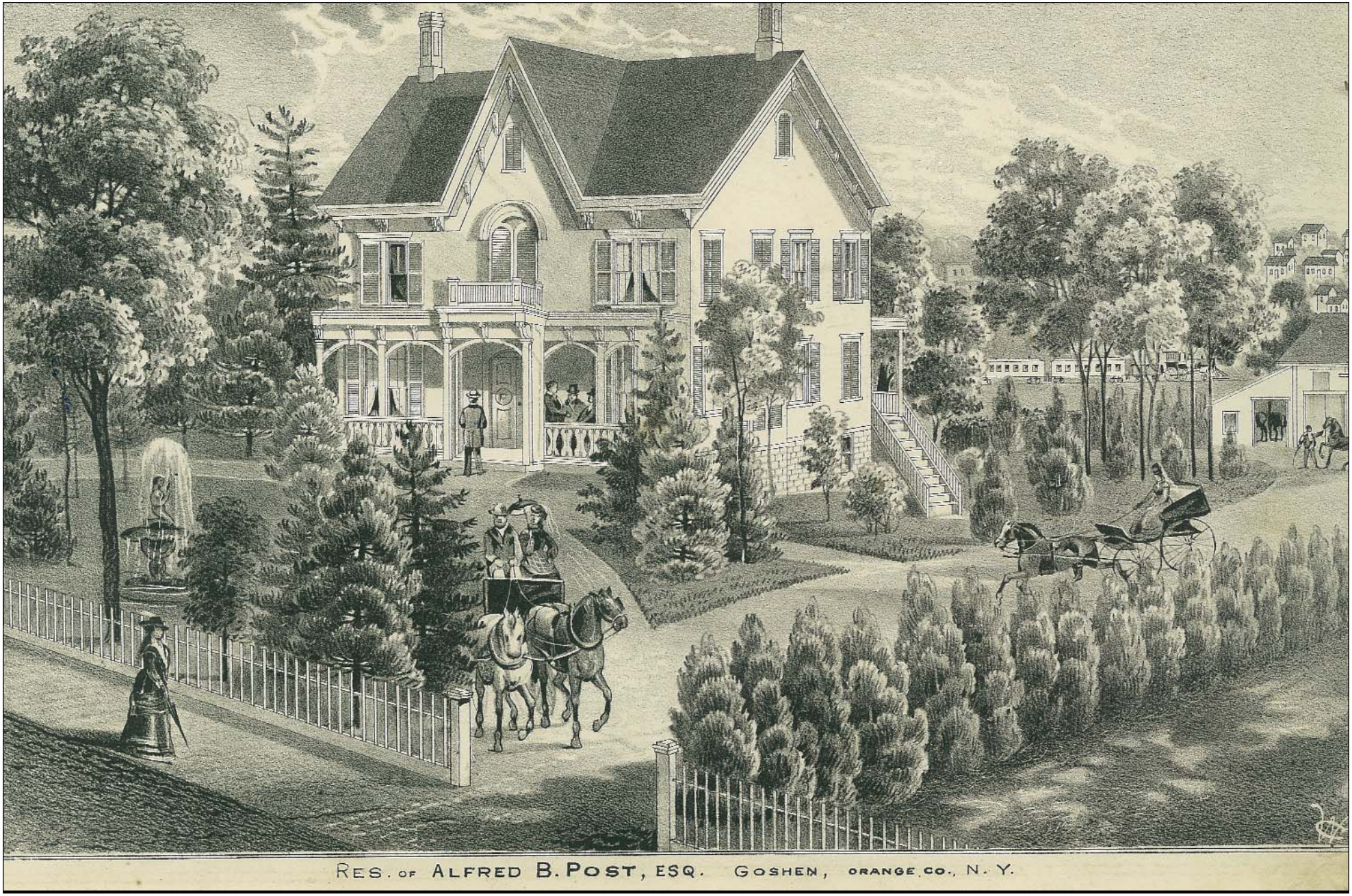


TOWN OF GOSHEN

FIGURE 1.1: HISTORIC TOWN OF GOSHEN, 1875

SOURCE: ATLAS OF ORANGE COUNTY, NY 1875

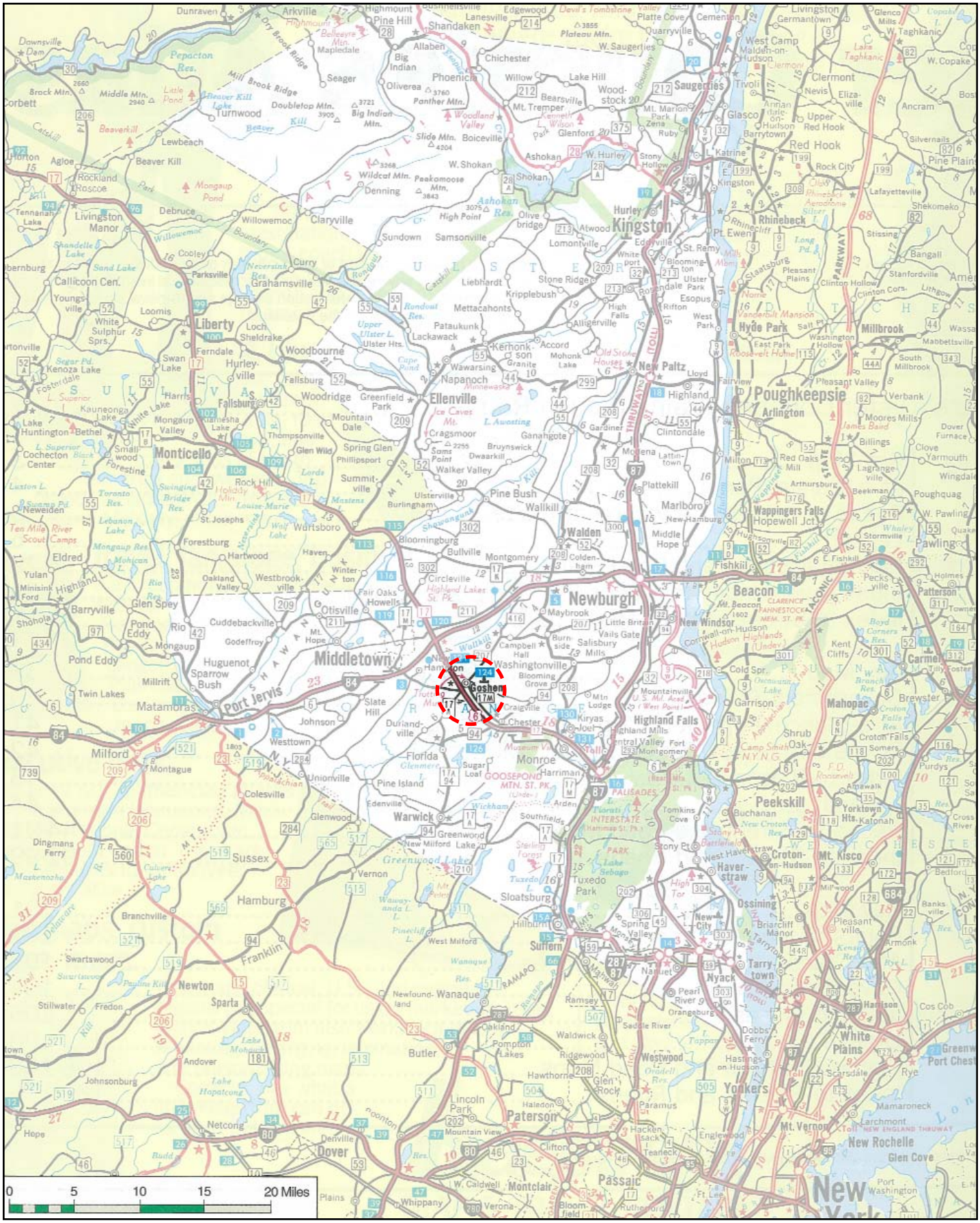

RES. OF N.J. KELSEY, GOSHEN, NEW YORK.



TOWN OF GOSHEN

FIGURE 1.3: RESIDENCE OF ALFRED B. POST, ESQ. GOSHEN, NY

SOURCE: ATLAS OF ORANGE COUNTY, NY 1875



TOWN OF GOSHEN

FIGURE 1.4: REGIONAL LOCATION

SOURCE: HAGSTROM MAP COMPANY, 2004

In the summer of 1998 the Town Board appointed a thirteen (13) member committee to update the 1974 Master Plan. The basic recommendations of this committee were prepared in June 1999 and in May 2000 these were forwarded to the Town Board for review. After review, The Town Board made several modifications to the Plan which resulted in a Draft Plan dated October 2001.

January 2002 to the Present

In January 2002, the newly elected Town Board hired Ferrandino & Associates Inc. to review the draft comprehensive plan, as modified by the Town Board. It was determined that greater technical analysis describing existing conditions, including, but not limited to, existing groundwater conditions was necessary to finalize the Plan. The Town had previously adopted an interim minimum 2-acre zoning law and, in May 2002, imposed a moratorium on most residential development to permit the consultant, as well as others, including a hydrogeology firm, to complete their respective reviews.

Information was compiled from technical analyses, census data, building trends, economic base studies, the *Orange County Comprehensive Plan*, field visits and meetings with members of particular Comprehensive Plan sub-committees. In addition, a Town-wide potable water study, conducted by Schoor Depalma Engineers, was undertaken for incorporation in the *Comprehensive Plan.* The June 2004 Plan was prepared and adopted in response to this information.

Upon the practical application of the zoning laws which were enacted following the adoption of the 2004 Comprehensive Plan, the Town Board became concerned in relation to the density and siting of the development allowed in the Hamlet Residential (HR) and Hamlet Mixed-Use (HM) districts, and in relation to other land use issues. BFJ Planning was asked in late 2007 to work with Edwin Garling, the Town's Consulting Planner, the Town's Legal Counsel, and the Town's Consulting Engineer to assist the Town Board in reviewing and updating the 2004 Comprehensive Plan, and address these issues and other concerns including density, Planned Adult Communities (PACs), and Transfer of Development Rights (TDRs), as outlined in the Introduction, Section 1.0.

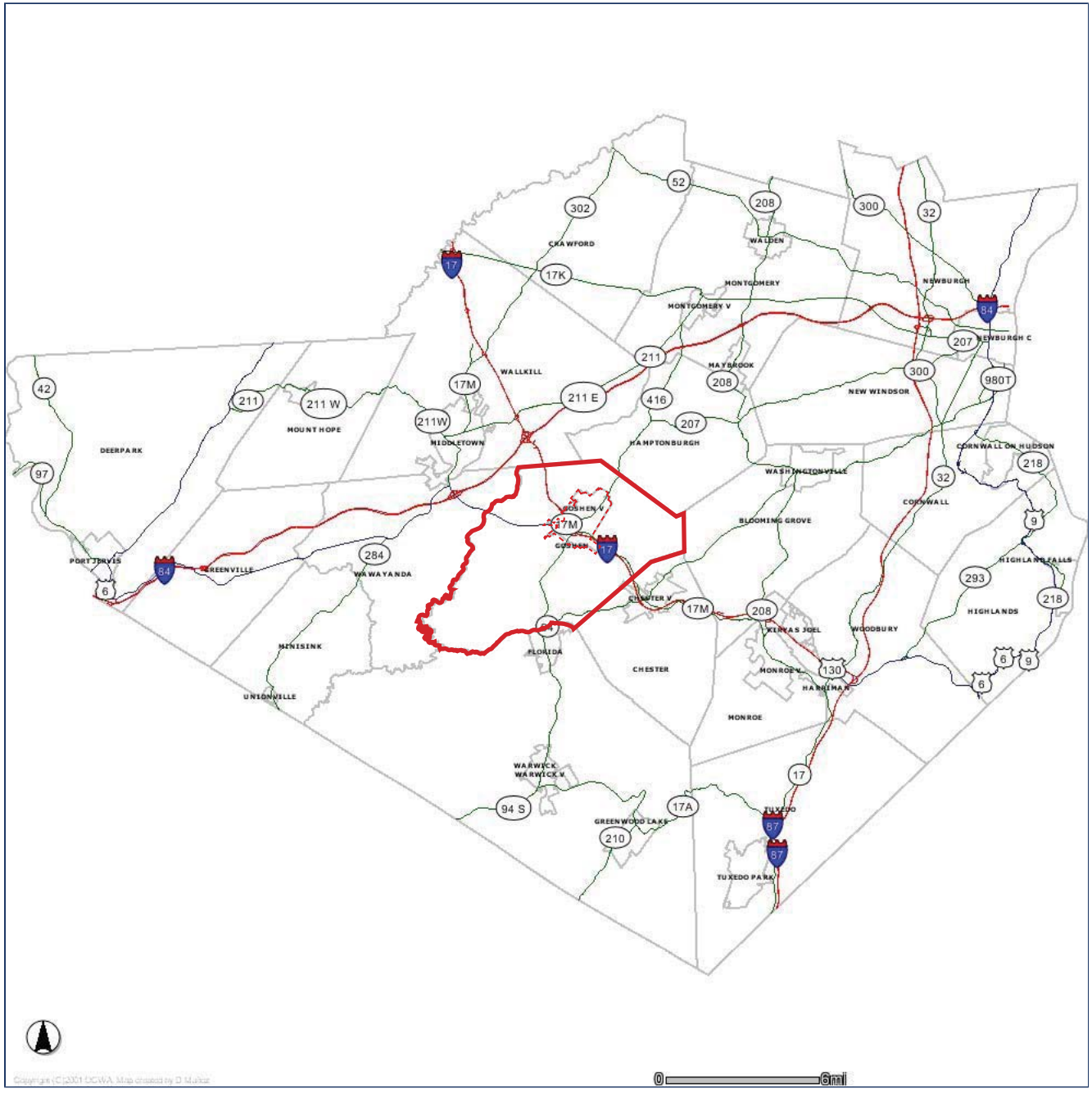
1.5 Regional Planning Context

Orange County maintains an overall comprehensive plan that includes all the municipalities in the County (see Figures 1.5 and 1.6). The most recent update was concluded in October 2001 with an addendum completed in January 2003 entitled *Strategies for Quality Communities in the 21st Century*. The Plan discusses patterns of development, utilizing the "urban-rural" concept of previous County plans. This concept encourages development in and around the existing built-up

areas. The Plan also describes various "Smart Growth" techniques, outlining specific strategies focusing on open space, housing, economic development, transportation and utilities.

Key Goals of the Orange County Plan include:

- Conserve the County's natural land resources in a sustainable, linked combination of parks, open space, agricultural lands and water.
    - Utilize and adequately maintain the County' s existing parks and strategically acquire or facilitate the preservation of additional parkland, or prominent vistas and develop facilities to meet the needs of all users.
    - Identify undeveloped areas of the County as appropriate for permanent open space, establish acquisition priorities and conserve farmland to enhance the open space character of the County as well as to diversify its economic base.
    - Utilize the active and passive recreation and open space potential of waterfront resources.
- For all built environments of the County, including residential, commercial, industrial, institutional and recreational, utilize infill redevelopment and new development techniques which enhance the advancement of quality communities.
- Secure the rural ambiance and community aesthetic of the County through control of land use along its multipurpose corridors.
    - Maintain the separate and distinct character of different segments of roadway corridors.
    - Preserve active and inactive rail corridors to enhance transportation, economic development and recreation functions in the County
    - Maintain the existing pedestrian and bike trails, while providing for their future expansion in the County.
- Promote a multi-modal transportation network that meets the needs of all segments of the County's current and future population for intra- and inter- County travel, and that adequately supports anticipated economic development.
- Strengthen the economy by attracting and supporting businesses that will enhance the County's economic base and provide jobs, tax revenues, and an orderly and sustainable land use pattern that accommodates the best of the County's old economy while providing the attributes necessary to build the new economy.
    - Enhance, support and maintain the County's quality of life to attract an educated, highly skilled and diversified workforce and high earning businesses demanding a range of skills.
    - Build the foundation for a knowledge-based economy to capture part of the regions share of the growth in technology and globally oriented businesses.

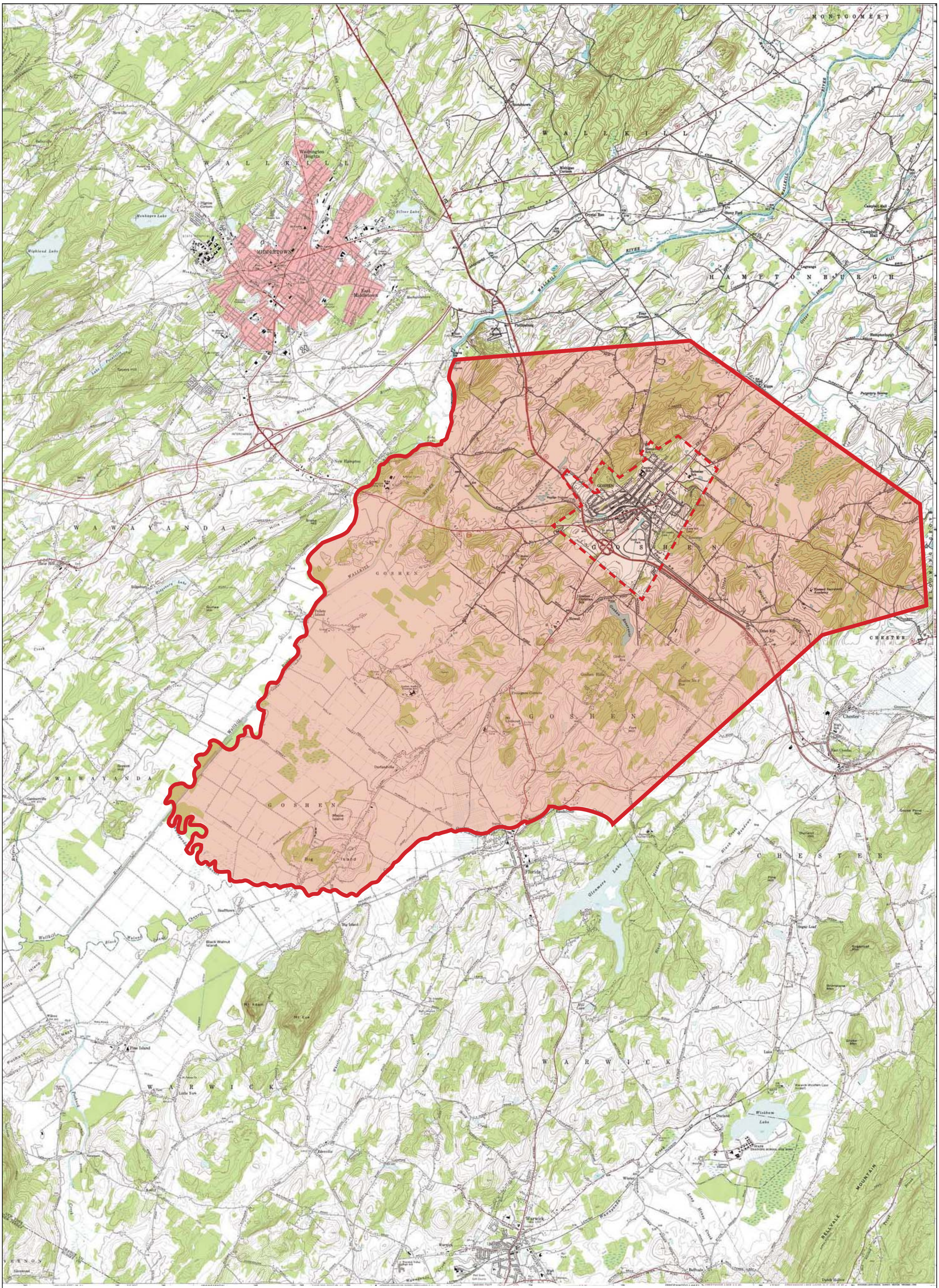


TOWN OF GOSHEN

FIGURE 1.5: ORANGE COUNTY MUNICIPALITIES, TOWN OF GOSHEN & INCORPORATED VILLAGE OF GOSHEN

SOURCE: ORANGE COUNTY GIS

BFJ Planning



LEGEND

Town of Goshen Boundary

Village of Goshen Boundary

Town of Goshen

Figure 1.6: USGS Map

Comprehensive Plan

source: USGS Topographical Survey

BFJ Planning

- Promote a broad range of housing opportunities that meet the needs of all segments of the County's population, and ensures the maintenance and rehabilitation of the County's existing housing stock.
- Encourage the provision of adequate utility systems that meet the needs of Orange County residents and businesses while balancing the preservation and quality of the County's natural resources.
    - Provision of an adequate supply of high quality water in support of the county's residential and business community.
    - Ensure the availability of environmentally sound sewage treatment systems and disposal techniques appropriate for different land development patterns which serve existing development and provide sufficient capacity to accommodate anticipated residential and business growth.
- Identify, protect and promote the County's historical and cultural resources ensuring their ability to enhance the sense of place and quality of life of county residents while providing an important component of overall county economic development.
- Preserve and promote the County's historic heritage. Support and enhance cultural values within the County.

The County Plan accurately depicts the Town of Goshen as predominantly agricultural and residential in nature. It identifies Cities and Villages as the primary centers of development for Towns. In general, the Plan recommends the continuance of the existing conditions for the Town, advocating for mid to low residential densities and business and commercial development along the primary arterials (Routes 17M and 17A). At the same time, the Plan calls for more urbanized development in the Cities of Newburgh, Middletown and Port Jervis.

It is important to note that the County Plan is considered advisory only. Although State law gives the County the right to recommend approval or disapproval of various projects and land use actions that have inter-municipal or countywide significance (General Municipal Law 239-l, -m & -n), a local municipality such as the Town of Goshen is still vested with the authority to chart its own land use course, and may override the County's recommendation by a majority plus one vote. Nevertheless, the concepts espoused in the County Plan represent fundamentally prudent planning principles and it is the objective of the Town of Goshen's Comprehensive Plan to adhere generally to its principles.

2.0 EXISTING CONDITIONS

2.1 Geography

The Town of Goshen is comprised of 42.56 square miles, including Villages. It is located in central Orange County and surrounds the incorporated Village of Goshen (see Figure 1.5). The Town is bordered by the Towns of Wallkill, Wawayanda, Warwick, Chester, Blooming Grove and Hamptonburgh, and the Wallkill River. The southern area of the Town is comprised of prime agricultural farmland, known as the "black dirt" area (see Figures 1.6 and 2.1). The Town also contains two major surface water bodies, the Prospect Lake and Green Hill Reservoirs, both of which are owned by and service the Village of Goshen. The Villages of Florida and Chester border the Town of Goshen to the south and south-east. It should be noted that both of these villages have land inside the Town and are rapidly growing Villages with central services that may expand farther into adjacent areas in the future. A number of properties from the Town of Goshen have been annexed to the Village of Florida, as well as a parcel of open space to the Village of Chester.

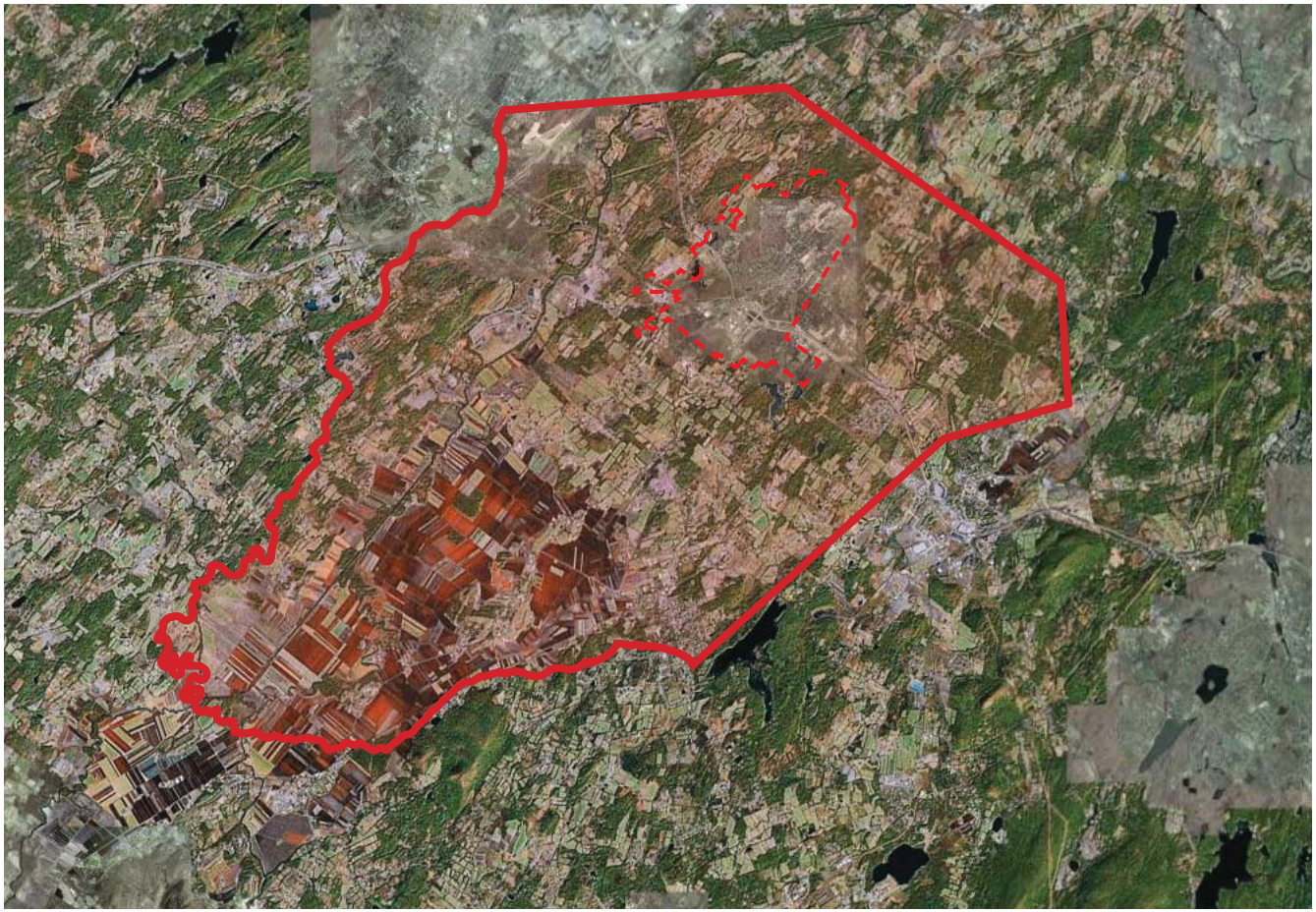
2.2 Water Supply

As part of the planning process, the Town hired an engineering firm in June 2002 to conduct a Town-wide potable water study. The results of this study validated many of the Town residents' concerns regarding the limited availability of water in the existing Town aquifers. The Study is summarized below[2].

- Existing Conditions

The Town is strictly dependent upon groundwater for its source of water and potable water is derived from bedrock aquifers. The average annual precipitation is approximately 43-45 inches of rain; however, due to dryer conditions in recent years portions of the Town have experienced either diminished or complete loss of groundwater availability. Two geological units exist in the Town, namely the southern ("black dirt") region consisting of karst (Wappinger Group), which is a sedimentary rock defined by the presence of porous limestone with a high void ratio, and a northern region consisting of shale (Martinsburg Formation), which is a sedimentary rock defined by the presence of fractured claystone.

[2] The full Town-wide Potable Water Study is on file with the Town of Goshen Building and Zoning Department.



LEGEND

Town of Goshen Approximate Boundary

Village of Goshen Approximate Boundary

- Analysis

The results of the water study identified three watershed basins with varying carrying capacities, established by either water quality or quantity variables. Furthermore, the carrying capacity was defined using an estimated density value for the total watershed basin, assuming a complete residential build out and no infrastructure improvements. The most constrained watershed basin (and therefore having the lowest potential carrying capacity) was estimated to allow for no more than 1 dwelling unit per every 10 acres. This watershed basin is the lowest producing in the Town and may be further constrained by the commercial/industrial uses sharing this aquifer. The median constrained watershed basin was estimated to allow for 1 dwelling unit per every 6 acres. This watershed basin was again constrained by the limited amount of water being produced by the aquifer in this area; however, unlike the previous watershed basin, this area does not have as many commercial and industrial uses drawing upon it. Finally, the least constrained watershed basin (and therefore having the highest potential carrying capacity) was estimated to allow for no more than 1 dwelling unit per every 3 acres. Unlike the previous watershed basins, which were more constrained by water quantity issues, this watershed basin is relatively higher yielding, but is also limited by water quality issues, including the potential contamination of the watershed basin through the proliferation of individual septic systems. These estimated densities are utilized in this Plan as base levels upon which to develop the residential plan.

2.3 Political Structure

The Town is governed by a five (5) member elected Town Board, including the Town Supervisor. The Town's planning activities are overseen by the Town's Planning Board and Zoning Board of Appeals, appointed for terms by the Town Board. The Town does not have a planning department per se, relying instead on planning, legal and engineering consultant firms for technical support when reviewing plans, and conducting environmental reviews under the State Environmental Quality Review Act ("SEQRA"). The Town also has an Environmental Review Board (formally designated in the Town Code as the "Environmental Conservation Commission") which is responsible for assisting the Planning Board, Zoning Board of Appeals and Town Board in complying with the New York State SEQRA regulations. The Environmental Review Board, in conjunction with the Town's Open Space and Recreation Committee, is responsible for, among other things, maintaining an inventory of natural resources and open spaces within the Town. Finally, building permits and code enforcement are administered by the Town's Building and Zoning Department through its Building Inspector.

The Town of Goshen includes a number of taxing entities, with a myriad of tax rates. In the Arcadia Hills subdivision, for example, some residents have a Goshen address, Chester telephone exchange, and may be located in either the Chester School District and Goshen Fire District or, Goshen School and Fire District or, the Goshen School District and Chester Fire District.

Villages

There is one (1) incorporated Village wholly contained within the Town: The Village of Goshen. It occupies 2.82 square miles roughly located in the center of the Town of Goshen, and the 2000 Census indicates that it has a population of 5,676. The Village houses the County government center, hospital and four public schools of the Goshen Central School District. The Village is in many ways also the economic center of the Town and was an important consideration when drafting the Comprehensive Plan.

The Village's surface water supply and watersheds lie within the Town and the Comprehensive Plan discusses their protection. For many years the Village's restricted central water and sewer systems have prevented any significant expansion and have limited its growth.

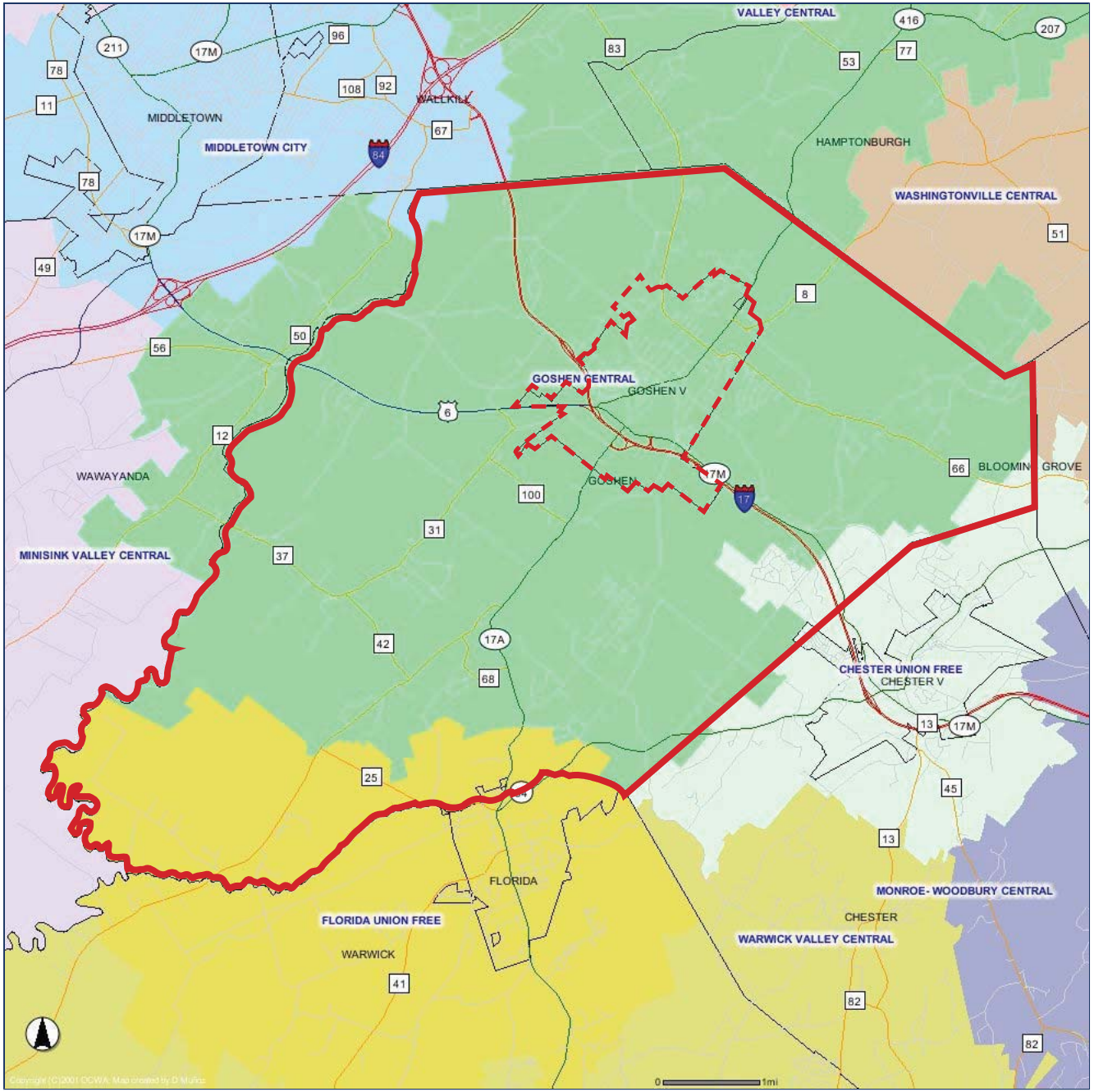
The Village of Florida is on the southern boundary of the Town of Goshen, with several parcels of land within the Town of Goshen having been annexed to the Village. Florida has its sewer plant, a small commercial/business hub and two intersecting State highways at the border of the Town of Goshen. Development in the southern area of the Town of Goshen is oriented toward the Village of Florida and its school district.

Similarly, the Village of Chester abuts the Town of Goshen to the south-east, with a parcel of open space previously annexed to the Village. The Village of Chester has a substantial shopping area, business area and an interchange with Route 17 (I-86). Since Goshen has no supermarket and a limited shopping center, this has become an area frequented by certain Goshen residents.

School Districts

There are three (3) school districts within the Town (see Figure 2.2):

1. The Goshen Central School District covers the bulk of the Town of Goshen and extends into portions of the neighboring Towns of Hamptonburgh, Wallkill, Wawayanda and Chester. Its current enrollment is approximately 3,000. Until the late 1990's enrollment had been relatively level for almost twenty-five years due to a low growth rate and an aging population. As table 2.1 shows, growth has remained fairly steady but modest in this decade. Additional growth may be expected because of recently completed projects. Harness Estates is under construction in the Village and has been adding approximately 45-50 students per year for four to five years. Goodtime Park's 122 units could add another 60-70 students by the early part of the next decade. However, the recent and severe housing market downturn may alter this projection.



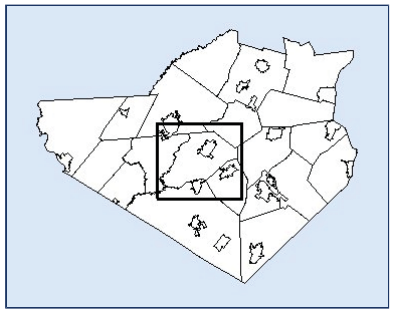
LEGEND

- Roads
- Town of Goshen Boundary
- Village of Goshen Boundary
- Municipal Boundary

SCHOOL DISTRICTS

- Goshen Central
- Chester Union Free
- Florida Union Free

LOCATION MAP



TOWN OF GOSHEN

FIGURE 2.2: SCHOOL DISTRICTS

SOURCE: ORANGE COUNTY GIS

BFJ Planning

2. The Florida Union Free School District serves a small part of the Town of Goshen along Route 17A up to Durland Road and out to Route 94 as well as the black dirt area along and south of Pumpkin Swamp Road. Enrollments have been increasing at approximately 3.5 percent annually, with the largest increases in 1995 and 1998. Florida's school additions and renovations, which are designed to handle growth for the next five year period, were approved in March 2000 with a capital improvement plan adopted in April 2008.

3. The Chester Union Free School District serves the bulk of the Arcadia Hills development. Its enrollments have been increasing in recent years.

The enrollment figures below indicate an upward trend, while the numbers remain relatively stable. Each of the districts experienced growth in the last year, which is expected to continue.

Table 2.1: Yearly Enrollment by School District (all figures are based on October enrollments)

Grades K-12	2000-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
Goshen Central School District	2,769	2,875	2,844	2,893	2,945	2,957	2,952
Florida Union Free School District	848	905	913	878	861	844	852
Chester Union Free School District	982	988	991	1,014	1,008	999	1,033

Source: Individual School Districts polled by Garling Associates, 2008

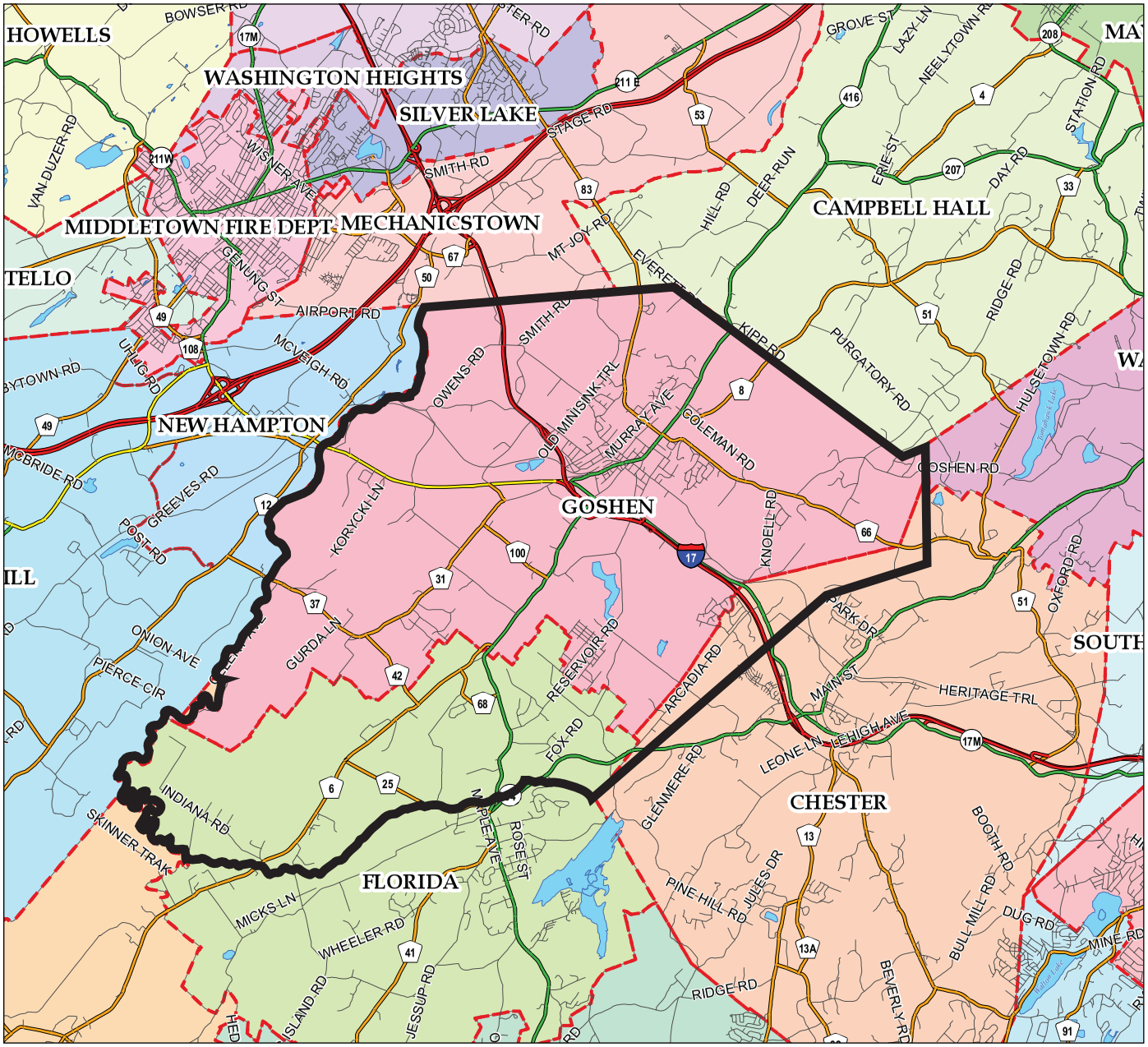
Fire Districts

There are three (3) fire districts within the Town (see Figure 2.3):

1. The Goshen Fire District includes three fire departments, all located within the Village. The Cataracts, Dikemans and Minisinks fire departments, serve the Village and the bulk of the Town. All stations have moved to larger quarters within the Village. The Dikemans are located at the outskirts of the Village in the Industrial Park, south of Route 17 (86), while the Minisink and Cataract Companies are located in the central business area on either side of Main Street.

2. The Florida Fire District serves the Village of Florida, most of the black dirt area portions of Warwick and Goshen, and portions of Routes 17A and 94 just outside the Village.

3. The Chester Fire District serves the Village of Chester, much of the Town of Chester and the Arcadia Road and Arcadia Hills area of the Town of Goshen.



LEGEND

- Town of Goshen Boundary
- Interstate
- Federal Highway
- State Route
- County Road
- Local Road
- Fire District Boundaries
- Municipalities
- Water Bodies
- Chester
- Florida
- Goshen

TOWN OF GOSHEN

FIGURE 2.3: FIRE DISTRICTS

SOURCE: ORANGE COUNTY GIS

BFJ Planning

Water Districts

There are four (4) water districts within the Town:

1. Hambletonian Park is District No. 1 and is comprised of 159 homes.

2. Arcadia Hills is District No. 2 and is comprised of 250 homes.

3. Stonehedge is District No. 3 and is comprised of 42 homes.

4. Scotchtown Park is District No. 4 and is comprised of 45 homes.

These districts are special revenue districts funded by user fees only (no tax revenues).

Districts No. 1 and No. 2 also include sewage treatment processed by the Village of Goshen sewage treatment plant. The charges for sewage treatment are incorporated into the rate schedule for each district.

It is a goal of the Comprehensive Plan to encourage sewer systems which are publicly run, e.g. the Village of Goshen sewer system. The Town discourages small privately operated packaged sewer treatment plants, for both environmental and long-term maintenance concerns.

2.4 Demographics

Population estimates from the U.S. Census Bureau suggest a population of 13,989 in Goshen in 2006, a population increase of 7.69 percent since 2000. The 2000 Census revealed that the Town of Goshen's population increased by 12.28 percent between 1990 and 2000 from 11,500 to 12,913 (see Table 2.2). Based on 2006 population estimates, there was a further increase of 7.69 percent in the population of Goshen from 2000 to 2006.

In terms of ethnicity, the Town is relatively homogeneous. Eighty-eight (88) percent of the population is Caucasian. However, as noted in the Orange County Comprehensive Plan and expressed in 2000 Census data, the region's "racial and ethnic diversity is expected to increase".

With regard to age, the Town, much like the County, is facing an aging population. In terms of percentage and an absolute value, the Town's greatest growth between 1990 and 2000 was in the 85 year old and above and the 45-54 age groups. Over the same time period Goshen saw a large decline in the 20 – 34 age cohort.

The 2010 census will provide updated figures, which will allow a more accurate analysis of the demographics in Goshen in the next revision of the Comprehensive Plan.

Table 2.2: Comparative Population Data: Town of Goshen and Orange County

	Town of Goshen 1990 Data	Town of Goshen 2000 Data	Town of Goshen 2006 estimates data	Trend %	(Orange) 1990	(Orange) 2000	Trend %	(Orange) 2006 estimates
Total Population	11,500	12,913	13,989	12.28	307,647	341,367	10.96	376,392
Race								
White	10,389	11,452		10.23	273,600	285,721	4.43	319,556
Black or African American	825	868		5.21	22,223	27,601	24.20	39,521
American Indian	37	21		-43.24	824	1,205	46.24	1,505
Asian or Pacific Islander	129	221		76.60	3,549	5,157	45.31	9,033
Other Race	120	235		95.83	7,451	13,962	87.38	-
Native Hawaiian and Other Pacific Islander	N/A	5			60	123	105.00	-
Hispanic/Latino	516	950		84.11	21,535	39,738	84.53	57,964
Age								
0 –5	672	684		1.75	26,627	25,970	-2.47	
5- 9	745	933		20.15	24,426	28,746	15.03	
10-14	772	926		16.63	22,418	28,599	21.61	
15-19	943	926		-1.80	22,699	26,554	14.52	
20-24	787	621		-21.09	21,908	21,133	-3.54	
25-34	1,817	1,513		-16.73	53,278	43,419	-18.50	
35-44	1,927	2,164		10.95	49,620	59,099	16.04	
45-54	1,363	1,818		25.03	31,720	47,221	32.83	
55-59	500	666		24.92	11,920	13,905	14.28	
60-64	397	482		17.63	10,947	11,536	5.11	
65-74	665	783		15.07	18,188	18,256	0.37	
75-84	564	747		24.49	10,652	12,294	13.34	
85 years and older	348	650		46.46	3,244	4,635	30.01	
Households								
Median household income	$46,566	$60,066		28.99	$30,056	$60,355	100.80	
Number of households	3,447	4,074		18.18	101,506	114,788	13.08	132,962
Average household size		2.73			2.63	2.85	8.37	

Source: 1990 and 2000 Census Data and US Census Bureau, 2006 population estimates data.

Finally, households in the Town reflect the norm throughout Orange County, both in terms of median income and household size (although the average household size and household income are slightly smaller, the rate of growth from 1990 – 2000 was somewhat larger than that experienced by the County as a whole).

Based on the 2000 Census, Goshen's labor force is comprised of approximately 5,700 people, 4,772 of whom commute to work by car (averaging approximately 30 minutes travel time to work). Less than 2 percent of the labor force is employed in the agricultural, forestry, fishing and hunting and mining industries, while approximately 28.1 percent of the Town's labor force is

employed in the educational, health and social service industry. Less than 10 percent are employed in manufacturing.

Table 2.3: Town of Goshen Labor Force Data (Year 2000)

Industry	Total Number in Labor Force	Percent of Labor Force (rounded to nearest tenth)
Agriculture, forestry, fishing and hunting, and mining.	95	1.7
Construction	334	6.1
Manufacturing	450	8.2
Wholesale Trade	202	3.7
Retail Trade	609	11.1
Transportation and warehousing, and utilities	265	4.8
Information	186	3.4
Finance, Insurance, Real Estate, and Rental and Leasing	442	8.1
Professional, scientific, management, administrative, and waste management services.	503	9.2
Educational, health and social services.	1,535	28.1
Arts, entertainment, recreation, accommodation and food services.	247	4.5
Other Services (except public administration)	204	3.7
Public Administration	392	7.2
Total	5,696 (total labor force includes 232 unemployed and 5 armed forces employees)	99.8

Source: 2000 US Census Data.

2.5 Existing Land Uses

The Existing Land Use Map clearly reflects the Town's agricultural and rural history. However, the current development pressure faced by the Town may result in a change toward a more

rural/suburban residential land use pattern. The following narrative describes the existing land uses in the Town and some of the trends for particular uses.

Residential

Residential development is permitted in the Rural (RU) and Hamlet Residential (HR) zoning districts of the Town. The AQ overlay districts permit residential development at 1 unit per 3 acres (AQ-3) and 1 unit per 6 acres (AQ-6). Residential development densities are largely dependent on the groundwater carrying capacity and topography in the Town of Goshen. The Comprehensive Plan recommends modified residential development density goals in order to protect the Town of Goshen's water supply, its natural environmental features, and to better reflect the ability of present infrastructure to support the densities recommended.

Agricultural

The largest single industry in Goshen is agriculture, consisting of 3,500+ acres of upland dairy farms and cropland, with the 10,000 plus acres of black dirt comprising the southwest section of the Town. Further, based on the New York State Office of Real Property Services, there are 717 farms in the Town, 561 of which are in the "black dirt" area. However, the economic benefits to the Town as a result of this industry are not as significant as this might imply.

Based on the 2000 Census, agriculture, forestry, fishing and hunting, and mining employ less than 2 percent of the labor force in Goshen. Farming is considered to be a critical element of the culture and history that defines the Town and contributes significantly to its rural character. Accordingly, the Comprehensive Plan proposes to preserve as many of these areas as possible for agriculture and its ancillary uses.

Conservation easements have been acquired for a number of farms under the Purchase of Development Rights (PDR) program, using $5 million dollars allocated by voters in 2004. There are several farms protected by the PDR program consisting of 169 acres on Knoell Road, 132 acres on Conklingtown Road, and 90 acres on Route 17A near Pulaski Highway. Additional open space dedicated in part for agricultural uses has been preserved as part of conservation and open space subdivisions in various areas of the Town. Additional PDR proposals are anticipated. Based on the split in the 2004 PDR program, the remaining $1.952 million could be used to purchase approximately 630 acres of land. It is anticipated that an additional 100-120 acres will be placed into the PDR program in 2009.

Commercial

A number of areas in Goshen have residences located along State and County roads where offices, service or retail uses have encroached over the years or where housing has depreciated in value due to the increased road traffic. It should be noted that the present zoning law requires a minimum lot size of one acre for an office building in the HC (Highway Commercial) zone. Currently, there are few "hubs" of commercial activity in the Town, with commercial activity primarily located along major corridors.

Based on the ORPS data there are approximately 176 commercial properties developed in the Town of Goshen.

Key employers[3] include:

- Orange County owns more than 650 acres of land in the Town outside the Village of Goshen (the Village of Goshen being the County seat, in which is located the County Government Center) consisting of the County Jail, the County Nursing Home, the County Social Services offices, the County landfill, the County Department of Public Works, and the County Veterans' Cemetery. Accordingly, the County has over 850 employees in the Town and well over 1,700 in the Town and Village combined.

- Goshen's Town government, Village government and the Goshen Central School District have approximately 300 employees located within the Town and Village.

- The Arden Hill Campus at the Orange Regional Medical Center, located in the Village of Goshen, is the largest employer in the Town outside of Orange County's government. The campus consists of the hospital and several medical offices. This complex employs 832 doctors, nurses, medical technicians, administrative and support staff. In 2000 the hospital merged with Middletown's Horton Hospital and is breaking ground for a new regional facility in the Town of Wallkill at the intersection of Route I-84 and 17 (future I-86). The current site will be sold, so the future of these facilities is uncertain at this time.

- Adjacent to Arden Hill is the Elant Goshen campus, consisting of a Continuing Care Retirement Community (Glen Arden),a Nursing Home and adult care facility (Elant at Goshen), and an active adult community project presently under construction. Originally part of the Arden Hill organization, Elant is now a separate entity employing 412 nurses, administrative and support staff in the Town and Village of Goshen.

[3] The facilities described employ in the region of 3,400 people. However, there are few places to shop in the Town and all of these properties are tax-exempt.

- Goshen Residential Center at 79 Cross Road is a 94 acre site operated by the New York State Office of Children and Family Services and has 117 staff members at the facility.

- Mid Hudson Psychiatric Center is located on Route 17M, across from the County Fire Training and Recycling facilities at the border with Wawayanda. This facility is located on a 105 acre site. The staff of over 200 is employed at this psychiatric correctional facility.

Industrial

Other than the Al Turi Landfill, on the western border of the Town, there are limited industrial land uses in the Town of Goshen. According to the ORPS database from June 2002, there are only approximately 13 properties developed for industrial use, even though industrial uses generate the highest gross property tax return per property in the Town.

Community and Public Facilities

Many of the Town's public facilities, such as the Orange County Government Center and the historic Town Hall, are located in the Village of Goshen, as are three of the four public schools. However, the Town's Police Department and Highway Department are located in the Town but outside of the Village of Goshen.

Parks and Recreational Facilities

According to the Town of Goshen Recreation Study,[4] prepared by the Orange County Department of Planning, public parks and recreation account for 203 acres of land, of which only 136 acres contain active recreational facilities. Goshen's Town Park, maintained jointly by the Town and Village, is located on Craigville Road adjacent to Hambletonian Park. It is 62 acres in size and contains a Little League field, several soccer fields, a playground, picnic area and pavilion with restrooms and cooking facilities and a substantial parking area. Other recreation areas include the privately owned and operated Orange Hollow Racquet Club, Wick's Golf Driving Range, a portion of the Orange County Golf Club, public school recreation areas, local churches and the Orange County Pathways Trail.

[4] This study provides a relatively complete list of the parks and recreation facilities within the Town.

Orange County Pathways has created a trail along the old Erie Railroad which presently runs from 6 ½ Station Road south to Monroe and should be completed shortly to the old Harriman railroad station at Routes 17-32. This trail is eventually going to be extended north through an industrial area to Echo Lake and eventually Middletown.

While it is generally considered that there is an increasing need for park and recreation facilities throughout the Town of Goshen (the Recreation Study states that by 2020 Goshen will need a minimum of 23 percent more parkland), some areas within the Town should be considered in greater need than others. In particular, the southeastern region of the Town, which has experienced a great deal of residential development in recent years, lacks many public recreational facilities.

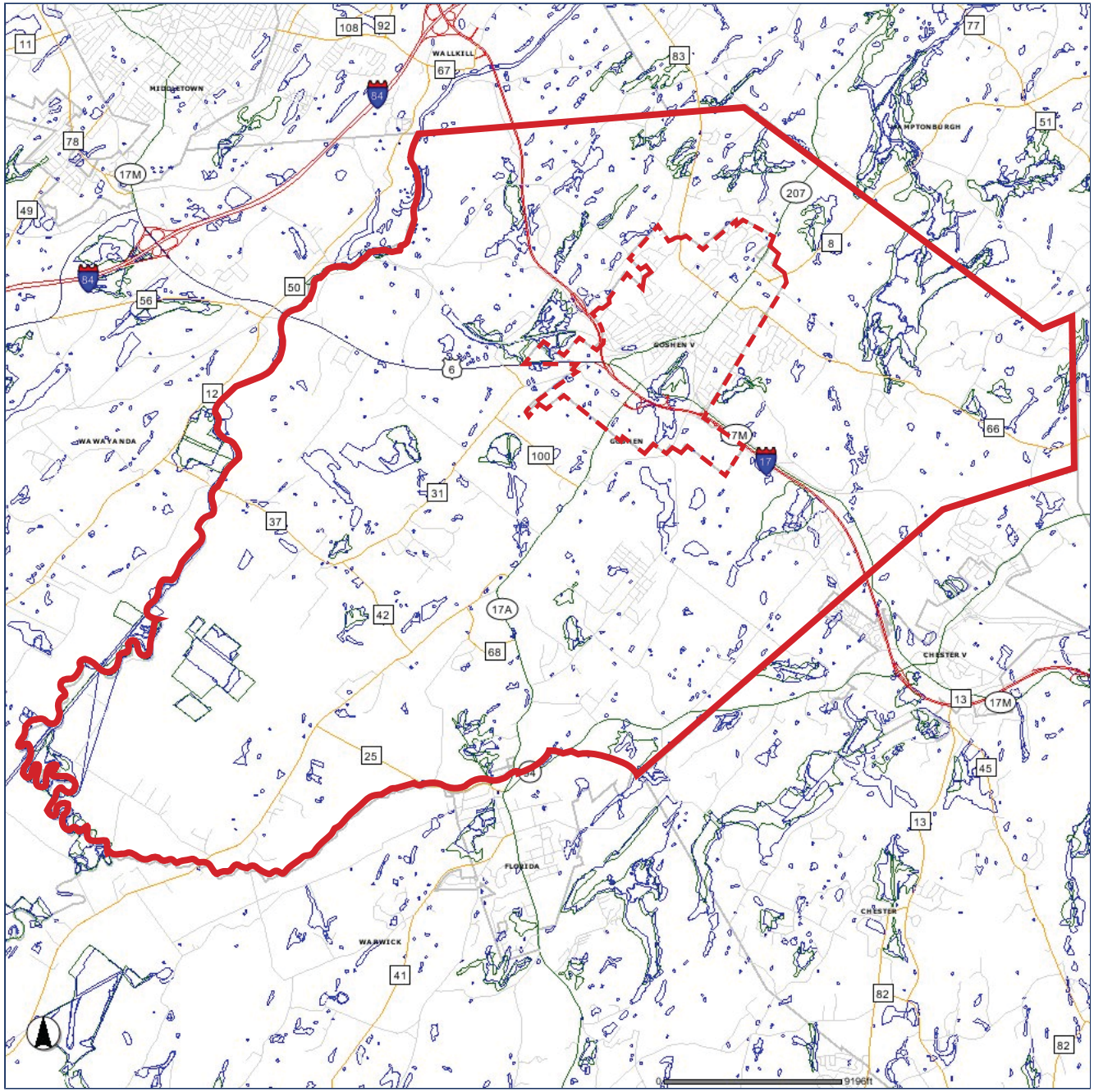
Natural Features

The Town of Goshen is rich in natural features. The Town has portions of the Wallkill River, Quaker, Black Meadow, Otterkill, Rio Grande and Cheechunk Creeks running through it. The Town also contains various key "gateways" and corridors that should be identified and marked for preservation and enhancement, as well as the Town's general topographical natural terrain that deserves protection.

In general, the Town's topography can be characterized as "rolling" with small hills and steep slopes, with the exception of the very flat "black dirt" area in the southern portion of the Town (see Figure 1.6). The Town also contains numerous Federal and State designated wetlands (see Figure 2.4).

Historic Resources

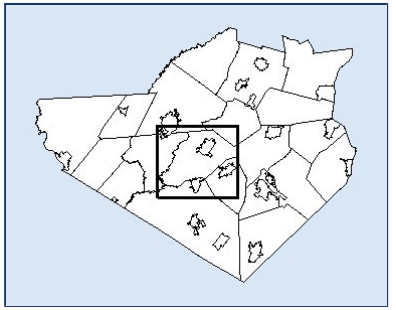
There are several historic resources in the Town. A list and background descriptions for the various historic sites and cemeteries are included in Appendix A. The list prepared in the early part of this decade was reviewed by Town Historian Michele Figliomeni and she has concluded that none of the sites are at the level of sites of national or state historic status. This presents a challenge in terms of preserving these properties. It is recommended that the Town's historic properties be used as an aesthetic reference in terms of design guidelines.



LEGEND

- Roads
- Town of Goshen Boundary
- Village of Goshen Boundary
- DEC Wetlands
- Federal Wetlands

LOCATION MAP



TOWN OF GOSHEN

FIGURE 2.4: WETLANDS MAP

SOURCE: ORANGE COUNTY GIS

BFJ Planning

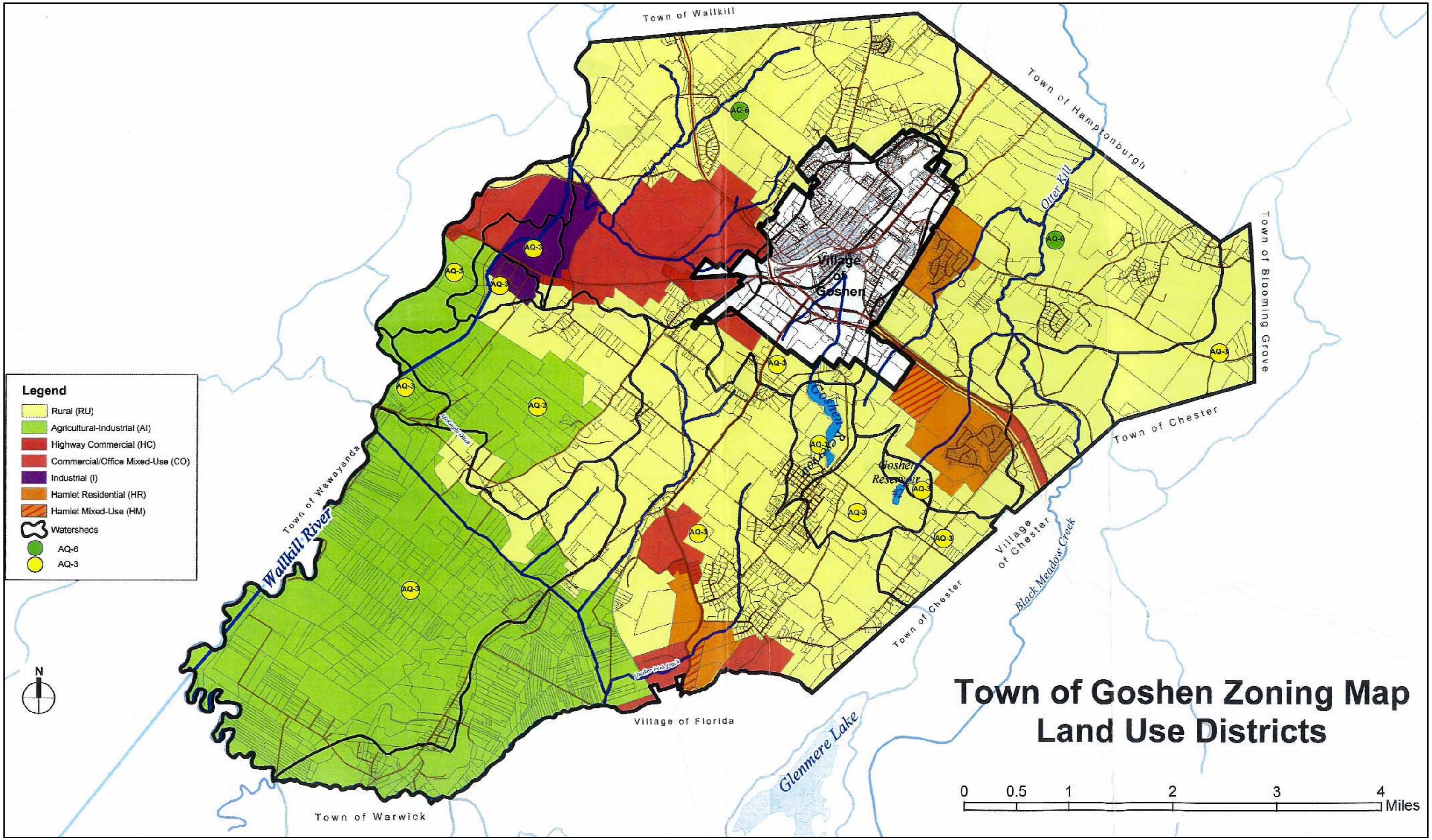
Tax Exempt Property

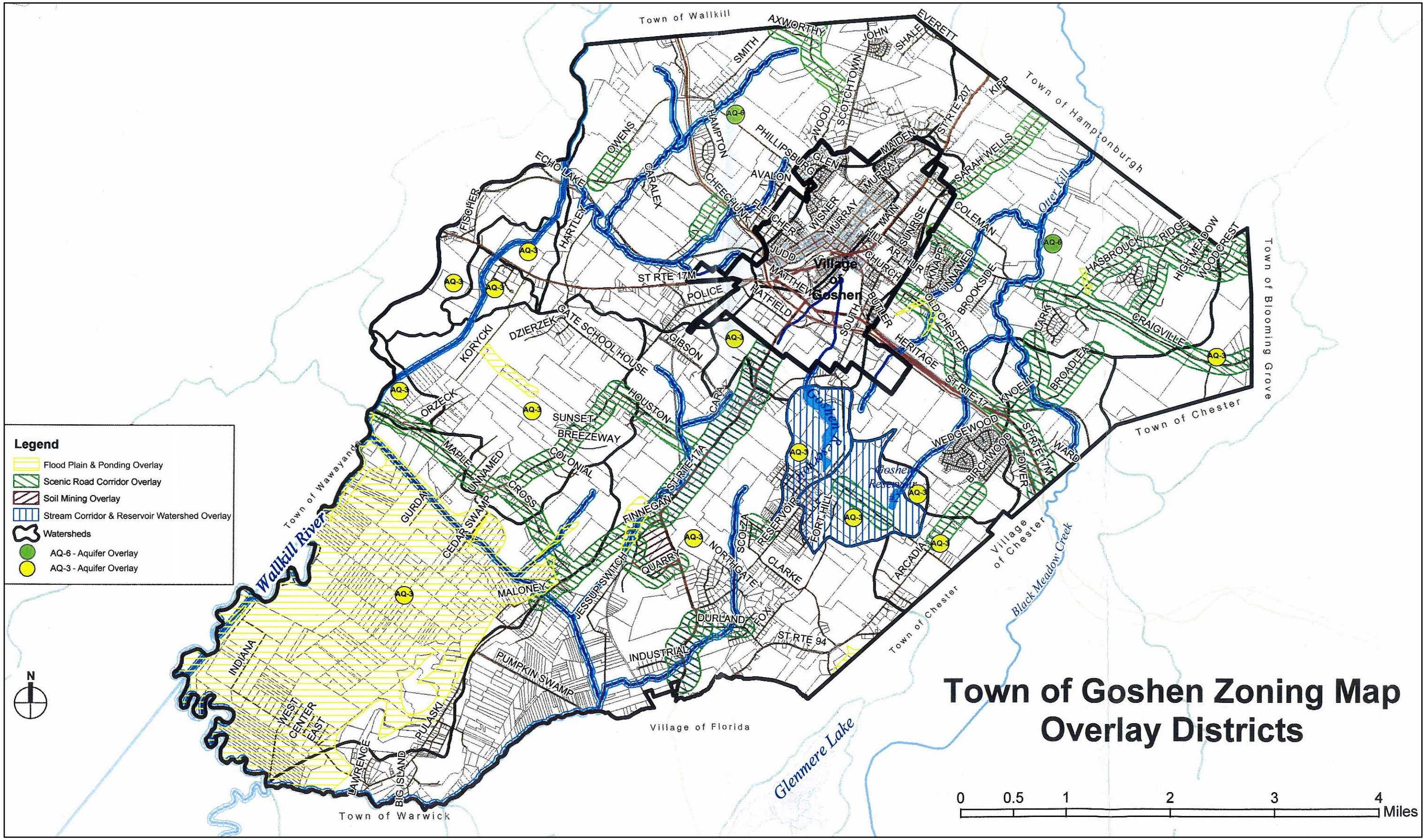
There are 364 acres in the Village of Goshen and 2,172 acres in the Town that are fully tax exempt, including the County Jail, County Government Center (including the County Courthouse), County social services properties, six public and parochial schools, a State prison, a landfill, nine churches or large church properties and the hospital and other not-for-profit facilities. While these uses generate jobs and support other businesses and offices, they do not offset the costs of fire and police protection, road maintenance, recreation and other general services or the educational costs of area residents that would be provided by other similar taxable business uses.

2.6 Review of Existing Zoning

The Town of Goshen is divided into seven (7) land use zoning districts (see Figure 2.5), with five (5) overlay districts (see Figure 2.6). The land use districts include:

- Rural District (RU): to promote agriculture and compatible open space and rural uses and to guide residential development so that it protects large blocks of the Town's open space.
- Agricultural-Industrial District (AI): to preserve the unique soils in prime black dirt areas in the Town for agricultural use and to protect farm operations from the impacts of nonagricultural uses, thereby supporting the continuance of a strong agribusiness sector.
- Highway Commercial District (HC): to allow commercial uses that rely heavily on automobile and truck access in locations with adequate road capacity, while minimizing their traffic and visual impact on the Town.
- Commercial/Office Mixed-Use District (CO): to allow areas for well-buffered light industrial, service commercial, office, and research facilities with minimal visual impact. Such districts may also include, where compatible, housing and limited retail commercial development intended to support the primary uses or to provide adaptive reuse for existing commercial or industrial buildings.
- Industrial District (I): to provide industrial and related uses that are not compatible with most commercial, office or residential uses, in locations buffered from residential areas.
- Hamlet Mixed-Use (HM) and Hamlet Residential (HR) Districts: to allow the creation of mixed-use hamlet centers and adjoining residential neighborhoods at the traditional scale and density typically found in rural hamlets and villages, provided that water and sewer service is available. In the absence of water and sewer infrastructure, the HM and HR Districts are subject to the regulations of the RU District.


Town of Wallkill
Town of Hamptonburgh
Town of Blooming Grove
Town of Chester
Village of Chester
Town of Chester
Town of Wawayanda
Town of Warwick
Village of Florida
Village of Goshen
Otter Kill
Goshen Pond Brook
Goshen Reservoir
Wallkill River
Black Meadow Creek
Glenmere Lake
Quaker Irish Ditch
Legend
Rural (RU)
Agricultural-Industrial (AI)
Highway Commercial (HC)
Commercial/Office Mixed-Use (CO)
Industrial (I)
Hamlet Residential (HR)
Hamlet Mixed-Use (HM)
Watersheds
AQ-6
AQ-3
N
Town of Goshen Zoning Map
Land Use Districts
0 0.5 1 2 3 4
Miles


Legend
Flood Plain & Ponding Overlay
Scenic Road Corridor Overlay
Soil Mining Overlay
Stream Corridor & Reservoir Watershed Overlay
Watersheds
AQ-6 - Aquifer Overlay
AQ-3 - Aquifer Overlay
N
Town of Goshen Zoning Map
Overlay Districts
0 0.5 1 2 3 4 Miles
Town of Wallkill
Town of Hamptonburgh
Town of Blooming Grove
Town of Chester
Village of Chester
Town of Wawayanda
Village of Florida
Town of Warwick
Village of Goshen
Wallkill River
Otter Kill
Black Meadow Creek
Glenmere Lake
Goshen Reservoir
AQ-6
AQ-3
AXWORTHY
EVERETT
SMITH
JOHN
SHALE
KIPP
ST RTE 207
SCOTCHTOWN
WOOD
HAMPTON
PHILLIPSBURG
GLEN
MAIDEN
MURRAY
SARAH WELLS
OWENS
CRALEX
ECHO LAKE
CHEECHUNK
AVALON
FLETCHER
WISNER
WAIN
SUNRISE
COLEMAN
FISCHER
HARTLEY
JUDD
ARTHUR
CHURCH
KNAPP
UNNAMED
HASBROUCK
RIDGE
HIGH MEADOW
WOODCREST
ST RTE 17M
MATTHEW
POLICE
HATFIELD
SOUTH
BUTLER
OLD CHESTER
BROOKSIDE
CLARK
CRAIGVILLE
GATE SCHOOL HOUSE
DZIERZEK
KORYCKI
GIBSON
HERITAGE
ST RTE 17
NOEL
BROADLEA
ORZECK
HOUSTON
CARR
SUNSET
BREEZEWAY
COLONIAL
MAIBEE
UNNAMED
CROSS
WEDGEWOOD
BIRCHWOOD
TOWER
WARD
ST RTE 17A
FINNEGAN
GURDA
CEDAR SWAMP
SCOFIA
RESERVOIR
FORT HILL
ARCADIA
CLARKE
NORTHGATE
QUARRY
JESSUPS WITCH
MALONEY
DURLAND
FOX
ST RTE 94
INDUSTRIAL
PUMPKIN SWAMP
INDIANA
WEST
CENTER
EAST
PULASKI
LAWRENCE
BIG ISLAND

The five (5) overlay districts are created to protect specific types of resources such as floodplains, stream corridors, road corridors and groundwater. They include:

- Flood Plain and Ponding Area Overlay District (FP): to control development within areas subject to periodic inundation and ponding.
- Stream Corridor and Reservoir Watershed Overlay District (SC): to protect the scenic character and water resource values of designated rivers and streams and the water quality of the Village of Goshen's reservoirs.
- Aquifer Overlay District (AQ): to protect groundwater resources that provide both public water supplies and drinking water for private wells.
- Soil Mining Overlay District (SM): to provide appropriate locations for soil mining to occur where it can encourage commercially viable agriculture by enabling farm operators to supplement their farm income.
- Scenic Road Corridor Overlay District (SR): to protect the scenic character of roads in the Town that are in areas that remain substantially undeveloped and/or provide important scenic views, pursuant to the Town's "Open Space and Farmland Plan" as it may be amended from time to time.

In general, the existing zoning provides for relatively low-density residential development, that is, generally one or more acres per lot. Similarly, commercial and industrial districts are zoned for 1 to 5+ acres depending on the development, and are mostly located along major linear arterials, such as Route 17M (the exception being the AI district comprising the southern portion of the Town). Currently, the Town has not matured in terms of nearing its build out potential, so the resultant development pattern has yet to be seen by residents of the Town.

2.7 Traffic Analysis

Introduction

Goshen was once located on the Erie Railroad Main Line. Since the closure of the rail line, Goshen is reliant almost exclusively on vehicular transportation. The closest passenger railroad stations are now located in the Towns of Hamptonburgh and Wallkill. The Town and Village of Goshen are located at the intersection of New York State Route 17, (due to be re-designated as part of Interstate 86), New York State Route 17M, and US Route 6.

Route 6 connects Goshen to Middletown and Port Jervis, while NY 17 continues to Binghamton and the Southern Tier. To the east US 6, NY 17 and NY17M lead to the New York State Thruway at Harriman, with Route 6 continuing to the Bear Mountain Bridge.

NY 207, the former Newburgh-Goshen Turnpike, begins at the interchange with NY 17 and becomes Greenwich Street and Main Street in the Village, before leaving the Village at the north end to continue across the county to Newburgh. South of NY 17, the same roadway becomes NY 17A, leading south to Florida and then to Warwick. Two Orange County roads also connect Goshen to nearby communities: Orange County 8, Sarah Wells Trail, begins north of the Village and runs parallel to NY 207, south towards Washingtonville; and Orange County Route 83 (Scotchtown Avenue) follows the old Goshen Turnpike to Scotchtown and on to Circleville.

This Traffic Analysis section is based on the Goshen Town Wide Traffic Analysis prepared by BFJ Planning in August 2008. The 2008 Study was an update to the Goshen Town Wide Traffic Study conducted by Stantec in December 2006. The complete 2008 Goshen Town Wide Traffic Analysis is appended herein as Appendix B.

Existing Conditions

Hierarchy of Roads

The road network in the Town of Goshen follows a hierarchy of roads, each serving a different function. There are two sets of definitions, as categorized by the New York State Department of Transportation Functional Classification System, one for urban and one for rural areas. The Town of Goshen is best suited to a rural Functional Classification System, which includes major and minor arterials, major and minor collectors, and local roads. A description of each roadway classification is provided below:

Major and Minor Arterials: Major arterials provide corridor movement with trip length and density suitable for sustainable statewide or interstate travel and minor arterials provide linkages between cities, towns and other traffic generators that are capable of attracting travel over longer distances. These routes would have an Average Annual Daily Traffic count of 5,000 to 25,000+.

Major and Minor Collector Streets: provide traffic movement between neighborhoods and collect traffic from local roads. They create the connecting links in the street network. Vehicles are carried from local roads via collectors to principals and minor arterials. These routes would have an Average Annual Daily Traffic count of 3,000 to 5,000.

Local Roads: provide direct access to properties located along them. The rural local road network primarily provides access to land adjacent to the collector network and serves travel over relatively short distances. All roads in Goshen not classified as arterials or collectors are considered local roads. These routes would have an Average Annual Daily Traffic count of less than 3,000.

Roadway Classifications

Using the functional classification system described above, the existing road classifications for the Town of Goshen are shown in figure 2.7. The roadways serving the Town of Goshen may be classified as follows:

Major and Minor Arterials – provide inter-state and intra-state service without access to adjacent properties and linkages between cities, towns and other traffic generators.

NY 17, a limited access highway, is included in this category. NY17 is due to be re-designated as part of I-86 as a result of work being carried out by the New York State Department of Transportation, in cooperation with the Federal Highway Administration.

Other arterials in the study area include the main through roads:

- NY 17 A;
- NY 17M;
- NY 207;
- NY 94;
- Craigville Road (CR 66);
- Scotchtown Road (CR 83);
- Pulaski Highway (CR 6); and
- Sarah Wells Trail (CR 8).

Major and Minor Collectors – serve as connectors between arterials and provide linkages between neighborhoods and collect traffic from local roads/streets. Collectors in the study area include:

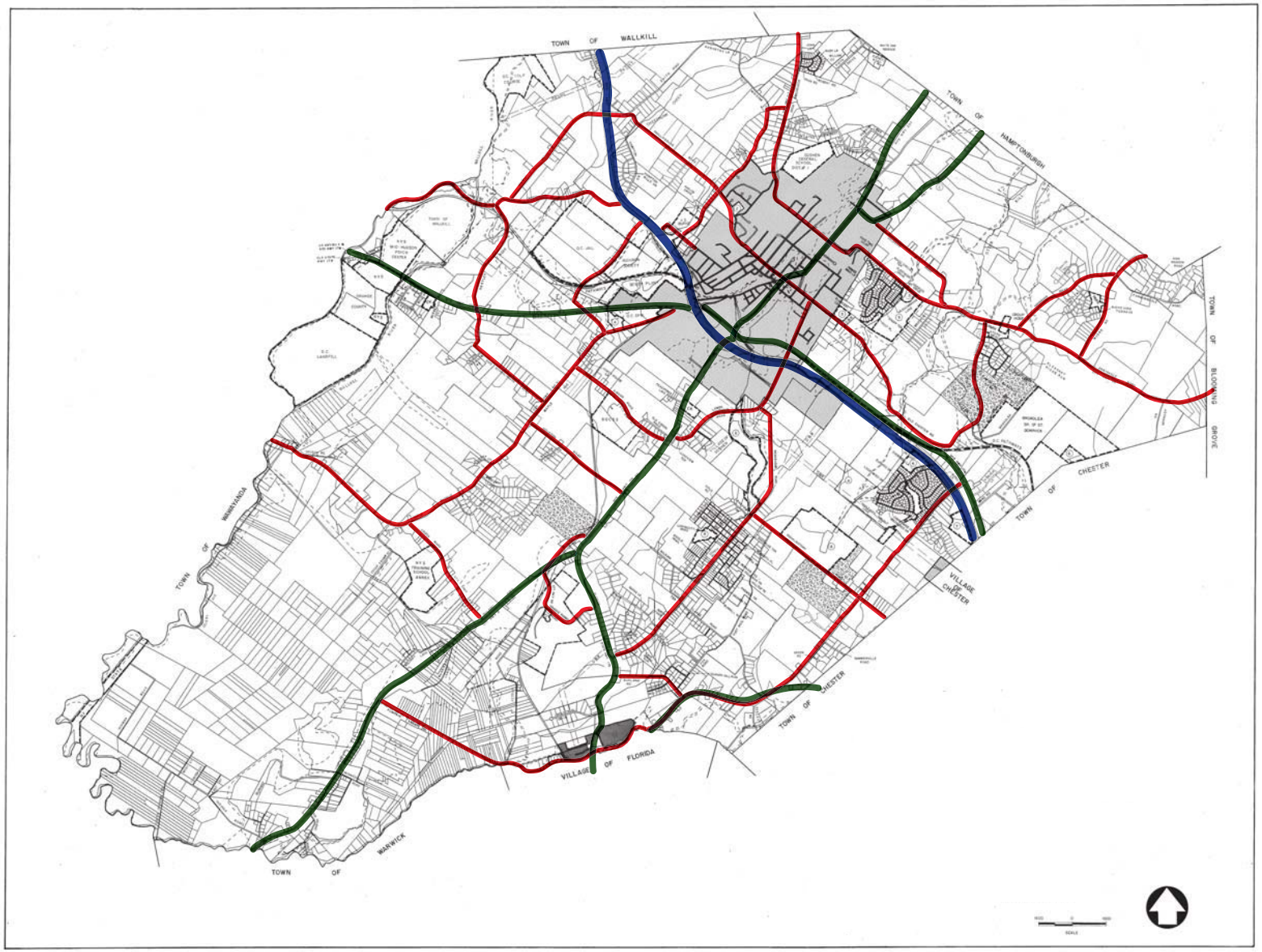
- Phillipsburgh Road;
- Old Chester Road;
- Coleman Road;
- Knoell Road;
- Minisink Trail;
- Cheechunk Road;
- Owens Road;
- Echo Lake Road;
- 6 ½ Station Road;
- Hartley Road;
- Gate Schoolhouse Road;
- Maple Avenue (CR 37);
- Gibson Road (CR 100);

- Cross Road (CR 42);
- Pumpkin Swamp Road (CR 25);
- Orange Farms Road (CR 68);
- Lower Reservoir Road;
- Reservoir Road;
- Conklingtown Road;
- Arcadia Road;
- Durland Road;
- Houston Road;
- Police Drive;
- Hasbrouck Road ;
- Ridge Road; and
- Ward Road.

All roads not classified as arterials or collectors are considered local roads.

Future commercial, industrial or residential development may be served by collector roads which are built and designed for that purpose. Industrial and commercial collectors shall provide direct access to lots as well as taking traffic to the arterial system. Residential collectors however, shall have as their primary function to take residential traffic to Town collectors and the arterial system. Only multi-family uses and residential uses with limited access should be served directly by collectors.

Minor collectors and local roads intended to be continued into adjacent residential parcels, must be built to the adjacent parcel boundary and provided with a temporary T-terminal, or at least graded to that adjacent parcel with a future street sign notifying such an extension.



LEGEND

- Route 17 (I-86) Highway
- Arterial
- Collector

TOWN OF GOSHEN

FIGURE 2.7: EXISTING ROADWAY CLASSIFICATION

SOURCE: NYSDOT RECORDS WWW.NYSDOT.GOV

BFJ Planning

Conflicts in Functional Classification

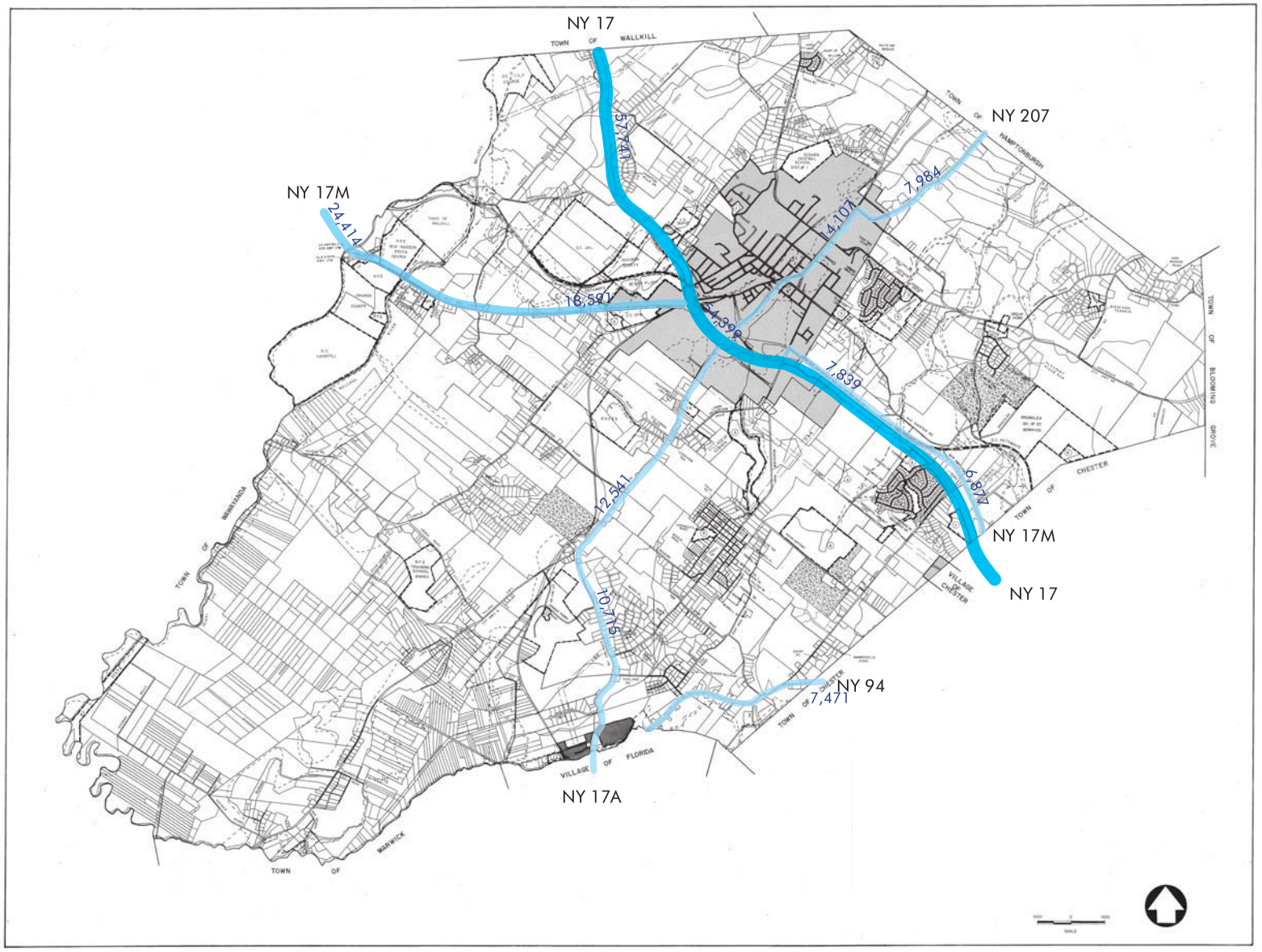
There are generally two types of functional conflicts in a roadway network: either a proliferation of driveways along arterials, thus impeding the through traffic function with numerous turns in and out of driveways, or cut-through traffic along local streets. The first type of conflict is often present along strip commercial developments. Historically these types of commercial developments grew along arterials or State highways, and as long as traffic volumes were low the mixing of local access and through traffic was not an issue. As traffic volumes increase the conflicts translate into higher crash rates and reduced capacities along these arterials. Studies have shown a strong correlation between driveway densities and crash rates. These conflicts need to be addressed through access management strategies. These strategies attempt to control access from the arterial roadway and increase access opportunities from side streets, service roads and from adjacent parcels of land. All arterials in Goshen, especially those with commercial uses, should be subject to access management strategies. Route 17A would be a typical candidate for this type of application.

The second type of conflict can be seen in street networks where local roads become an attractive alternative for through traffic avoiding arterial or collector routes that may be longer or more time consuming. The cut-through traffic along these local roads is seen as a nuisance, and may affect safety and neighborhood character. These conflicts generally are addressed through traffic calming strategies. These strategies aim to reduce traffic volumes or traffic speeds along local roads, through either physical, regulatory or psychological measures. A wide variety of measures may be implemented for this type of conflict. Examples of cut-through traffic in Goshen may include local roads as well as minor collectors, such as Gate Schoolhouse Road.

Traffic Volumes

Analyzing existing traffic volumes on Goshen's arterials and collector roads helps to determine if and where capital improvements are needed. The general unit of measurement for traffic on a road is the annual average daily traffic (AADT), which is defined by the New York State Department of Transport (NYSDOT) as the estimated average daily traffic volume on a route segment at a particular count station location.

Figure 2.8 illustrates average annual daily traffic volumes for 2006 on major and minor arterials, and a number of collector routes. As shown, the greatest traffic volume occurs on NY 17, which is the primary arterial providing access to Goshen from I-84 and I-87.



2006 AADPT:

- 0-2,000
- 2,001-5,000
- 5,001-15,000
- 15,001-50,000
- 50,001-300,000

TOWN OF GOSHEN

FIGURE 2.8: AVERAGE ANNUAL DAILY TRAFFIC, 2006 (AADT,2006)

SOURCE: NYSDOT RECORDS WWW.NYSDOT.GOV

BFJ Planning

Accident History

An analysis of all the crashes reported to NYSDOT (collected by the local Police Departments) was conducted for major intersections and their surrounding area in the town of Goshen (excluding Village of Goshen) from the January 2004 to October 2007. Each crash report was reviewed based on location, type of accident, time of day, day of the week, month of the year, persons injured or killed and number of vehicles involved. There were a total of 177 crash reports reviewed along the major roads and intersections described above. Table 2.4 shows the total number of reported vehicular accidents within the study area.

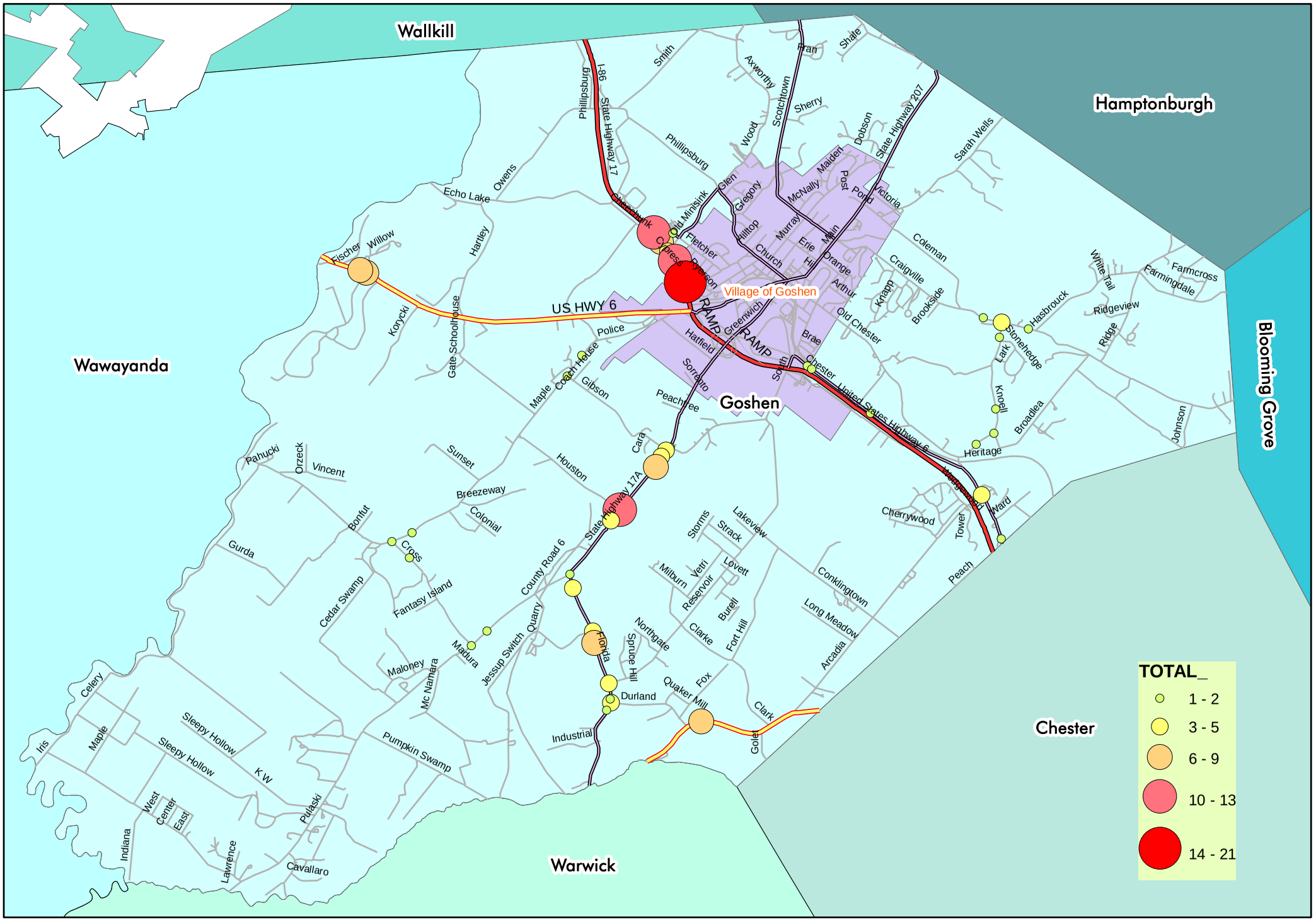
Table 2.4 Number of Reported Vehicular Accidents & Type of Accidents

Accident Type				Light Condition			Wet Road	Fixed Object	Ped. & Bike	Truck	Total
Fatality	Injury	PDO*	N/R+	Down/ Dusk	Day	Night					
0	70	61	46	11	102	42	34	49	0	6	177
0.0%	39.5%	34.5%	26.0%	6.2%	57.6%	23.7%	19.2%	27.7%	0.0%	3.4%	100.0%

Source: NYSDOT and BFJ Planning
Notes:
**PDO – Property Damage Only.*
+ N/R – Type of accident was not reported.

No pedestrian crashes were reported. Of the 177 crashes, 39.5% of total accidents involved some kind of injury with no fatalities being reported. Almost 28% of drivers collided with fixed objects and only 3.4% of crashed included trucks.

Figure 2.9 shows the accident summary data for the study area.



Comprehensive Plan & Zoning

TOWN OF GOSHEN, NEW YORK

FIGURE 2-9: TOWN OF GOSHEN TRAFFIC ACCIDENTS (JAN. 2004 - OCT 2007)

Source: New York State DOT

BFJ Planning

Strategies and Recommendations

Future Road Improvements

The New York State Department of Transportation (NYSDOT) in cooperation with the Federal Highway Administration has begun a public consultation process in relation to the preferred interchanges and road improvements for the proposed upgrade of Route 17 to Interstate 86.

These road improvements will not affect the functional classification of the roads, apart from a shift of Route 17M to Matthews Street in the Village of Goshen and Chester Road in the Town of Goshen. As a result Matthews Street and Chester Road will have to fulfill a more regional role compared to today.

Table 2.5 shows the list of intersections that was studied in the Goshen Town Wide Traffic Study (Stantec, December 2006) together with the current and projected levels of service and the number of crashes for each intersection. The table also shows the amount of side street traffic during the peak hour that is delayed. These variables allow the Town to prioritize intersection improvements. The intersections with current levels of service F and with more than 10 crashes over the 3.8 year period have been marked in red an indication to prioritize improvements at these intersections.

Roundabouts

Goshen's roadway network is ideal for the installation of "modern" roundabouts, instead of signalized intersections. It is important not to confuse the successful modern roundabout with the older, "nonconforming" traffic circles or rotaries built in the early- or mid-20th century in the United States. Problematic elements in older designs are responsible for residual negative perceptions in the U.S. of the one-way rotary intersection. The two main deficiencies of old traffic circles are that 1) entering traffic often had the right-of-way, which tended to cause lock-ups at higher volumes; and 2) the circles were often designed for high-speed entries, increasing the likelihood of accidents and making the old traffic circles dangerous. In contrast, the modern roundabout system of Yield-at-Entry requires that vehicles in the circulatory roadway have the right-of-way and all entering vehicles must wait for a gap in the circulating flow. Also, modern roundabouts are designed for slow entry speeds (typically 15 to 20 mph) making them very safe.

Table 2.5 Intersection Improvement Priorities

Intersection		Exist. LOS	2011 LOS	2016 LOS	Minor Street Delayed Volume		Number Of Accidents	
#	Description				2006	2016	Total	Inj.
1	NY Route 207 / Scotchtown Road / (Country Route 83) / Craigville Road (County Route 66)	E	F	F	592	991	7	5
2	NY Route 207 / Sarah Wells Trail (Country Route 8)	F	F	F	115	149	6	3
3	Sarah Wells Trail (Country Route 8) / Coleman Road	B	B	B	9	33	NA	
4	Craigville Road (Country Route 66) / Knoell Road	B	B	B	84	152	3	1
5	Knoell Road / Old Chester Road	A	B	B	36	154	2	2
6	NY Route 17M / Old Chester Road	C	E	F	79	212	1	1
7	NY Route 17A / Lower Reservoir Road	D	F	F	21	28	1	0
8	NY Route 17A / Reservoir Road	D	E	F	61	70	4	3
9	NY Route 17A / Durland Road	C	D	E	39	54	5	3
10	NY Route 94 / Durland Road	B	B	B	78	96	6	3
11	NY Route 17A / Pulaski Highway	F	F	F	133	137	NA	
12	NY Route 17A / Quarry Road (Country Route 68)	E	F	F	173	183	5	2
13	NY Route 17A / Houston Road	C	D	E			11	6
14	Maple Avenue (Country Route 31) / Houston Road	A	B	B	73	98	NA	
15	Maple Avenue (Country Route 31) / Gibson Road (Country Route 100)	A	B	B	59	70	2	0
16	NY Route 17M / 6 1/2 Station Road / Maple Avenue	F	F	F	340	369	NA	
17	NY Route 17M / Arcadia Road	A	C	C			5	3
18	NY Route 17M / South Street	C	E	F	758	1047	NA	
19	Harriman Drive / South Street	C	F	F	365	531	NA	
20	NY Route 17 Westbound Ramps / NY Route 17M (East)	D	F	F	379	521	2	1
21	South Church Street / South Street / Parkway / Old Chester Road	C	D	D	720	805	1	1
22	Miniskin Trail / Philipsburg Road	A	A	A	NA	NA	NA	
23	Maple Avenue (Country Route 31) / Cross Road (Country Route 42)	B	B	B	158	160	1	1
24	Cross Road (Country Route 42) / Pulaski Highway	B	B	B	95	97	1	0
25	NY Route 17 Eastbound Ramps / Harriman Drive / Driveway	B	C	C	155	312	NA	
26A	Cheechunk Road / Route 17 Connector / Cypress Road	B	B	B	226	299	6	3
26B	NY Route 17 Eastbound Ramps / Route 17 Connector	D	F	F	183	239	13	6
27	NY Route 17 Westbound Ramps / Route 17 Connector	C	F	F	133	185	4	1
28	NY Route 17A / Gibson Road (Country Route 100)	B	B	C	79	98	3	1
29	Fletcher Road / Route 17 Connector / Burke School Drive	C	C	D	280	360	1	0
30	NY Route 17 Westbound Ramps / NY Route 17M (West)	B	C	C	194	239	NA	

Sources: Goshen Twon Wide Trafic Study, Stantec, December 2006; NYSDOT; BFJ Planning

BFJ Planning
May 2008

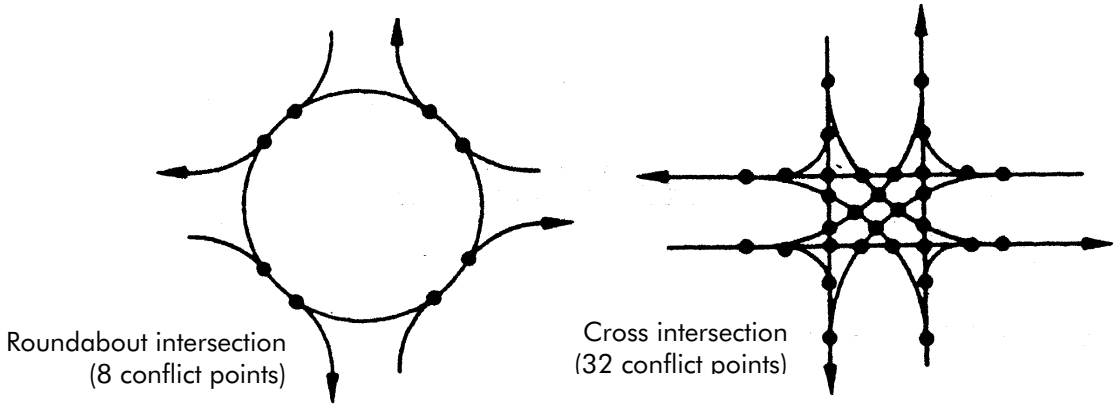
In the 1950s, Great Britain tested the improved Yield-at-Entry roundabout and found that capacity was increased by 10 percent and delays were reduced by 40 percent in comparison to other options, including no control, police control, or signal control. Due to low entry speeds, crashes with injury were reduced by 40 percent when compared with cross intersections – both with and without signals. The improved roundabout was thereafter exported worldwide. Roundabouts are very common in France, Australia, Germany, Switzerland, Scandinavia, Spain and Portugal, and are increasingly common in New Zealand, South Africa and Israel. The roundabout is finally re-gaining acceptance in the United States, with examples like the Gainesville, FL roundabout, built in 1992, and the I-70/Vail Road interchange completed in October 1995. In 1997 the Town of Avon, CO built a string of five roundabouts along Avon Road with a common cultural and landscaping theme. New York State DOT has been actively building roundabouts in the State since about 2000.

The increased acceptance of roundabouts in the United States is due to three main factors:

1. Increased capacity and reduced vehicle delay - A high degree of capacity and fluidity can be achieved by the modern roundabout. When greater capacity is required, relatively simple improvements can be implemented such as widening the entries to provide more than one entry lane, and widening the circulatory roadway.

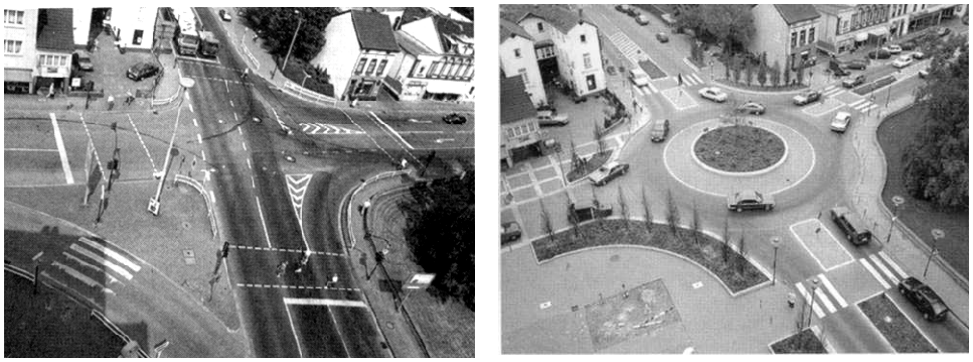
2. Improved Safety - Roundabout design has consistently proven to be superior in safety to cross intersections. Reduced speeds alone make impacts less likely and less severe when they do occur. Driver error is less likely because the driver who enters the roundabout must be alert to only one traffic movement – he looks left for an acceptable gap to enter into the flow. By contrast, a driver at a four-way intersection has to deal with two or three different movements. In a roundabout, no one can run a red light and cause a right-angle collision; accidents that do occur are generally side-swipe or rear-end types. The presence of the center island interrupts an otherwise straight path, forcing slowing and heightened awareness in the roundabout. In contrast, traffic given the green light at conventional signalized intersections does not slow at all. With road rage so much in the news recently; it is worth noting that reduced delays at roundabouts compared to signalized intersections have the effect of decreasing the level of frustration and aggressiveness of drivers, making them behave in a more responsible manner.

Safety Aspects of Roundabouts; Potential Conflict Points



Survey results taken before and after roundabout construction have proven these findings. In small- to moderate-sized roundabouts a total crash reduction was achieved of 51 percent, with a reduction of 73 percent in crashes with injury and 32 percent in property-only crashes. Large roundabouts experienced a less dramatic but still positive improvement. Total crashes were down 29 percent; crashes involving injury were down 31 percent and property-damage-only crashes were down 10 percent. A safety study conducted by the Insurance Institute for Highway Safety and NYSDOT has confirmed these substantial safety improvements.

3. *Positive Aesthetic and Environmental Effects*- The roundabout improves the visual quality of the road and is a major reason for the support it enjoys among residents, urban planners, and politicians. In many cases of roundabout construction there is a reduction in total area paved and a more elegant use of space (See figure above). The landscaped center island is an opportunity to create a sense of place. Reduced idling time at roundabouts has significant environmental benefits in the reduction of noise and air pollutant emissions. Field measurements in Sweden showed reductions in pollutant emissions and fuel consumption in the range of 21 to 29 percent.



Before and after roundabout construction, Bruhl, Germany

Public Acceptance of Roundabouts

Due largely to the dangers presented by older "traffic circles" public opinion in the United States towards roundabouts has been relatively low. An interesting study was prepared in 1998 concerning public opinion towards roundabouts before and after one was constructed in the respondents' area. The study found that whereas before the construction of the roundabout, 68 percent of public response was negative or very negative toward the roundabout, there were no negative feelings after the construction. After construction, 73 percent of the respondents indicated a positive or very positive attitude. It is also interesting to note that improvement in safety on newly built roundabouts is immediate, despite the fact that drivers are inexperienced with the roundabout. The initial negative public reaction to the Kingston, NY roundabout (opened end of November 2000) is an exception, and can be explained by the introduction of bypass lanes and the fact that the roundabout was opened before the signage, striping and markings were in place.

Appropriate Locations for a Roundabout

The roundabouts built in the United States cover a wide range of applications: roundabouts can be found in urban, suburban or rural areas, on arterials, collectors or local streets.

The most appropriate locations identified for successful roundabout construction include, but are not limited to the following:

- High accident locations, especially those related to cross movements or turning movements.
- Locations with high delays (especially if there is limited space to accommodate lanes of waiting traffic).
- Locations where traffic signals are not warranted.
- Four-way stop sign intersections.
- Intersections with more than 4 legs
- Intersections where it is difficult or expensive to widen the approaches sufficiently to provide the approach width needed for signalized intersections. Roundabouts function well with narrow approaches.

Costs of Roundabouts

At the low end, $50,000 reflects the cost of a roundabout that is installed by the municipality's own personnel within an existing intersection, where the only work includes the construction of the central island and the splitter islands. At the high end are roundabouts built by the state agencies on state highways, generally involving substantial amounts of grading and drainage, as well as

relatively long splitter islands and lots of curbs. These state-built roundabouts can cost in the range of $400,000 to $600,000 each.

Traffic Calming

Generally the purpose of traffic calming is to reduce the negative impacts of traffic intrusion into residential neighborhoods or other areas with relatively high levels of pedestrian activity. Traffic calming strategies involve reducing traffic speeds or limiting the degree of vehicular freedom in an area, without prohibiting traffic movement.

Throughout the United States, traffic volumes and speeds are increasing, particularly on local roads. This is largely due to drivers looking for short cuts to avoid congested regional roads and arterials. Often, this results in drivers traveling through residential neighborhoods at relatively high speeds. Since local roads may be designed to be wide, straight and seemingly underutilized, as compared to arterial and collector roads, drivers are tempted to accelerate and drive at 35-40 mph, rather than at the 25-30 mph posted speed limits. This has an impact on the quality of life within the neighborhoods in terms of increases in noise and pollution levels, accident rates and hindrances to the mobility of local drivers.

Access Management for Commercial Development

Access management provides controlled access to land development while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety, capacity and speed. Access management increases traffic safety and capacity, provides shorter travel times and creates pedestrian/bicycle/transit friendly communities. Whereas access from the major road may be more limited with access management, access from side streets and from adjacent properties are often increased.

One of the greatest difficulties with access management along arterial and collector routes is the general lack of incentives for property owners to share common access points and the lack of regulatory powers to require owners to consolidate driveways. It is therefore important to consider access management early in the plan review process and during site plan review. Property owners may be encouraged to obtain easements from neighboring property owners to eliminate unnecessary access points along arterials and collectors. New commercial developments should be required to provide direct vehicular access to adjacent commercial parcels.

Street Connectivity

It is generally desirable to have a comprehensive and flexible street network where streets are interconnected and the network allows circulation alternatives. The advantages of such a network are the greater capacity of the system as a whole, greater circulation flexibility, lower vehicles

miles of travel, greater reliance on low speed streets rather than arterials, and also a network that is more favorable for bicycle and pedestrian circulation (since the travel distances are shorter, and these vulnerable modes prefer to be on local streets). Even though residents like to live on dead-end streets (because there cannot be any through traffic), a more comprehensive grid system can also allow for high quality residential environments. The grid system can be designed such that no street will have excessive traffic volumes and the overall vehicle miles of travel would be less than with a series of dead-end streets. The problem with the proliferation of dead-end streets is that there is no circulation flexibility and all dead-end streets have to connect to an arterial that will end up carrying high volumes of traffic, yet not every intersection can be signalized. This is sometimes referred to as the sewer approach to traffic planning, i.e. all small pipes lead to a large sewer.

When a municipality considers connecting two local streets, attention should be paid to the traffic effects that the connection may have. In some cases the connection may attract excessive amounts of through traffic that could affect the residential character of the street. These effects can be studied through traffic and origin-destination surveys, and potential traffic diversions can be estimated. Traffic volumes are always likely to increase at the end of the dead-end road when that dead-end road gets connected to another dead-end road; however, in most cases these increases are low and will not affect the character of the residential street. The increases at the end of the dead-end may be offset by reductions at the intersection with the major road and also by the reduced vehicle miles of travel and greater flexibility and better emergency access. Generally the residential character of a street is not threatened as long as daily traffic volumes are less than 2000 vehicles[5]. However, the introduction of new connector streets to long established strong residential neighborhoods also has the potential to modify the existing social fabric in place, and must be considered in determining the appropriateness of any proposed connectivity.

Public Transportation

Main Line Trolley Bus operates a local bus service in conjunction with Short Line bus operators from Chester to Woodbury Common, with stops at Chester, Goshen, Harriman, Middletown, Monroe and Woodbury Common. This service operates two morning services and two evening services in both directions on weekdays and one morning and one evening service in both directions at weekends. This route serves County Government Center, Main Street, Matthews Street Park and Ride, VA Clinic and Arden Hill Hospital in Goshen.

The Short Line commuter service from Woodbury Common to New York City, Port Authority Bus Terminal, operates 15 morning services to New York on weekdays and 6 morning services to

[5] Appleyard, Donald, 1981. *Livable Streets*. University of California Press, Berkeley and Los Angeles, CA.

New York on the weekend. There are 5 afternoon/evening weekday services and 6 afternoon/evening weekend services to New York. All of these pick up passengers in Goshen.

The return service operates 16 afternoon/evening buses from New York on weekdays and 8 afternoon/evening buses from New York on the weekends. There are also 3 morning services from New York on weekdays and 2 at weekends, all of which serve Goshen en route to Woodbury Common.

Pedestrian and Bicycle Circulation

The County, in cooperation with Orange County Pathways, has created a trail along the old Erie Railroad which presently runs from 6 ½ Station Road to Monroe and should be completed shortly as far as the old Harriman Railroad station at Routes 17-32. This trail is eventually going to be extended north through an industrial area to Echo Lake and on to Middletown. This trail provides recreation facilities for pedestrians and cyclists in a safe environment, free from vehicular traffic.

3.0 COMPREHENSIVE PLAN

3.1 Goals and Objectives

This subsection articulates seven (7) goals and the coinciding objectives to be achieved through the implementation of this Plan.

Goal #1 Protect and enhance the agricultural activities and rural character of the Town.

- Encourage the preservation of viable agricultural properties.
- Identify farmland for use in a Purchase of Development Rights (PDR) program. [NOTE: A Town-wide referendum was passed in 2004 to protect farmland through PDR's]
- Actively work with farmers to promote best farming practices.
- Maintain farm-friendly practices in agricultural areas.
- Encourage appropriate rural residential development.

Goal #2 Support existing Village center and foster Town clusters

- Promote subdivision designs and layouts that create connected street patterns where appropriate.
- Allow cluster development in order to encourage open space preservation, pedestrian activity and the reduction of car dependence for all trip generated activity.
- Allow group water and wastewater systems in cluster developments in order to maintain environmental stability where appropriate.
- Encourage development that strengthens the development of the Village of Goshen as the development center of the Town.

Goal #3 Provide a range of housing alternatives that will meet the housing needs for a range of socio-economic groups.

- Provide for the development of affordable/multi-family and senior/adult housing units at appropriate locations.

Goal #4 Develop a strong and balanced economic base.

- The Town must attract tax positive commercial development to offset existing tax exempt lands and to help pay for services required by the growing population.
- Encourage a diverse economic base that provides tax ratables as well as necessary local services.
- Permit small scale neighborhood commercial use by special permit in cluster developments where appropriate.

Goal #5 Protect and enhance open space and public space.

- Actively utilize conservation easements through zoning and the purchase of farmland and other open space.
- Ensure that land designated for public open space requirements is primarily high-quality, usable space and not wetland or steep slopes.
- Preserve the Town's mature forests and natural terrain to the greatest extent practicable.

Goal #6 Ensure a development pattern that will provide for sustainable water use.

- Ensure that residential development does not exceed the groundwater recharge capacities of existing watersheds as outlined in the Town-Wide Potable Water Study.
- Maintain and enhance the groundwater capacities of watersheds through the public or private provision of infrastructure and through the adoption of water conservation policies.
- Ensure the preservation of water quality throughout the community.

Goal #7 Encourage appropriately sited development & protect environmental assets

- Ensure that development proposals are appropriately sited considering the surrounding and natural topography (including factors such as soil type, elevation, natural terrain and adjacent development) and available/appropriate infrastructure.
- Protect wetlands, including, but not limited to, DEC and Army Corps Wetlands.

3.2 Key Elements

Revise Hamlet Residential (HR) and Hamlet Mixed-Use (HM) Districts

Over the past several years the Town has experienced difficulties with the locations of the mapped HM and HR districts, their inability to fully comply with some of the required criteria for Traditional Neighborhood Development (TND) patterns, and the likely development of disparate hamlets detracting from the Village of Goshen as the development center of the Town that should be reinforced. The concept of Hamlet Residential and Hamlet Mixed-Use districts should be revised to reflect development more appropriate to the rural character of the Town of Goshen, rather than a high density urban-type development.

It is necessary to revise the development and design criteria associated with the existing Hamlet districts and consider cluster developments with low to medium density, as opposed to high density hamlet developments.

It is recommended that the Hamlet Mixed Use (HM) and Hamlet Residential (HR) districts be merged into one zoning district called Hamlet Residential (HR). In addition, a number of the Hamlet Residential – Hamlet Mixed Use zones as mapped, adjacent to the Village of Florida and the Village of Goshen, should be reduced in size or eliminated. The HR district should be developed at low to medium density, maintaining a maximum density of no more than 3 units per unconstrained acre. The minimum lot size should be at least 8,000 sq. ft. in all circumstances for a single-family dwelling, 10,000 sq.ft. for a two-family dwelling, 12,000 sq.ft. for multi-family dwellings, and 2,500 sq.ft. for a defined Town home. The minimum square footage of such lots should not be located on constrained lands. A minimum of 30% of the site area should be private and public open space and should not include wetlands or other constrained lands to ensure a high quality of open space. No more than 30% of the dwelling units proposed should be multifamily dwellings to ensure a diversity of housing. Non-residential development of up to a maximum of 10,000 sq.ft. should be permitted by special permit from the Town Board and the Town Board may allow by special permit a supermarket of up to a maximum of 60,000 sq.ft., as a supermarket is an important element to the area's economic viability. Light industrial development should be omitted as a permitted use in this district, unless considered appropriate by special permit.

Eliminate discretionary density bonuses within the Rural (RU) Zoning District

All discretionary density bonuses should be eliminated in the RU District, and allow density standards to be set forth as part of the zoning code and subdivision regulations. This elimination also removes the uncertainty regarding the densities permitted for any particular project that was previously dependent on an unnecessarily complex system of Code-dictated Planning Board discretionary decisions that in operation provided few density additions in any event.

Omit Transfer of Development Rights (TDR) from the Zoning Code

The Transfer of Development Rights (TDR) should likewise be eliminated, as the Town believes that TDR is not necessary as a tool to incentivize cluster development.

Revise Planned Adult Community (PAC) Provisions

It is recommended that PACs not be permitted in the CO district. The parameters within which Planned Adult Communities are permitted should be revised to permit PACs in any residential district, provided it is connected to a Town water district and Town sewer district, or extensions thereof. Further, the maximum density of a PAC should be reduced from 5 to no more than 3 units per acre of unconstrained land (including roads), with a maximum of 200 units in any one PAC to avoid a mega-PAC that would not be consistent with the character of Goshen. The PAC should also be located with direct access to a State or County highway or arterial or collector road for easy access, and should be developed on naturally existing walkable topography with no development permitted on predevelopment slopes over 15%. PACs should be permitted in an RU or HR district by special permit from the Planning Board, consistent with the above criteria.

Multifamily Housing Provisions

Goal #3 of this Plan is to provide a range of housing alternatives that will meet the housing needs of a range of socio-economic groups. To better implement this Plan goal, it is recommended that multifamily housing be allowed as of right, subject to site plan review by the Planning Board instead of by special permit, within the RU [multi-family dwelling conversion, accessory apartment, and Planned Adult Community (PAC)], HR (multifamily dwelling new and conversion, accessory apartment, and PAC), HC (accessory apartment and upper-floor apartments in mixed-use building), and CO (multi-family dwelling conversion, accessory apartment, and upper-floor apartments in mixed-use building) zoning districts. Implementation of this Plan recommendation would streamline the approval process for a range of multifamily housing types in the Town.

Increase Impervious Surface Coverage Ratios

To attract additional tax positive commercial development and to encourage a diverse economic base that provides tax ratable for the Town (Goal #4), it is recommended that the Town's maximum impervious surface coverage requirements (Zoning Code §97-14.A) within the CO, HC, and I Zoning Districts be increased to more competitively compare with the commercial coverage requirements of other Orange County municipalities. The following maximum impervious surface coverage ratios are recommended:

Zone	Maximum Impervious Surface Coverage	
	Existing	Proposed
HC	60%	70%
CO	40%	70%
I	30%	70%

Revise Town of Goshen Water Testing Protocols

To address concerns regarding the scarcity of water supply in Goshen and impacts on water quality from natural and manmade sources as well as from the development of subdivisions that do not presently require testing under the existing Zoning Code, revisions to the Town of Goshen Water Testing Protocols [Zoning Code §97-43(B)] are recommended[6]. The recommended revisions to the testing protocols are intended to provide improved protection for existing and future residents of the Town from water quantity and quality problems caused by the increasing number of development proposals for large tracts of land. The recommended revisions to the Water Testing Protocols seek to meet the following objectives:

[6] The proposed revisions to the Town of Goshen Water Testing Protocols have been prepared by the Town's Consulting Engineer, Dennis Lindsay of Riddick Associates, P.C., in consultation with the Town Board.

- Provide better assurance, through more extensive testing, that lots created by subdivision have adequate water supply without significant impact to existing developed lots and adjacent parcels with development potential.
- Establish water testing protocols to provide better assurance that water supply is adequately evaluated for quantity and quality with consideration of needs of adjacent developed parcels or having potential for development.
- Provide for the location of wells in areas that provide the best opportunity for long-term water quality protection.
- Provide adequate test pumping rates and duration to better assess long-term water supply capabilities and impacts on adjacent parcels.
- Provide consideration of potential impacts from known contaminated sites.
- Provide such measures as are required to best assure lots created by subdivision will have long-term water supply of adequate capacity and quality without unmitigated impact on adjacent wells or property.

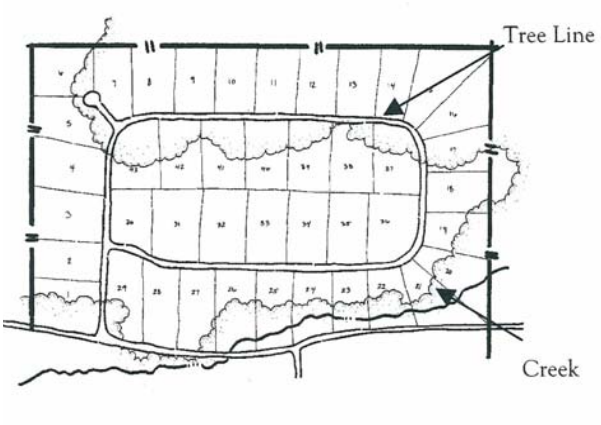
Based on the Town's Consulting Engineer's review and in consideration of the findings in the Town-wide Potable Water Planning Study and Town experience in implementing existing zoning, it is recommended that the Zoning Code be modified to include testing of subdivision wells to demonstrate adequate water supply. In summary, the draft zoning amendments are intended to accomplish the following:

- Provide for the drilling of sufficient wells in all subdivisions of three or more lots (after preliminary action) to provide assurance of adequate water supply throughout the subdivision.
- Provide well testing at a rate that will ensure adequate sustainable water supply with consideration of impacts on neighboring wells and properties. In accordance with the Town-Wide Potable Water Planning Study this will not be less than 200% of maximum day demand.
- Requirement that test pumping be extended at the discretion of the Town to 96-hours or more if stabilization is not achieved after the 72-hour test is completed.
- Analysis of data that includes consideration of adjacent existing wells and potential subdivisions based on existing zoning.
- Installation of monitoring wells at site boundaries or use of existing wells to confirm impacts on adjacent wells and property.
- Bonding requirement to ensure all drilled wells are either adequately caped until they are made production wells or are abandoned properly in accordance with health department standards.

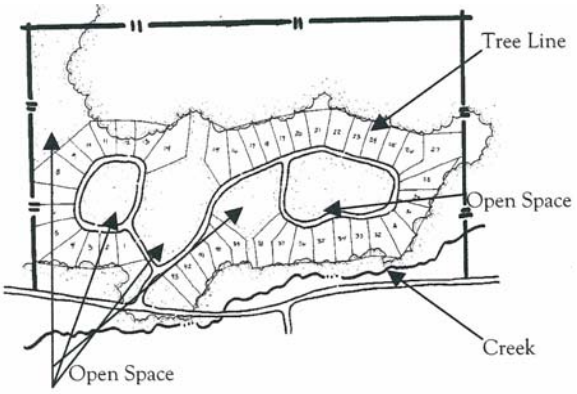
3.3 Land Use Recommendations

Most of the Town of Goshen should develop consistent with the rural nature of the Town and to preserve open space, with the exception of the Hamlet Residential districts. This development pattern is consistent with the Town's priority of preserving its rural character, balanced with the need to provide a fair return to landowners, as well as meeting its reasonable share of local and regional needs for housing, jobs and community services. This recommendation is set in the overall regional planning context that seeks to concentrate large-scale growth in urban centers. Residential development should generally take a clustered form in which large amounts of open space are permanently preserved. Areas along State highways already developed commercially or along Route 17 are suitable for more intensive commercial and light industrial uses where appropriate.

Cluster residential subdivisions should be encouraged over conventional residential subdivisions as they provide the opportunity to preserve environmental features and create common open space areas.



Conventional Subdivision
(43 lots on 100 acres)
0% Community Open Space,
approx. 2 ac. Home lots



Cluster Subdivision
(43 lots on 100 acres)
60% Community Open Space,
approx. ½ ac. Home lots

Preferred Residential Development Forms

This Comprehensive Plan recommends continuing with existing options for residential development: small scale developments, open space development, clusters, and conservation density developments. Conventional subdivisions, which create the form popularly known as "suburban sprawl," with building lots of relatively uniform size and no significant protected open space, is not consistent with maintaining the Town of Goshen's rural character. To accommodate

the needs of landowners to generate income from their land, or to split off lots for use by family members, the Plan also recommends that a limited number of lots be allowed to be created on a small scale in the more conventional pattern associated with suburban sprawl, but that this option not be available for the full-scale development of any large property.

Cluster (Open Space) Development

The above image compares cluster subdivision design (also known as "open space" subdivision design) with conventional subdivision design. In general, an open space subdivision preserves open space by reducing minimum lot area and bulk requirements, while maintaining the same overall density as a conventional subdivision. The undeveloped land area is devoted to open space, active recreation, preservation of environmentally sensitive areas and/or agriculture. It is permanently preserved by a conservation easement that runs with the land. The land preserved in an open space subdivision may be carefully selected based upon a conservation analysis that assesses the various environmental resources on the property and sets priorities for their preservation.

Permissive and Mandatory Affordable Housing

Increasingly workers are willing to add to their commute time in order to purchase a more affordable home than is typically available around the major regional employment centers (New York City and Westchester County). Accordingly, many are seeking new housing in Orange County (as identified in the *Orange County Comprehensive Plan*). Also, many other workers and non-workers alike are seeking more affordable housing. However, new housing development tends to push housing prices up throughout the housing supply. This poses a problem with regard to providing more affordable housing alternatives for existing residents, new arrivals, families of moderate income, first time homebuyers, senior citizens and others. Further, given the decline in Goshen's population in the 20-34 age cohort and the increase in the 55+ age cohort, the provision of affordable housing is going to become a larger issue in the near future.

The Town should encourage the availability of more affordable housing by (1) providing an adequate opportunity in the zoning laws for the development of multi-family and rental housing units, (2) mandating and maintaining affordable housing in certain medium density and adult housing areas, (3) designating appropriate areas to encourage affordable housing, and (4) providing for and/or requiring smaller lots in water/sewer serviced areas. The affordable housing should be targeted to those whose incomes are at or below a reasonable range of the median income level for the Town of Goshen and, as permitted by law, provide for the

reservation of such housing for individuals or families providing essential services to the community, as reviewed and determined by the Town Board.[7]

Age-Restricted Housing

Municipalities throughout the U.S. have decided to embrace changing demographic patterns and are encouraging retirees to move to their communities, or at a minimum, providing facilities that allow existing senior citizens to "age in place." Realizing that retired people make good neighbors, these communities have begun to market themselves to the 55+ age bracket by playing up their safety, natural beauty and access to cultural amenities.

A review of 2000 Census data for both Orange County and the Town of Goshen indicates that there is an increase in the senior age groups. Accordingly, the Town should evaluate its ability to meet the needs of all residents in need of unique housing. Planned Adult Communities should be allowed in residential districts, pursuant to a set of development parameters, including ready access to major roadways and municipal water and sewer, and receptive topography to facilitate a pedestrian environment without excessive grading of the natural terrain that is so important to Goshen's environment.

3.4 Open Space and Recreation Plan

As discussed in the existing conditions section of this Plan, the Orange County Planning Department developed a recreation study for the Town of Goshen. This study clearly outlined the need for more park and recreation facilities in the Town, simply to meet the current demand.

Natural features and open space are encouraged to be retained through active farmland usage, clustered development of housing, and acquisition of conservation easements by land trusts and other appropriate agencies. The Town used the information included in the recreation study to develop and implement an *Open Space and Farmland Protection Plan* in July 2003, which included the recommendations of the *Town of Goshen Parkland and Recreation Study.*

The Town should also review its recreational facilities on a regular basis to ensure that availability keeps pace with residential development. While cluster guidelines will allow for the development of small pocket-parks within newly developed neighborhoods, there remains a need for larger Town-wide park facilities. As both pocket parks and larger facilities begin to develop in the Town, the Planning Board should actively seek to acquire connecting parcels and easements and to develop trails that connect these open space amenities.

[7] Examples of essential services include, teachers, fire personnel, police, nurses, emergency medical personnel, etc.

Wallkill River Trailway Area

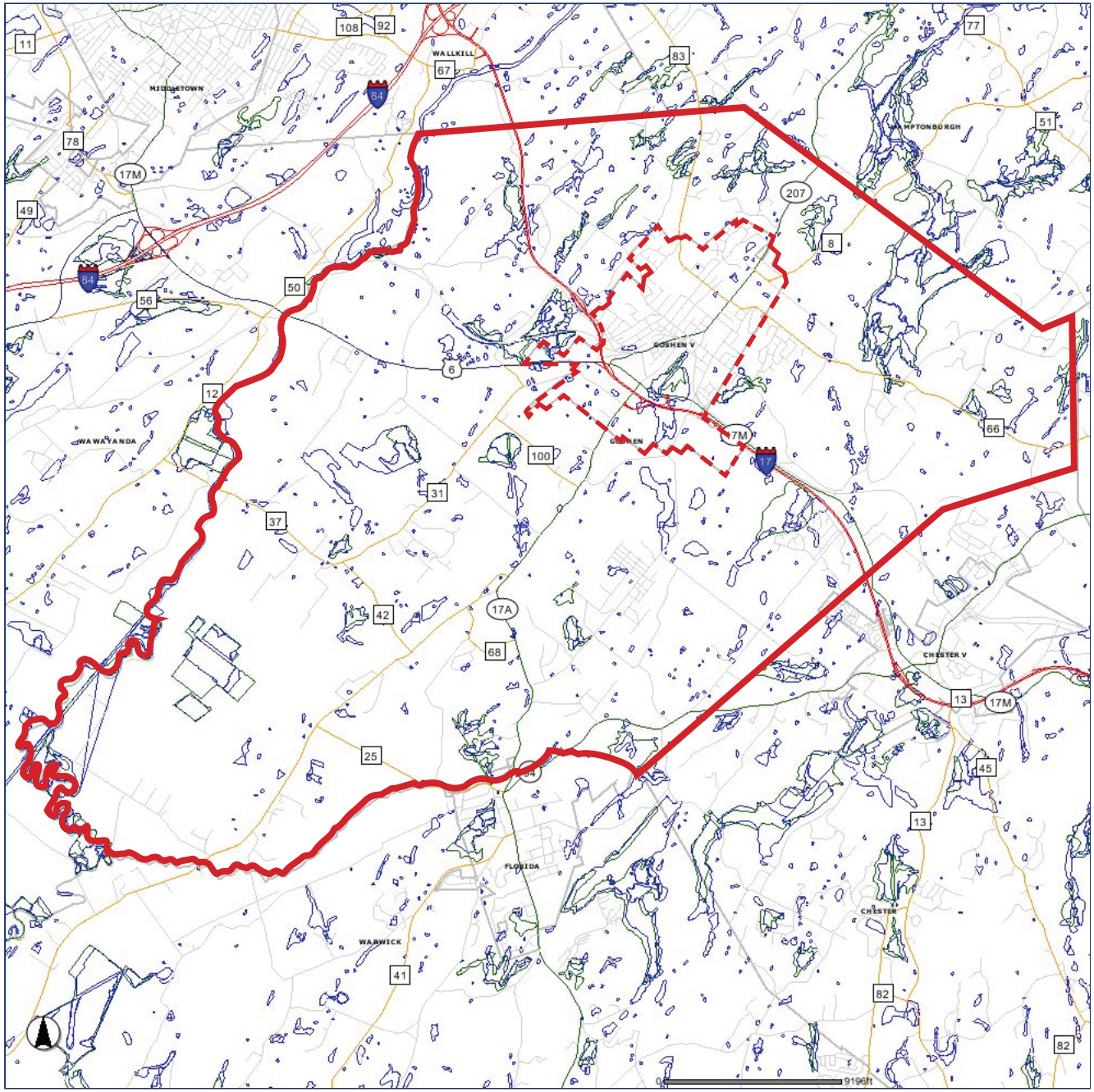
The Wallkill River is an underutilized, neglected and, at times, even abused natural resource in the Town. The Wallkill River Task Force has identified a large area along the river which can be developed as a multiple use recreation area[8]. The boundaries of the proposed site are the Town of Wallkill line, the north side of the Al Turi Landfill, and the Wallkill River and border with the Town of Wawayanda. This area represents several contiguous parcels owned by different individuals and groups. The site offers tremendous potential for both passive and active recreation, as well as providing an opportunity to revitalize a large natural area in the Town.

A conceptual plan has been put forward to the Wallkill River Task Force that includes areas for natural feature restoration and the creation of parkland, active and passive recreation, as well as an extensive trailway system connecting eventually to the existing Heritage Trail system. Accordingly, the Town should seek to purchase various parcels and/or develop easement rights over properties to permit this area to be developed as a key public space in the Town, provided adequate funding mechanisms can be put in place. Goshen should also seek to work with the Towns of Wawayanda and Wallkill to form inter-municipal arrangements that will allow the boundaries of this area to be extended outside the borders of the Town of Goshen.

Preserving Stream Corridors and other Water Bodies (see Figures 3.1, 3.2, 3.3 and 3.4)

Land along all major streams including the Wallkill River, Quaker Creek, Black Meadow Creek, the Otter Kill, the Rio Grande and portions of Cheechunk Creek should be preserved whenever practical for a distance of at least 150 feet from the stream center lines. In addition, the Town has established a regulated area beyond 100 feet in which development proposals undergo special scrutiny. The overriding purpose is to control non-point source pollution, erosion and sewer outfalls, prevent flooding where floodplains exist, limit or prevent filling, create wildlife corridors, and create potential linear parks in those areas where it is conducive to such development as well as for their general visual preservation. These requirements and provisions also apply to the Village of Goshen watershed area.

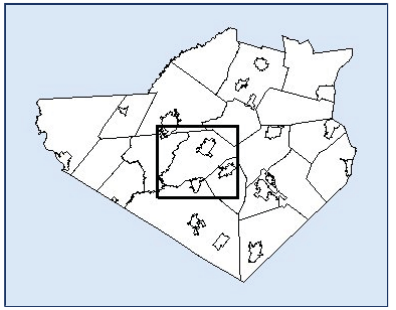
[8] See report prepared for the Town of Goshen by Ferrandino & Associates Inc. *Wallkill River Trailway: Conceptual Plans* dated November 2002.



LEGEND

- Roads
- Town of Goshen Boundary
- Village of Goshen Boundary
- DEC Wetlands
- Federal Wetlands

LOCATION MAP

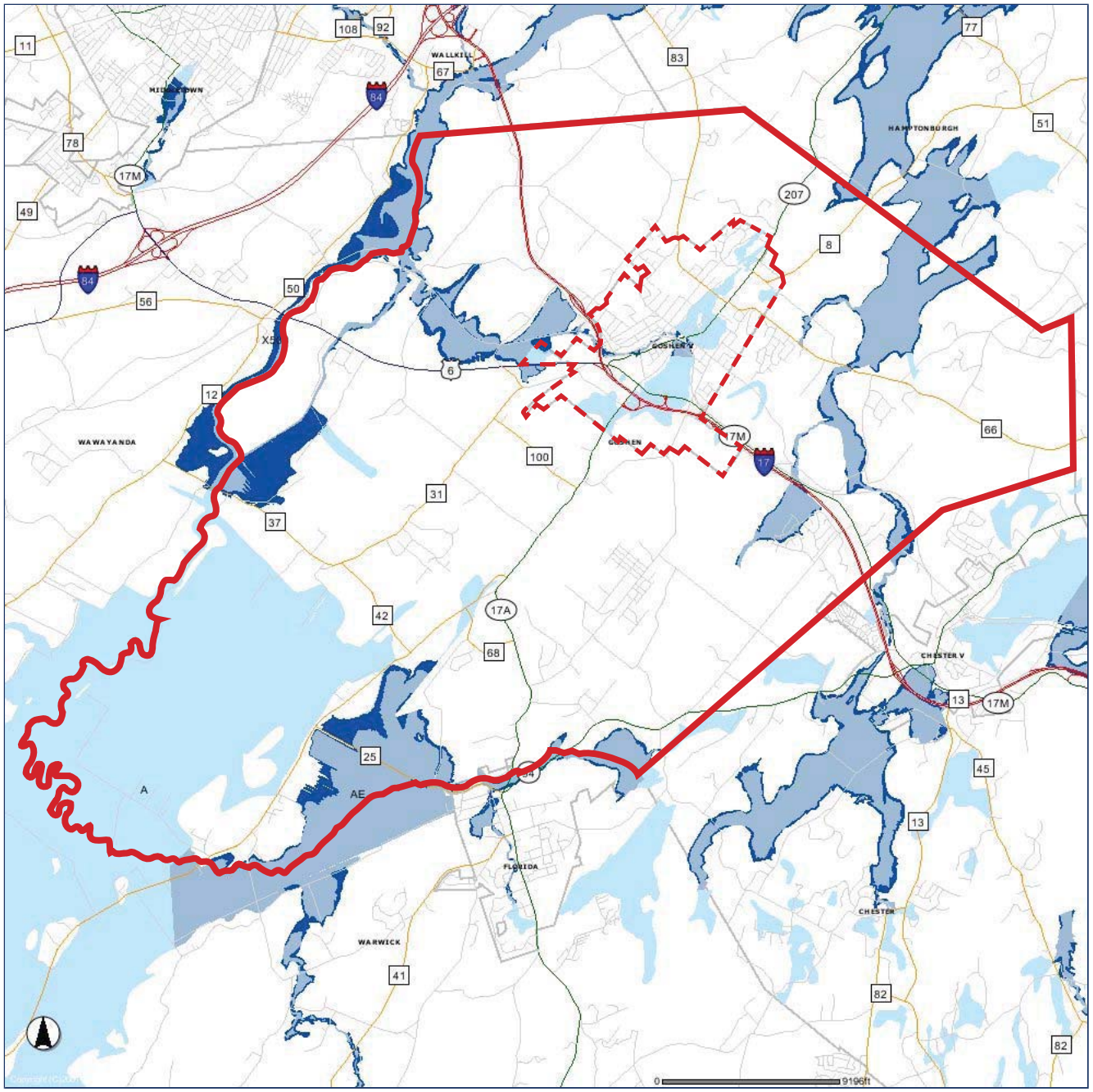


TOWN OF GOSHEN

FIGURE 3.3: WETLANDS MAP

SOURCE: ORANGE COUNTY GIS

BFJ Planning



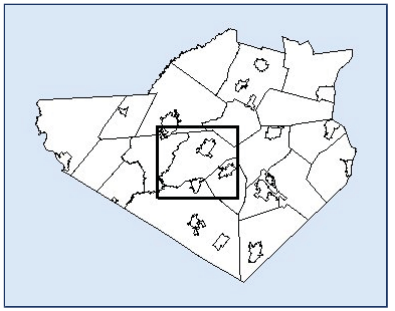
LEGEND

- Roads
- Town of Goshen Boundary
- Village of Goshen Boundary

FLOOD PLAINS

- 100 Year No Elevation
- 100 Year with Elevation
- 500 Year

LOCATION MAP

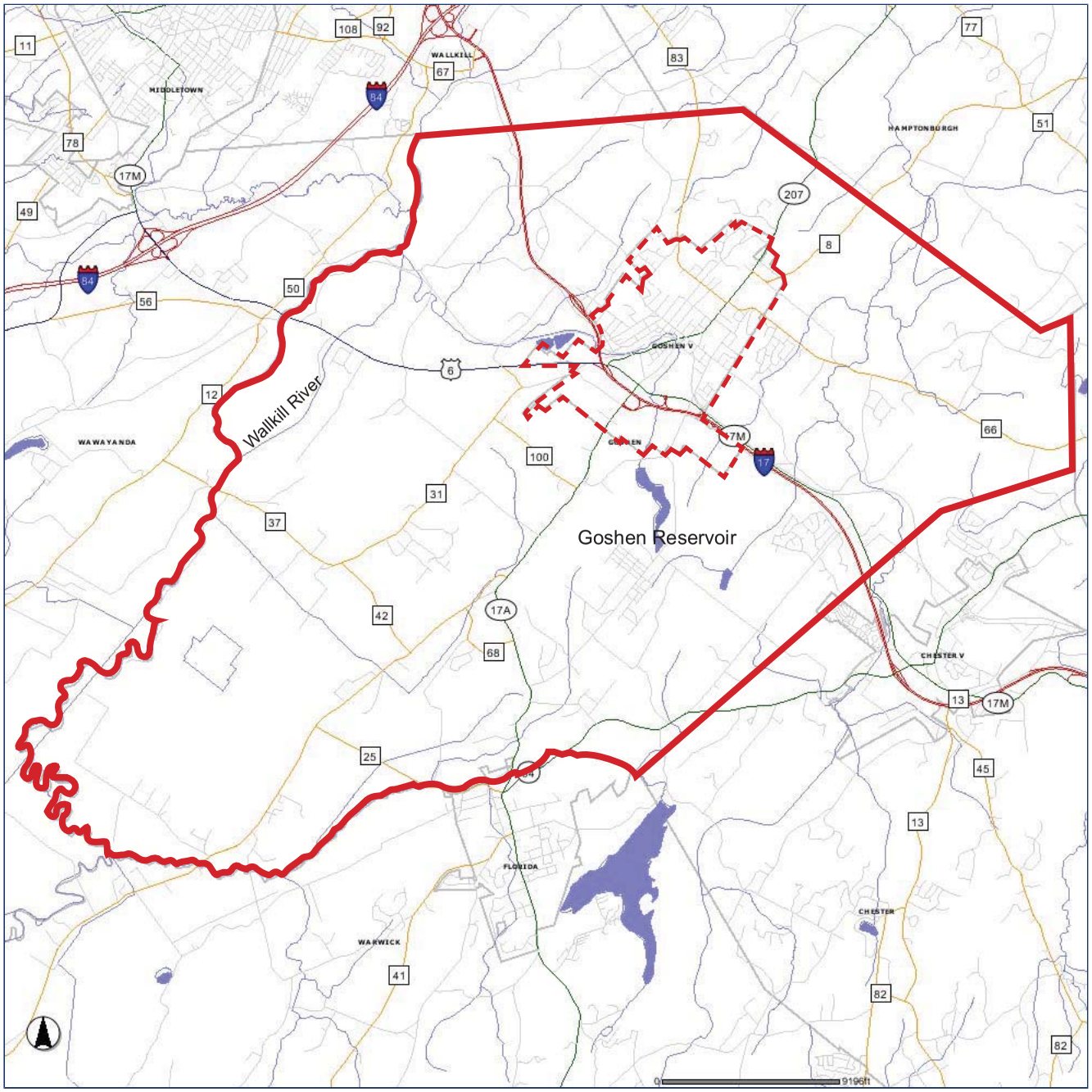


TOWN OF GOSHEN

FIGURE 3.2: FLOOD PLAINS

SOURCE: ORANGE COUNTY GIS

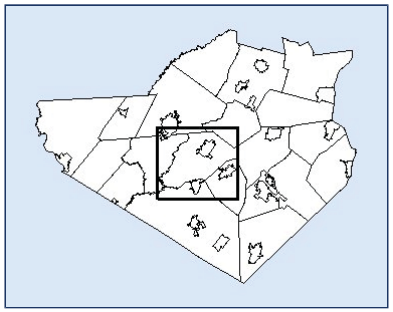
BFJ Planning



LEGEND

- Roads
- Town of Goshen Boundary
- Village of Goshen Boundary
- Streams
- Lakes

LOCATION MAP

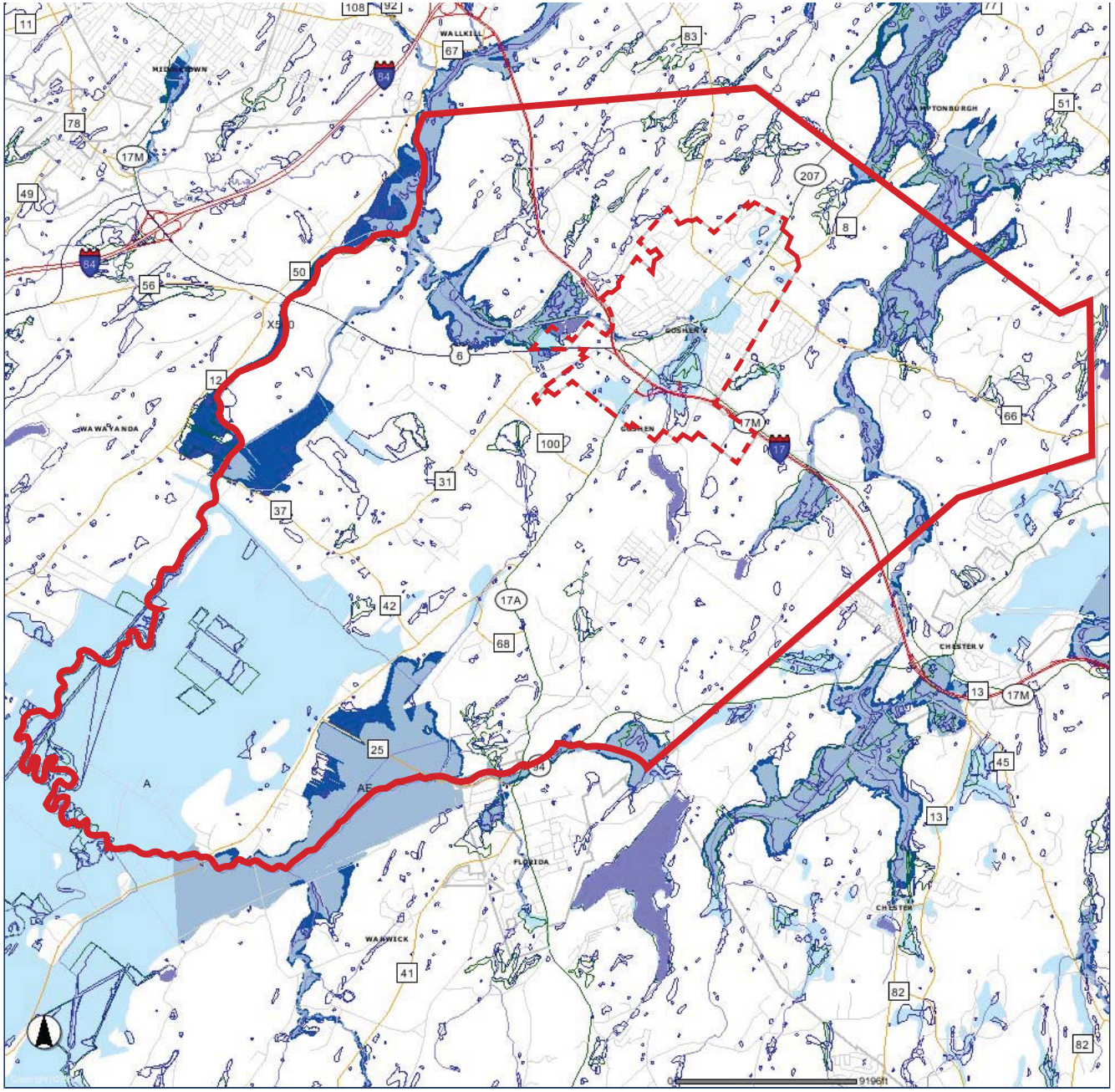


TOWN OF GOSHEN

FIGURE 3.1: STREAMS & LAKES

SOURCE: ORANGE COUNTY GIS

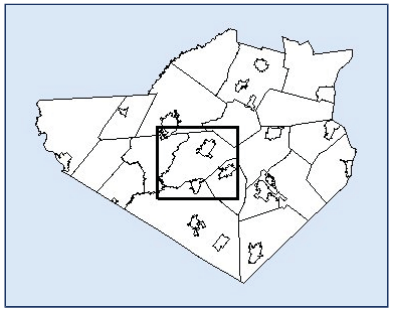
BFJ Planning



LEGEND

- Roads
- Town of Goshen Boundary
- Village of Goshen Boundary
- Streams
- Lakes
- DEC Wetlands
- Federal Wetlands
- Flood Plains

LOCATION MAP



TOWN OF GOSHEN

FIGURE 3.4: WETLANDS & FLOODPLAINS

SOURCE: ORANGE COUNTY GIS

BFJ Planning

Trails

The County of Orange and Orange Pathways has created the *Heritage Trail* along the old Erie Railroad bed, which presently runs from 6 ½ Station Road south to Monroe. Plans call for the Trail to ultimately connect Middletown in the north with Harriman in the south.

The Town has adopted a map showing recommended acquisitions for trail connections, which should be consulted in the course of all subdivision and other development approvals. Using such a map, the Planning Board can request that developers set aside appropriate portions of each parcel for such connections as development occurs. The Planning Board cannot require public dedication of such land, but it can request that such land not be built upon, it can accept voluntary donations of land, and it can recommend to the Town Board that such parcels be purchased for public use.

Floodplains and Drainage (see Figures 3.2 and 3.4)

Floodplains are addressed in the current Plan, zoning law and subdivision regulations and they should continue to be protected for the benefit of the Town, its residents and its surrounding neighbors.

Drainage issues are addressed in the Town's subdivision regulations and in the current zoning law for site plans. Also, State DEC SPDES regulations for stormwater runoff and erosion controls require a Plan to address State regulations for all areas where five acres or more are to be disturbed. More stringent regulations may need to be developed as part of the proposed Town Infrastructure Plan.

Wetlands (see Figures 3.3 and 3.4)

The Plan proposes no local regulations for freshwater wetlands, which are regulated by both the State DEC and the U.S. Army Corps of Engineers. While there are State protections for the DEC wetlands, the Plan recommends that the Planning Board continue to evaluate the need for local wetland delineations.

Prime Farmlands and Farmland Protection

As described in the residential plan, the designation of upland farm properties will be critical to the development and utilization of a Town farmland protection mechanism. Such a mechanism should be developed in conjunction with the Town's Farmland and Open Space Preservation Committee.

3.5 Economic Plan

While the primary commercial center as proposed by this Plan will remain the Village of Goshen, impervious surface coverage ratios within the Town's commercial and industrial zones should be increased and additional commercial uses should be encouraged within the Town to increase tax ratables that offset the costs of providing residential services.

Beyond the existing Dutchess Quarry, no heavy industrial uses are recommended in the Plan. Additional considerations regarding light industrial uses include:

- Re-use of quarries when and where possible for industrial development.

- Requiring landscape plans and bonds in commercial and industrial areas to provide more attractive settings, particularly along State highways.

- Prohibiting new landfills, or expansion of existing landfills and similar uses in accordance with existing Town policies (Town Code 80 b and the Town's Solid Waste Management Law).

The Town must remain sensitive to the negative impact outlying retail development may have on the Village's business district. However, retail use that would not be harmful to the Village downtown businesses could be encouraged to help stabilize Town tax rates.

Over the past decade "big box" retailers have been a driving force in the retail sector in areas within Orange County, but outside of the Town of Goshen. Big boxes are defined as large-scale retailers occupying more than 50,000 square feet deriving their profit from high sales volume. They may operate as standalone facilities or as part of a larger "power center[9]." Examples of power centers in Orange County are the Woodbury Common outlet center and the Crystal Run shopping center. This Plan recommends against any big box retail development in the Town of Goshen.

[9] Power centers usually have some common characteristics such as large rectangular single story structures that bring together various branches of the big box family, for example, a discount department store, a warehouse club, a supermarket and smaller outlets.

Agriculture

Critical to the Plan is the preservation of prime upland farms and farmland through the creation of sustainable development patterns and buffer zones. Agricultural Black Dirt and agri-industrial uses are located along the Wallkill River opposite the closed Orange County Landfill and the more extensive area south of Cross Road which extends into Wawayanda, Warwick and Minisink. The permissive agriculture zoning in the AI district should be continued and the zoning in the rest of the Town should be made more farm-friendly by allowing farm operators to conduct small businesses on their properties that do not adversely affect their neighbors.

Infrastructure

The Town should develop an Infrastructure Plan over the next 5-10 years. This Plan would cover the full range of infrastructure needs the Town may have as it develops, including those that are the Town's direct responsibility (such as Town roads and parks), as well as those for which other entities are responsible. These infrastructure needs include, but are not limited to roads, water and sewer facilities, recreation facilities, hiking and biking trails, schools, Town offices, highway garages, fire protection facilities, emergency services and library facilities. The Infrastructure Plan should address both current and future infrastructure needs.

As described earlier, the potable water study identified the residential carrying capacities of the existing watershed basins. These capacities were described by an approximate lot size that would yield a maximum potential residential build out for each watershed basin. The Comprehensive Plan recognizes that water resource limitations on development in each basin are based on the assumption of no public water or sewer infrastructure. However, the low densities allowed by water resource carrying capacities in some locations will not fully accommodate development pressures on the Town, maintain sufficient equity in the land for Goshen's farming community and other landowners, or result in a pattern of development that is in concert with New York State's Smart Growth Principles. Carrying capacity limitations that result from water resource constraints can be overcome in appropriate areas of the Town by the use of public water and sewer infrastructure and by taking measures to reduce water consumption and ensure adequate groundwater recharge.

Thus, the Plan proposes residential development where particular water preservation and enhancement protocols are met and infrastructure is developed (see Section 3.2 – Revise Town of Goshen Private Well Testing Protocols). In addition, to satisfy other Town goals the proposed locations for increased density development should have adequate access to the primary road network and take the form of a cluster development, if appropriate for the particular parcel under consideration.

Through its capital improvements budget, the Town should consider developing an infrastructure plan that will increase water availability in appropriate areas. Of particular importance is water and sewer infrastructure availability in locations that are sustainable for industrial development. It is far easier to attract the kind of industry the Town wants if it has locations with both good highway access and water and sewer service. Fundamental to such a Plan would be the development of infrastructure that would:

- Support "open space" or "cluster" development that preserves large areas of open space while allowing more compact development forms, and
- Support commercial and industrial development in areas that have good road access and will not detract from the commercial viability of the Village of Goshen or negatively impact on other neighborhoods in the Town.

3.6 Other Plan Recommendations

To fully implement the principles espoused in this Plan, certain tools should be considered to be included or omitted from the Town Zoning Code. This section outlines these key elements.

Creation of a Local Historic Preservation Ordinance

The Town contains several properties of historic significance. However, unlike in the Village of Goshen, they are spread throughout the Town, making regulation more difficult. Nevertheless, as part of its Code, the Town should consider incorporating a historic preservation ordinance that clearly outlines criteria that will allow property to be deemed historic and the extent to which that property will be limited for development. Similar ordinances have been developed by municipalities throughout the region to actively identify and preserve historic features in areas like Goshen.

4.0 IMPLEMENTATION

A Comprehensive Plan is only as useful as its implementation. Therefore, a major focus of this Comprehensive Planning process is the implementation of the Plan's goals through zoning, other land use regulations and other actions by the public and private sectors to make the goals of this Plan the reality of Goshen's future. To ensure that the Plan is properly implemented, the Town Board is simultaneously proposing amendments to the zoning ordinance with the draft of the Comprehensive Plan. The intent of combining these documents into one integrated process is to put implementation at center stage and enable the community to understand exactly how this Plan would be implemented through regulatory changes.

4.1 State Environmental Quality Review (SEQR)

A critical step that the Town must take toward implementing the *Comprehensive Plan* is to comply with the requirements of the New York State Environmental Quality Review Act ("SEQR"). This State law requires that government agencies identify the environmental effects of their actions, including adoption of comprehensive plans, and associated zoning text and map modifications. These actions, which are under the sole jurisdiction of the Town Board, is classified as a Type I Action. The SEQR regulations require that the Town Board, as lead agency, set forth its determination of significance and identify potential significant areas of environmental impact to determine whether an *Environmental Impact Statement* (EIS) will be prepared. The SEQR process can combine an analysis of the Comprehensive Plan with the proposed land use regulations that implement it. This is the most efficient way to comply with SEQR and it also helps to ensure that the Plan and zoning are consistent with each other. The Town Board resolved to make its SEQR determination of significance as a positive declaration and has prepared an accompanying EIS.

4.2 Adopting the Plan

The Comprehensive Plan must be adopted by the Town Board in accordance with the provisions of § 272-a of the New York State Town Law. The community's implementation of its plan rests largely in the hands of the local government, especially the Town Board and Planning Board.

4.3 Maintaining the Plan

Frequent review of the Plan to make sure that it meets any new conditions arising subsequent to its adoption is one of the most important elements of the planning process. The Plan must reflect current Town planning goals and policies if it is to be respected and regularly used. A re-examination of the Plan should continue to be undertaken at least once every three (3) years. Future amendments to the Plan can be accomplished by means of meeting minutes, resolutions, studies, reports and other descriptive materials that may be adopted as part of the

Comprehensive Plan or through a comprehensive revision process, such as occurred for the preparation of this updated Comprehensive Plan.

4.4 Zoning/Town Regulations

Zoning is an important tool, utilized as part of the police powers of local government, to regulate the way in which land may be used.

Following adoption of the Comprehensive Plan, a revision of the zoning regulations should be considered in order to ensure that its provisions remain in accordance with the Town's development policies, as established in the Plan. Zoning regulations serve as a major instrument in carrying out the recommendations of the Plan, and the Plan acts as a firm foundation on which to base specific provisions of the regulations. New York State Town Law also requires that all land use controls must be in accordance with an adopted Comprehensive Plan.

Zoning can be expected to change, as it has in the past, to meet changing objectives of the Town and its residents. Such changes should be made in accordance with the Town Plan. Special zoning and regulatory controls are often used to accomplish public purposes. They might be formulated to promote good design, protection of sensitive environmental areas, preservation of historic structures, appropriate conversion to accessory apartments, etc. These possibilities are discussed in further detail below.

Strict reinforcement of zoning regulations is needed to ensure realization of the Town's goals. Ways also need to be found to increase the effectiveness of the Building Department's enforcement efforts. Performance bonding is a tool that can be used to ensure that proposed site plan improvements, etc. are indeed carried out.

A. Zoning and Other Land Use Controls

Zoning Regulations

This Comprehensive Plan has recommended consideration of a number of revisions to the Town of Goshen Zoning Law. These are sufficiently far reaching that a comprehensive revision of the Zoning Law has been prepared and is recommended for adoption simultaneously with the Plan. To ensure consistency and comprehensiveness, it is recommended that any amendments be devised, considered, and studied under SEQR, and enacted into law at the same time.

Subdivision Regulations

While zoning regulates the use of land, subdivision regulations guide the layout and design of new developments and roads and help to ensure that all improvements required within subdivisions are properly accomplished. Each

subdivision, whether residential or commercial, should be designed so that it will fit into the planned overall pattern of roads, pedestrian, bicycle and other related facilities and dynamics.

B. Natural Resource Protection Regulations

Land use controls, dealing with natural resource protection, are now firmly established in the State enabling acts and use of such measures by local government has been increasingly upheld by the courts. These controls include:

Wetlands, Lakes and Stream Area Buffer Protection
Special application procedures can be required whenever a development proposal involves construction adjacent to a water body. Buffer areas can be utilized as a means of keeping development away from areas such as a wetland, lake, reservoir, pond or stream and out of flood prone areas and as a means of protecting water quality, recreational access and scenic beauty.

Aquifer Protection
Densities and land uses in aquifer recharge areas should be regulated to require maximum recharge, minimize depletion of groundwater supply and protect water quality using overlay zoning.

Drainage Controls
"Zero runoff" is a relatively recent concept in drainage control which requires that the rate of water runoff from any land tract should be the same or less after the completion of development as it was before construction began.

Steep Slope and Natural Terrain Protection
Means for controlling development in steep slope areas could involve complete prohibition or, alternatively, a program of regulation wherein the degree of development permitted is related to the amount of slope involved, construction techniques, soils data and vegetation cover and runoff. Also, excessive grading of sites to prepare them for development is an adverse environmental impact that robs a municipality of the beauty of its natural terrain. Site planning should be conducted in such a manner to permit improvements that conform to natural terrain to the greatest extent practicable.

Erosion and Sediment Control
Approval of erosion control plans by the Town Planning Board or Building Inspector should continue before building permits are issued. Erosion control

plans are currently prepared and submitted by potential developers along with their applications for subdivision or site plan approval and should include maintenance plans. Ideally, the Town should encourage designs which will avoid potential difficulties and preserve natural drainage to the greatest extent possible, rather than devising expensive engineering solutions.

C. Existing Non-Conforming Uses

As the zoning revision process moves forward, some existing uses may become non-conforming. The reasonable use and reuse of these facilities should be the prime consideration for any rezoning.

4.5 Official Town Map

The Official Town Map is a foundation for the Town to base decisions and policies upon, such as reserving rights-of-way in subdivisions, providing appropriate locations for parks, drainage facilities, or providing new roads. Once adopted by the Town Board, an applicant for a subdivision or other development cannot develop the land except as indicated on the Official Map. The Town Board may also require developers to locate roads or provide rights-of-way for future roads, trails and infrastructure that connect to adjacent parcels.

4.6 Capital Improvements Program and Transactions

The ways and the places in which Goshen spends money for public improvements – parks, recreational facilities, open space, schools, roads, municipal buildings, etc. – and the standards to which they are built have a major effect upon the development of the Town. The Town may undertake what is known as a public or capital improvement program. This is a systematic scheduling and projecting of various public works and land acquisitions that will be needed over a period of years as the Town grows and develops. The infrastructure plan described in this report should be part of such a capital improvement program. Projects scheduled for the first year should be incorporated into the Town's proposed budget for the next fiscal year. Each year the program would be restudied and revised in light of the changes in priorities, which may be needed due to changing conditions, and extended another year into the future.

Such a program would provide a continuously updated picture of estimated future improvement needs and costs facing the Town. It could also help to give greater stability to the tax rate by spreading improvement costs systematically over a period of years.

Although the Town has no direct control over the various school districts, the County, or the State, cooperation by these units of government should be requested and encouraged. This will benefit

these agencies, as well as the Town. It is also now required that such units of government consider the policies and recommendations made in this Comprehensive Plan in all their capital projects.

4.7 Recreation/Open Space Fees

Residential developments should be required to provide recreation areas or fees contributed to a general park fund. The Town should periodically adjust its recreation fees as needed, taking into consideration present and anticipated future needs for park and recreational facilities resulting from projected population growth.

4.8 Private Development and Philanthropy

Neither the Comprehensive Plan, zoning or subdivision regulations, nor the Town agencies which administer these regulations, can force any private individual or agency to develop a particular piece of land for a particular use, although it can dictate the manner of development if the owner chooses to develop. But where there is a good Comprehensive Plan, and it is followed on a continuing basis, private enterprises have a more reliable foundation upon which to plan and build. This encourages good development, as well as helps to accomplish some of the specific recommendations in the Comprehensive Plan.

The active solicitation of donations of conservation easements to a municipality's private trust is an increasingly successful open space and landmark preservation implementation device. For many landowners, such donations can be the source of a significant tax benefit. Current Federal income tax regulations permit certain write-offs of the value of the donation or easement. Donors can guarantee that their property will be preserved as they desire. Private organizations such as the Orange County Land Trust, Trust for Public Land, Open Space Institute, The Nature Conservancy and the Audubon Society have played an active role in open space and landmark preservation by seeking land or easement donations or, alternatively, by purchasing properties.

4.9 Town-Village Cooperation

The recognition of the close interrelationship between the life of the Town and the life of the Village of Goshen must continue during the implementation of this Comprehensive Plan. Every available mechanism should be used to maximize the coordination among local governments with regard to land use planning, transportation infrastructure, economic development, provision of recreational facilities, expansion of water and sewer systems, purchase of goods and services, sharing of governmental equipment and facilities, regulation of utility, communication and power franchises, solid waste disposal, and any other aspects of community life with which local governments have the potential to materially interact.

4.10 Town Cooperation with County and State Agencies

The implementation of many of the goals of this Comprehensive Plan also depends on cooperation from County and State agencies whose decisions affect the Town of Goshen. This is especially true of decisions about highway improvement, which can significantly affect quality of life, traffic conditions, noise and the livability of a community. In particular the State or County roads that pass through areas that the Town may choose to designate as residential centers will need very different treatment than usual highway design practices, in order to slow traffic and create a pedestrian-friendly environment. Section §272-a of New York State's Town Law requires that all governmental agencies take a local comprehensive plan into account when making decisions on capital projects on land within the Town. This Comprehensive Plan can therefore serve to guide other agencies when they make important decisions that affect the Town of Goshen.

4.11 Summary

The Comprehensive Plan in itself does not change the zoning or other land use control regulations of the Town nor assure implementation of the proposals which it recommends. A community is developed over the years by hundreds of individual and group decisions – decisions by private citizens to build houses, by corporations to locate in the Town, by Town officials to create new public facilities, and so on. The ultimate accomplishment of the Comprehensive Plan, as modified from time to time, requires the cooperative action of many people and agencies. All interests, whether public or private, have a stake in an attractive, orderly and environmentally sound community. The Comprehensive Plan is designed to be a guide for achieving this shared goal.

5.0 Potential Zoning Map Changes

In addition to the text changes recommended in the Comprehensive Plan, the Town Board has discussed and should consider a number of potential map changes which may be included in a revised Zoning Map for the Town of Goshen.

The following recommendations illustrate six (6) general areas of potential zoning map changes. See Figure 5.1 for the location of each of the 6 areas and Figure 5.2 for the location of the proposed zoning map changes within the context of the Town of Goshen Zoning Map. There are three major Hamlet areas where it is recommended that the Hamlet Residential/Hamlet Mixed Use zoning be reduced in scope or eliminated and replaced with rural residential and/or commercial zoning. There are also a number of areas in the Town considered to be more appropriate locations for commercial rather than heavy industrial or residential. Generally these areas are located along major travel routes, providing suitable access for such development. Each of the six areas identified on Figures 5.1 and 5.2 are summarized below.

1. Hambletonian Park Hamlet Residential Area

This Plan recommends reducing the extent of the Hamlet Residential (HR) area. It would continue to recognize the existing hamlet of Hambletonian Park. However, two largely undeveloped areas are suggested for Rural (RU) residential development. The two areas are located on either side of Hambletonian Park (see Area 1A and 1B on Figures 5.1 and 5.2). Area 1A, the Salesian lands are located between Craigville Road and Coleman Road and Area 1B, a wetland area, is located adjacent to Old Chester Road.

Both areas (1A and 1B) are recommended for Rural (RU) residential development. The Salesian site (Area 1A) is recommended for Rural (RU) residential development due to the location of extensive wetlands on the site, limiting the true Hamlet development potential of the lands and the low density residential uses along Coleman Road. The area south of Hambletonian Park (Area 1B) is also recommended for Rural (RU) residential development. The wetland area, along with part of an adjacent cemetery and Orange and Rockland Utility substation, is primarily owned by an adjacent development.

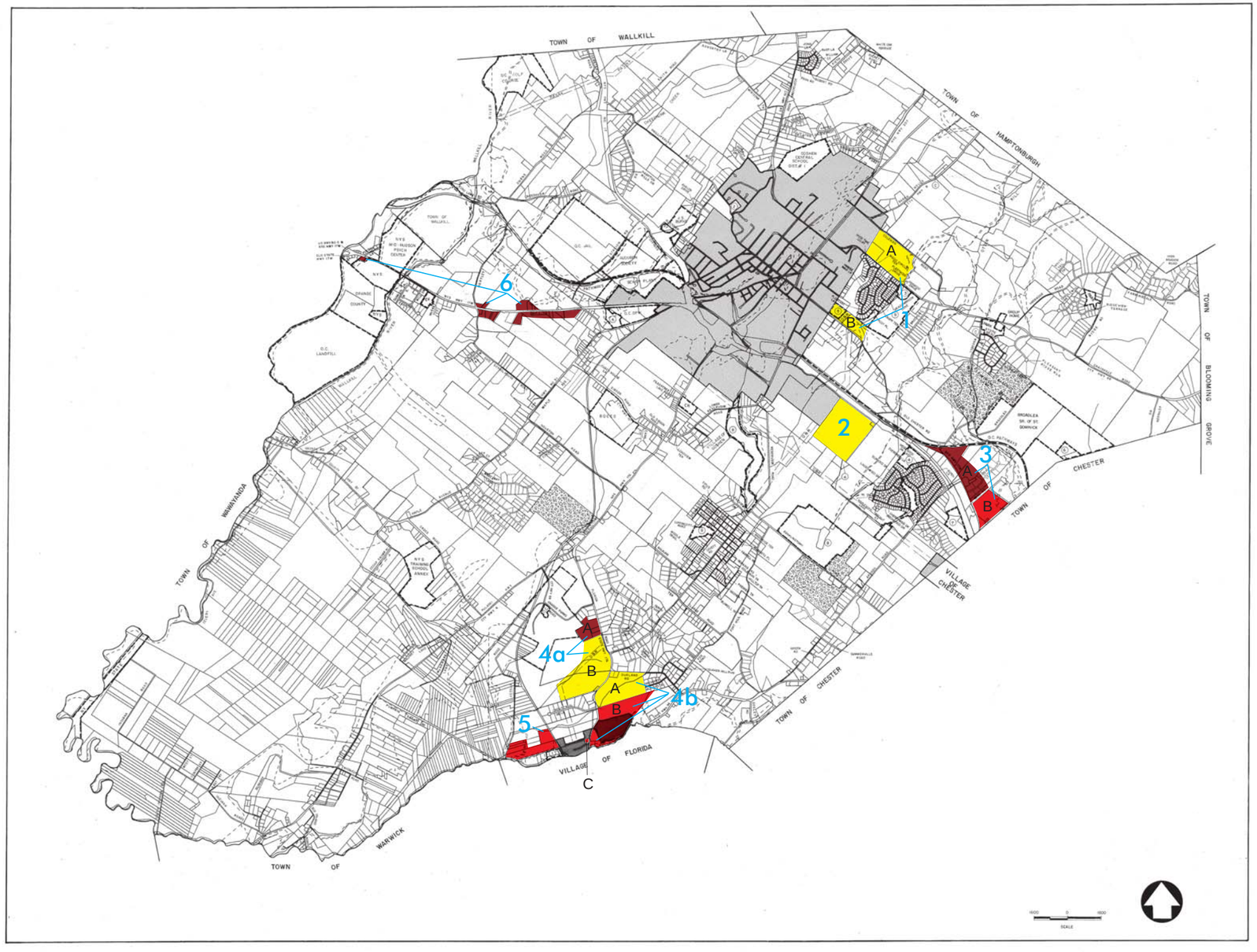
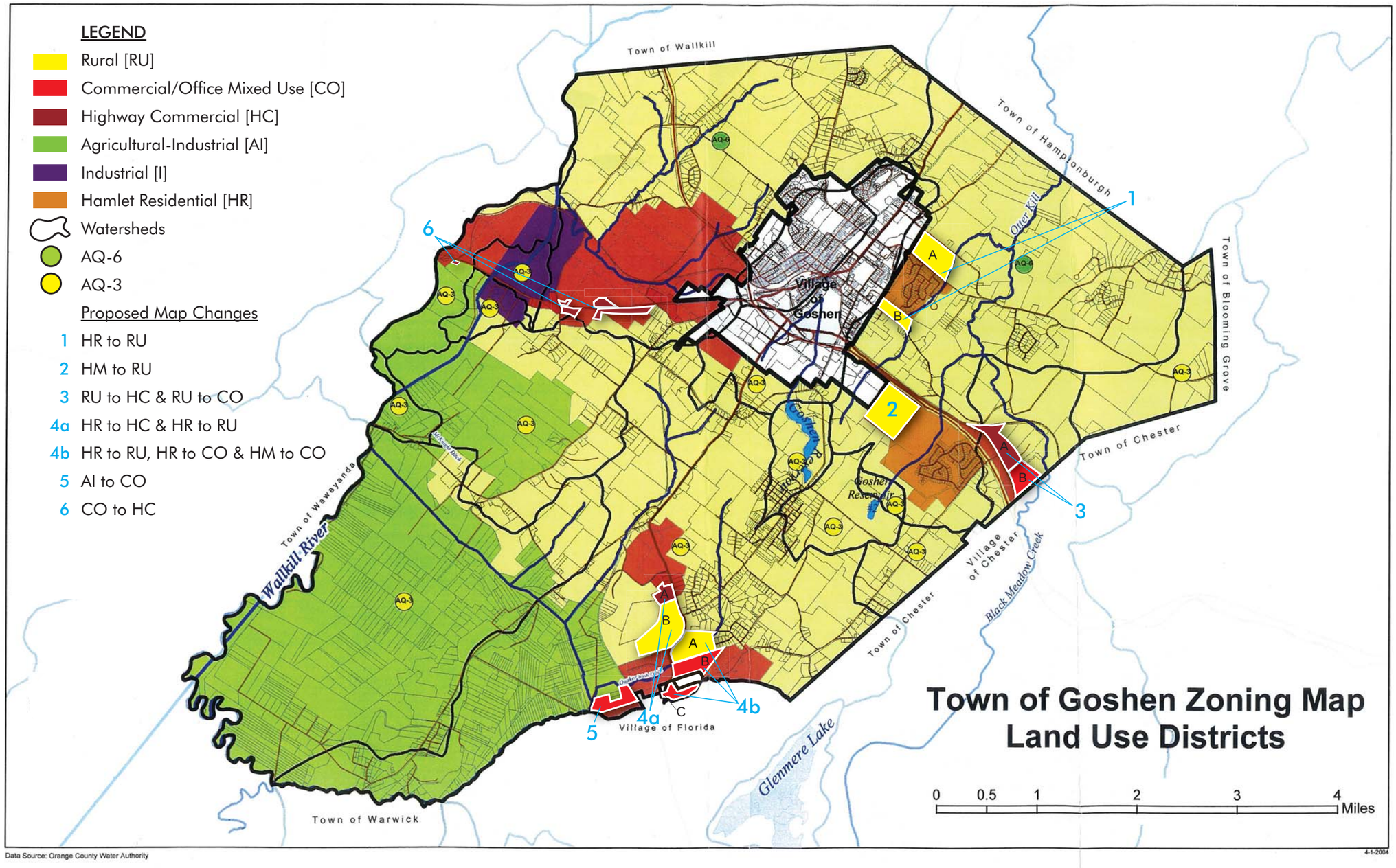


FIGURE 5.1: POTENTIAL ZONING MAP CHANGES

SOURCE: GARLING ASSOCIATES; BASE MAP FROM ORANGE COUNTY


LEGEND
Rural [RU]
Commercial/Office Mixed Use [CO]
Highway Commercial [HC]
Agricultural-Industrial [AI]
Industrial [I]
Hamlet Residential [HR]
Watersheds
AQ-6
AQ-3
Proposed Map Changes
1 HR to RU
2 HM to RU
3 RU to HC & RU to CO
4a HR to HC & HR to RU
4b HR to RU, HR to CO & HM to CO
5 AI to CO
6 CO to HC
Town of Wallkill
Town of Hamptonburgh
Town of Bloomming Grove
Town of Chester
Village of Chester
Village of Goshen
Village of Florida
Town of Wawayanda
Town of Warwick
Wallkill River
Otter Kill
Black Meadow Creek
Glenmere Lake
Goshen Reservoir
Town of Goshen Zoning Map
Land Use Districts
0 0.5 1 2 3 4 Miles
Data Source: Orange County Water Authority
4-1-2004

2. Hamlet Mixed Use District on Harriman Drive

This Plan recommends eliminating the Hamlet Mixed Use (HM) area on Harriman Drive (see Area 2 on Figures 5.1 and 5.2) in an effort to support the existing Village of Goshen village center (Goal #2). It is recommended that the location of this area, directly adjacent to the Village of Goshen makes it suitable for Rural (RU) residential development. This change is recommended to avoid uses with a highway or heavy traffic orientation adjacent to an approved residential development in the Village of Goshen and proposed development in the Town of Goshen. This area has a steeper gradient and a portion of the area also contains a substantial wetland and is therefore better suited for low-density residential development.

3. Arcadia Road to Ward Road and adjacent site on Route 17M

In line with a number of previous planning studies, it is recommended that several lots with double frontage along and/or between Route 17 or 17M and Heritage Trail and Old Chester Road, are more suitable for commercial development (Site A - HC and Site B - CO) than rural residential development, due to traffic, noise and adjacent commercial properties.

4a. Hamlet Residential Area west of Route 17A, north of Florida

This Plan recommends eliminating the Hamlet Residential (HR) area west of Route 17A, north of Florida (see Area 4a-A and 4a-B on Figures 5.1 and 5.2). This undeveloped area is recommended for Highway Commercial (HC) and Rural (RU) residential development, in line with the zoning to the north, east and west of these lands.

The two areas are located along the west side of Route 17A, north of Florida. Area 4a-A is located just past Quarry Road and the Dutchess Quarry, adjacent to existing HC and CO uses, and Area 4a-B is located to the south of this, adjacent to rural residential lands within the Town of Goshen to the east and west.

Area 4a-A is recommended for Highway Commercial (HC) use in order to conform to adjacent commercial uses along Route 17A. In addition, the steep topography to the rear of the site would isolate it from surrounding residential areas.

It is recommended that Area 4a-B is unsuitable for hamlet residential development due to a combination of terrain, wetlands and a lack of access to services. Rural (RU) residential development is considered more appropriate at this location because development of the area consistent with rural residential densities would be better suited to address the significant environmental constraints associated with this area.

4b. Hamlet area east of Route 17A, north of Florida

This Plan recommends eliminating the Hamlet Residential (HR) and Hamlet Mixed Use (HM) areas east of Route 17A, north of Florida. This area is recommended for Rural (RU) residential development and Commercial/Office Mixed-Use (CO) development adjacent to the Village of Florida.

Three parcels of land in this area are located to the east of Route 17A, north of Florida (see Area 4b-A, 4b-C, and 4b-C in Figures 5.1 and 5.2). Area 4b-A is located at the intersection of Durland Road and Route 17A; Area 4b-B is located to the south of this on Route 17A and has in part been annexed by the Village of Florida; and Area 4b-C is located on Route 17A and is surrounded by the Village of Florida.

It is recommended that poor site access, limited sightlines, topographical features and character make Area 4b-A unsuitable for Hamlet Residential (HR) development. In addition, there is a deep gorge located on the site, which separates it from lands closer to Florida. The gorge precludes the use of at least one third of the site. Two of the three lots already contain single family homes. The character of the site and its relationship to other residential development along Durland Road suggest that it is more suitable for Rural (RU) residential development.

A number of small houses on lots along Quaker Creek are in the process of being converted into commercial and mixed-use structures. The land just south of Area 4b-B has been annexed to the Village of Florida. It is recommended that the existing commercial uses are maintained and that due to its proximity to the Village of Florida, Commercial/Office Mixed-Use (CO) development is more appropriate here than Hamlet Residential (HR) development.

The single residence in Area 4b-C has been converted for office use. It is recommended that the location of this lot, surrounded by the Village of Florida, is more appropriate for Commercial/Office Mixed-use (CO) development than Hamlet Mixed-Use (HM) development.

5. AI District north of CO District near Florida

It is recommended that there is potential for the expansion of Commercial/Office Mixed-Use (CO) development in this area (see Area 5 on Figures 5.1 and 5.2). This is a limited area that allows for some expansion of CO uses in an area with central sewer service, either from an existing private plant or from the Village of Florida.

6. CO District along both sides of Route 17M, between Town of Wawayanda and Maple Avenue/6 ½ Station Road

The majority of these parcels are already developed with Highway Commercial (HC) uses (see Area 6 in Figures 5.1 and 5.2). The location of these properties along Route 17M, provides suitable access for commercial development. It is recommended that rezoning these areas to Highway Commercial (HC) will also eliminate the need for property owners to seek variances in the future. In addition, it is recommended that any future development will be required to address all of the environmental and aesthetic concerns associated with commercial development.

Appendix A

Historic Sites
Town of Goshen, New York

Site #	Site Name	Location
1	J.W.A. Brewster House (1810)/MacKuen	Rte. 17A @ Village line [1]
2	V.S. Smith House (1850)/Dickerson	Rte. 17A @ L. Res. Rd.
3	D.C. Howell House (1810) Bokar	Rte 17A
4	District #9 Schoolhouse (Stone)/Borden Prop.	Rte 17A
5	Houston House, federal (1786)	Rte 17A @ Houston Rd.
6	D. Carpenter Homestead (1760)	CR 6
7 (1)	Dutchess Quarry Prehistoric Cave site /Overlook Mt.	Off Orange Farm Rd.
8	Orange County Farm, 1840 Stonehouse	Orange Farm Rd.
9	A.W. Thompson House (1810-1820)	Reservoir Rd.
10	District #6 Schoolhouse (1850)	Reservoir Rd.
11	S.S. Fitzgerald House (1830)	Reservoir Rd.@ Lake View Dr.
12	N.C. Coleman House (1851) /Serdarevic	Reservoir Rd.
13	George S. Conkling House (1829)	Conklingtown Rd. @ Arcadia Rd.
14	J.J. Stage Barn (1859)	Rte. 94 @ Durland Rd.
15	Tyler House (1907) Tudor, stone	Arcadia Rd.
16	Seely Barn (1860) White House Rest.	Rte 17M @ Old Chester Rd.
17	Old Chester Road Gas Station (1920's)	Old Chester Rd.
18	Westinghouse House (1910-1920)	Old Chester Rd.
19	Broadlea (Tweedy Estate) (1916)	Broadlea Rd. off Knoell Rd.
20	East Division Schoolhouse (1840)	Craigville Rd.
21	J. Vail House (1850)	Craigville Rd.
22	N. Tuthill House (1820)	Craigville Rd.
23	Phineas Rumsey House/Wallace (1735)	Ridge Rd.
24	Horton Homestead/Karpralian (1750-1792)	Farmingdale Rd.
25	J.K. Payne House (1820) Christensen	Sarah Wells Trail
26	D.E. Case House (1800)	Sarah Wells Trail
27	Charles A. Reeve House (1830)	Sarah Wells Trail @ Kipp Rd.
28	Gates McGarrah House/Ontaroga (1904-1919)	Rte. 207
29	Springsteen-Seward House/Coppers (1756)	Rte. 207
30	Elsie Smih House (1820-30) Fed. Adams Style	Axworthy Lane
31	Smith House (1830-40) Greek Revival	Smith Rd.
32	J. Ryerson House (1780) Scumaci	Fletcher St. @ Min. Trail
33	S.L. Everett House (1840) Gabella's Lakeville Inn	Fletcher St. @ John S. Burke High School
34	John Wells Homestead (1779-1810)	6 ½ Station Rd.
35	J.S. Tuthill House (1800-1810)	Rte. 17M @ 6 ½ Station Rd.

[1] Listed on the National Register for Historic Sites.

Site #	Site Name	Location
36	Webb House (1830)	Maple Ave.
37	Jessup House	Rte. 207
38	Knapp House (Oak Glen Farm) (1820)	Rte. 17M
39	William Strong House (Oak Ridge Farm)	Cheechunk Rd.
40	Archaeological Site-Lake View Drive	Lake View Dr.
41	Sawyer House-1790/Colonial	Maple Ave.
42	Jonas House	Minisink Trail
43	Westinghouse and Clark House (1920)/Bergamo	Old Chester Rd.
44	Round Well (1880)	Rte. 17M
45	Gothic Revival/Late Victorian (1860-70)	Maple Ave. @ Houston Rd.
46	Howell House Meadow View Farm. (1733)	Rte. 17A
47	Downey Farm (1870)	Maple Ave.
48	Canon Inn 1860 Mansard Roof 2nd Empire/ J.C. T. Church	Rte. 17M opp. Landfill
49	Lattimer Farm (1840-50)	Maple Ave. @ Orzech Ln.
50	Farm House	Rte. 17A
51	Howell or Colonial, Meadow View Farm	Rte. 17A
52	1850 White Stucco	Pulaski Hwy.
53	Italiante Barn	Reservoir Rd.
54	Smith (1820)	Scotchtown-Fran Dr.
55	Engley House	Minisink Trail
56	Tobias Farm	Phillipsburg Rd.
57	Stone Block House-Greek Rev. white trim repointed field stone	Pulaski Hwy.
58	Scesa House (1790)	Cheechunk Rd. @ @ 6 ½ Station Rd.
59	Blue Spruce Farm House (1820)	Hampton Rd.
60	Edelstein House/Sawyers School House Circa 1890	Maple Ave.
61	Laffin Meade Run (1707)	Cheechunk Rd.
62	Berkman	Hartley Rd. SW cor.
63	1800	Gate Schoolhouse Rd. @ Rt. 17M/SW corner
64	Brookfield House & Farm	Rte. 17A
65	Buchheit House (1860-70) Brick Vict.	Rte. 17A
66	House on Hill	Conklington Rd.
67	Elm Hill Farm	Arcadia Rd. opposite Green Rd.
68	Sinsabaugh/Victorian Farm House with barn across Street	Maple Ave. Ext.
69	Old house across Quaker Creek near mill	Rte. 94
70	Urbanski House	Big Island Rd.
71	Mike's Tavern	Pulaski Hwy.
72	Brick Farm House (1880's)	Cross Rd.
73	CV Tuthill	Maple Ave. east of Cross Rd.
74	Wolek/Victorian Farm House with Barn	Maple Ave.
75	Brick House-Italianate	141 Gates Schoolhouse Rd.

Site #	Site Name	Location
76	Goshen Hotel Site	N. Church St.
77	Vail House-orig. Stonehedge farmhouse/Levine (1790-1829)	Knoell Rd. @ Stonehedge Rd.
78	Hasbrouck Farm House – (1710)	173 Ridge Rd. @ Hasbrouck Rd.
79	1860 Farm House (Donna Schneider)	332 Maple Ave.
80	1784 Post and Beam Farm Hands House	34 Clark Rd. @ Fort Hill Rd.
81	Federal early 1800's house near Village line	6 Reservoir Rd.
82	1800's Farm Hand House	53 Farmingdale Rd.
83	1832 or earlier	234 Phillipsburgh Rd.
84	Revolutionary War Signal Tower	Fort Hill Rd.
85	VanBuskirk	Maple Ave.
86	Noah's Ark-Club House-County Seat Cons. Club	Maple Ave.
87	Crane/Knapp/Sawyer/Tuthill/Pearson House	Maple Ave.

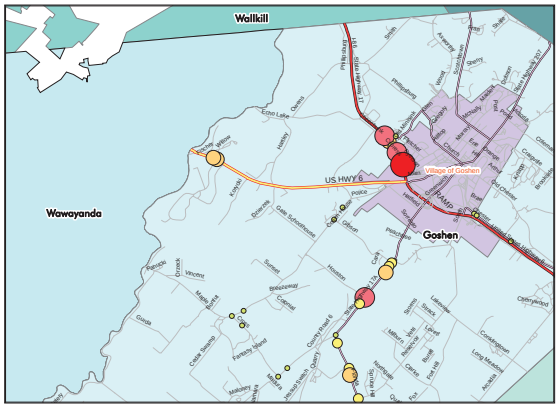
Cemeteries List – Goshen Town & Village

	Cemetery	Location
A	Orange Farms/Poor House Cemetery	Orange Farms Road
B	Webb/Sawyer Cemetery/Gibson	Maple Avenue
C	Case Cemetery	Sarah Wells Trail
D	Stone Hedge Cemetery	Knoell Road
E	Horton/Bull-Spencer Cemetery	Farmingdale Road
F	Rumsey Cemetery	Richard Wallace Farm-Ridge Rd.
G	Mabee-Dunning Cemetery	Reservoir Rd.
H	General Allison Cemetery	Jessup Switch Rd.
I	St. James Episcopal Cemetery	South Street (Village)
J	Slate Hill Cemetery	Old Chester Road (Village)
K	Young Cemetery/Bradner	South Street
L	Carpenter Cemetery	Pulaski Highway
M	Houston Cemetery	Route 207
N	Surreywood Farm	
O	Conklingtown Burial Ground	Conklingtown Rd.
P	Weslowski Farm	Clark Road
Q	Ward/Jackson Cemetery	Ward Road @ Rt. 17M
R	St. Johns Cemetery	West Main St. Ext.
S	Everett Cemetery/Andrews Prop.	South St.
T	Olivers Parking Lot/Track	Park Pl.
U	Razey Cemetery	Route 17A
V	McCoy Cemetery	Gates Schoolhouse Rd.
W	Van Duzer Cemetery	Pulaski Hwy./Mapes Corner
X	Presbyterian Church	Park Pl. @ Main St.
Y	Phillipsburgh Cemetery	Phillipsburgh Rd.
Z	Haight Family Cemetery	Main St. @ Sarah Wells Trail
AA	Wescott Burial Place	Court Lane
BB	Townsend Cemetery	Prospect St.
CC	Vail Cemetery	Craigville Rd.

T:\Goshen\Appendix C.doc

Appendix B

Goshen Town Wide Traffic Study



GOSHEN TOWN WIDE TRAFFIC ANALYSIS

Goshen, New York

Prepared for:
Town of Goshen

August 2008

GOSHEN TOWN WIDE TRAFFIC ANALYSIS

Town of Goshen, New York
41 Webster Avenue
Goshen, NY 10924

Prepared by:
Town of Goshen Town Board
Douglas Bloomfield, Supervisor
Kenneth Newbold
Louis Cappella
George Lyons
Philip Canterino

Legal Counsel
Dennis Caplicki, Attorney for the Town
Richard B. Golden, Planning Board Attorney
Kelly M. Naughton, Planning Board Attorney

And

Edwin Garling, Planner for the Town

Prepared with the assistance of:
BFJ Planning
Frank Fish, FAICP, Principal
Georges Jacquemart, P.E., AICP, Principal
Sarah K. Yackel, AICP, Associate
Todd Okolichany, Senior Planner
Alireza Rabiee, Senior Transportation Planner
Áine Balfe, Planner

T. 212.353.7474

August 18, 2008

Table of Contents

1.0 Introduction 1
Project Purpose 1
Project Location 1
2.0 Existing Conditions 3
Hierarchy of Roads 3
Roadway Classifications 3
Conflicts in Functional Classification 6
Traffic Volumes 7
Accident History 7
3.0 Strategies and Recommendations 9
Future Road Improvements 9
Recommended Roadway Improvements 12
Roundabouts 14
Traffic Calming 19
Access Management for Commercial Development 21
Street Connectivity 22
4.0 Conclusion 23
Appendix A 24

List of Figures

Figure 1: Study Area Location Map
Figure 2: Existing Roadway Classification
Figure 3: AADT Traffic Volumes
Figure 4: Town of Goshen Traffic Accidents
Figure 5: Total Traffic Accidents for 30 Intersections (Jan. 2004 - Oct. 2007)

List of Tables

Table 1: Number of Report Vehicular Accidents & Type of Accidents
Table 2: Intersection Improvement Priorities
Table 3: Priority List of Recommended Roadway Improvements

Goshen Town Wide Traffic Analysis

1.0 Introduction

Project Purpose

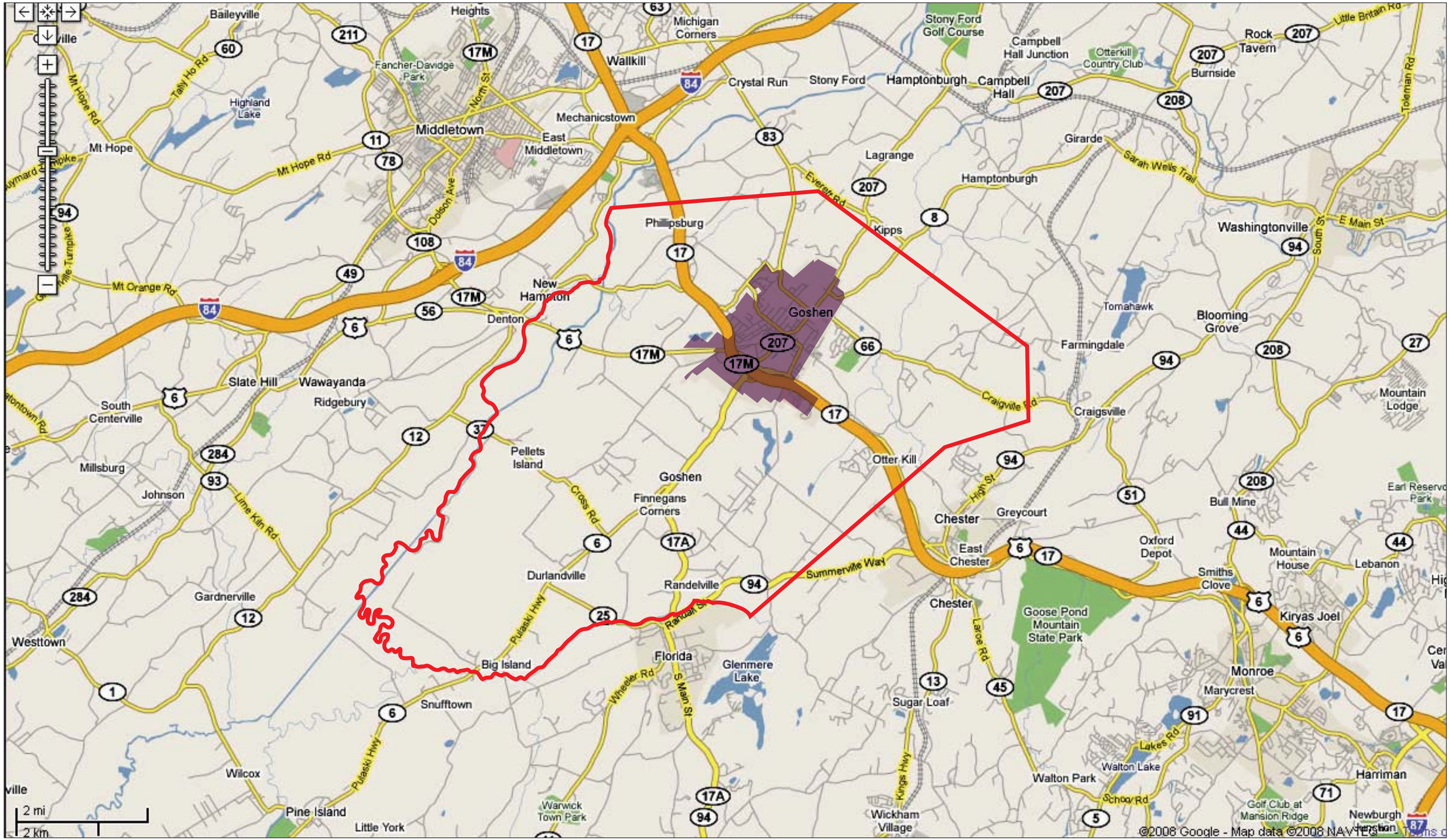
The Goshen Town Wide Traffic Analysis is an expansion to the Traffic Element in the Town's Comprehensive Plan and is an update to the Goshen Town Wide Traffic Study conducted by Stantec (Dated December 2006). In late 2007 the Town Board engaged BFJ Planning to update the 2004 Comprehensive Plan. BFJ Planning worked with the Town's Consulting Planner, the Town's Legal Counsel, and the Town's Consulting Engineer to review some key elements of the Plan text. This Traffic Analysis addresses the most up-to-date research and analysis within the Draft 2008 Comprehensive Plan Update, Goshen Town Wide Traffic Study (Stantec, December 2006), and New York State Department of Transportation (NYSDOT) Design Proposal Drawings (April 2008). The report has also been updated to evaluate existing and future issues, include prioritization of improvements, and propose short-term and mid-term recommendations.

Project Location

Goshen was once located on the Erie Railroad Main Line. Since the closure of the rail line, Goshen is reliant almost exclusively on vehicular transportation. The Town and Village of Goshen are located at the intersection of NY 17, (due to be re-designated as part of Interstate 86) and NY 17M and US 6.

Route 6 connects Goshen to Middletown and Port Jervis, while NY 17 continues to Binghamton and the Southern Tier. To the east US 6, NY 17 and NY 17M lead to the New York State Thruway at Harriman, with Route 6 continuing to the Bear Mountain Bridge.

NY 207, the former Newburgh-Goshen Turnpike, begins at the interchange with NY 17 and becomes Greenwich Street and Main Street in the Village, before leaving the Village at the north end to continue across the county to Newburgh. South of NY 17, the same roadway becomes NY 17A, leading south to Florida and then to Warwick. Two Orange County roads also connect Goshen to nearby communities: Orange County 8, Sarah Wells Trail, begins north of the Village and runs parallel to NY 207, south towards Washingtonville; and Orange County 83, Scotchtown Avenue, follows the old Goshen Turnpike to Scotchtown and on to Circleville (see Figure 1: Study Area Location Map).



TOWN OF GOSHEN, NEW YORK

FIGURE 1: STUDY AREA LOCATION MAP

GOSHEN TOWN WIDE TRAFFIC ANALYSIS

SOURCE: GOOGLE MAPS

BFJ Planning

2.0 Existing Conditions

Hierarchy of Roads

The road network in the Town of Goshen follows a hierarchy of roads, each serving a different function. A description of each roadway classification is provided below:

Limited Access Highways: These highways are meant to carry through traffic exclusively. Access is controlled and limited to interchanges. These highways are designed for high volumes and speeds. Average Annual Daily Traffic volumes are generally in the range of 50,000 to 100,000.

Major and Minor Arterials: Major arterials provide corridor movement with trip length and density suitable for sustainable statewide or interstate travel and minor arterials provide linkages between cities, towns and other traffic generators that are capable of attracting travel over longer distances. These routes would have an Average Annual Daily Traffic count of 5,000 to 25,000+.

Major and Minor Collector Streets: provide traffic movement between neighborhoods and collect traffic from local roads. They create the connecting links in the street network. Vehicles are carried from local roads via collectors to arterials. These routes would have an Average Annual Daily Traffic count of 3,000 to 10,000.

Local Roads: provide direct access to properties located along them. The rural local road network primarily provides access to land adjacent to the collector network and serves travel over relatively short distances. All roads in Goshen not classified as arterials or collectors are considered local roads. These routes would have an Average Annual Daily Traffic count of less than 3,000.

Roadway Classifications

Using the general classification system described above, the existing road classifications for the Town of Goshen are shown in Figure 2. The roadways serving the Town of Goshen may be classified as follows:

NY 17 is classified as a limited access highway. NY 17 is due to be re-designated as part of I-86 as a result of work being carried out by the New York State Department of Transportation (NYSDOT), in cooperation with the Federal Highway Administration (FHWA).

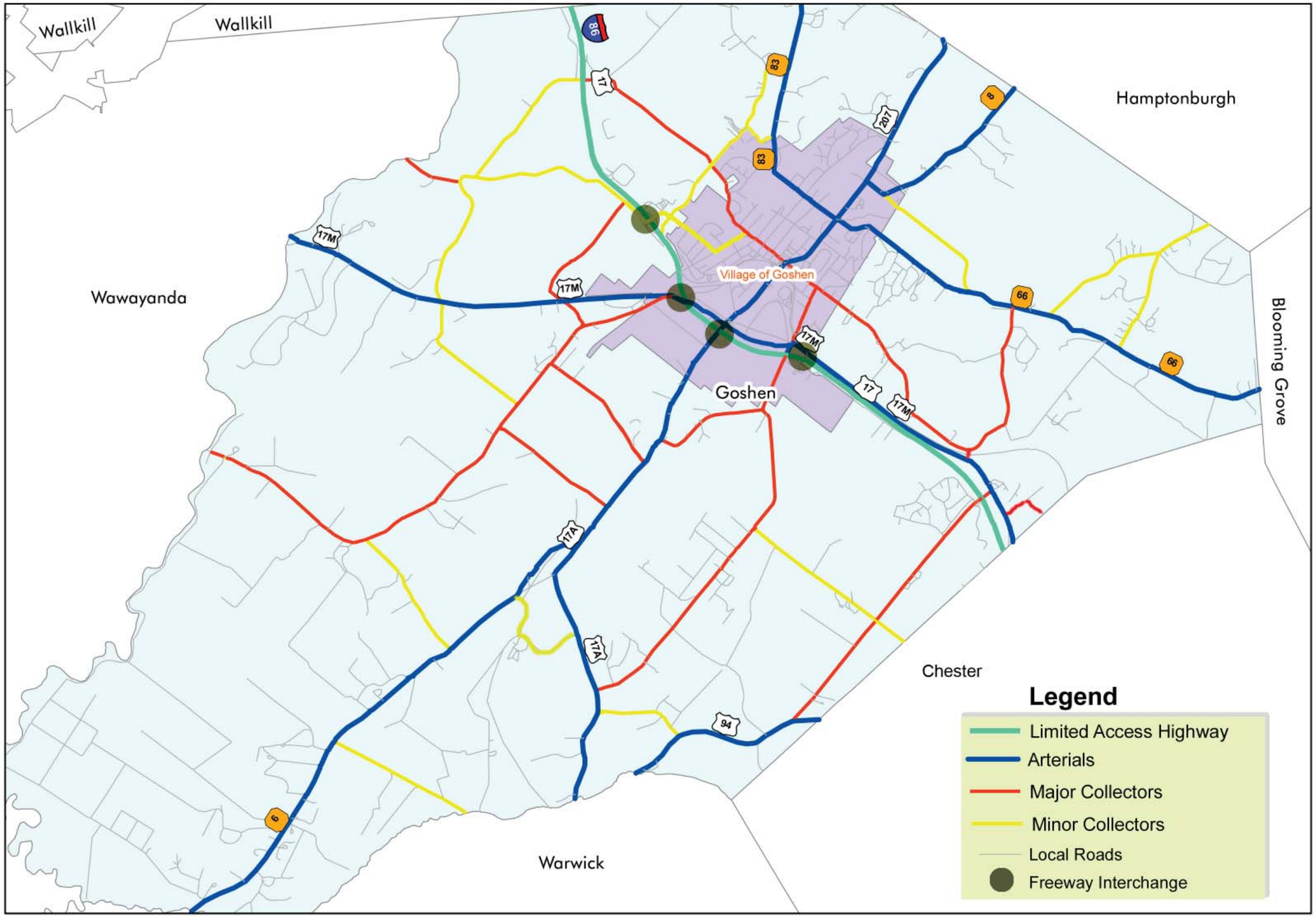


Figure 2: Existing Roadway Classification

Source: New York State GIS

Arterials in the study area include the main through roads:

- NY 17 A;
- NY 17M;
- NY 207;
- NY 94;
- Craigville Road (CR 66);
- Scotchtown Road (CR 83);
- Pulaski Highway (CR 6); and
- Sarah Wells Trail (CR 8).

Collectors in the study area include:

- Arcadia Road;
- Cheechunk Road;
- Coleman Road;
- Conklingtown Road;
- Cross Road (CR 42);
- Durland Road;
- Echo Lake Road;
- Gate Schoolhouse Road;
- Gibson Road (CR 100);
- Hartley Road;
- Hasbrouck Road;
- Houston Road;
- Knoell Road;
- Lower Reservoir Road;
- Maple Avenue (CR 37);
- Minisink Trail;
- Old Chester Road;
- Owens Road;
- Phillipsburgh Road;
- Police Drive;
- Pumpkin Swamp Road (CR 25);
- Quarry Road (CR 68);
- Reservoir Road;
- Ridge Road;
- 6 ½ Station Road; and
- Ward Road

All roads not classified as arterials or collectors are considered local roads.

Future commercial, industrial and multi-family residential development should be served by collector roads which are built and designed for that purpose. Collectors shall also bring traffic from local streets to arterials. Local streets shall have as their primary function to provide access to single-family homes.

Minor collectors and local roads intended to be continued into adjacent residential parcels, must be built to the adjacent parcel boundary and provided with a temporary T-terminal, or at least graded to that adjacent parcel with a future street sign notifying such an extension.

Conflicts in Functional Classification

There are generally two types of functional conflicts in a roadway network: either a proliferation of driveways along arterials, thus impeding the through traffic function with numerous turns in and out of driveways, or cut-through traffic along local streets. The first type of conflict is often present along strip commercial developments. Historically these types of commercial developments grew along arterials or state highways, and as long as traffic volumes were low the mixing of local access and through traffic was not an issue. As traffic volumes increase the conflicts translate into higher crash rates and reduced capacities along these arterials. Studies have shown a strong correlation between driveway densities and crash rates. These conflicts need to be addressed through **access management** strategies. These strategies attempt to control access from the arterial roadway and increase access opportunities from side streets, service roads and from adjacent parcels of land. All arterials in Goshen should be subject to access management strategies, especially those with commercial uses. Route 17A would be a typical candidate for this type of application.

The second type of conflict can be seen in street networks where local roads become an attractive alternative for through traffic avoiding arterial or collector routes that may be longer or more time consuming. The cut-through traffic along these local roads is seen as a nuisance, and may affect safety and neighborhood character. These conflicts generally are addressed through **traffic calming** strategies. These strategies aim to reduce traffic volumes or traffic speeds along local roads, through either physical, regulatory or psychological measures. A wide variety of measures may be implemented for this type of conflict. Examples of cut-through traffic in Goshen may include local roads as well as minor collectors, such as Gate Schoolhouse Road.

Traffic Volumes

The general unit of measurement for traffic on a road is the annual average daily traffic (AADT), which is defined as the average daily traffic volume (i.e. the total annual traffic divided by 365) on a route segment at a particular count location.

Figure 3 illustrates average annual daily traffic volumes for 2006 on major highways within the vicinity of the town. As shown, the greatest traffic volume occurs on NY 17, with the majority of this traffic passing to the south of the Village of Goshen at the Exit 122 interchange. NY 17 is the primary east-west arterial providing access to Goshen from I-84. NY 17M experiences the second highest volumes of traffic, also providing access to Goshen from I-84 in the west. The main north-south distributor, NY 207 – NY 17A experiences the third greatest volumes of traffic. Volumes increase closer to the Village, suggesting that this route primarily services locally generated trips.

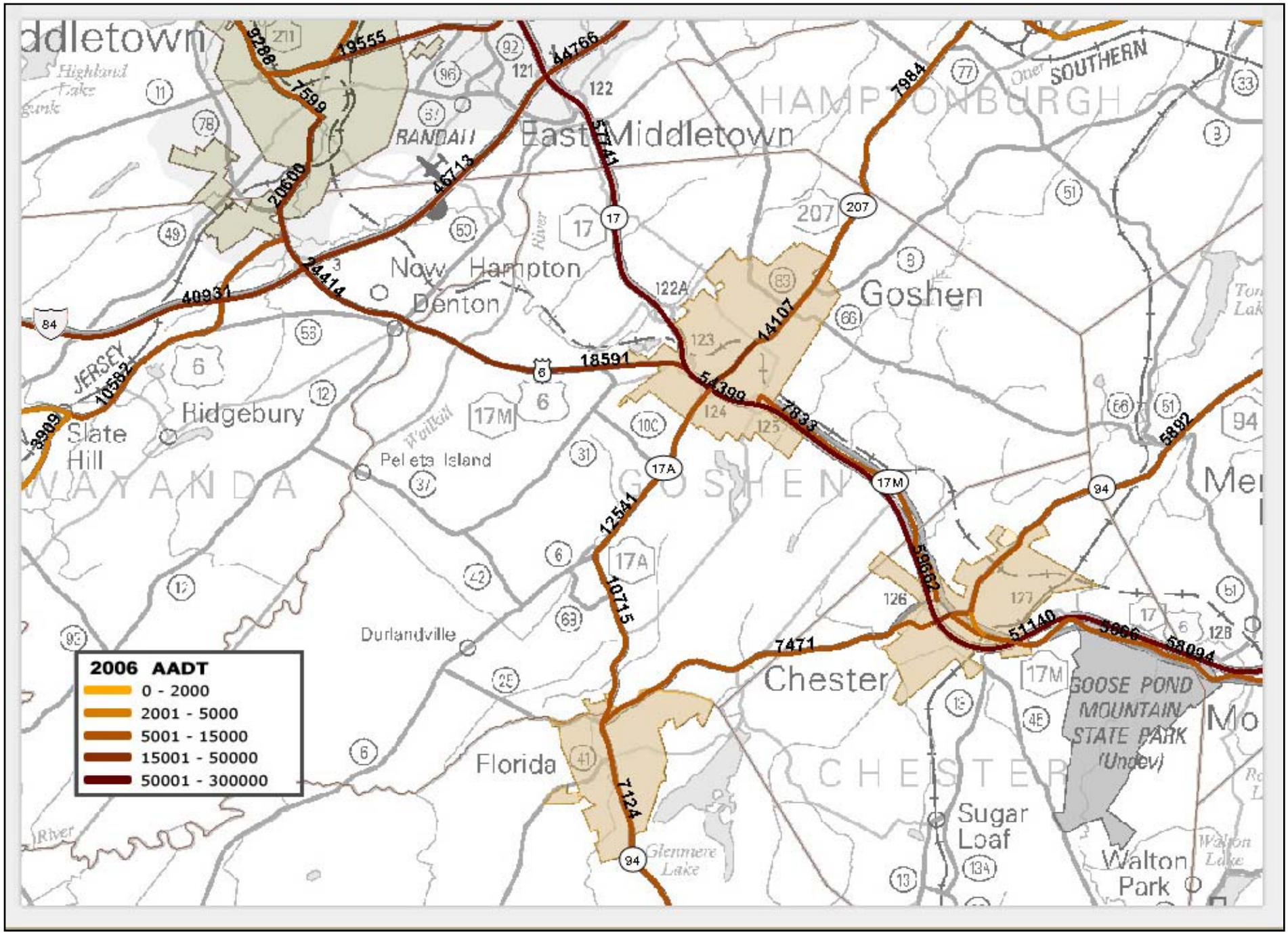
Accident History

An analysis of all the crashes reported to NYSDOT (collected by the local Police Departments) was conducted for major intersections and their surrounding area in the Town of Goshen (excluding the Village of Goshen) from January 2004 to October 2007. Each crash was reported based on location, type of accident, time of day, day of the week, month of the year, persons injured or killed and number of vehicles involved. There were a total of 177 crash reports reviewed along the major roads and intersections described above. Table 1 shows the total number of reported vehicular accidents for the 30 most important intersections and adjacent links within the Goshen Town Wide study area.

Table 1: Number of Reported Vehicular Accidents & Type of Accidents

Accident Type				Light Condition			Wet Road	Fixed Object	Ped. & Bike	Truck	Total
Fatality	Injury	PDO	N/R	Down/ Dusk	Day	Night					
0	70	61	46	11	102	42	34	49	0	6	177
0.0%	39.5%	34.5%	26.0%	6.2%	57.6%	23.7%	19.2%	27.7%	0.0%	3.4%	100.0%

Source: NYSDOT and BFJ Planning



TOWN OF GOSHEN, NEW YORK

FIGURE 3: AVERAGE ANNUAL DAILY TRAFFIC, 2006 (AADT, 2006)

SOURCE: NYSDOT RECORDS WWW.NYSDOT.GOV

No pedestrian crashes were reported. Of the 177 crashes, 39.5% involved some kind of injury with no fatalities being reported. Almost 28% of drivers collided with fixed objects and only 3.4% of crashes included trucks.

Figures 4 and 5 depict the same accident data visually for the study area.

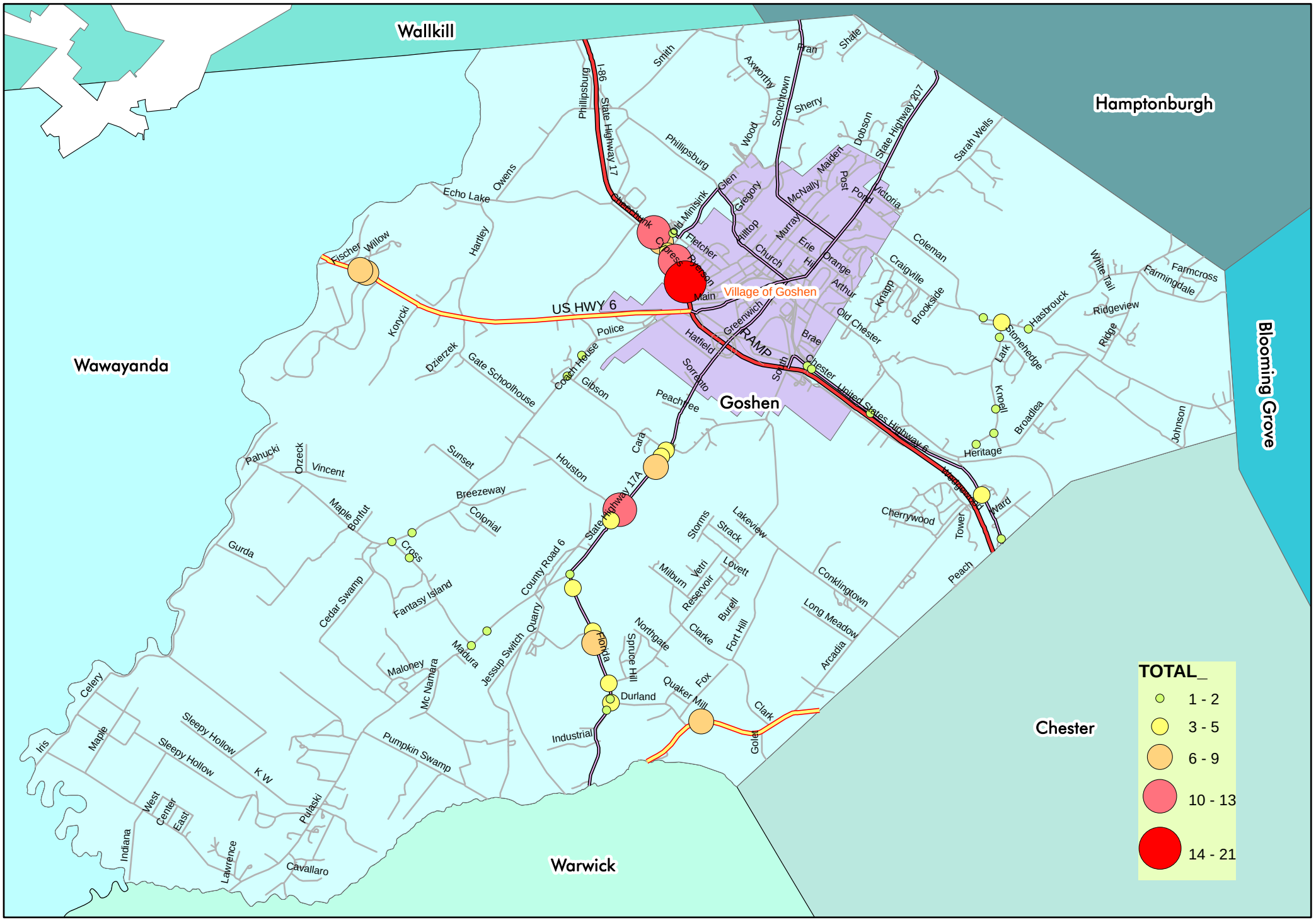
3.0 Strategies and Recommendations

Future Road Improvements

The FHWA has begun a public consultation process in relation to the preferred route for the proposed upgrade of Route 17 to Interstate 86. Some of the proposed improvements include ramp reconfiguration, realignment of intersections, and bridge and lane improvements at the following exits/areas:

- Exit 122A: Fletcher Street – Lengthen and reconstruct the eastbound and westbound ramps.
- Exit 123: NY 17M/US 6: Realign the intersection of West Main Street/Matthews Street/westbound off-ramp. Realign NY 17M/US 6 southbound off-ramp.
- Exit 124: NY 207 and NY 17A – Raise the bridge to obtain required clearances above NY 17.
- Exit 125: NY 17M East and South Street – Adopt one of two alternatives developed to resolve the deficient acceleration and deceleration lane lengths and horizontal ramp radii. Alternative A involves an upgrade of the existing ramp configuration by increasing the radii and thereby expanding out from NY 17. Alternative B involves the relocation of the eastbound and westbound ramps just south of the existing eastbound ramps and reconfiguration as a diamond type interchange with a connecting roadway across NY 17 and signalization and westbound ramps. Includes realigned Harriman Drive just east of the Orange Regional Medical Center-Arden Hill.
- NY 17M East/US 6, Hatfield Lane and Police Drive: New entrance and exit ramps onto NY 17M East/US 6. Intersection improvements at Hatfield Lane and Police Drive including new access road with parking.
- NY 17/US 6. [1]

[1] Goshen Town Wide Traffic Study. Stantec, December 2006. 19; NYSDOT Design Proposal Drawings. April 8, 2008.



TOWN OF GOSHEN, NEW YORK

GOSHEN TOWN WIDE TRAFFIC ANALYSIS

FIGURE 4: TOWN OF GOSHEN TRAFFIC ACCIDENTS (JAN. 2004 - OCT. 2007)

SOURCE: NEW YORK STATE DOT

0 3,000 6,000 Feet

BFJ Planning

TOWN OF GOSHEN, NEW YORK

FIGURE 5: TOTAL TRAFFIC ACCIDENTS FOR 30 INTERSECTIONS (JAN. 2004 - OCT. 2007)

GOSHEN TOWN WIDE TRAFFIC ANALYSIS

Scale: 1"=0.5 miles
August 2008
Map Sources: NYSDOT Records WWW.NYSDOT.GOV / Google Earth

BFJ Planning

See *Appendix A: Design Proposal Drawings* for the proposed NYSDOT upgrade work that will affect the area around Goshen. Additional private development improvements are also anticipated but on a limited basis.

These road improvements will not affect the functional classification of the roads, apart from a shift of Route 17M to Matthews Street in the Village of Goshen and Chester Road in the Town of Goshen. As a result Matthews Street and Chester Road will have to fulfill a more regional role compared to today.

Recommended Roadway Improvements

Table 2 shows the list of intersections that were studied in the Goshen Town Wide Traffic Study (Stantec, December 2006) together with the current and projected levels of service (LOS) and the number of traffic accidents for each intersection. The table also shows the amount of side street traffic during the peak hour that is delayed. These variables allow the Town to prioritize intersection improvements. The intersections with current levels of service E and F and those intersections with more than 10 crashes over the approximately 3 ½ year period have been marked in red (LOS F and >10 crashes) and orange (LOS E), an indication to prioritize improvements at these intersections. Table 3 includes recommendations that can be implemented in a relatively short time-frame compared to major roadway improvement projects where major construction activities occur and thus longer anticipated construction lead time (i.e. Conversion of NY 17 to I-8 and other NYSDOT major roadway improvements). Short-term improvements include traffic calming (i.e. speed humps, raised crosswalks, traffic circles, planting of street trees, etc.), access management (i.e. driveway sharing between adjacent properties, landscaped medians, etc.), traffic signal timing, and realignment of local streets to promote the efficiency of street connectivity; whereas medium-term improvements include roundabouts and minor realignment or expansion of roadways. Wherever feasible, short to medium-term improvements should be implemented in areas that require immediate improvements, such as the intersections listed in Table 3.

Table 2: Intersection Improvement Priorities

Intersection		Exist. LOS	2011 LOS	2016 LOS	Minor Street Delayed Volume (vph)		Number Of Accidents (Jan. 2004 to Oct. 2007)	
#	Description				2006	2016	Total	Inj.
1	NY Route 207 / Scotchtown Road / (Country Route 83) / Craigville Road (County Route 66)	E	F	F	592	991	7	5
2	NY Route 207 / Sarah Wells Trail (Country Route 8)	F	F	F	115	149	6	3
3	Sarah Wells Trail (Country Route 8) / Coleman Road	B	B	B	9	33	N/A	N/A
4	Craigville Road (Country Route 66) / Knoell Road	B	B	B	84	152	3	1
5	Knoell Road / Old Chester Road	A	B	B	36	154	2	2
6	NY Route 17M / Old Chester Road	C	E	F	79	212	1	1
7	NY Route 17A / Lower Reservoir Road	D	F	F	21	28	1	0
8	NY Route 17A / Reservoir Road	D	E	F	61	70	4	3
9	NY Route 17A / Durland Road	C	D	E	39	54	5	3
10	NY Route 94 / Durland Road	B	B	B	78	96	6	3
11	NY Route 17A / Pulaski Highway	F	F	F	133	137	N/A	N/A
12	NY Route 17A / Quarry Road (Country Route 68)	E	F	F	173	183	5	2
13	NY Route 17A / Houston Road	C	D	E	N/A	N/A	11	6
14	Maple Avenue (Country Route 31) / Houston Road	A	B	B	73	98	N/A	N/A
15	Maple Avenue (Country Route 31) / Gibson Road (Country Route 100)	A	B	B	59	70	2	0
16	NY Route 17M / 6 1/2 Station Road / Maple Avenue	F	F	F	340	369	N/A	N/A
17	NY Route 17M / Arcadia Road	A	C	C	N/A	N/A	5	3
18	NY Route 17M / South Street	C	E	F	758	1047	N/A	N/A
19	Harriman Drive / South Street	C	F	F	365	531	N/A	N/A
20	NY Route 17 Westbound Ramps / NY Route 17M (East)	D	F	F	379	521	2	1
21	South Church Street / South Street / Parkway / Old Chester Road	C	D	D	720	805	1	1
22	Miniskin Trail / Philipsburg Road	A	A	A	NA	NA	N/A	N/A
23	Maple Avenue (Country Route 31) / Cross Road (Country Route 42)	B	B	B	158	160	1	1
24	Cross Road (Country Route 42) / Pulaski Highway	B	B	B	95	97	1	0
25	NY Route 17 Eastbound Ramps / Harriman Drive / Driveway	B	C	C	155	312	N/A	N/A
26A	Cheechunk Road / Route 17 Connector / Cypress Road	B	B	B	226	299	6	3
26B	NY Route 17 Eastbound Ramps / Route 17 Connector	D	F	F	183	239	13	6
27	NY Route 17 Westbound Ramps / Route 17 Connector	C	F	F	133	185	4	1
28	NY Route 17A / Gibson Road (Country Route 100)	B	B	C	79	98	3	1
29	Fletcher Road / Route 17 Connector / Burke School Drive	C	C	D	280	360	1	0
30	NY Route 17 Westbound Ramps / NY Route 17M (West)	B	C	C	194	239	N/A	N/A

Sources: Goshen Town Wide Trafic Study, Stantec, December 2006; NYSDOT; BFJ Planning

BFJ Planning
August 2008

Table 3: Priority List of Recommended Roadway Improvements

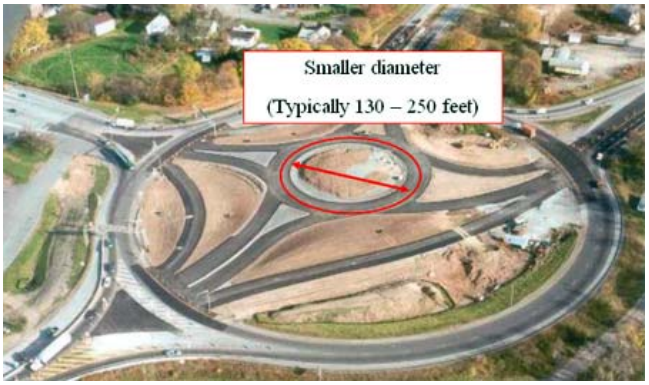
Intersection		Exist. LOS	Number of Accidents (Jan. 2004 to Oct. 2007)	Improvement Description	Responsibility
#	Description				
1	NY Rte 207/ Scotchtown Rd / CR 83 / Craigsville RD (CR 66)	E	7	Consider widening Rte 207 to add stacking/merging lanes and widening Craigsville Rd to add second approach lane; prohibiting left turns onto Scotchtown Rd and/or from Craigsville Rd in conjunction with Sarah Wells Trail; realigning Craigsville Rd opposite Scotchtown Rd	State / County / Town
2	NY Rte 207 / Sarah Wells Trail (CR 8):	F	6	Study feasibility of roundabout or new traffic signal	State / County
3	NY Rte 17A / Pulaski Highway	F	N/A	Study feasibility of roundabout or new traffic signal	State
4	NY Rte 17A / Quarry Rd (CR 68)	E	5	Consider new traffic signal or prohibiting left turns with diversion to potential traffic signal at Pulaski Highway	State / County
5	NY Rte 17A / Houston Rd	C	11	Maintain visibility at intersection; consider adding street trees on west side of 17A or other traffic calming measures with additional road signage	State / Town / Property Owner
6	NY Rte 17M / 6 ½ Station Rd / Maple Ave	F	N/A	Study feasibility of roundabout; examine signal timing; consider widening Rte 17M for stacking/merging lanes for through traffic and Maple Ave for second approach lane	State / Town
7	NY Rte 17 Eastbound Ramp / NY Rte 17 Connector	D	13	Monitor planning of conversion of Rte 17 to I-86; consider new traffic signal	State

Sources: Goshen Town Wide Traffic Study, Stantec, December 2006; NYSDOT; BFJ Planning

Roundabouts

Goshen's roadway network is ideal for the installation of "modern" roundabouts, instead of signalized intersections. It is important not to confuse the successful modern roundabout with the older, "nonconforming" traffic circles or rotaries built in the early and/or mid-20th century in the United States. Problematic elements in older designs are responsible for residual negative perceptions in the U.S. of the one-way rotary intersection. The two main deficiencies of old traffic circles are that 1) entering traffic often had the right-of-way, which tended to cause lock-ups at higher volumes; and 2) the

circles were often designed for high-speed entries, increasing the likelihood of accidents and making the old traffic circles dangerous. In contrast, the modern roundabout system of Yield-at-Entry, requires that vehicles in the circulatory roadway have the right-of-way and all entering vehicles must wait for a gap in the circulating flow. Also, modern roundabouts are designed for slow entry speeds (typically 15 to 20 mph) making them very safe.



Smaller and more efficient modern roundabout constructed within larger rotary in Kingston, NY. The previous larger rotary was eventually removed all together.

In the 1960s, Great Britain tested the improved Yield-at-Entry roundabout and found that capacity was increased by 10% and delays were reduced by 40% in comparison to other options, including no control, police control, or signal control. Due to low entry speeds, crashes with injury were reduced by 40% when compared with cross intersections – both with and without signals. The improved roundabout was thereafter exported worldwide. Roundabouts are very common in France, Australia, Germany, Switzerland, Scandinavia, Spain and Portugal, and are increasingly common in New Zealand, South Africa and Israel. The roundabout is finally regaining acceptance in the United States, with examples like the Gainesville, FL roundabout, built in 1992, and the I-70/Vail Road interchange completed in October 1995 in Vail, CO. In 1997 the Town of Avon, CO built a string of five roundabouts along Avon Road with a common cultural and landscaping theme. NYSDOT has been actively building roundabouts in the State since about 2000.

The increased acceptance of roundabouts in the United States is due to three main factors:

1. Increased capacity and reduced vehicle delay

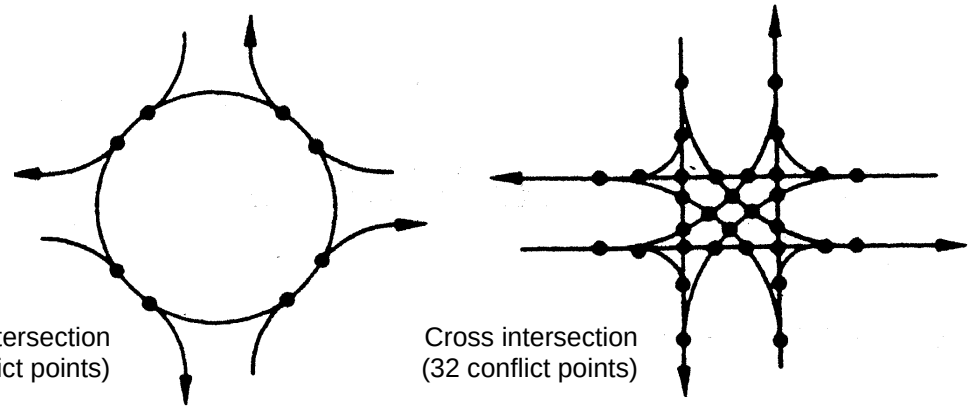
A high degree of capacity and fluidity can be achieved by the modern roundabout. When greater capacity is required, relatively simple improvements can be implemented such as widening the entries to provide more than one entry lane, and widening the circulatory roadway.

2. Improved Safety

Roundabout design has consistently proven to be superior in safety to cross intersections. Reduced speeds alone make impacts less likely and less severe when they do occur. Driver error is less likely because the driver who enters the roundabout must be alert to only one traffic movement – he looks left for an acceptable gap to enter into the flow. By contrast, a driver at a four-way intersection has to deal with two or three different movements. In a roundabout, no one can run a red light and cause a right-angle collision; accidents that do occur are generally side-swipe or rear-end types. The presence of the center island interrupts an otherwise straight path, forcing slowing and heightened awareness in the roundabout. In contrast, traffic given the green light at conventional signalized intersections does not slow at all. With road rage so much in the news recently it is worth noting that reduced delays at roundabouts compared to signalized intersections have the effect of decreasing the level of frustration and aggressiveness of drivers, making them behave in a more responsible manner.

Two lane modern roundabout at former Griffiss Air Force Base in Rome, NY.

Safety Aspects of Roundabouts; Potential Conflict Points



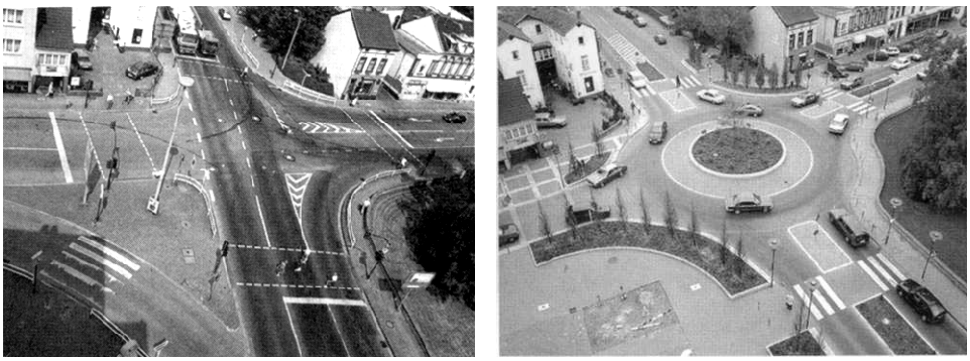
Roundabout intersection (8 conflict points)

Cross intersection (32 conflict points)

Survey results taken before and after roundabout construction have proven these findings. In small- to moderate-sized roundabouts a total crash reduction was achieved of 51%, with a reduction of 73% in crashes with injury and 32% in property-only crashes. Large roundabouts experienced a less dramatic but still positive improvement. Total crashes were down 29%; crashes involving injury were down 31% and property-damage-only crashes were down 10%. A safety study conducted by the Insurance Institute for Highway Safety and NYSDOT has confirmed these substantial safety improvements.

3. Positive Aesthetic and Environmental Effects

The roundabout improves the visual quality of the road and is a major reason for the support it enjoys among residents, urban planners, and politicians. In many cases of roundabout construction there is a reduction in total area paved and a more elegant use of space. (See picture below) The landscaped center island is an opportunity to create a sense of place. Reduced idling time at roundabouts has significant environmental benefits in the reduction of noise and air pollutant emissions. Field measurements in Sweden showed reductions in pollutant emissions and fuel consumption in the range of 21% to 29%.



Before and after roundabout construction in Bruhl, Germany

Public Acceptance of Roundabouts

Due largely to the dangers presented by older "traffic circles" public opinion in the United States towards roundabouts has been relatively low. An interesting study was prepared in 1998 concerning public opinion towards roundabouts before and after one was constructed in the respondents' area. The study found that whereas before the construction of the roundabout, 68% of public response was negative or very negative toward the roundabout, there were no negative feelings after the construction. After construction, 73% of the respondents indicated a positive or very positive attitude. It is also interesting to note that improvement in safety on newly built roundabouts is immediate, despite the fact that drivers are inexperienced with the roundabout. The initial negative public reaction to the Kingston, NY roundabout (opened November 2000) is an exception and can be explained by the introduction of bypass lanes and the fact that the roundabout was opened before the signage, striping and markings were in place.

Appropriate Locations for a Roundabout

The roundabouts built in the United States cover a wide range of applications: roundabouts can be found in urban, suburban or rural areas, on arterials, collectors or local streets.

The most appropriate locations identified for successful roundabout construction include, but are not limited to the following:

- High accident locations, especially those related to cross movements or turning movements.
- Locations with high delays (especially if there is limited space to accommodate lanes of waiting traffic).
- Locations where traffic signals are not warranted.
- Four-way stop sign intersections.
- Intersections with more than 4 legs.
- Intersections where it is difficult or expensive to widen the approaches sufficiently to provide the approach width needed for signalized intersections. Roundabouts function well with narrow approaches.

Entry lane leading to completed modern roundabout in Voorheesville, NY

Single lane modern roundabout in Sag Harbor, NY

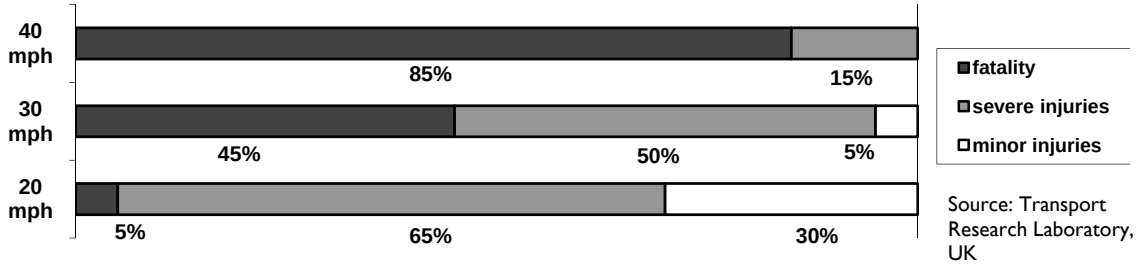
At the low end, $50,000 reflects the cost of a roundabout that is installed by the municipality's own personnel within an existing intersection, where the only work includes the construction of the central island and the splitter islands. At the high end are roundabouts built by the state agencies on state highways, generally involving substantial amounts of grading and drainage, as well as relatively long splitter islands and lots of curbs. These state-built roundabouts can cost in the range of $400,000 to $600,000 each.

Traffic Calming

Generally the purpose of traffic calming is to reduce the negative impacts of traffic intrusion into residential neighborhoods or other areas with relatively high levels of pedestrian activity. Traffic calming strategies involve reducing traffic speeds or limiting the degree of vehicular freedom in an area, without prohibiting traffic movement.

Throughout the United States, traffic volumes and speeds are increasing, particularly on local roads. This is largely due to drivers looking for short cuts to avoid congested regional roads and arterials. Often, this results in drivers traveling through residential neighborhoods at relatively high speeds. Since local roads may be designed to be wide, straight and seemingly underutilized, as compared to arterial and collector roads, drivers are tempted to accelerate and drive at 35-40 mph, rather than at the 25-30 mph posted speed limits. This has an impact on the quality of life within the neighborhoods in terms of increases in noise and pollution levels, accident rates and hindrances to the mobility of local drivers.

However, over the last twenty years there has been a concerted attempt by traffic engineers and planners to develop measures to reverse this trend. Collectively these tools are known as "Traffic Calming Measures". Twenty years ago traffic calming was known as neighborhood traffic control. The objective is to discourage unwanted drivers from using the streets as short-cuts and to discourage drivers from driving at dangerous speeds. The diagram below illustrates the relationship between vehicle speed and severity of injuries in pedestrian – vehicle accidents.



Source: Transport Research Laboratory, UK

Result of Speed on Vehicle – Pedestrian Collisions

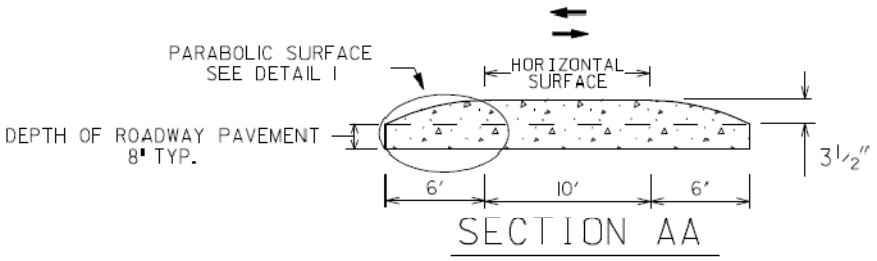
Lower vehicle speeds open a range of design options that enable a street to look less like an expressway and more like a neighborhood street. The design speed in traffic calming projects should be equal to the posted or statutory speed of the roadway. Traffic calming devices assist in maintaining this design speed (and adherence to the speed limit) by physically limiting the speed at which the design vehicle may traverse the device. The goal is to moderate and balance vehicle speeds along the roadway.

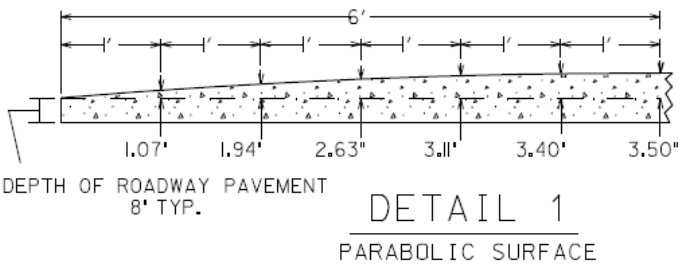
Examples of traffic calming include speed humps/tables/cushions, raised crosswalks, traffic circles, neckdowns and context sensitive designs, such as planting of street trees and median islands. Candidates for traffic calming measures are the Greater Schoolhouse Road, Gibson Road and Lower Reservoir Road.

Typical traffic calming circle

Typical speed table with raised crosswalk

Speed hump section and detail

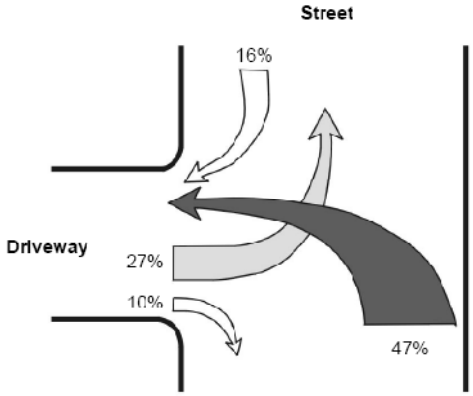




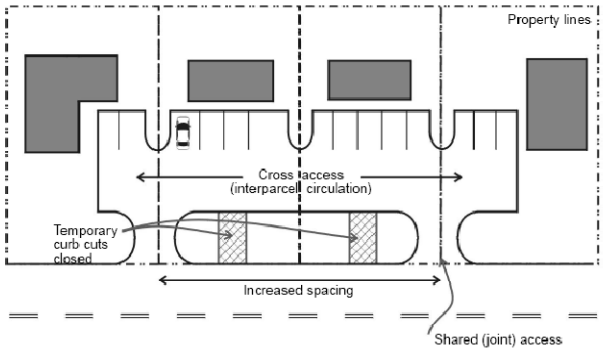
Access Management for Commercial Development

Access management provides controlled access to land development while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety, capacity and speed. Access management increases traffic safety and capacity, provides shorter travel times and creates pedestrian/bicycle/transit friendly communities. Whereas access from the major road may be more limited with access management, access from side streets and from adjacent properties are often increased (See figure below on this page). The basic goal is to improve traffic flow and safety along the arterial without reducing access.

Access management strategies aim to alleviate the inherent conflicts between the function of through traffic of an arterial or state highway, and the local function of access to abutting properties. As traffic volumes increase along these types of roads, these conflicts become more and more problematic in terms of congestion and accidents, and will eventually hamper the economic well being, as well as the quality of life along the corridor. Access management attempts to group some of the turning movements in and out of properties, or shift them to side streets or service roads, or minimize problematic turns (i.e. left turning movements). As shown in the figure below, left turns in and out of driveways are the main culprits for accidents.



Percentage of driveway crashes by movement[2]



Example of joint and cross access[3]

[2] Source: Access Management Manual. Transportation Research Board, Washington, D.C.. 2003. 10.
[3] Source: Access Management Manual. Transportation Research Board, Washington, D.C.. 2003. 109.

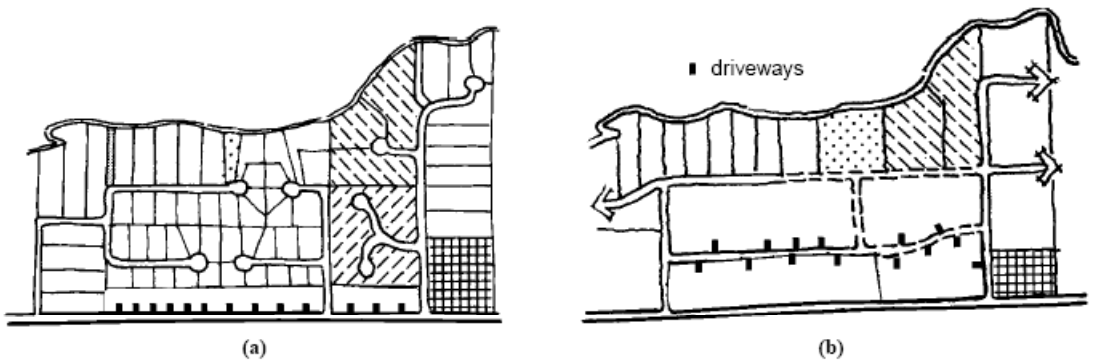
One of the greatest difficulties with access management along arterial and collector routes is the general lack of incentives for property owners to share common access points and the lack of regulatory powers to require owners to consolidate driveways. It is therefore important to consider access management early in the plan review process and during site plan review. Property owners may be encouraged to obtain easements from neighboring property owners to eliminate unnecessary access points along arterials and collectors. New commercial developments should be required to provide direct vehicular access to adjacent commercial parcels. By facilitating traffic flow along commercial corridors, these actions will make it easier for the volume of vehicles to grow in these corridors, which can have resonating benefits and result in increased property values. Candidates for access management measures are Hatfield Lane, Matthews Street, Main Street, and West Main Street NY 207 (Greenwich Avenue).

Street Connectivity

It is generally desirable to have a comprehensive and flexible street network where streets are interconnected and the network allows circulation alternatives. The advantages of such a network are the greater capacity of the system as a whole, greater circulation flexibility, lower vehicles miles of travel, greater reliance on low speed streets rather than arterials, and also a network that is more favorable for bicycle and pedestrian circulation (since the travel distances are shorter, and these vulnerable modes prefer to be on local streets). Even though residents like to live on dead-end streets (because there cannot be any through traffic), a more comprehensive grid system can also allow for high quality residential environments. The grid system can be designed such that no street will have excessive traffic volumes and the overall vehicle miles of travel would be less than with a series of dead-end streets. The problem with the proliferation of dead-end streets is that there is no circulation flexibility and all dead-end streets have to connect to an arterial that will end up carrying high volumes of traffic, yet not every intersection can be signalized. This is sometimes referred to as the sewer approach to traffic planning, i.e. all small pipes lead to a large sewer (see below figure regarding connectivity of supporting streets).

When a municipality considers connecting two local streets, attention should be paid to the traffic effects that the connection may have. In some cases the connection may attract excessive amounts of through traffic that could affect the residential character of the street. These effects can be studied through traffic and origin-destination surveys, and potential traffic diversions can be estimated. Traffic volumes are always likely to increase at the end of the dead-end road when that dead-end road gets connected to another dead-end road; however, in most cases these increases are low and will not affect the character of the residential street. The increases at the end of the dead-end may be offset by reductions at the intersection with the major road and also by the reduced vehicle miles

of travel and greater flexibility and better emergency access. Generally the residential character of street is not threatened as long as daily traffic volumes are less than 2000 vehicles.



Connectivity of supporting streets: (a) Poor connectivity increases demand for arterial access. (b) Improved connectivity increases opportunities for alternative access [4]

4.0 Conclusion

With this report and the above referenced plans, the Town of Goshen has taken strides to analyze improvements on a town wide level. We believe that if these recommendations are implemented, there will be positive affects for the Town of Goshen and surrounding areas. A key element of this circulation plan is the presentation of a functional classification of the roadway system. This classification provides the Town with a guide on which roadways need to be prioritized for traffic flow and access management improvements, and which roadways should be protected with traffic calming devices. Specific areas of improvements are discussed in this report with recommended short-term and mid-term strategies and priorities. The Priority List of Recommended Roadway Improvements can act as a guideline for the Town for future area improvements.

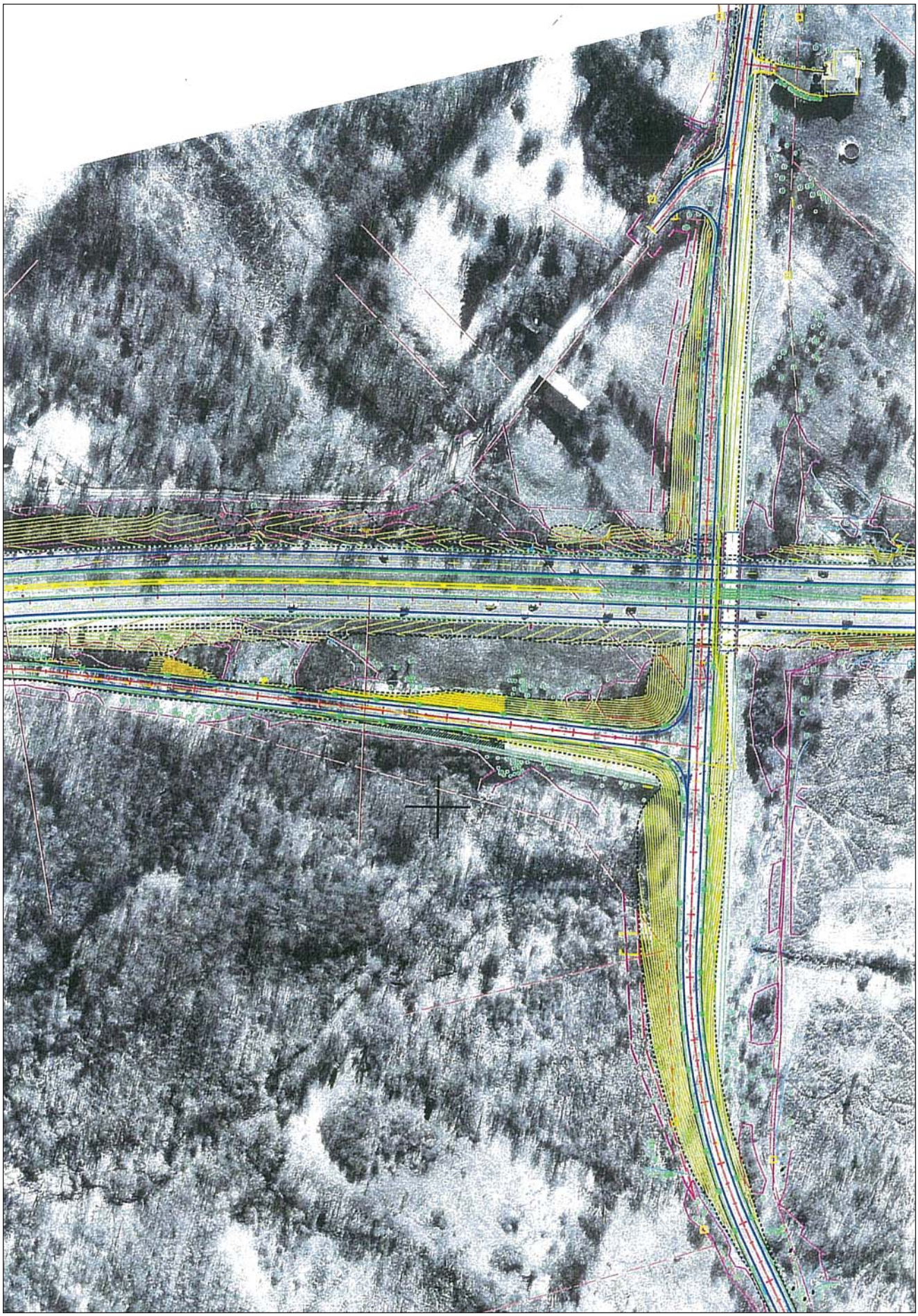
[4] Source: Access Management Manual. Transportation Research Board, Washington, D.C.. 2003. 104. Adapted from SNO-TRAN.

Appendix A

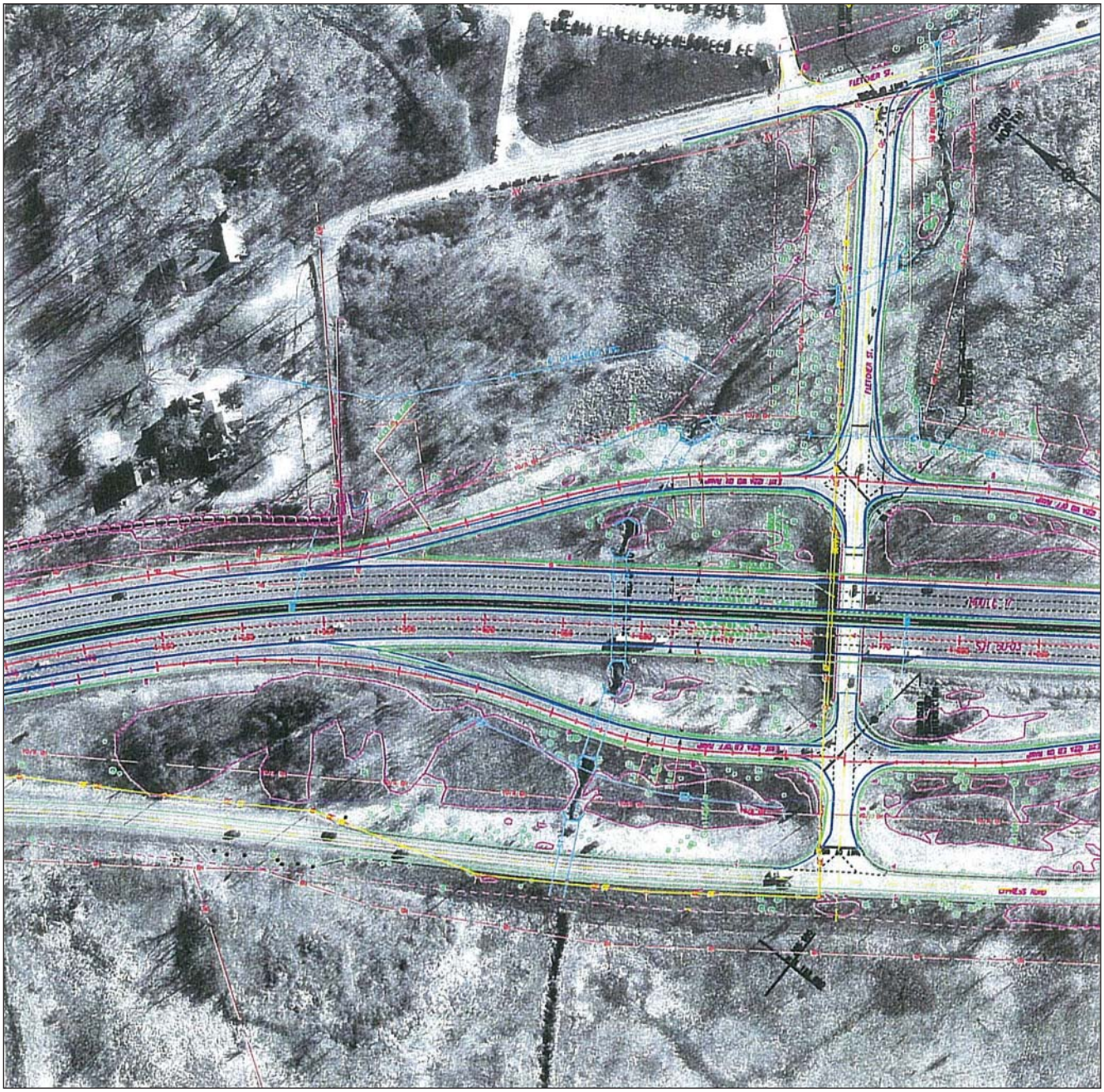
Design Proposal Drawings

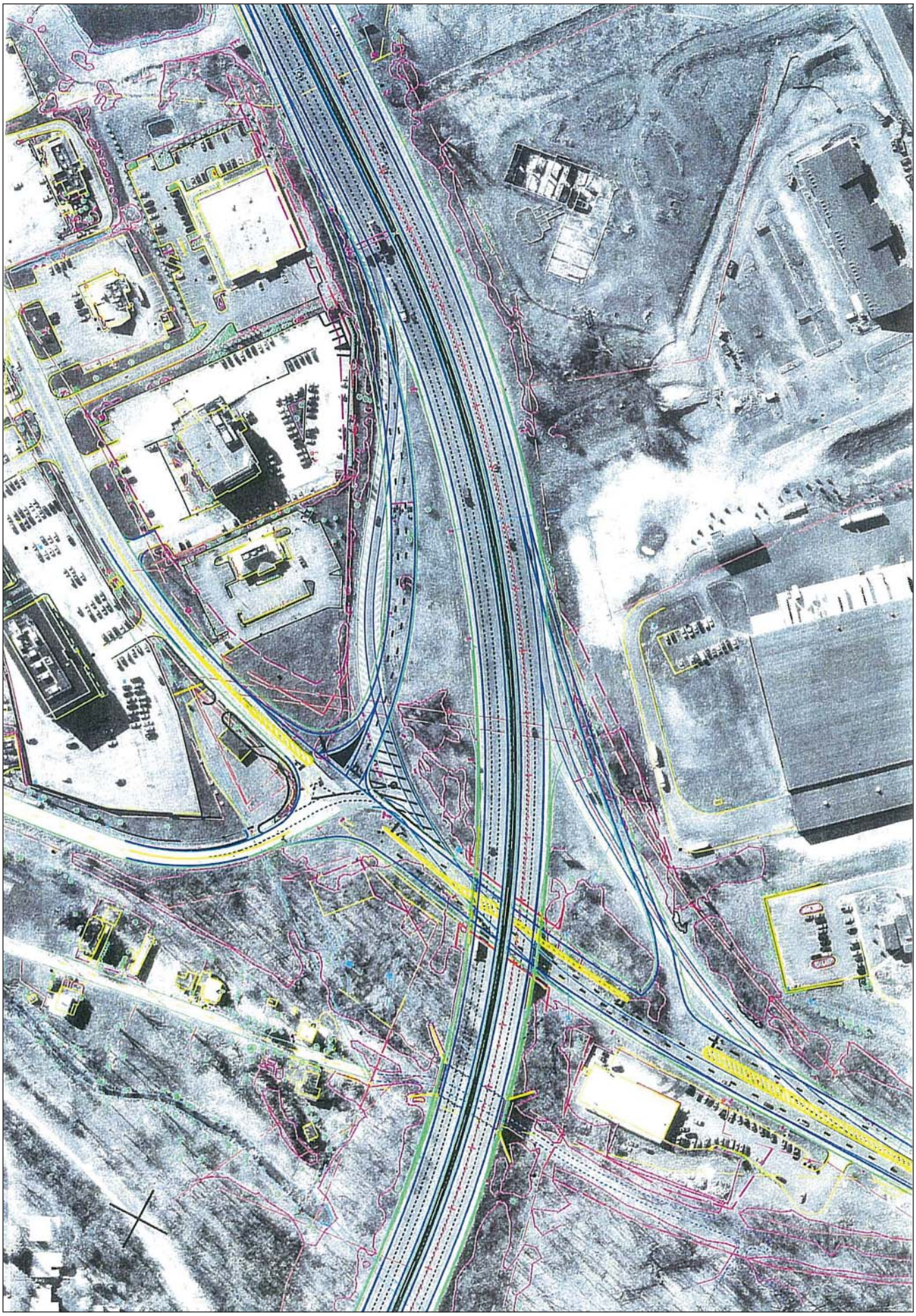
NYSDOT PROJECT 8006.82
ROUTE 17 UPGRADE TO I-86
TOWNS OF WALLKILL, GOSHEN, CHESTER
VILLAGES OF GOSHEN, CHESTER
ORANGE COUNTY, NEW YORK
APRIL 2008

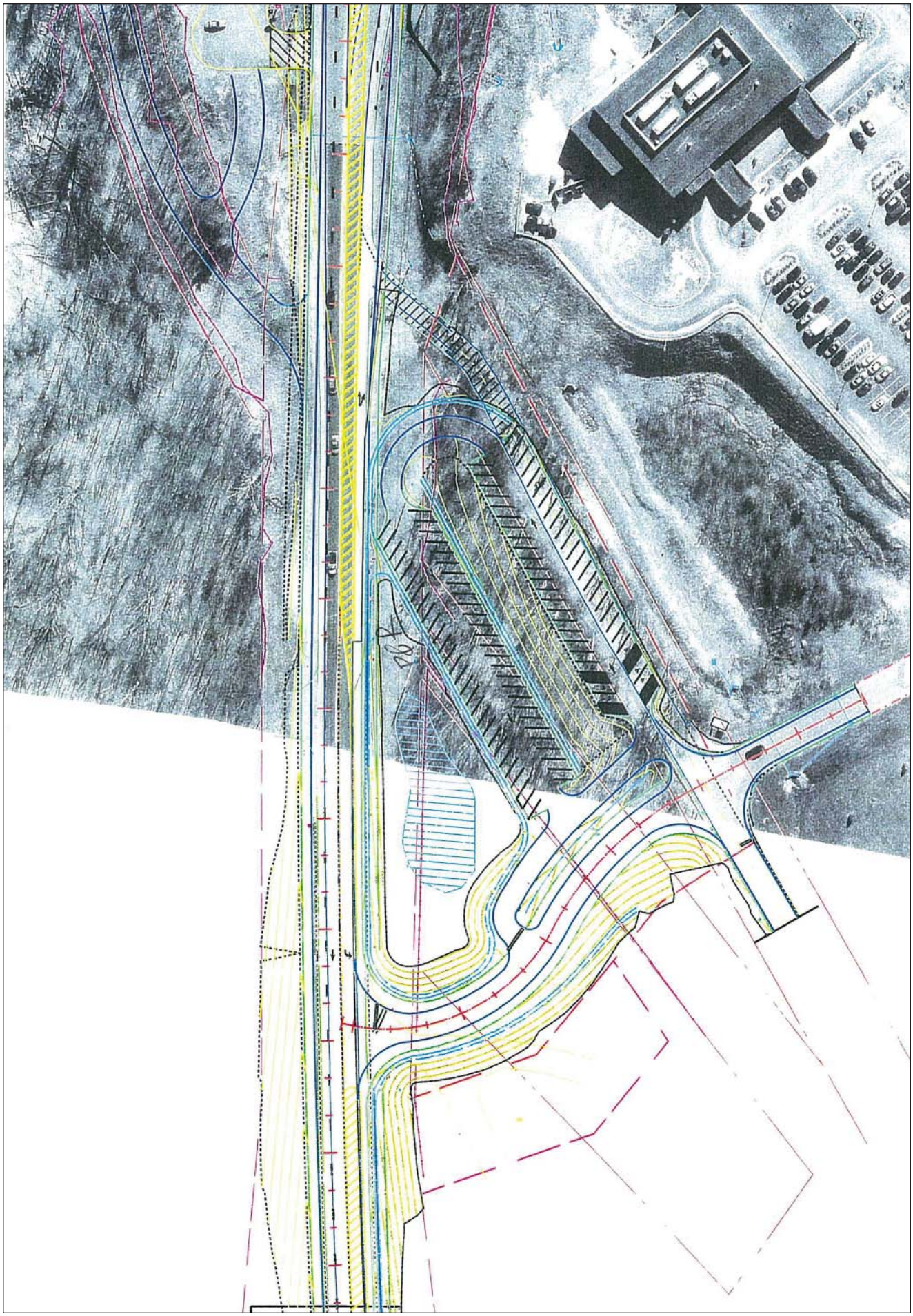
Phillipsburg Rd at NY 17

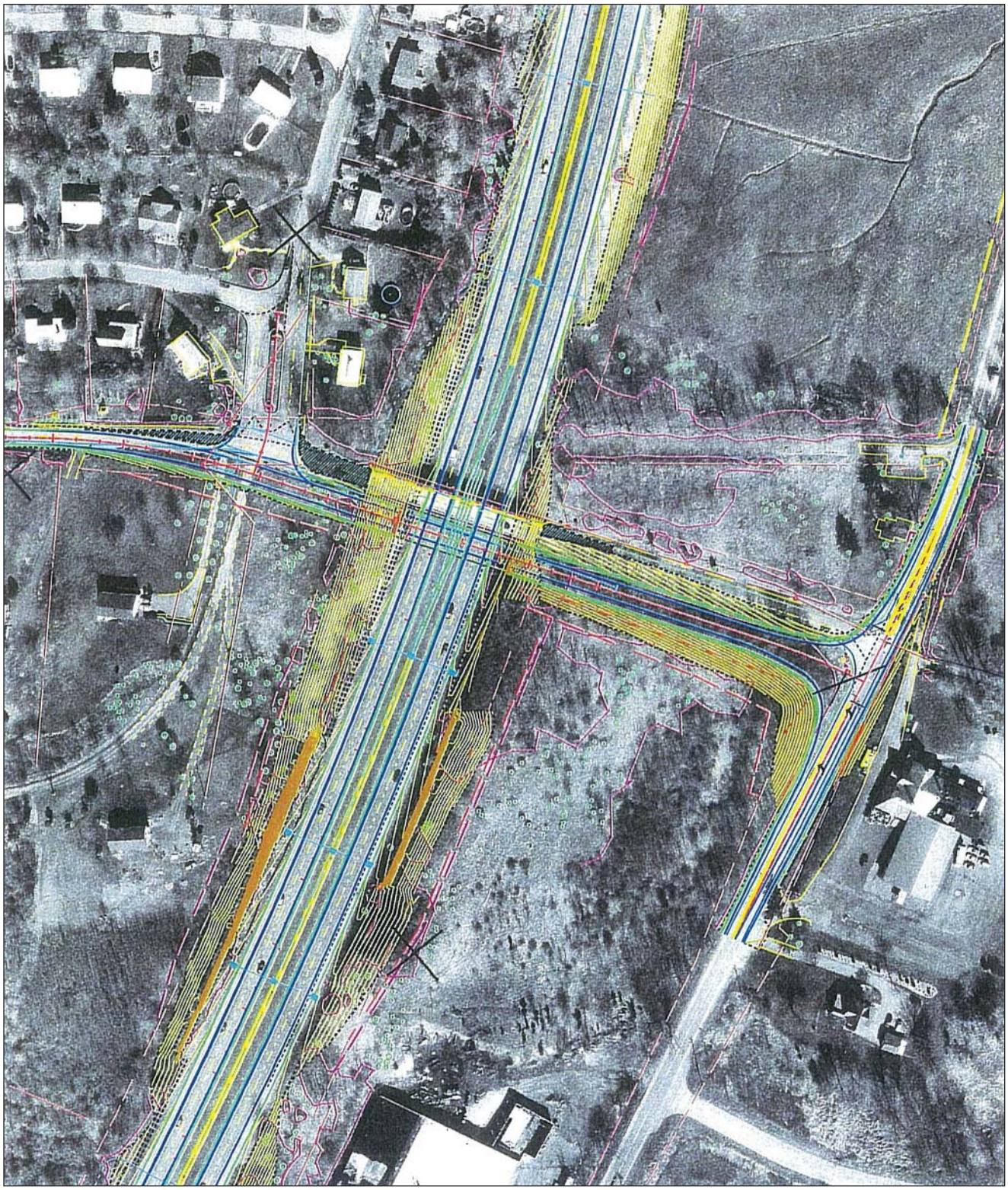


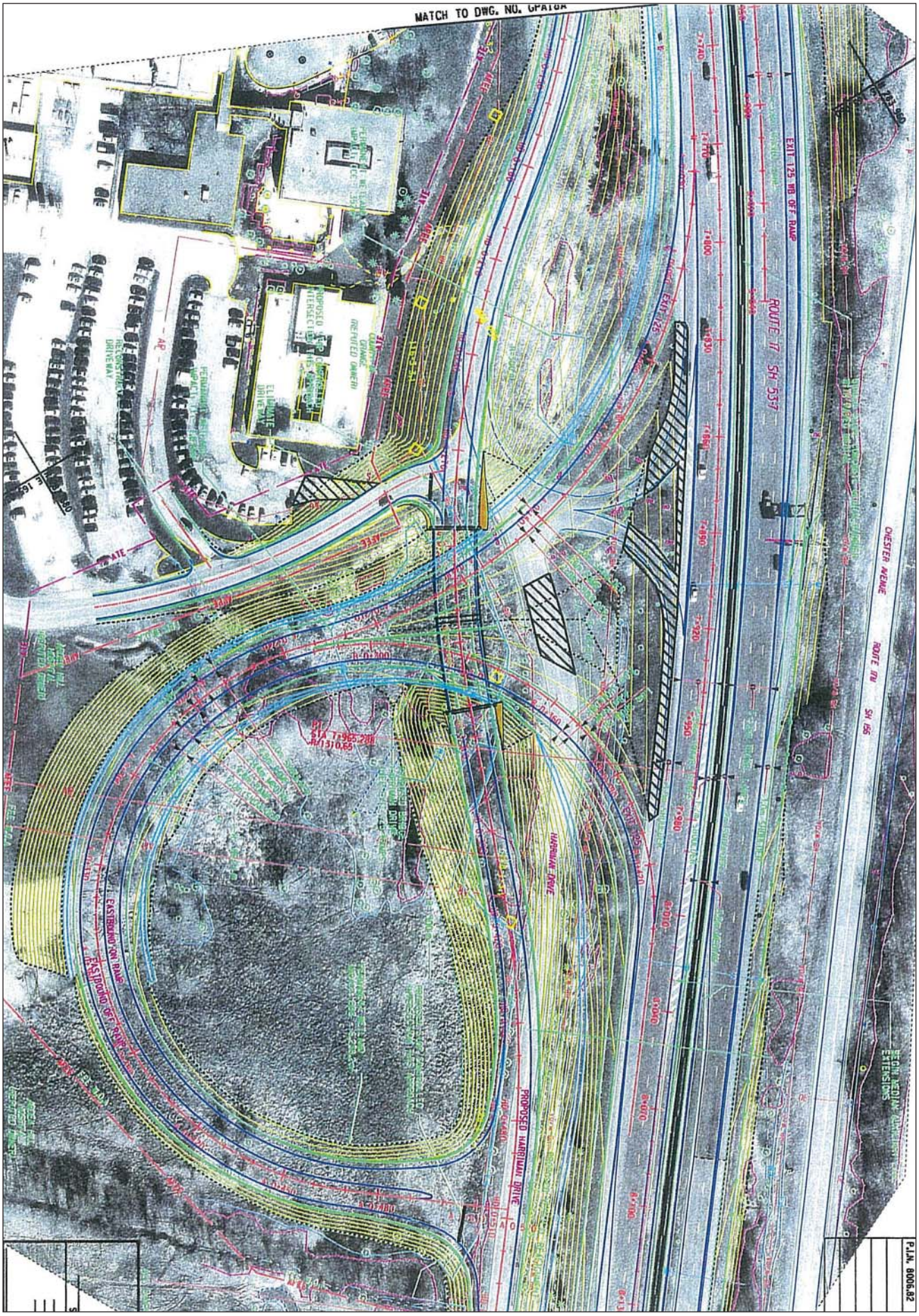
Exit 122A - Fletcher St.

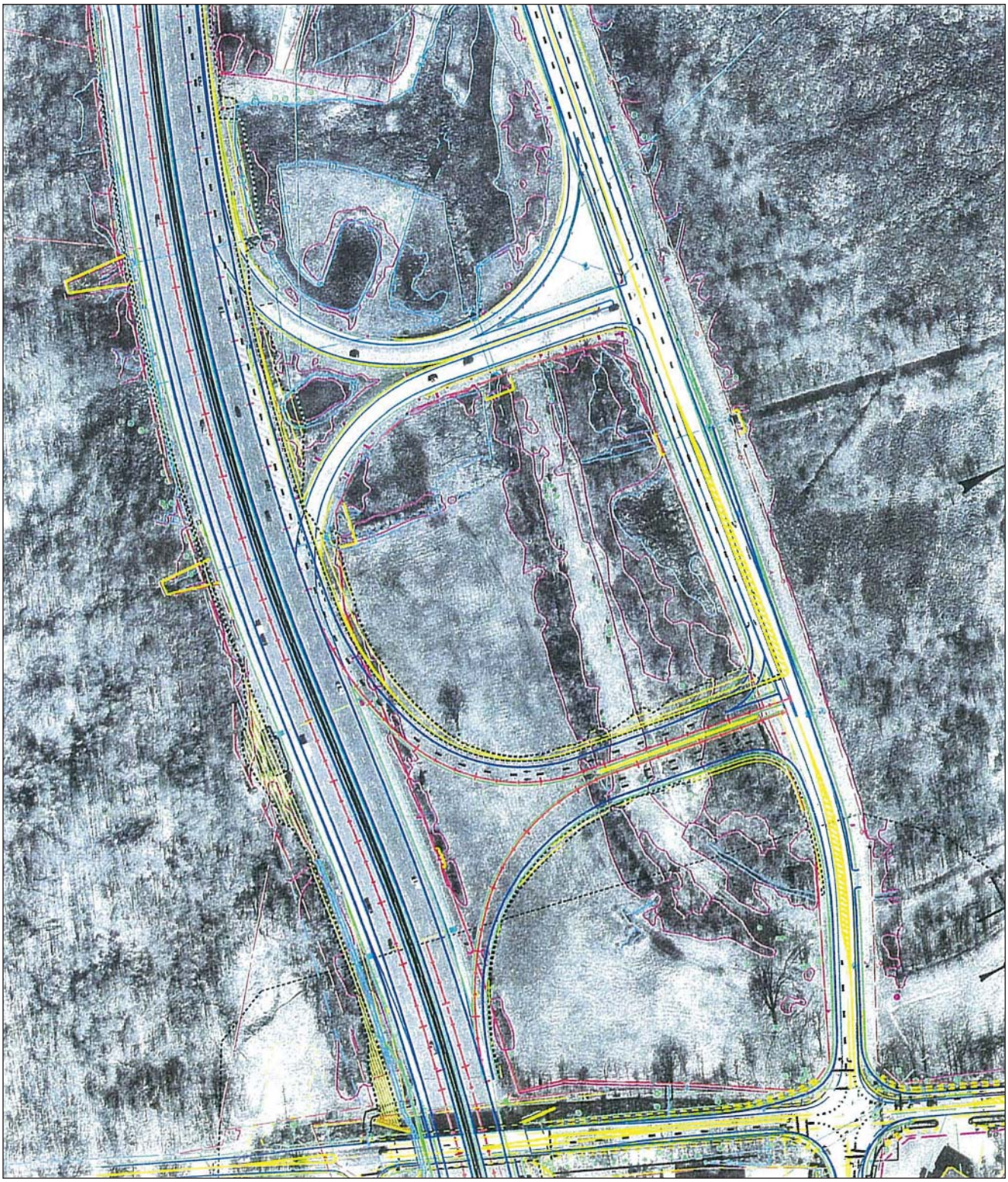




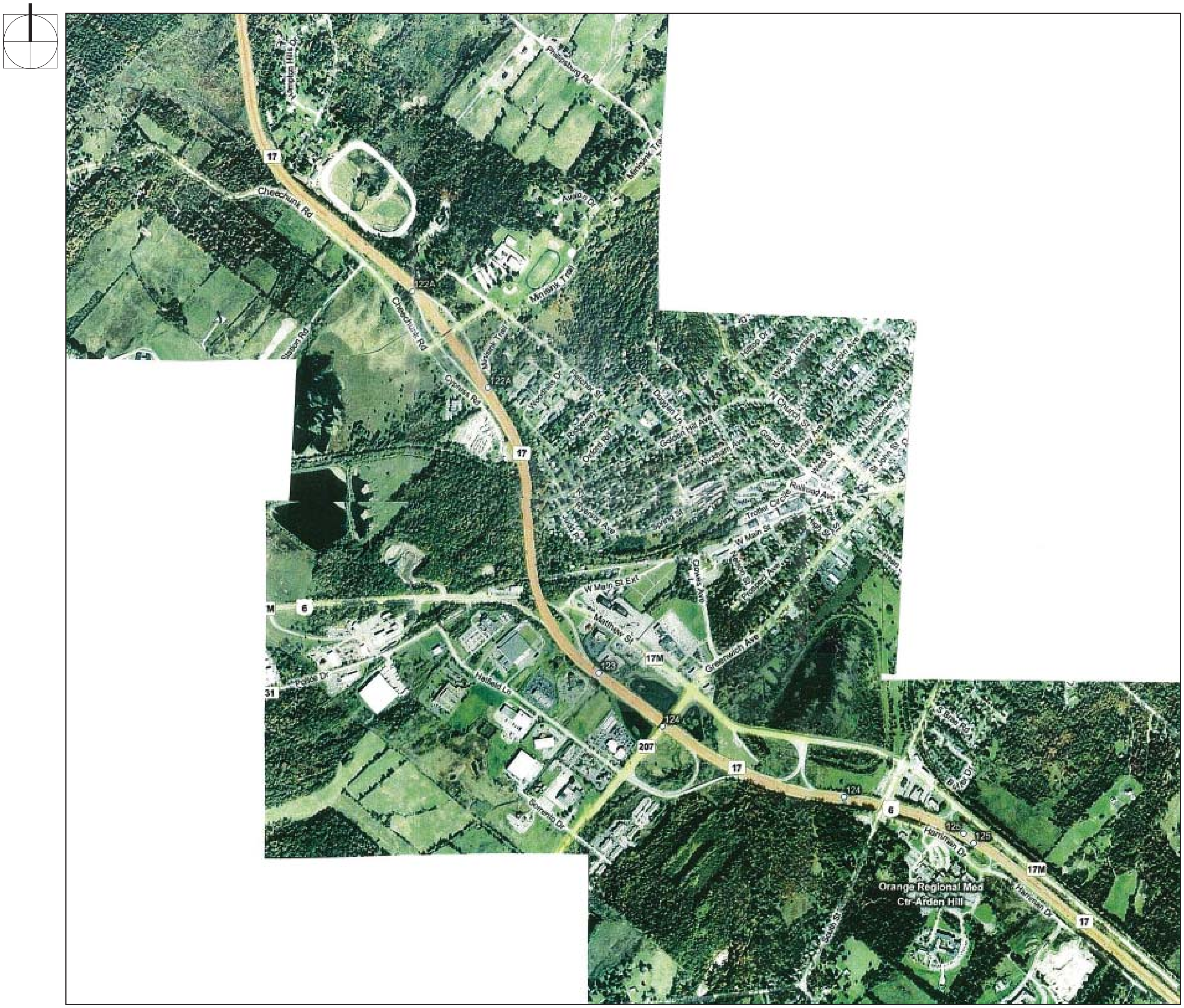





MATCH TO DWG. NO. GP-01A
EXIT 125 WB OFF RAMP
ROUTE 17 SH 537
CHESTER AVENUE
ROUTE 17N SH 165
EASTBOUND OFF RAMP
EASTBOUND ON RAMP
PROPOSED HARRIMAN DRIVE
HARRIMAN DRIVE
REMOVE MEDIAN EXTENSIONS
P.I.N. 8006.82



Aerial Map


17
Cheechunk Rd
Minisink Trail
122A
Station Rd
W Main St Ext
Matthew St
17M
Greenwich Ave
Railroad Ave
Hatfield Ln
Police Dr
Sorrento Dr
207
124
123
125
6
Harriman Dr
Orange Regional Med
Ctr-Arden Hill