

EXECUTIVE SUMMARY

This technical report represents the first major product of the New Paltz Land Use/Transportation Project (the “Project”). The work effort in this initial phase of the Project focused on:

- extensive data collection;
- assessment of existing transportation, environmental and land use conditions;
- administration of origin/destination and household surveys; and,
- development of an integrated transportation/land use model for New Paltz.

Phase A is the building block for subsequent phases of the Project (B and C). These phases will focus on longer term land use and transportation recommendations.

PROJECT ORIGINS

This Project grew out of a set of meetings that took place in the mid-1990s between the Town and Village of New Paltz, SUNY New Paltz, and the New York State Department of Transportation (NYSDOT). During these meetings the Town and Village expressed concern over the growing congestion of Main Street (Route 299). As a possible remedy to chronic congestion, there was interest and prior feasibility studies regarding a connector roadway linking South Putt Corners Road, Route 32, and Route 208 at a point south of the SUNY New Paltz campus.

There was agreement that the concept of a southern connector should be evaluated within a larger land use/transportation study incorporating the Town and Village. In September 2000 NYSDOT prepared an Initial Project Proposal (IPP) to conduct a comprehensive multi-modal land use-transportation. This Project is the result of that IPP.

PROJECT SCOPE

The Project has 3 phases. Phase A is summarized in this Executive Summary and in the technical report that follows. The findings of Phase A provide a baseline against which to compare the future analysis of transportation and land use in New Paltz.

Phase B of the project will address future land use/growth scenarios and future transportation improvements designed to manage the travel demand associated with a particular land use future. An essential concept of the Project is the direct link between the type and location of land uses, and the performance of the transportation system. Phase B will enable us to evaluate alternative land use futures, and then to test the effectiveness of different transportation solutions to achieve safety and mobility for future New Paltz citizens.

Phase C is the final project phase that defines final recommendations for future land uses and transportation improvements. Phase C will include the preparation of a Final Report that will include a process for incorporating recommended transportation improvements into the Regional Transportation Improvement Program (TIP), evaluation in the Initial Project Proposal (IPP) or Expanded Project



Proposal (EPP). Phase C recommendations may also include model ordinances, overlay districts, or special district legislation. The full set of Phase C recommendations will be submitted to the appropriate Town and Village Boards for their consideration and implementation.

PUBLIC PARTICIPATION

Essential to this Project is a meaningful public participation process. The Project is overseen by two committees, both of which engage selected members of the New Paltz citizenry in addition to outside experts. The Citizen's Advisory Committee (CAC) has 30 members and meets 6 times over the course of the project. The Technical Review Committee (TRC) has 12 members and is charged with working with the project consultant to review and advise on technical matters.

A total of 4 public meetings will occur over the course of the work, where input and feedback will be received on various project elements. The project's website (www.newpaltztransportation.com) is an ongoing repository of Project information, including all meeting minutes and technical memoranda.

Finally, the Project will generate a total of 4 newsletters over the course of the work. A database of over 300 names has been assembled in a project mailing list for newsletter distribution.

EXISTING CONDITIONS OF THE TRANSPORTATION SYSTEM

Phase A includes an extensive amount of data collection relative to land use and the transportation system in the Town and Village of New Paltz. Data collection efforts included new detailed traffic counts, accident data, and origin-destination and household surveys. In addition existing bicycle, pedestrian, transit, parking, land use, environmental and road network conditions were inventoried.

Concern about growing congestion in New Paltz was a driving force behind the IPP that created this Project. Extensive data collection and analysis has been conducted to evaluate the extent of congestion in New Paltz. Congestion occurs regularly on weekdays during 1-2 afternoon/early evening. Three signalized intersections operate with very long delays during normal PM peak hour conditions. In addition, a number of side streets to the Town's arterials operate with extreme delays including: Henry DuBois Drive at Route 32; Plattekill Avenue at Main Street; South Putt Corners Road at Route 32; Hasbrouck Avenue at Route 32; and Springtown Road at Route 299.

Approximately 70% of traffic on the local roadway network is local, with trip origins and/or destinations within the Town or Village. Thus, approximately 30% of all traffic that enters New Paltz on the main arterials – Route 299, Route 32 North and South, Route 208, and the NYS Thruway –also exits New Paltz on one of these arterials.

Travel safety is a major concern in New Paltz. NYSDOT has rated 7 road sections within the Town and Village as being High Accident Locations. All of these road segments are on Routes 32 and 299, and most of these locations overlap with areas/intersections that are congested. The 4 intersections with the highest accident rates are Route 299/NYS Thruway, Route 32/South Putt Corners Road, Route 32/Jansen Road, and Route 32/Shivertown Road.



While normal PM peak hour traffic results in congestion for specific areas within the New Paltz roadway network, extreme system-wide congestion is known to occur during the many special events that take place in New Paltz. Many of these events occur at the Ulster County Fairgrounds. Creation of a Special Events Traffic Management Committee is an important first step in creating solutions to this problem.

The Project has invested considerable effort in documenting conditions for pedestrian, bicycle, and transit facilities. The Wallkill Valley Rail Trail is the centerpiece of New Paltz' alternative transportation network. Aside from this important pathway, the lack of interconnected and safe bicycle facilities throughout New Paltz is an issue that generated a great deal of discussion throughout Phase A. Key deficiencies noted include lack of bike lanes or rideable shoulders (particularly along state and county highways), lack of adequate connections to the Wallkill Valley Rail Trail, and lack of bicycle facilities west of the Wallkill River (e.g. a safe bicycle route to the Ulster County Fairgrounds).

The sidewalk network within the most developed portions of the Village and Town is not complete. Both the Town and Village subdivision regulations provide authority to the respective Planning Boards to establish new sidewalk linkages through the normal land use permitting process. Of particular concern is the lack of a coherent streetscape on Route 32 north of the village, and there is a need to develop a streetscape plan for this area to promote safe pedestrian travel. In addition there is an ongoing need for clearly marked pedestrian crosswalks, such as those recently upgraded as part of NYSDOT's Route 32 repaving project.

Although New Paltz is served by a variety of transit services and providers, there was strong sentiment that improvements to transit should be considered as part of a package of future transportation improvements. Ulster County Area Transit (UCAT) has recently initiated a revised New Paltz shuttle route that serves the downtown, SUNY, and the Route 299 plazas. Ways to improve the attractiveness of this service will be explored in subsequent phases of the Project.

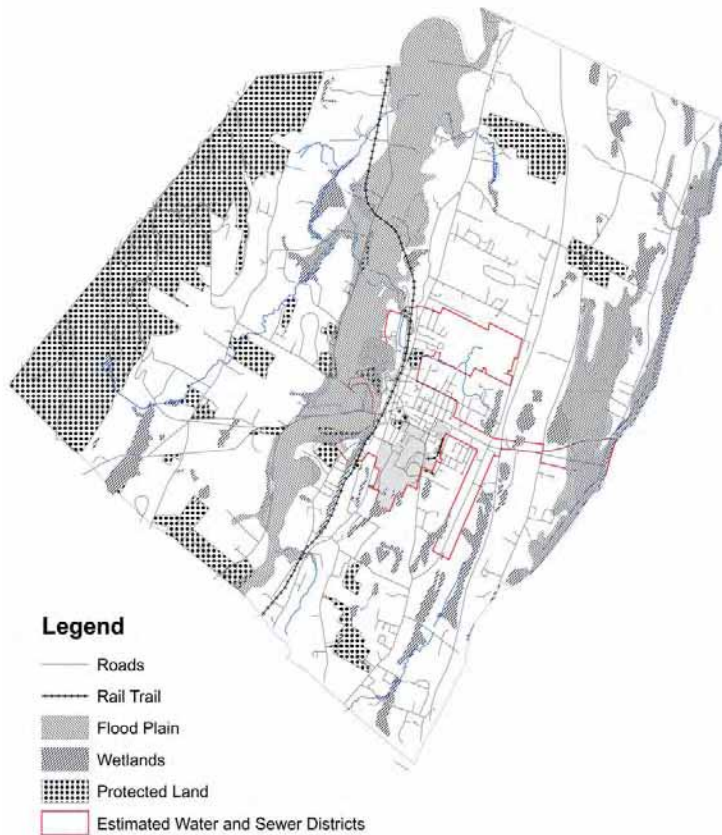
Parking in the CBD (both on street and municipal parking) is inadequate to serve the numerous commercial entities along Main Street and adjacent local streets. The Project recommends advancing a feasibility study of structured parking downtown. Satellite parking facilities to serve special events and major employers should be identified and secured. Another noted deficiency includes lack of adequate parking at trailheads to the Wallkill Valley Rail Trail.

ENVIRONMENTAL CONSTRAINTS AND LAND USE

Existing environmental constraints and land use are key components of the Project that will have an effect on future land use and transportation. Figure A shows an environmental constraints map of New Paltz.



Figure A: Environmental Constraints in New Paltz

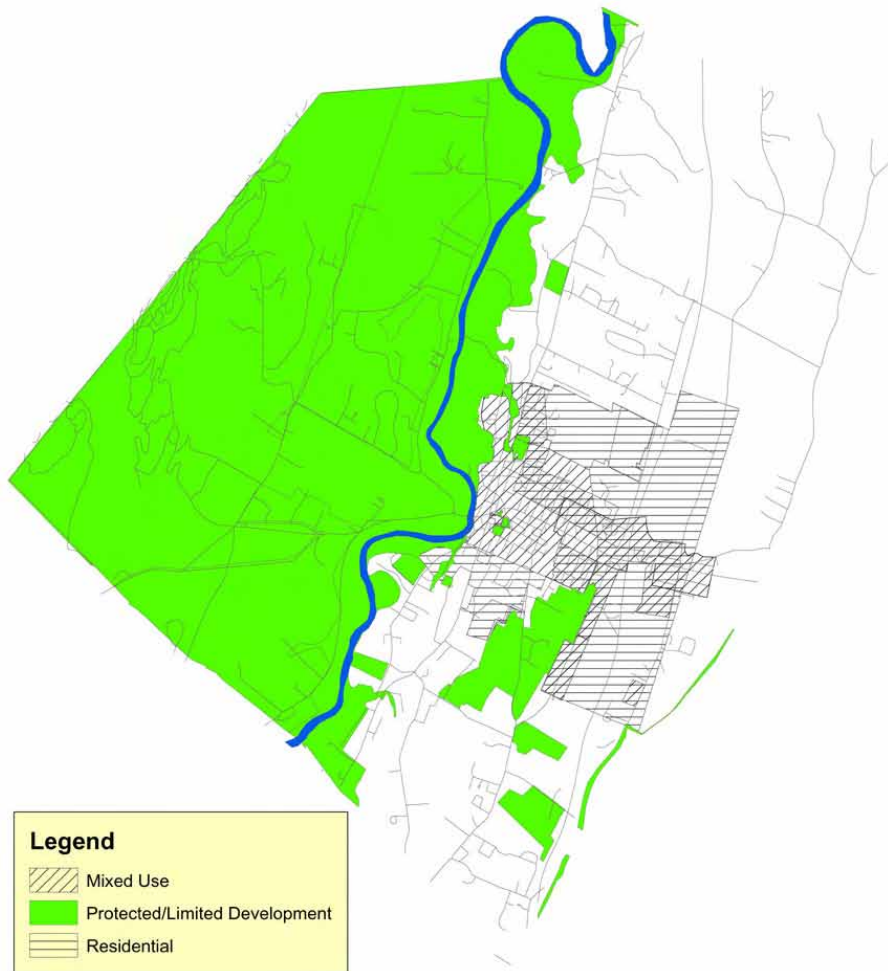


The highest concentration of commercial development is currently served by Municipal Water and Sewer located primarily in the Village of New Paltz and along the NYS 299 corridor east of the Village. However, over the past 30 years, most (70%) new residential development has occurred outside the Village limits.

This growth tendency runs counter to the land use direction many New Paltz residents would like to see. There appears to be consensus among the New Paltz public -- as garnered from the New Paltz Master Plan and from public meetings associated with this Project -- to encourage the concentration of development, and allow for future increases in housing density, in those areas served by water and sewer (Figure B).



Figure B: Future Land Use Map Developed by New Paltz Residents at Project Meetings



Current and committed demands on the Village's sewer treatment plant will limit the amount of future growth that can be accommodated within the Village. Hence, the desire of the public, as expressed at the



Projects' public meetings, to concentrate future development within existing sewer areas, cannot be satisfied with the current sewer treatment infrastructure.

This Project is occurring simultaneous with a region-wide effort to establish the Shawangunk Mountains Scenic Byway. Findings of this Project that coincide with the Byway region will be discussed with the Byway Steering Committee.

FUTURE PROJECT DIRECTIONS

The completion of Phase A and the assessment of existing land use and transportation conditions provide the groundwork to launch into the next phases of the Project. Phase B will evaluate major transportation investments within the context of alternative land use futures. The traffic model developed in Phase A is a key tool for evaluating the effectiveness of major transportation improvements.

The Project will evaluate future land use/transportation changes for the year 2025. Based on input from the New Paltz public, the project will be considering at minimum the following land use futures:

- **Growth Rate:** the Project will evaluate the continuation of historical growth rates and settlement patterns, and will also evaluate a higher-than-historic growth rate.
- **Location of Future Land Use Change:** the Project will evaluate scenarios that consider the continuation of historic trends (dispersal) and the concentration of housing and commercial growth to areas served by sewer and water.

Other variations on land use alternatives have been discussed, including establishing a hospitality district and other commercial mixes within the municipal sewer/water area.

Each land use future will affect the performance of the transportation system. In response the project team will evaluate alternative transportation improvements – including the southern connector roadway original to the Project's beginnings – designed to preserve the mobility and improve the safety of New Paltz residents.



PHASE A REPORT OF THE NEW PALTZ TRANSPORTATION/LAND USE PROJECT

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1.0 INTRODUCTION TO THE PROJECT

The goal of the New Paltz Transportation/Land Use Project is to document multi-modal transportation deficiencies and to propose remedies to those deficiencies. The major deficiency that the Project is designed to address is congestion – the congestion that occurs every day along the main arterials of New Paltz and the acute congestion that occurs during special events or periods of high tourist activity. In addressing congestion, the Project takes a multi-modal perspective and explicitly considers the rate and location of land use change in the Town and Village, now and in the future.

This technical report completes the first phase of the New Paltz Land Use/Transportation Project and has six sections:

- Section 2.0--Public Participation Program
- Section 3.0--Existing Conditions
- Section 4.0--Land Use and Environmental Constraints
- Section 5.0--Existing Transportation Deficiencies and Potential Solutions
- Section 6.0--New Paltz Household Survey
- Section 7.0--Transportation Model Development

The remainder of this introductory section provides further project background, describing the origins of the project and the scope of work.

1.1 PROJECT BACKGROUND

The Town and Village of New Paltz offer a convenient location, a magnificent rural landscape, a small town quality of life, and economic and cultural diversity. New Paltz is situated about half way between Albany and New York City, each about an hour and a half drive. The Shawangunk Mountains to the west and the surrounding areas of Ulster County offer a wide array of recreational and tourist attractions. New Paltz is home to a State University of New York (SUNY) campus, with a combined full time and part time enrollment of approximately 7800 students. These attractions and close proximity to major population centers make New Paltz a desirable and convenient tourist destination.

Since 1980, population in New Paltz has grown at a 1.1% annual growth rate. Census data from 2000 show a combined population in the Village and Town of about 12,830 residents, including SUNY campus residents. Although the Village of New Paltz is approaching build-out as limited by available sewer capacity, the Town, with a land area of 34 square miles, can potentially accommodate significant additional residential and commercial growth.



Recent residential subdivision applications in the Town and Village submitted over the past year exceed 700 lots/units and could signal a significant departure from historical growth rates.¹ Surrounding towns, such as Gardiner, are experiencing significant new applications for land subdivision.

The combination of population growth, vibrant tourist economy, and convenient location have created travel demands in New Paltz that, in turn, are associated with a variety of transportation safety and mobility problems. These problems are evident during typical weekday peak periods, but can be severe during special events and peak weekends that occur throughout the year. The most obvious problem cited by New Paltz residents are the high levels of congestion they encounter. In addition to congestion, poor safety is always a concern. NYSDOT has documented a total of 7 high accident road sections within New Paltz.

The boundaries of the Town of New Paltz, encompassing the Village of New Paltz, define the project limits. These limits are bounded by the intersections of Route 299/Libertyville Road in the west, Route 299/Ohioville Road in the east, Route 32/Jansen Road in the south and Route 32/Shivertown Road in the north. Figure 1-1 depicts the Town and Village boundaries and roadways.

The north-south Interstate 87 is situated along the eastern edge of the Town with Interchange 18 providing direct access to NY Route 299. Major state highways through the Town are Routes 299, 32, and 208. Ulster County Routes are Mountain Rest Road (CR 6), Libertyville Road/Springtown Road (CR 7), Putt Corners Road (CR 17), and South Ohioville Road (CR 22A). Nearby cities are Poughkeepsie to the east (approximately 10 miles), Kingston to the north (approximately 15 miles), and Newburgh to the south (approximately 20 miles). The Shawangunk Mountains are to the west of the Town limits.

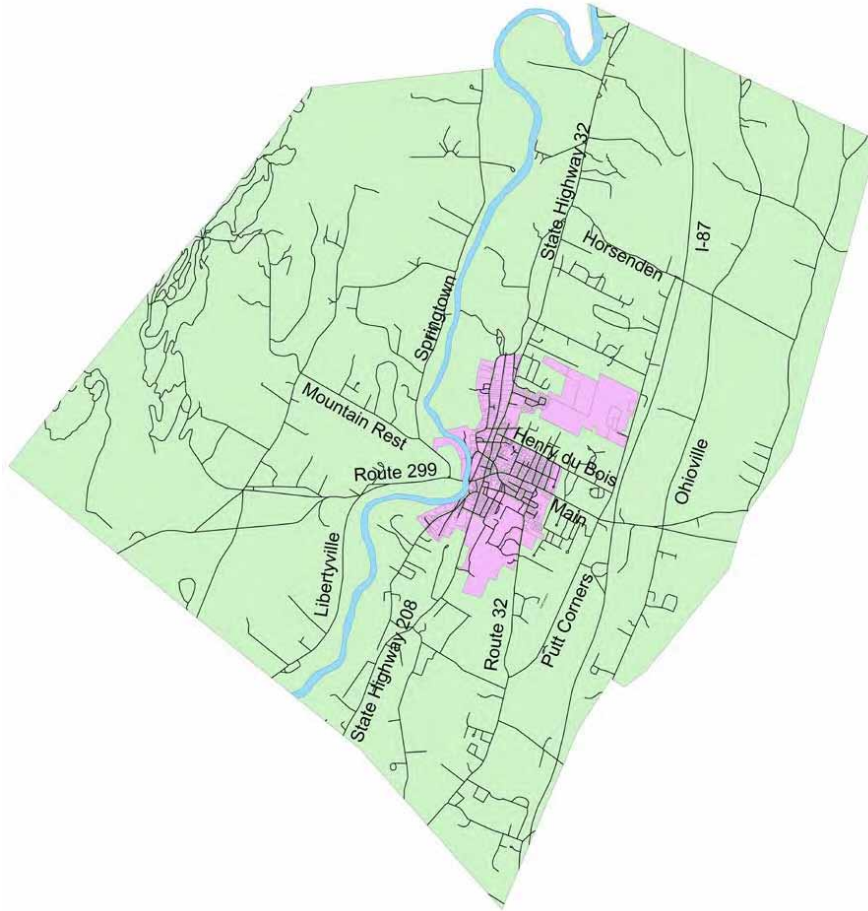
1.2 PROJECT ORIGIN

The New Paltz Transportation/Land Use Project arose from discussions about traffic congestion in town. For many years people in New Paltz have considered a new roadway connecting South Putt Corners Road with Route 32 and Route 208 in the southerly section of Town as a possible source of congestion relief to Main Street. A transportation study conducted for the town in 1974² described such a roadway as an “Alternative Immediate Connector,” and showed an extension of the roadway westerly on a new bridge over the Wallkill River.

¹ Current subdivision applications or discussions in the Village include the 300-unit Stoneleigh Woods proposal, the adjacent 300-unit Woodland Pond proposal, and a 100-unit apartment complex known as Victoria Square. There are 80-90 residential units/lots currently within open applications to the Town Planning Board.

² Traffic Study for New Paltz, New York. Ulster County Planning Board. 1974.



Figure 1-1: Project Area Map

The idea of a southern connector roadway surfaced again in 1996, when Town of New Paltz officials met with SUNY officials to discuss concerns over traffic associated with a then proposed Field House Project. This project was larger in scale and different in function from the Field House facility that SUNY ultimately proposed and which is now nearing completion. In 1996, however, SUNY and the Town felt traffic issues were acute enough to warrant a serious look at a southerly connector. There was a consensus reached between key private property owners, SUNY, and the Town regarding the general concept and location of the connector.



The Town, Village, SUNY, and the State University Construction Fund sent letters to NYSDOT in support of the southern connector roadway project. In May 1997, NYSDOT expressed their interest in supporting the project and in expediting a Design Study of the roadway.

In 1998, SUNY canceled the Field House project and began re-defining the project. Due to this change in plans, NYSDOT postponed the Design Study and the project became dormant. In mid-1999 the Town and Village re-initiated contact with SUNY and with the NYS Department of Transportation Regional Planning and Programming Division. There continued to be strong interest in the southern connector on the part of SUNY, and the Town and Village emphasized their continuing and growing concerns about Main Street congestion and in the potential for relief that a southern connector might promise.

NYSDOT agreed that a formal study should be initiated, but that the study should not only focus on the impacts of a southern connector. According to NYSDOT the new study should:

- be comprehensive in its review of transportation and land use;
- be multimodal;
- be able to test the long-term impacts of any major transportation improvements; and,
- allow for preliminary engineering of any major improvements that are advanced by the project and embraced by the Town and Village.

Further, the project must engage the public throughout all phases of the work. NYSDOT agreed to finance the project entirely from state and federal funds.

From the origins of the project described above emerged an Initial Project Proposal (IPP),¹ which is a formal statement of need developed by NYSDOT. The IPP described the problem as follows:

“Traffic congestion is a significant problem on Route 299 in both the Town and the Village of New Paltz. This congestion is the result of:

1. Route 299 being the only east/west thoroughfare;
2. The presence of SUNY New Paltz College;
3. Major recreational attractions located west of New Paltz;
4. The New York State Thruway interchange with Route 299 just east of the Village of New Paltz; and,
5. The Village of New Paltz is a major local destination for commercial activity and increasing residential development and commuter traffic. There are both weekday peak period and weekend shopping and recreational peak congestion.”

¹ The Initial Project Proposal is provided in Appendix A.



The IPP describes the project objective as “prepar(ing) a *Sustainable Development Plan* for New Paltz that includes a combination of land use and multi-modal transportation improvement recommendations that are acceptable to the Town of New Paltz, the Village of New Paltz, Ulster County, and NYSDOT.” The *Sustainable Development Plan* has taken on the formal name: “New Paltz Transportation/Land Use Project”. This project will:

- study existing transportation conditions,
- identify present and future transportation demand,
- formulate, analyze, and evaluate alternative transportation solutions, and
- develop consensus decisions regarding short and long term improvement programs for a comprehensive area improvement plan including both land use and transportation improvement components.

The project includes developing a micro-simulation transportation model to evaluate land use and transportation alternatives, a macro-level inventory of key environmental constraints, and an extensive public participation program.

1.3 PROJECT SCOPE

The project was initiated in August of 2003 and is scheduled to be completed in 2005. The project is divided into three major phases:

- **Phase A** includes data collection, base plan development, environmental constraint mapping, traffic data collection, development and calibration of the Transportation Model, traffic analysis and preparation of a Technical Report. Development of short-term, low cost improvement concepts is included in Phase A.
- **Phase B** of the project will address future land use/growth scenarios and future transportation improvements designed to manage the travel demand associated with a particular land use future. A range of transportation mitigation strategies will be explored during this phase including:
 - Conventional capacity improvements such as adding lanes or new roadways.
 - Transportation Systems Management (TSM) measures such as signalization improvements (timing/phasing, coordination).
 - Travel Demand Management (TDM) measures such as vanpooling and park and ride lots.
 - Intelligent Transportation Systems (ITS) such as advance warning Interstate signage giving real time information about delays.
 - Pedestrian, transit, bicycle and parking improvements.



Phase B will culminate in preparation of Technical Report #2 that summarizes Phase B methodology, public participation process, future land use scenarios and transportation improvements, future year traffic modeling/analysis and preliminary findings.

- **Phase C** is the final project phase that defines final suggestions for future land use growth and zoning ordinance updates. Recommendations on land use policies may include drafts of updated ordinances and accompanying commitments to implement the new policies. Phase C will include the preparation of a Final Report that will include a process for incorporating recommended transportation improvements into the Regional Transportation Improvement Program (TIP), or evaluation in the Initial Project Proposal (IPP) or Expanded Project Proposal (EPP) and model ordinances, overlay districts, or special district legislation for presentation to the appropriate Town and Village Boards for implementation.

2.0 PUBLIC PARTICIPATION PROGRAM

Central to this project is community input and public involvement. The success of the project depends on meaningful participation by Town and Village residents, and by officials representing Ulster County, NYSDOT, NYS Thruway Authority, the New Paltz Business Community, SUNY New Paltz, the newly formed Ulster County Transportation Council (Metropolitan Planning Organization).

The consultant team for this project, led by Resource Systems Group (RSG), is responsible for performing the technical work underlying the multi-modal transportation plan and for interfacing with the public along several dimensions, as described below.

The consultant team works directly with two project committees – the Technical Review Committee (TRC) and the Citizens' Advisory Committee (CAC) – to conduct the fundamental work supporting the multi-modal plan. The roles of these committees are described below.

The Public Participation Program outlines the critical roles of local officials, stakeholder groups, transportation agencies, the general public and others in developing the study and in determining how information will be integrated into the decision making process.

2.1 GOALS OF THE PARTICIPATION PROGRAM

The Public Participation Program must identify and address the issues of stakeholders, residents and government in the study area. The Public Participation Program approach is multi-tiered, using many types of outreach tools. The goal of the Public Participation Program is to implement a process that proactively and effectively manages public, government, agency and stakeholder input resulting in a consensus plan for present and future actions.

Accordingly, the goals of the Participation Program are to:

- Identify stakeholders and determine their needs and concerns.
- Anticipate and address local issues and concerns.



- Obtain early and on-going input about project needs and preferences.
- Strive for consensus on multi-modal transportation and land use needs and opportunities.
- Provide information to the public and stakeholders about the project.
- Bring information to the project that will assist decision-making.

Throughout the process, the consultant team will work collaboratively with the TRC and CAC to offer expertise. The Team will attend meetings with stakeholders, prepare presentations and materials, provide handouts, run meetings and take minutes. Public meetings will be run by a facilitator, Laura Walls. Team members will meet prior to CAC, TRC and Public Meetings to orchestrate effective meeting outcomes.

2.2 STAKEHOLDERS

Table 2-1 outlines the key responsibilities and duties of the stakeholder groups engaged in this project.

Table 2-1: Key Stakeholder Groups for the Project

Stakeholder Group	Chair/Manager	Key Responsibilities	Key Decisions
Citizens' Advisory Committee	Gail Gallerie	Provide a conduit between project's technical work and the New Paltz public.	Recommend transportation/land use improvements established by study.
Technical Review Committee (TRC)	David Clouser	Review technical data and analysis, provide feedback to consultant team on same	Advise consultant team on technical approaches, assumptions, data analysis/interpretation.
New Paltz Town and Village, Citizenry	Don Wilen, Town Supervisor; Jason West, Mayor; meetings facilitated by Laura Walls	Participate in all meetings; provide input and feedback on project progress	Work through CAC to support study recommendations;
NYSDOT	Akhter Shareef, Project Manager	Participate in TRC; help maintain consistency with NYSDOT needs for project scoping	Review of project scope, revisions, management/leadership.

2.2.1 Citizens' Advisory Committee

The main purpose of the CAC is to act as a conduit between the project's technical work and the affected public of New Paltz. Ultimately, the CAC is charged with the key responsibility of making recommendations of the project with regard to land use and transportation improvements to the Town and Village Boards.



Other important roles of the CAC are:

- help define future multi-modal transportation and land use options;
- participate in general discussions of travel mobility and safety;
- inform government about their experiences and insights relating to mobility and quality of life in the greater New Paltz area;
- assist in publicizing the work of the project to the wide variety of constituent groups in the local community.

The CAC consists of over 30 members (Table 2-2), and includes representatives of NYSDOT.

Table 2-2: Citizens' Advisory Committee Members

Member	Affiliation
Charles Andola	New Paltz Rescue Squad
Allan Bowdery	Citizen, Walkill Valley Land Trust
David Clouser	Town of New Paltz Engineer
George Danskin	Walkill Valley Rail Trail, Chair of Village Planning Board
Gail Gallerie	CAC Chair
Steve Greenfield	New Paltz Fire Department
Sheila Hamilton	Citizen
Johan Hedlund	Citizen
Toni Hokanson	New Paltz Town Council Member
Don Kerr	New Paltz Central School District Board Member
Joyce Minard	Executive Director, New Paltz Chamber of Commerce
Mike Moriello	Land Use Attorney, Farmer
David Porter	AFFIRM
Sally Rhoads	President, New Paltz Library
Maureen Rogers	Member, EnCC
Maureen Ryan	New Paltz Central School District
David Santner	Downtown New Paltz Business
Akhter Shareef	NYSDOT
Mark Sherman	Former Town Council, Member Public Safety Task Force
Alan Stout	Member Ethics Board, Chair of the CAC Bicycle/Pedestrian
Ron Suits	New Paltz Central School District
Pete Talaferro	Farmer
Bob Taylor	President, Walkill Valley Land Trust
Sean Uhl	Chair, Town Planning Board
Kevin Van Buren	Engineer, Citizen
Laura Walls	Public Participation Specialist, Patterns for Progress
Al Wegener	Executive Director, Shawangunk Scenic Byway Project
Jason West	Mayor, New Paltz Village
Shelly Wright	SUNY
Donald Wilen	Supervisor, Town of New Paltz
Raymond Zappone	Chief of Police, Town of New Paltz

All CAC meetings are advertised and are open to the public and media. CAC meetings occur during evening hours to reach the broadest possible audience. Minutes of the CAC meetings are kept and posted on the project website within 10 days of the meeting. A total of 6 CAC meetings¹ are scoped for the duration of the project.

¹ Six CAC meetings facilitated by the consultant team are within the project scope. Additional CAC meetings can be called based on project need and at the discretion of the CAC chair.



2.2.2 Technical Review Committee

The TRC is charged with overseeing the technical aspects of the study. As such, the TRC is a sounding board for the consultants to review key analytical approaches or assumptions used in the project. The TRC must ultimately endorse the analytical approaches used to develop land use policies or transportation improvements through this project.

The TRC consists of 12 members (Table 2-3). TRC meetings are designed to be round-table working meetings. While the public is invited, the main order of business is in making decisions relative to the technical aspects of the work.

Table 2-3: Members of the Technical Review Committee

Member	Affiliation
Akhter Shareef	NYSDOT
John Shupe	SUNY New Paltz Facilities and Planning
Bill Tobin	Ulster County Transportation Council
David Clouser	Town Engineer, Town of New Paltz
Dennis Doyle	Planning Director, Ulster County Transportation Council
Donald Wilen	Town Supervisor, Town of New Paltz
Jack Hohman	NY State Thruway Authority
Jerry Luke	
Maureen Ryan	New Paltz Central School District
Peter Montalvo	
Russell Robbins	NYSDOT
Walt Paradies	

2.2.3 Involvement and Communication Opportunities

Table 2-4 shows the variety of opportunities that have been created to engage the public over the course of the project. The two project committees are described above and the household travel survey is described in detail in Section 6 of this report.

Table 2-4: Public Involvement Opportunities

Opportunity	# Over Course of Project	Status
Public Meetings	4	2 completed (April, May 2004)
Citizen Advisory Committee (CAC)	6	4 completed (September 2003; January, June, December 2004)
Technical Review Committee (TRC)	6	3 completed (January, June, November 2004)
Project Website	ongoing	www.newpaltztransportation.com
Project Newsletters	4	2 issued (Spring 2004, Winter 2004)
Travel Survey	1	completed (October 2003)
Origin-Destination Survey	1	completed (October 2003)
Reports	3	Phase A report submitted February 2005



2.2.4 Public Meetings

Over the course of the project 4 formal public meetings are planned. These meetings are distinct in their focus from the other project meetings, such as the CAC meetings, to which the public is also invited.

The public meetings are evening meetings held at the BOCES meeting facility in New Paltz. They will be facilitated by Laura Walls. The general concept for these meetings is to give attendees the ability to voice concerns and provide feedback to the direction of the project. Ideally, these meetings are used to develop a foundation for reviewing transportation and land use issues and visions, which can then be refined further in the work of the TRC and CAC.

Considerable thought is given to making the public sessions engaging to maximize participation. Focus groups, roundtable discussions, visioning sessions, and charrette techniques are employed to maximize public input. Public meetings include a concise presentation and public discussion phase. Questionnaires may be used to better gauge public consensus on various aspects of the planning project.

Two weeks before each public meeting the event is advertised in local newspapers in the region and a press release about the meeting is distributed via local media outlets, which include:

- New Paltz Times
- Poughkeepsie Journal
- Daily Freeman
- Times-Herald Record

Presentation graphics, handouts, supporting materials and preparations for the public meetings will be prepared by the project consultant. Depending on the agenda, it is assumed that graphics will include colored plan rolls, various design displays, aerial photography overlays, power point presentations, computer visualizations/renderings, and traffic model simulations, etc. These techniques will be used to explain the project, key issues, findings and conclusions. Meeting minutes will be taken by the consultant and a memorandum prepared after each meeting that outlines key aspects and results of each meeting including attendees and the major issues raised. This summary memorandum will be posted on the project website.

The schedule of formal project meetings, including meetings to date and those anticipated over the course of the project is provided in Table 2-5.



Table 2-5: Project Meeting Schedule

Scope/Tasks		Meeting Date		Who	Purpose
		Month	Week		
Phase A	Existing Conditions	1-Apr-04	4	Public 1	Introduce Project; Describe "Big Picture" trends in New Paltz; Facilitate Group Discussion of Transportation/Land Use Problems and Visioning of Solutions
		1-May-04	2	Public 2	Present Task A Findings; Develop Generic Transportation Improvement Options; Develop LU Strategies to Improve/Enhance Transportation Service
		Jun-04	4	TRC 2	Review/Critique Model Calibration; Review/Establish Key Assumptions for Future Modeling; Review Phase A Report
		Jun-04	4	CAC 3	Refine Transportation Improvement and Land Use Options for Detailed Analysis; Review Phase A Report
Phase B, Tasks 1 - 3	Future Land Use/Transportation Scenarios	Nov-04	3	TRC 3	Establish Future Land Use Assumptions for Baseline Traffic Modeling; Establish Measures of Performance/Reporting Protocol;
		Dec-04	2	CAC 4	Summarize Phase A Recommendations; Review/Discuss Land Use Futures; Review Transportation Model
Phase B, Tasks 4 - 6	Preliminary Findings	Mar-05	?	TRC 4	Review Future Modeling Results; Develop Alternative Modeling/Reporting Procedures
		Apr-05	?	CAC 5	Describe Future Travel Conditions Associated with Tested Transportation Improvements/LU Scenarios; Revise Improvement Scenarios if Necessary
		May-05	?	Public 3	Describe Future Travel Conditions, Obtain Public Input on Preferred Improvement Options
Phase C	Draft & Final Recommendations	Sep-05	?	TRC 5	Review Preliminary Engineering Issues Associated with Improvement Options; Discuss Any Technical Reporting Issues
		Sep-05	?	CAC 6	Recommend Improvement Packages for Review by Public
Project Completion	Finalize Recommendations	Oct-05	?	Public 4	Obtain Input/Critique on Recommended Improvement Options
		Oct-05	?	TRC 6	Recommend Transportation Recommendations to Town/Village Boards

Public Meeting #1 (29 April 2004): The objective of the first public meeting was to provide New Paltz residents with an opportunity to discuss their concerns about all modes of transportation/land use and to engage them in visioning possible solutions to transportation/land use problems in the New Paltz area.

This session began with a brief overview of the project. A concise presentation on historical demographic and transportation trends was delivered to set the stage for a discussion of current transportation problems, and the hopes for addressing those problems through transportation improvements and land use strategies in the future. Participants shared a broad range of concerns and alternative views of



opportunities for addressing those concerns in a facilitated session. The meeting concluded with an exercise designed to elicit the modal and land use priorities of participants (Table 2-6).

Public Meeting #2 (13 May 2004): After a brief overview, participants were organized into 5 tables where they discussed transportation improvement options, by mode, and land use policies/regulations. For each mode, participants were given a map showing the potential improvements. Participants were also given markers with which to develop new modal concepts, and were instructed to record ideas on paper to hand in to the project managers.

Table 2-6: Modal and Land Use Issue Priority from Public Informational Meeting #1

Bicycle/Pedestrian Issues	Priority (# of dots)
Inadequate bicycle facilities	11
Need to encourage alternative transportation	3
Reduced/limited pedestrian facilities	2
Projected changes at fairgrounds, providing good bicycle access	0
Need sidewalks and bicycle facilities for students	0
No good alternatives for events, no buses	0
Bus Transit Issues	
No good transport for senior citizens	5
Bus transportation for schools, children	2
Need a single fare hop on/hop off bus service	1
Busway to MT	0
Parking on MT	0
Maintain access to bus for attractions and institutions	0
Environmental Impacts of Transportation	
Transportation solutions can have an adverse impact on the landscape	10
Impact on rural character/preservation	1
Transportation solutions/decisions affect land use	0
Impact on open space	0
Quality of life; impact of solutions on quality of life	0
Creating too much pavement; too many new roads	0
Environmental impact of transportation (i.e. air quality/salt)	0
Issues Related to Bypasses	
Lack of a 2nd bridge crossing over the Walkill	3
Bypass impacts on downtown business	2
Development impacts of bypass	2
Use of existing "bypasses" (e.g. Dubois, Jantzen)	2
Land Use/Tax Base Related	
Tax base -- need to expand it; where to put new business?	5
Land development through southern Ulster County	1
Present zoning promotes dispersion of housing	1
Impact of 2 governments (town & village) on achieving a solution makes it complicated	1
Restrict commercial uses on a portion of the bypass	0
New construction at SUNY New Paltz	0
Roadway Capacity/New Roads/Congestion	
Getting anywhere on 299 east of Thruway	5
Inadequate parking	3
Widening roads too wide; we don't need 3 lanes in each direction	1
4 lanes to 2 lanes nightmare	1
Impact of traffic from other towns on New Paltz (i.e. Gardiner, Rosendale)	1
Traffic volume through New Paltz; traffic going through the town	1
Poor signage	1
Price of gasoline	0
No speedways	0
Safety (road condition, anxious drivers, speed)	0
Vehicle back-ups on Thruway	0
Traffic density/safety	0
Closing of Mohonk Avenue	0
When you build more roads, you get more traffic	0
Other Issues Not Elsewhere Classified	
Clarify addressing regular problems vs attraction-related problems	1
Coordination with other transportation studies conducted by Ulster Co. MPO	1



Regarding potential future roadway improvements participants were asked to react to a number of major potential roadway improvements, including new bypass concepts and new crossings of the Wallkill River. Reactions of the meeting participants to these concepts are shown in Table 2-7.

Table 2-7: Participant Reaction to Major Roadway Improvements

	Table 1	Table 2	Table 3	Table 4	Table 5
Connector Road and Bridge from N Putt Corners Road across Wallkill River to Route 299		no	no	last resort; widen bridge at Wallkill first or secondly make the bridge 1-way at same location	no
Connector Road and Bridge from Route 299/Front Street, across Wallkill River, to Route 299/Springtown Road		no	no	last resort; widen bridge either here or at connector road from N. Putt Corners Road to Route 299	no
Connector Road and Bridge from S Putt Corners Road, across Wallkill River, to Route 299	stop at Route 208	no	?	last resort	some variation possible
Establish truck route from thruway to Route 32 N	not on Shiverstown	yes	?	road needs improvement; turns onto 32 would be difficult; need traffic light	?
Henry DuBois Dr Bypass		minimal benefits			leave as is
Jansen Road Bypass		minimal benefits			?
Connector Road from S. Ohioville Road to Route 32 and 208	no	no	no		
Thruway exit in Plattekill (Routes 44/55)	yes yes yes	no	?		
OTHER	create parallel route south of 299		possible hamlet in between Route 32 South and South Putt Corners Road north of the Route 32S/S Putt Corners Road intersection	no parking from P+G's (North Front Street) to 32/208	

As shown, there was minimal to no support for any one concept. The general tendency of the meeting participants was not to consider major roadway improvements as a realistic option. The exception to this was Table 4, which was more open to consideration of major improvements, but mostly as a last resort.

Regarding future transit/park and ride improvements there was considerable agreement that existing park and ride facilities needed to be expanded, that shuttles should be employed for special events and tourist service, and that a high frequency shuttle loop should be established serving SUNY and the downtown. Table 2-8 provides the participant reactions to these types of improvements.



Table 2-8: Participant Reaction to Transit and Park and Ride Improvements

	Table 1	Table 2	Table 3	Table 4	Table 5
Expand park and ride	yes	at thruway exit and link to public transportation	at thruway	at thruway	
Shuttle for campus	yes	to downtown and uptown		campus bus loop to downtown daily	loop bus - SUNY, Village, Town, downtown
Shuttle for fairgrounds on event days	yes		and to Gardiner	from park and ride	yes
Shuttle to Ridge from thruway		yes	running every half hour with bike rack and dogs allowed		on weekend
Increase service in New Paltz and to rail stations		conduct a detailed study			yes
Survey New Paltz students and residents		yes			yes
Improve bus system and make it bicycle friendly		yes		yes	
Expand service hours of buses	yes		run on the half hour		
25 cent fare			yes		
Non-fossil fuel buses			yes		
All tourists well-behaved			yes		

For bicycle and pedestrian improvements, participants were asked to respond to the following concepts:

- Requiring businesses to provide bicycle parking
- Improving access to the rail trail and to BOCES
- Improve and provide more sidewalks
- Develop a Master Plan for bicycle/pedestrian facilities
- Develop an alternative path to the fairgrounds

In addition to these concepts, participants provided other ideas, all of which are shown in Table 2-9.



Table 2-9: Participant Reaction to Bicycle/Pedestrian Improvements

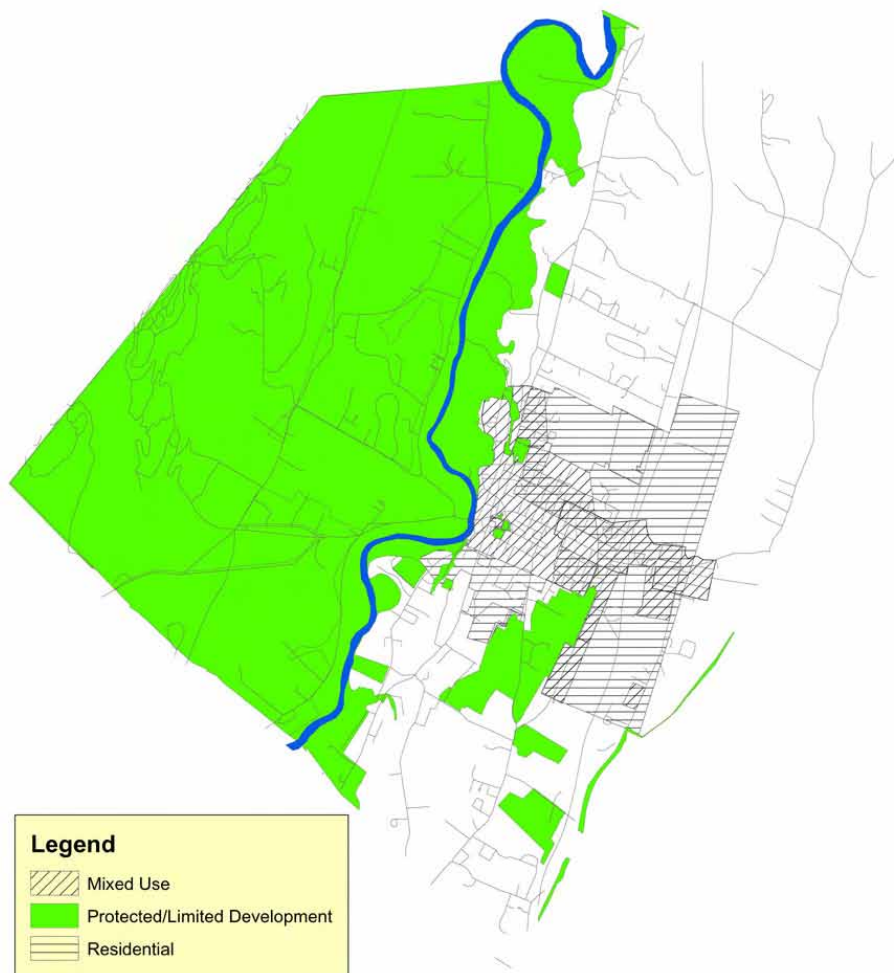
	Table 1	Table 2	Table 3	Table 4	Table 5
Require businesses and institutions to provide bicycle parking.					yes
Need more/better access points to rail trail north of BOCES.					yes
Improve, provide more sidewalks.				yes	
Create a town/village Master Plan for pedestrian/bike facilities.				yes	yes
Promote walks to downtown from remote parking for employees, others.		yes			
proposed bike path to fairgrounds	Safe crossing on 32 from Rail Trail to M. Pool and Community Center	good idea	bike/ped to Gardiner, Rosendale, Lloyd	add bike route to high school	highly recommended
Other	bike path on Route 32 North, Putt Corners Road, Route 32 South, Route 299 west of river, Libertyville Road, Huguenot Street	Restore parallel parking to make sidewalks pedestrian friendly. On Main Street, many meters gave way to turning lanes!	drew bike trails	add turn lanes at high school	bike and sidewalk from Main to NPHS on South Putt Corners Road
	Make Huguenot Street more ped friendly. Close road? Slow it down or get rid of traffic	extend bike path along Route 299, connect to Highland Rail Trail		add bike/walk route or bridge connecting Route 208 and Libertyville Road	
	Extend sidewalk north of Route 32 to My Market and BOCES	Bike trail from Village to Mohonk			

Each table developed a future land use map, which defined the geography of future growth. A major point of consensus emerged from this meeting relating to future growth in New Paltz. Generally, the participants felt strongly that future mixed-use growth should be strongly encouraged in the areas currently served by municipal water and sewer. These areas are primarily within the Village, but there are some extensions of this infrastructure into the Town, including an agreement for future capacity allocated to the South Putt Corners Road Corridor.

Accompanying this desire to concentrate development was a universal desire to maintain as much open space west of the Wallkill as possible. Figure 2-1 shows the future land use map that is a composite of the maps developed during Public Meeting #2.



Figure 2-1: Future Land Use Map from Public Meeting #2



The meetings that take place for the remainder of the project will be designed to move the project toward specific recommendations. It is during this time that we anticipate commissioning some preliminary engineering of the key improvements that have gained favor through the process.



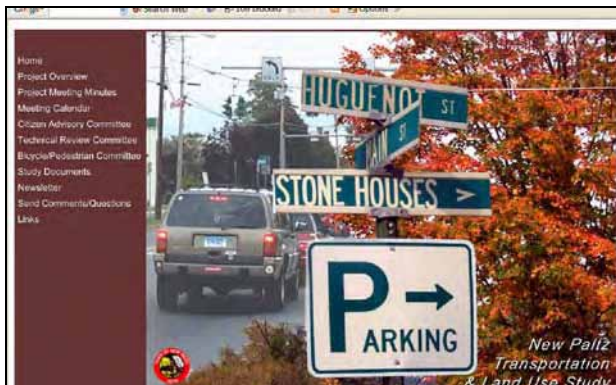
2.2.5 Project Mailing List

The project team maintains a mailing and email list to facilitate wide public notification of the project and meetings. The mailing list includes the names and addresses of local property owners, businesses, meeting attendees, etc. SUNY students, staff, and administration is engaged through the participation of SUNY officials on the CAC and TRC. The New Paltz Chamber of Commerce has assisted in the development of the mailing list, which exceeds 300 names. The mailing list will provide opportunities for the public to learn about the project and give feedback about the project through face to face conversations (meetings), surveys, written comments and email.

2.2.6 Public Information

Project Website (www.newpaltztransportation.com): Primary target audience: General Public.

Figure 2-2: Home Page of the Project Website



Purpose: The purpose of the website is to provide a location on the Internet where residents and other stakeholders can obtain information about the project at their convenience. It will also be used to communicate with the Project Team.

Schedule & Activities: During the course of this study a project website will be maintained by the Consultants with links to the Village, Town, College-SUNY and Local Chamber of Commerce websites. The web site will explain what the project is about and all written materials and graphics will be posted on the site. The website will include relevant project information and it will be updated as needed and used to announce upcoming public meetings, project activities, reports, memos, minutes, newsletter(quarterly), etc. Email capability will be built into the site so residents and officials can communicate with the Project Team about concerns, issues and suggestions.

The website will also be updated to announce the meeting locations, time and agenda. The website will be linked with other websites of local government, the college, chamber of commerce, etc.



Press Releases: Primary target audience: General Public

Purpose: The purpose of press releases is to provide announcements about the project or project event that can be widely distributed by the mass media (newspapers, radio, TV, local cable, etc.). Press kits should accompany press releases.

Schedule and Activities: Press releases and press kits will be prepared and sent out two weeks prior to Public and CAC Meetings. The consultant will prepare draft press releases and media kits and the Town and Village will send out press releases and kits.

Project Newsletters: Primary target audience: Residents of study area and others

Purpose: Project newsletters are another way to inform the public about activities, issues, conclusions and progress. The newsletter will be mailed to the project mailing list and posted on the websites and links. The newsletter for this project is targeted to study area residents, businesses, and the college community within the limits of the study area.

Schedule and Activities: The newsletter is to be distributed four times over the course of the project. The newsletter will contain general project information, updates on activities, progress of project and contact information. It will also provide an opportunity for regular feedback to the project team. Every issue will contain information and explain how to reach the website and project contacts. Each issue will be placed on the website and links so that it may be printed out by users. A mailing list will be developed based on property owners, businesses, CAC members, officials and others interested in the project.

3.0 EXISTING CONDITIONS

A major component of the Phase A effort is documenting the existing conditions of the New Paltz transportation system. The extensive documentation of existing conditions that follows helps identify existing problems and deficiencies, as well as points to potential opportunities to improve the overall performance of the local transportation system.

Establishing existing conditions for each travel mode also provides a performance baseline against which the future performance to the transportation system can be measured. Having this performance baseline will be important in subsequent phases of the project as future conditions are estimated. The relative benefits of alternative transportation solutions will be better understood when compared against existing conditions.

Documenting existing conditions is accomplished by mode, beginning with travel conditions related to vehicular travel and proceeding to discussions of conditions for bus transit, bicycle, and pedestrian modes. The data collection and associated analysis occurred within the 2003-2004 time frame.

3.1 TRAFFIC VOLUMES

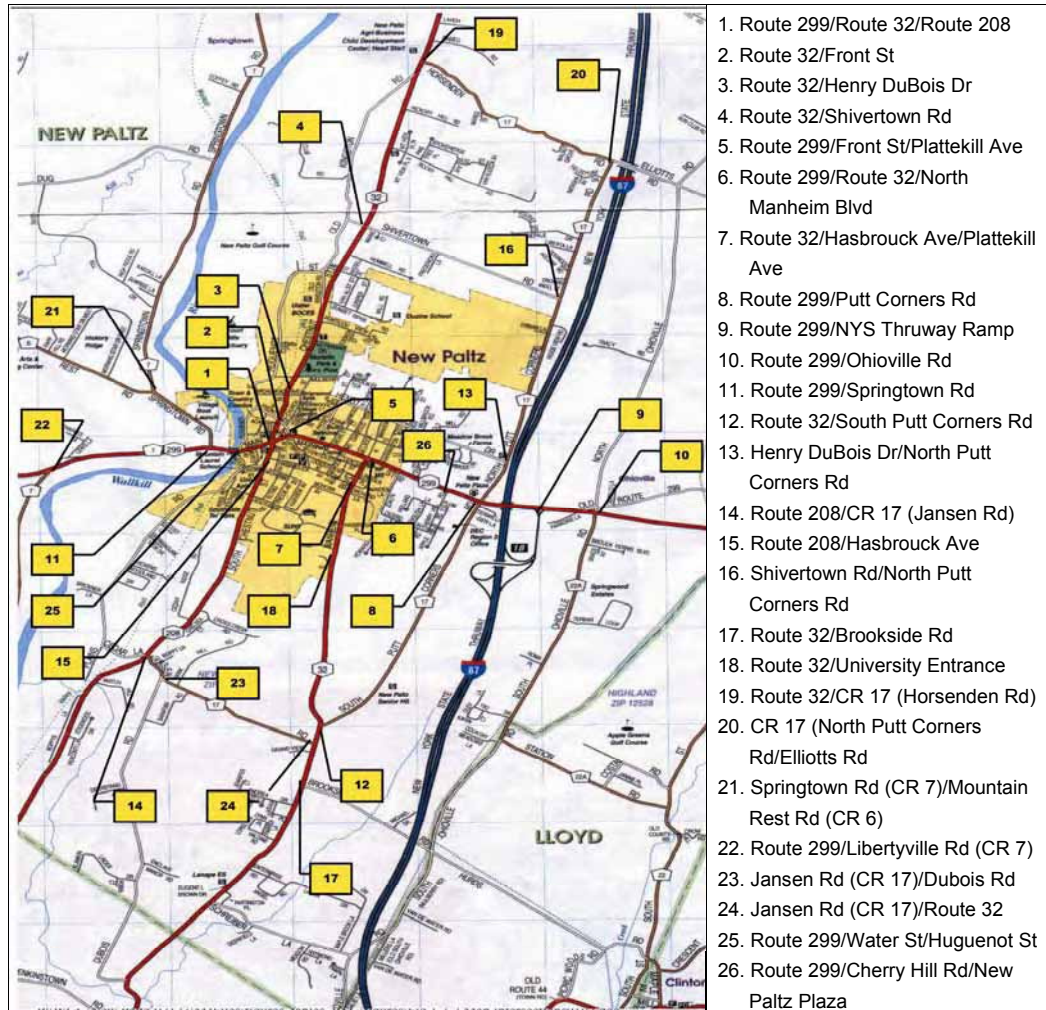
Within limits of the Town, 26 intersections were mutually selected during project scoping to collect specific data for use in the project. The turning movement counts were collected in October 2003 at a time when SUNY New Paltz classes were in session. Turning movement diagrams, depicting turning



volumes for the weekday evening (PM) peak hour and the Saturday midday peak hour are presented in Appendix B.

Figure 3-1 lists the project intersections and shows their locations. The intersection numbers are referenced throughout the project report for use in data collection, analyses, and reporting of results.

Figure 3-1: Location of Project Intersections



The New York State Department of Transportation (NYSDOT) conducted twenty-four hour, two-way counts on several of the major roadways within the Town. Where possible these counts were taken during the same period of time as the intersection counts.

NYSDOT also conducted twenty-four hour road tube counts during special events such as the Ulster County Fair, Wallkill River Regatta and the SUNY New Paltz graduation. This information allows a comparison of peak event traffic with typical PM peak period traffic.

A permanent continuous traffic counter is located on Route 32 just north of Route 299. This counter shows average daily traffic being the highest during the months of May, July, September, and October which corresponds with peak tourism seasons and special events. Yearly summaries are provided below.

The peak one hour of traffic was determined for each intersection. In general the peak hour occurred between the hours of 4:00 and 6:00 PM during a weekday and between 12:00 and 2:00 PM on Saturday. The most prevalent intersection weekday PM peak hour occurred between 4:30 and 5:30. The Saturday hour was 12:00 to 1:00 PM.

Truck (3 axles or more) volume counts were also taken during the same peak hour periods and in general were three (3) percent or less passing through the project intersections.

3.1.1 Current Traffic Volumes

Daily traffic volumes averaged from counts taken over several days for several key arterials in the project area are shown in Figure 3-2.



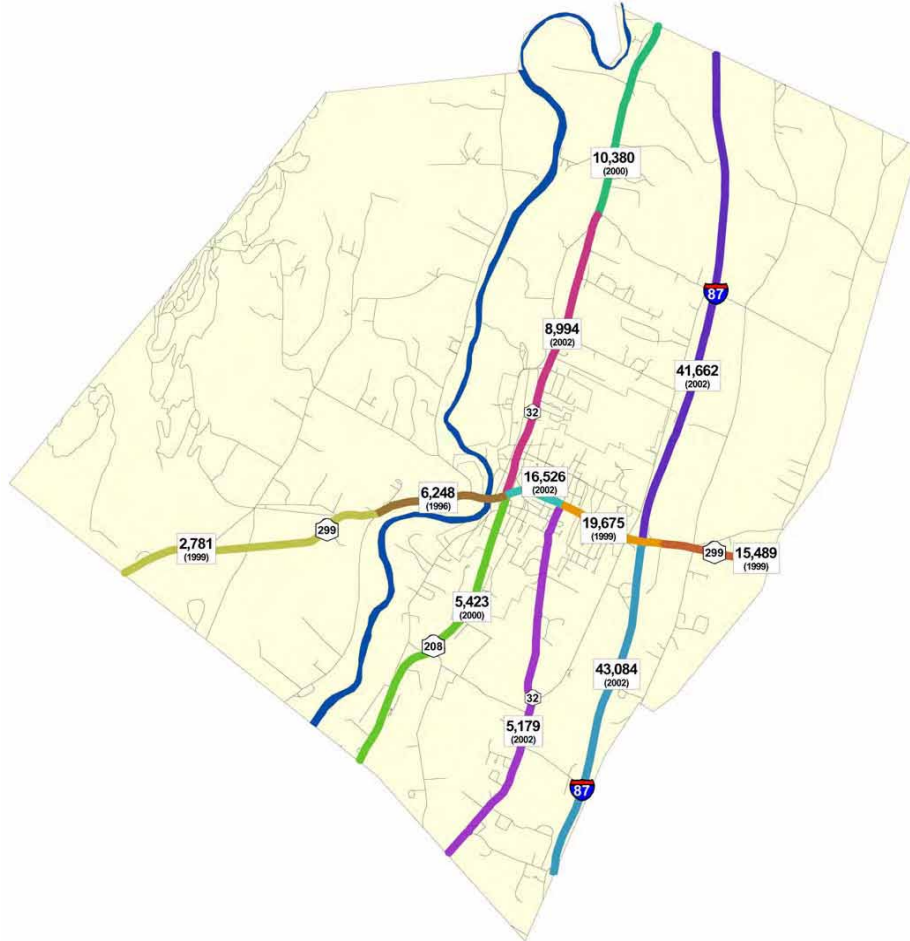
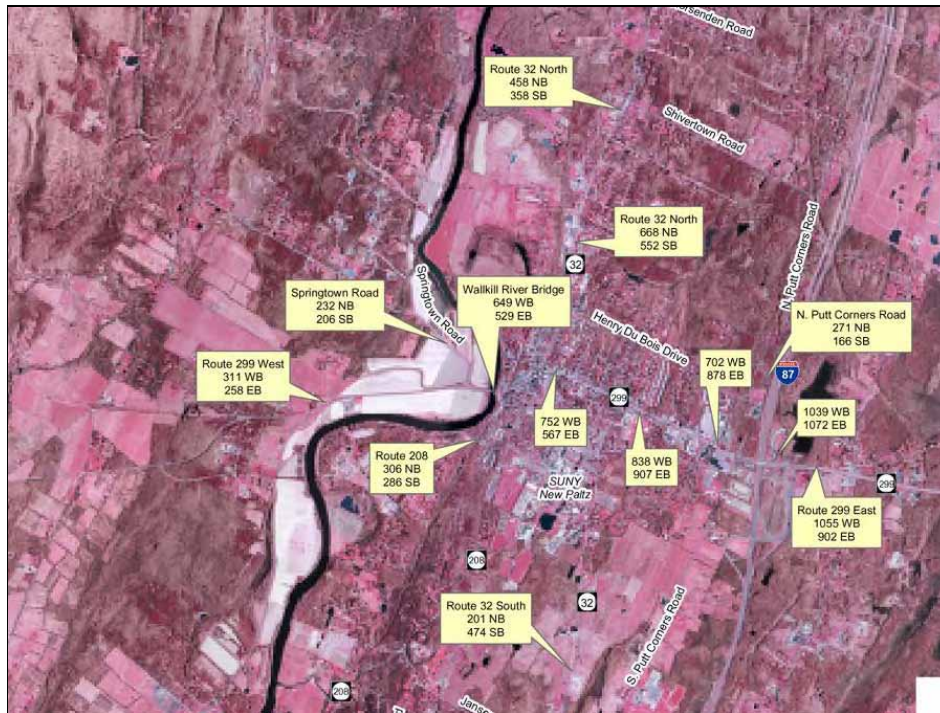
Figure 3-2: Average Annual Daily Traffic on the Principal Arterials of New Paltz

Figure 3-3 shows peak hour volumes depicted on the various roadway links between the intersections. Peak hour vehicular volumes follow the same general pattern as daily traffic volumes: they are highest on Route 299 proximate to the Thruway ramps and tend to decline as one proceeds westerly along Route 299 toward the downtown. State Routes 32 and 208 and many county roads and local streets intersect with Route 299 to draw traffic away from the mainline. In addition the overall capacity of Main Street is reduced as well, decreasing from a 4 lane arterial near the Thruway to a 2 lane street in the Village core.



Figure 3-3: Weekday PM Peak Hour Traffic Volumes on Selected New Paltz Arterials and Collectors¹

The peak hour of traffic was determined for each intersection. In general the peak hour occurs between the hours of 4:00 and 6:00 PM on weekdays, with the most prevalent peak hour being 4:30-5:30 PM. On Saturdays, peaks occur between 12:00 and 2:00 PM, with the most prevalent hour being 12:00 to 1:00 PM.

Hourly NYSDOT roadway counts throughout New Paltz conducted in 2003 from 12 noon to 8 PM at 8 locations² were analyzed to determine how the volume of traffic within each hour compared with the volume of traffic during the peak hour.³ The data indicate that the 5PM-6PM hour is the highest hour of

¹ The traffic data presented in Figure 3-3 are from raw traffic counts from October 15-16, 2003. The data have not been adjusted or balanced.

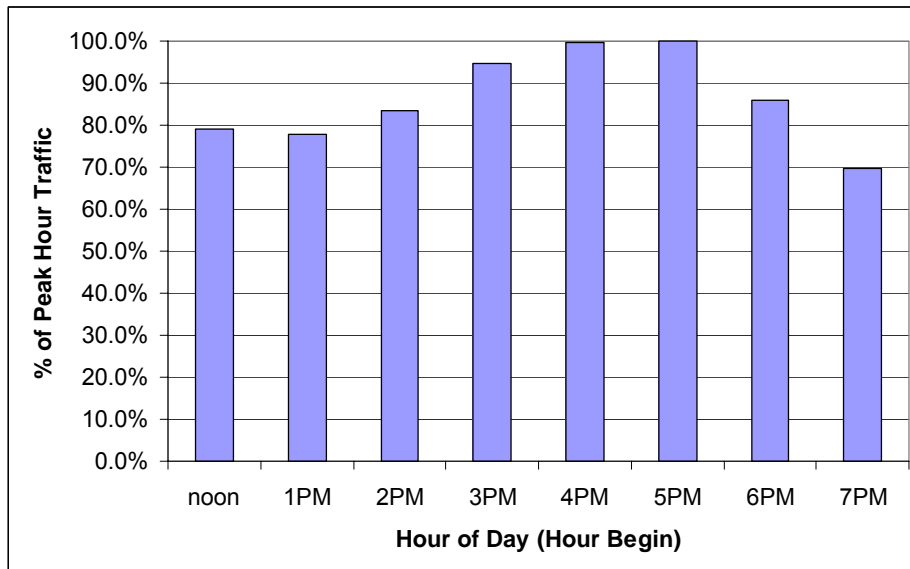
² The locations sampled were: on Route 299—at Ohioville Road, at Jacobs Lane, at Front Street, at Joalyn Road, at Libertyville Road; Route 32 near SUNY and south of Bonicoview Road; and Route 208 south of Route 299.

³ The data are collected in hourly intervals beginning at the top of the hour, hence a specific half-hourly peak could not be determined. Intersection turning movement counts, which are accumulated in 15-minute intervals, allow a more precise designation of the peak hour.



volume in New Paltz. At 99.7% of the peak hour the 4PM-5PM hour is almost identical in total volume. The 3PM-4PM hour is the next highest hour, at 94.8% of the peak. Figure 3-4 displays the results of this analysis. The data suggest that there is a 3 hour period, from 3PM to 6PM, where congestion can be regularly anticipated during normal weekdays.

Figure 3-4: Weekday Hourly Traffic as a Percentage of Peak Hour Traffic, Selected Roadways in New Paltz, 2003



As mentioned traffic counts were also conducted at twelve (12) key intersections during a Saturday mid-day period. In comparing weekday PM peak hour traffic volumes to Saturday mid-day peak hour traffic volumes, there is a slight tendency for the intersections clustered near the Village downtown along Route 299 to exhibit higher volumes during the Saturday peak as compared to the weekday PM peak hour. Table 3-1 shows the 12 project intersections for which both Saturday and weekday turning movement counts were conducted.



Table 3-1: Comparison of PM Peak Hour and Saturday Peak Hour Volumes at Project Area Intersections (2003 October Counts)

Intersection	Weekday PM	Saturday Peak	% Difference (PM
	Peak Hour	Hour	Peak/Saturday
Route 299 - Ohioville Road	2181	1834	19%
Route 299 - I-87 Exit 18	2885	2559	13%
Route 299 - Putt Corners Road	3057	2209	38%
Route 299 - Cherry Hill Road - Simmons	2090	1991	5%
Route 299 - Route 32 - North Manheim	2134	2330	-8%
Route 299 - Plattekill Avenue	1445	1555	-7%
Route 299 - Route 208 - Route 32	1813	1864	-3%
Route 299 - Huguenot Street - Water St	1307	1480	-12%
Route 299 - Springtown Road	1250	1385	-10%
Route 299 - Libertyville Road	775	896	-14%
Route 32 - South Putt Corners	1028	828	24%
Route 208 - Jansen Road - Cedar Lane	750	828	-9%

An important part of the current traffic mix is commuting traffic. Journey to Work data from the 2000 Census provides information on the place of work for New Paltz residents. This information is depicted in Figure 3-5, which shows the work location of New Paltz residents and the likely commuting route. The commuting route was determined based on geography. In the case of Route 32 north and I87, parallel routes, 75% of the traffic was assumed to use I87 to access Kingston and Ulster.¹

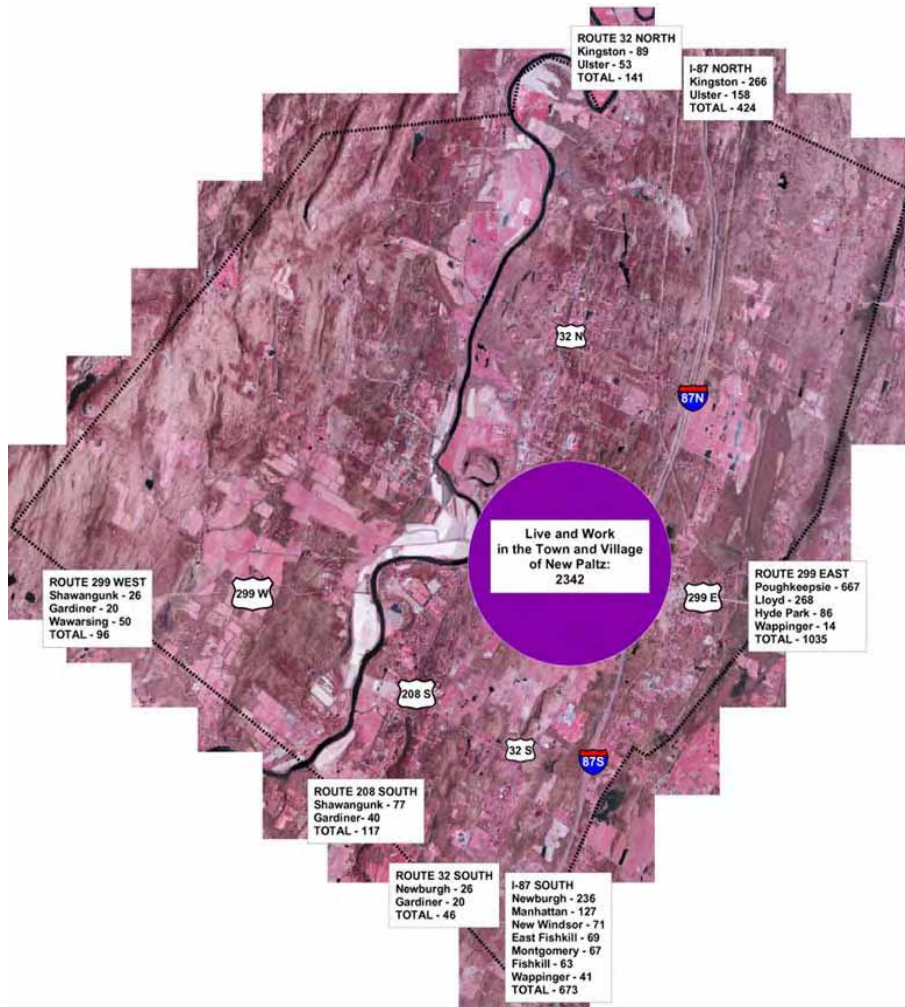
Over 2,300 New Paltz residents also work in New Paltz. For commuters, the highest volume commuting flow is easterly on Route 299, with Poughkeepsie having the next highest share of New Paltz resident workers (667). Commuting flows north and south on I87 are the next largest. Commuting traffic is typically 45-50% of all AM peak hour traffic. For the reverse commute during the PM peak hour, work-to-home commutes tend to be 15-25% of all traffic present on the network.

Based on employment data obtained from the Ulster County Transportation Council, there are approximately 5,700 jobs within the Town (approximately 2,100) and Village (approximately 3,600) of New Paltz. Thus approximately 3400 workers commute into New Paltz from outside.

¹ These data are illustrative of traffic flows. Determination of the exact routes of New Paltz to Kingston commuters are not available and expensive to obtain. Data from the NYS Thruway indicate that, in 2004, there were an average of 1358 passenger vehicles per day that entered the NYS Thruway at Exit 18 and exited the Thruway at Exit 19 (Kingston). Based on these data alone the commuting flow of 424 vehicles between Exits 18 and 19 shown in Figure 3-5 is a reasonable assumption.



Figure 3-5: Likely Commuting Routes of New Paltz Residents



3.1.2 Historic Traffic Trends

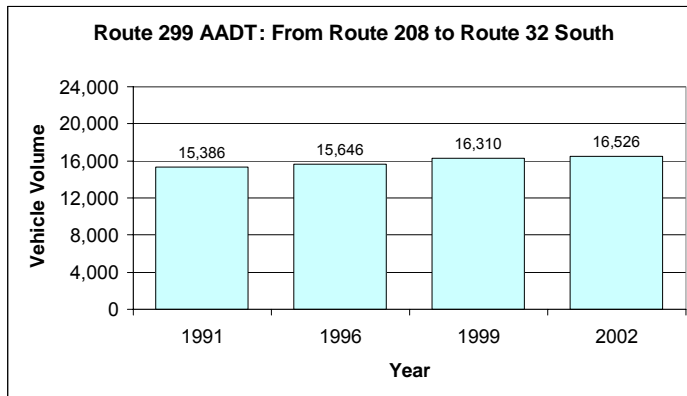
NYSDOT has a traffic count program that provides information on how traffic has changed in the project area on selected arterials over the recent past. Traffic counts are conducted periodically along



state highways and provide information on changes in demand over time along the key arterials serving New Paltz.

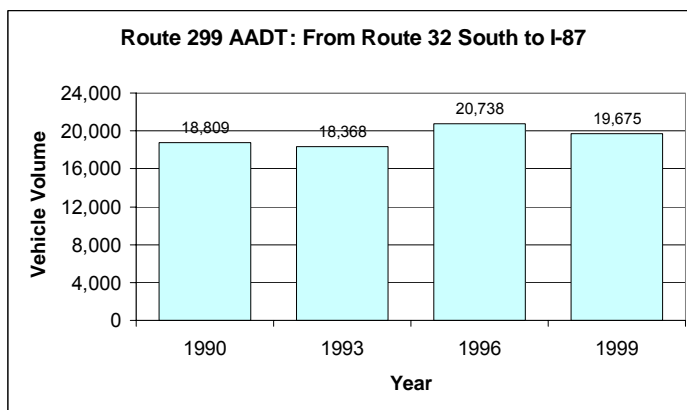
Traffic data are reported as Annual Average Daily Traffic, which represents the total amount of traffic passing a point on a highway in both directions over the course of a year, divided by 365 days. Figure 3-6 - Figure 3-8 show AADTs for Route 299.

Figure 3-6: Average Annual Daily Traffic on Route 299 from Route 208 to Route 32 South, Selected Years



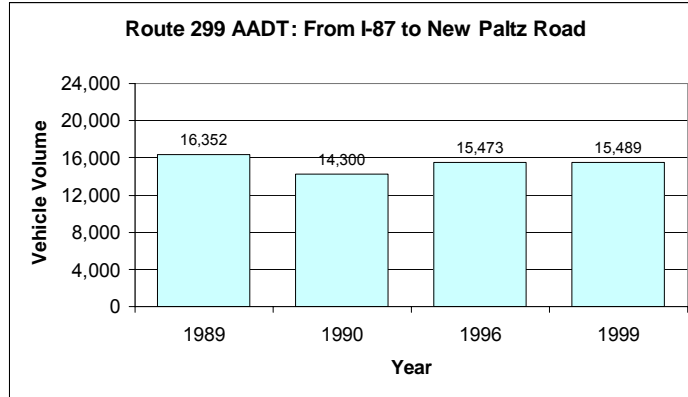
Since 1991, traffic AADT along Main Street (Route 299) from Chestnut Street (Route 32 N/Route 208) to Manheim Boulevard/Route 32 S has grown 0.65% per year.

Figure 3-7: Average Annual Daily Traffic on Route 299 from Route 32 South to I-87, Selected Years



Since 1991, traffic AADT along Route 299 from Manheim Boulevard/Route 32 S to I87 has grown 0.5% per year.

Figure 3-8: Average Annual Daily Traffic on Route 299 from I87 to New Paltz Road, Selected Years



Average Annual Daily Traffic along the most easterly section of Route 299, from I87 to New Paltz Road has not shown an increase since 1989.

Figure 3-9 and Figure 3-10 show AADT's for Route 32 North (proximate to Horsenden Road) and South. Since 1991, traffic along the northerly portion of Route 32 has grown approximately 1% annually; along the southerly portion (Figure 3-10) traffic has grown over 1.8% per year.

Figure 3-9: Average Annual Daily Traffic on Route 32 from Horsenden Road to Route 213 Tilson, Selected Years

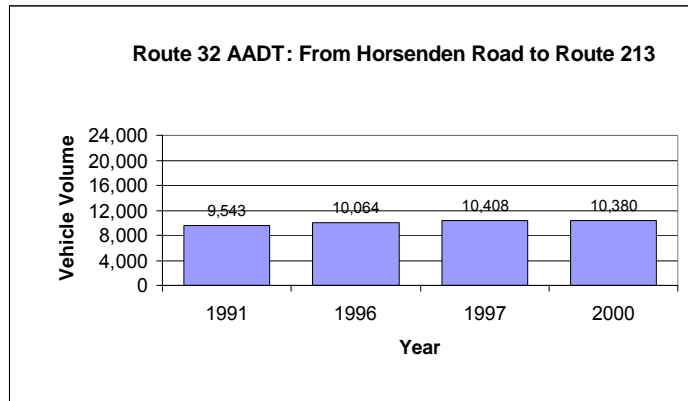
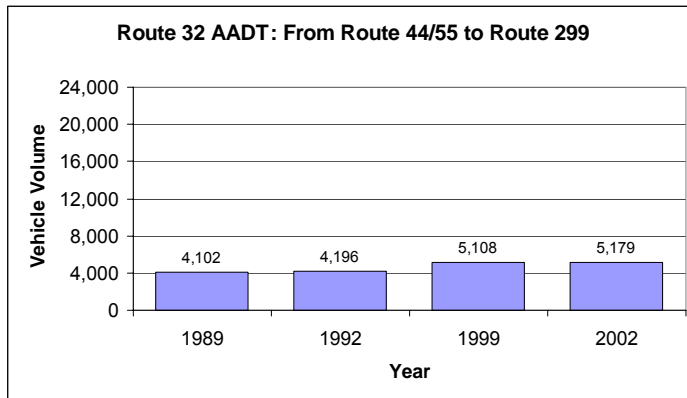


Figure 3-10: Average Annual Daily Traffic on Route 32 from Route 44/55 to Route 299, Selected Years

Average Annual Daily Traffic along Route 208 south of Route 299 has shown annual increases and decreases since 1990, but nevertheless has grown at about 0.5% annually since 1990 (Figure 3-11)

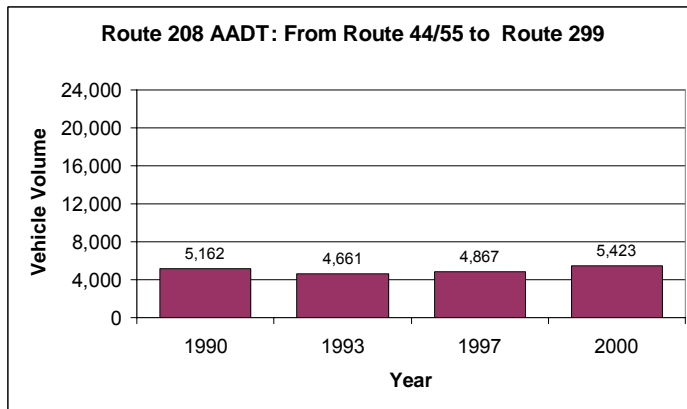
Figure 3-11: Average Annual Daily Traffic on Route 208 from Route 44/55 to Route 299, Selected Years

Figure 3-12 - Figure 3-13 show Average Annual Daily Traffic for the segments of I87 south and north of Exit 18 (Route 299). Since 1999, traffic for the southerly portion of I87 has grown at 4.7% annually. Traffic along the northern section has grown 3.9% annually.



Figure 3-12: Average Annual Daily Traffic on I87 from the Orange County Line to Route 299, Selected Years

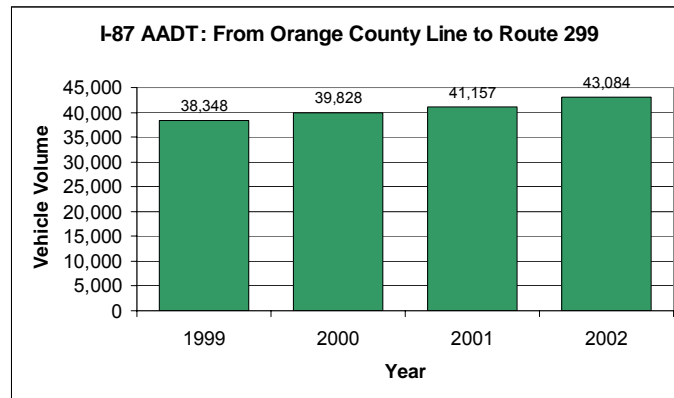
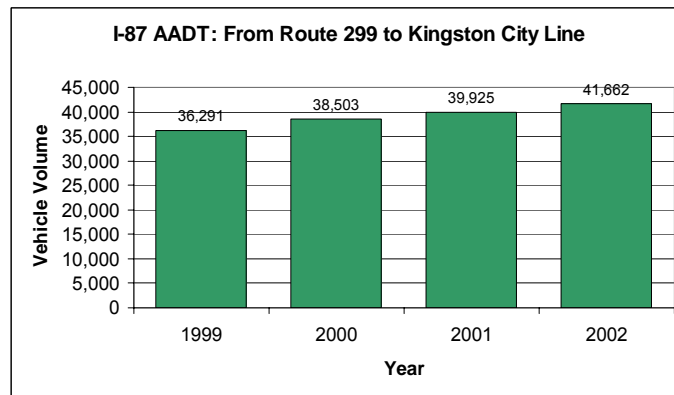


Figure 3-13: Average Annual Daily Traffic on I87 from Route 299 to Kingston, Selected Years



Traffic entering the Thruway at Exit 18 has grown at 4.2% annually, based on data for the 1998-2004 time period. When compared to the annual growth rates at the other stations (0.3%), which are more oriented to servicing local traffic, the high traffic growth rate on the Thruway and at Exit 18 supports the notion that tourist traffic contributes significantly to the New Paltz traffic mix. Destination data provided by the NYS Thruway Authority for Exit 18 show that 23-28% of all traffic entering the Thruway at Exit 18 have destinations south of Newburgh. August and October are the months with the highest number of destinations south of Newburgh.

Average daily traffic entering the Thruway at Exit 18 grew from 5660 vehicles per day in 1998 to 7250 vehicles per day in 2004.



Based on turning movement counts conducted at the Thruway ramp intersection with Route 299, the directional distribution of Thruway traffic can be estimated (Table 3-2). The data indicate that during normal weekday peak operations traffic entering and exiting the Thruway is distributed 56% toward the direction of New Paltz and 44% in the direction of Poughkeepsie. The same general trend is in evidence on a Saturday.

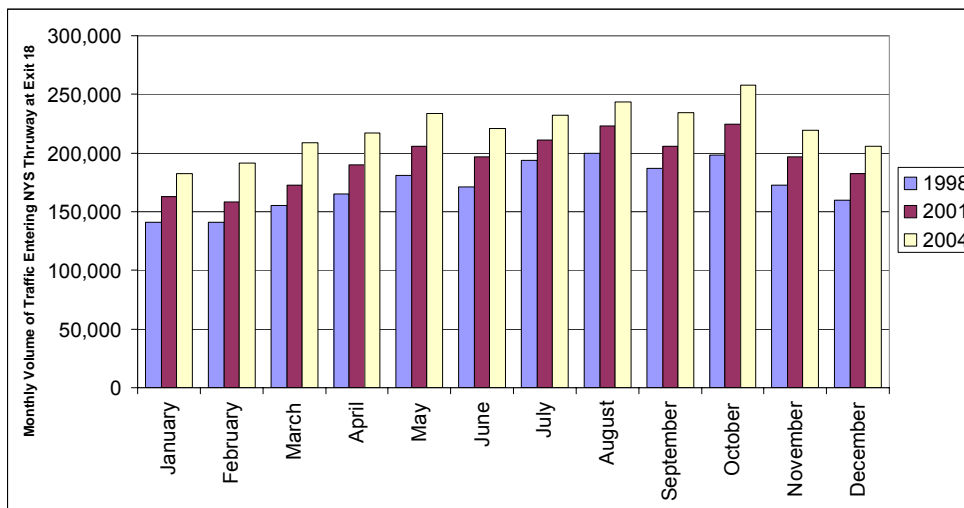
Table 3-2: Directional Distribution of Traffic Entering and Exiting Thruway at Exit 18

		Entering Thruway	Exiting Thruway
Weekday	To/From Points West	56%	56%
	To/From Points East	44%	44%
Saturday	To/From Points West	62%	55%
	To/From Points East	38%	45%

3.1.3 Monthly Traffic Trends

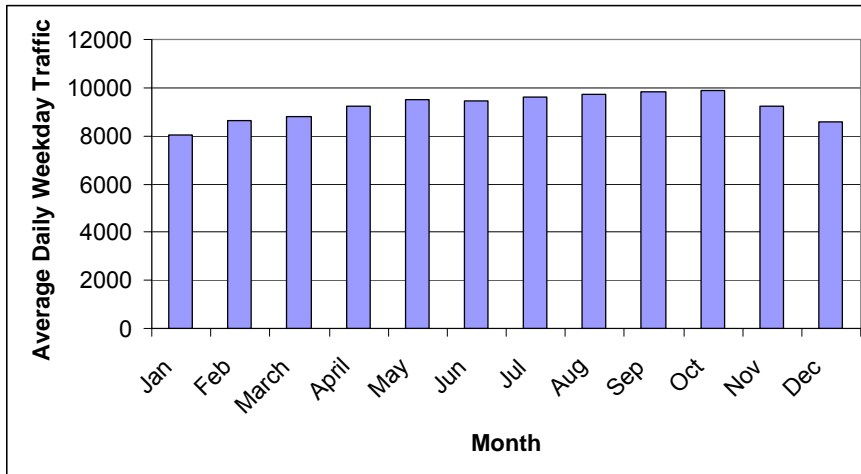
Figure 3-14 provides average monthly traffic entering I87 at Exit 18 for 1998 and 2001. The chart shows that the high months for Thruway traffic entering Exit 18 are August and October, corresponding to peak tourist months. Figure 3-14 also shows consistently higher traffic volumes for 2001 and 2004 when compared to 1998.

Figure 3-14: Average Monthly Traffic Volume Entering NYS Thruway at Exit 18 New Paltz, 1998-2004



NYSDOT maintains a continuous traffic counter on Route 32, 1.2 miles north of Route 299. This counter shows a moderate tendency to peak in September and October which corresponds with peak tourism seasons and some special events. Figure 3-15 shows average weekday traffic volumes for each month at this location. Over the 3-year period, 2000-2003, traffic volumes increased an average of 0.3% annually at this location.

Figure 3-15: Average Weekday Daily Traffic on Route 32, by Month, Averaged 2000-2003



3.2 CONGESTION IN NEW PALTZ

The IPP that initiated this project cites traffic congestion as the primary problem motivating this project. Results from the household survey, described below in Section 6.0, underscore the intensity with which residents perceive congestion to be a problem. New Paltz residents are very concerned about the levels of congestion that they encounter on the New Paltz roadway network.

An important component of the Phase A effort was to measure existing congestion levels in order to understand the degree of the problem, and to provide a baseline against which to measure the efficiency of recommended improvements in addressing this problem.

Traffic engineers describe congestion through an indicator called Level of Service (LOS). LOS is a qualitative measure describing the operating conditions as perceived by motorists driving in a traffic stream, based on the average delay per vehicle. The 2000 Highway Capacity Manual defines six grades of LOS at an intersection (Table 3-3). The delay thresholds for levels of service at signalized and unsignalized intersections differ because of the driver's expectations of the operating efficiency for the respective traffic control conditions.



LOS is typically estimated for a one hour period. For New Paltz average traffic conditions, as opposed to conditions during special events, are typically most congested during the PM peak hour. In the majority of cases all hours outside of the PM peak hour are less congested than the PM peak hour.

Table 3-3: LOS Criteria for Signalized and Unsignalized Intersections

LOS	Characteristics	--Unsignalized--	--Signalized--
		Total Delay (sec/veh)	Total Delay (sec/veh)
A	Little or no delay	≤ 10.0	≤ 10.0
B	Short delays	10.1-15.0	10.1-20.0
C	Average delays	15.1-25.0	20.1-35.0
D	Long delays	25.1-35.0	35.1-55.0
E	Very long delays	35.1-50.0	55.1-80.0
F	Extreme delays	> 50.0	> 80.0

The 26 intersections in the project were analyzed to determine Capacity and Level of Service (LOS) using traffic volumes collected during the Phase A effort. The detailed LOS worksheets for each signalized and unsignalized intersection are located in Appendix C.

3.2.1 Congestion at Signalized Intersections

As defined by the *Highway Capacity Manual 2000*, the methodology for evaluating congestion addresses capacity and other performance measures for lane groups, intersection approaches and for the intersection as a whole. Capacity is evaluated in terms of the ratio of demand (volume) to capacity (v/c), whereas LOS is evaluated on the basis of control delay attributed to traffic signal operation. The control delay includes deceleration delay, queue move-up time, stopped delay, and final acceleration delay. To determine capacity and LOS, Synchro 6.0 software was used in the analysis¹.

An overall intersection LOS below “D” is generally considered unacceptable at signalized intersections and indicates that the average signal delay per vehicle traveling through the intersection exceeds 55 seconds. Results are shown in Table 3-4, and indicate poor operations with long delays (LOS D or worse) at 3 intersections:

- Route 299/32/208
- Route 299/Putt Corners Road
- Route 299/Ohioville Road

¹ For signalized analysis, optimized signal timings were assumed to simulate actuated operation.



Table 3-4: Estimated 2003 PM Peak Hour Level of Service, Signalized Intersections

Intersection	LOS-Total Delay per Vehicle				
	Overall	EB	WB	NB	SB
Route 299/Route 32/Route 208	E-65	E-56	E-78	F-127	C-22
Route 32 North / Front Street	B-14	C-22	C-23	A-10	B-12
Route 299 / Route 32 South	D-52	D-43	B-15	F-109	D-39
Route 299/Cherry Hill / NP Plaza	D-48	D-54	E-56	D-39	C-25
Route 299 / Putt Corners Road	E-68	D-42	E-77	F-102	E-65
Route 299/ I-87 Thruway Exit 18	D-44	D-52	C-34	D-45	na
Route 299 / Ohioville Road	E-58	E-67	E-61	D-39	B-19

Three other intersections are shown to operate at LOS D conditions. Capacity at signalized intersections is also measured with the volume-to-capacity ratio (v/c). A v/c ratio greater than 1.0 is an indication of actual or potential breakdown; the overall signal and geometric design provides inadequate capacity for the given flows. Several approaches at these intersections are exceeding approach capacity under normal PM peak hour conditions (Table 3-5).

Table 3-5: Volume-to-Capacity Ratio for Specific Lane Groups, 2003 PM Peak Hour

INTERSECTION/APPROACH	DIRECTION LANE GROUP	LANE GROUP LOS - V/C
1 Rte 299 / Rte 32 / Rte 208		
Route 299	Eastbound Left	F - 1.06
Route 299	Westbound Left	E - 0.62
Route 299	Westbound Thru	E - 1.03
Route 208	Northbound Thru/Left/Right	F - 1.15
26 Rte 299 /Cherry Hill /Plaza		
Route 299	Eastbound Left	E - .76
8 Rte 299 /Putt Corners Rd		
Route 299	Eastbound Left	E - 0.89
Route 299	Westbound Thru	F - 1.18
Putt Corners Road	Northbound Left	E - 0.91
Putt Corners Road	Northbound Thru	F - 1.14
Putt Corners Road	Southbound Left	E - 0.93
9 Rte 299 / NYS Thruway		
Route 299	Eastbound Thru	E - 1.02
Route 299	Westbound Left	E - 0.91
Thruway Ramp	Northbound Left	F - 1.01
10 Rte 299 / Ohioville Road		
Route 299	Eastbound Thru	E - 1.06
Route 299	Westbound Thru	E - 1.03



3.2.2 Congestion at Unsignalized Intersections

As defined by the *Highway Capacity Manual 2000*, the methodology for evaluating congestion at unsignalized intersections addresses the interaction of drivers on the minor or stop-controlled approach with drivers on the major street. The LOS is determined by the computed or measured delay and is defined for each minor movement. LOS is not defined for the intersection as a whole.

The LOS criteria for unsignalized intersections are different from those for signalized intersections, primarily due to different driver perceptions. The expectation is that a signalized intersection is designed to carry higher traffic volumes and experience greater delay than an unsignalized intersection. To determine capacity and LOS, Highway Capacity Software (HCS) was used in the analysis. Results of the analysis are shown in Table 3-6.

At an unsignalized intersection, minor approaches with LOS below “D” (>35 seconds of delay per vehicle) are generally considered unacceptable. LOS F occurs when there are not enough gaps of suitable size to allow a minor-street demand to safely cross through traffic on the major street.

Table 3-6: Estimated 2003 Level of Service, Unsignalized Intersections

Intersection	Minor Approach		Minor Approach	
Route 32/Henry DuBois Drive	WB	F-69	EB	F-50
Route 32/Shivertown Road	WB	C-21	EB	C-22
Route 299/Front Street/Plattekill Avenue	NB	F-94		
Route 32/Hasbrouck Avenue/Maiden Lane	WB	B-12	EB	F->100
Route 299/Springtown Road	SB	F-55		
Route 32/ So. Putt Corners Road	WB	F->100		
Henry DuBois Drive/No. Putt Corners Road	EB	C-18		
Route 208/Cedar Lane/Jansen Road	WB	C-23	EB	C-16
Route 208/Hasbrouck Avenue	WB	B-13		
Shivertown Road/ No. Putt Corners Road	EB	A-10		
Route 32/Brooks Road	WB	C-16	EB	C-22
Route 32/SUNY Driveway	EB	C-18		
Route 32/CR 17 (Horsenden Road)	WB	C-16		
CR 17 (No. Putt Corners Road)/Horsenden Road	NB	A-10		
Springtown Road/Mountain Rest Road	EB	B-10		
Route 299/CR 7 (Libertyville Rd.)	NB	B-12		
CR 17 (Jansen Road)/Dubois Road	NB	B-11		

From this analysis, the most congested unsignalized approaches are:

- Westbound approach to Route 32 on South Putt Corners Road
- Southbound approach to Route 299 at Springtown Road
- Eastbound approach to Route 32 on Hasbrouck Avenue
- Northbound approach to Route 299 (Main Street) at Plattekill Avenue
- Westbound approach to Route 32 on Henry DuBois Drive



3.2.3 Queuing

Queue lengths were estimated on approaches at the seven (7) signalized intersections within the project area. As shown in Table 3-7 there are approaches for 6 intersections that have queues with spillbacks (cars stacked in a queue longer than the length of storage lane) or storage blocking (through movements blocking the entrance to the storage lane). No chronic adverse queuing is estimated for the Route 32/Front Street intersection.

Table 3-7: Estimated Queue Lengths at Selected Signalized Intersections¹

No.	Intersection		Turn Lane Storage Length	2003 PM Peak Hour Estimated Queue Length (Feet)	REMARKS	
1	Rte. 299 / Rte. 32 / Rte. 208	EB	L	60	163	Spillback
			TR		460	Blocking Turn Lane
		WB	L	137	118	
			TR		737	Blocking Turn Lane
		NB	TR		524	Blocking Turn Lane
		SB	L	123	157	Spillback
		TR		282	Blocking Turn Lane	
6	Rte. 299 / Rte.32 / No. Mannheim Blvd.	EB	L	35	23	
			TR		382	
		WB	L	250	114	
			TR		284	Blocking Turn Lane
		NB	LT		255	
		NB	R	100	226	Spillback
	SB	LTR		173		
8	Rte. 299 / No. & So. Putt Corners Rd.	EB	L	230	267	Spillback
			TR		408	Blocking Turn Lane
		WB	L	425	245	
			T		854	Blocking Turn Lane
			R	850		Yield Condition
		NB	L	300	195	
	SB	L	230	247	Spillback	
9	Rte. 299 / Thruway Ramp	EB	T		847	
			R	1000		Yield Condition
		WB	L	417	346	
			T		529	Blocking Turn Lane
		NB	L		942	Toll Booth Control
			R	1000		Merge Condition
10	Rte. 299 / Ohioville Rd.	EB	L	225	74	
			TR		738	Blocking Turn Lane
		WB	L	100	13	
			TR		807	Blocking Turn Lane
		NB	LTR		169	
		SB	LT		70	
		R	104	34		
26	Rte. 299 / Cherry Plaza Entrance	EB	L	142	161	Spillback
			T		625	Blocking Turn Lane
			R	142	23	
		WB	L	133	98	
			T		605	Blocking Turn Lane
			R	133	22	
	NB	LTR		183		
	SB	LT		184		
		R	280	29		

¹ The data in Table 3-7 represent 50th percentile queues for a typical signal cycle during the PM peak hour.



This analysis points to six locations where available storage is exceeded during PM peak hour traffic operations:

- Eastbound Left Turn – Route 299/32/208
- Southbound Left Turn – Route 299/32/208
- Northbound Right Turn – Route 299/32/Manheim Boulevard
- Eastbound Left Turn – Route 299/Putt Corners Road
- Southbound Left Turn – Route 299/Putt Corners Road
- Eastbound Left Turn – Route 299/Cherry Hill Road

An example of spillback would be for eastbound left turns at the Route 299/Route 208 intersection and for northbound right turns at the Route 299/Route 32 intersection. These turning queued vehicles are longer than the storage space that is available and thus spill out onto the through lane.

An example of significant storage blocking is the westbound through movement blocking the entrance to the westbound left turn lane at the Route 299/Route 208 intersection. The resulting queue lengths shown in Table 3-7 are based on the analysis of independent (non-coordinated) signalized intersections.

The technical analysis using Synchro did not conclude that the westbound left turn approach at the Route 299/Putt Corners Road intersection was overcapacity. However, this overcapacity queuing has been observed in the field.

3.2.4 Speeds and Delay

Travel time and delay runs were conducted along the Route 299 corridor to provide information regarding average vehicle speeds and delays encountered at the various intersections. A summary of findings for the weekday PM peak hour are shown in Table 3-8 and Table 3-9 for the 2.8 mile segment of Route 299 between Libertyville Road on the west and Ohioville Road on the east. The tables provide information on total travel time, total stopped time (including time stopped at traffic signals), total running time (travel time less stopped time), and travel speeds.



Table 3-8: Weekday PM Peak Travel Time and Delay Summary, Westbound Route 299

Town of New Paltz

Travel - Time and Delay Study

Date 10/15/2003

PM Peak Period

Direction: WESTBOUND

Trips started at: 4:16 PM

ROUTE 299

MILE	LOCATION	TRIP NO	1	TRIP NO	2	TRIP NO	3	TRIP NO	4	TRIP NO	5
		TIME (min)	MPH	TIME (min)	MPH	TIME (min)	MPH	TIME (min)	MPH	TIME (min)	MPH
0	OHIOVILLE RD	0	0	0	0	0	0	0	0	0	0
0.275	THRUWAY RAMP	0.48	34.1	1.55	10.6	0.93	17.7	0.57	29.1	1.07	15.5
0.568	PUTT CORNERS RD	1.02	33.0	2.67	15.7	2.05	15.7	1.68	15.7	2.15	16.2
0.748	CHERRY PLAZA	2.50	7.3	3.90	8.8	3.08	10.5	3.17	7.3	2.92	14.1
1.19	ROUTE 32 SOUTH	3.55	25.3	5.55	16.1	5.20	12.5	5.00	14.5	4.23	20.1
1.592	FRONT ST	4.52	25.0	6.50	25.4	6.10	26.8	5.28	85.1	5.37	21.3
1.695	ROUTE 208	6.22	3.6	7.87	4.5	6.88	7.9	5.32	185.4	6.03	9.3
1.912	West End of BRIDGE	6.83	21.1	8.47	21.7	7.47	22.3	6.87	8.4	6.97	14.0
2.019	SPRINGTOWN RD	7.00	38.5	8.72	25.7	7.67	32.1	7.12	25.7	7.17	32.1
2.805	LIBERTYVILLE RD	7.97	48.8	9.73	46.4	8.67	47.2	8.08	48.8	7.97	59.0

TRIP LENGTH	2.805	miles									
TRAVEL TIME	seconds	478		584		520		485		478	
	minutes	7.97		9.73		8.67		8.08		7.97	
STOPPED TIME	seconds	123		221		145		114		65	
	Field Measured	minutes	2.05	3.68		2.42		1.90		1.08	
RUNNING TIME	seconds	355		363		375		371		413	
	Time in Motion	minutes	5.92	6.05		6.25		6.18		6.88	
TRAVEL SPEED	MPH	21.1		17.3		19.4		20.8		21.1	
	Distance Traveled/Travel Time										
RUNNING SPEED	MPH	28.4		27.8		26.9		27.2		24.5	
	Distance Traveled / Running Time										

Table 3-9: Weekday PM Peak Travel Time and Delay Summary, Eastbound Route 299

Town of New Paltz

Travel - Time and Delay Study

Date 10/15/2003

PM Peak Period

Direction: EASTBOUND

Trips started at: 4:04 PM

ROUTE 299

MILE	LOCATION	TRIP NO	1	TRIP NO	2	TRIP NO	3	TRIP NO	4	TRIP NO	5
		TIME (min)	MPH	TIME (min)	MPH	TIME (min)	MPH	TIME (min)	MPH	TIME (min)	MPH
0	LIBERTYVILLE RD	0	0	0	0	0	0	0	0	0	0
0.786	SPRINGTOWN RD	1.03	45.6	1.00	47.2	0.92	51.4	0.88	53.4	1.05	44.9
0.92	East End of BRIDGE	1.33	26.8	1.25	32.2	1.18	30.2	1.13	32.2	1.40	23.0
1.109	ROUTE 208	2.07	15.5	2.07	13.9	2.92	6.5	1.67	21.3	2.62	9.3
1.213	FRONT ST	2.47	15.6	2.37	20.8	3.33	15.0	2.07	15.6	3.03	15.0
1.615	ROUTE 32 SOUTH	3.53	22.6	7.07	5.1	4.98	14.6	5.38	7.3	4.17	21.3
2.056	CHERRY PLAZA	4.97	18.5	7.92	31.1	6.67	15.7	6.67	20.6	5.68	17.4
2.236	PUTT CORNERS RD	5.37	27.0	8.50	18.5	7.18	20.9	7.03	29.5	6.67	11.0
2.53	THRUWAY RAMP	7.12	10.1	10.03	11.5	9.53	7.5	7.55	34.1	7.35	25.8
2.805	OHIOVILLE RD	7.72	27.5	10.70	24.8	10.20	24.8	9.07	10.9	8.02	24.8

TRIP LENGTH	2.805	miles									
TRAVEL TIME	seconds	463		642		612		544		481	
	minutes	7.7		10.7		10.2		9.1		8.0	
STOPPED TIME	seconds	107		297		239		180		105	
	Field Measured	minutes	1.8	5.0		4.0		3.0		1.8	
RUNNING TIME	seconds	356		345		373		364		376	
	Time in Motion	minutes	5.9	5.8		6.2		6.1		6.3	
TRAVEL SPEED	MPH	21.8		15.7		16.5		18.6		21.0	
	Distance Traveled/Travel Time										
RUNNING SPEED	MPH	28.4		29.3		27.1		27.7		26.9	
	Distance Traveled / Running Time										



The data show an average travel time of about nine (9.1) minutes in the eastbound direction and eight and one half (8.5) minutes westbound. Of the total travel time in the eastbound direction, 33% is time stopped in a queue, usually at an intersection. In the westbound direction 26% of the total travel time is as stopped time. One-quarter to one-third of the total travel time is largely attributable to intersection delay. Average speeds for the entire route between Libertyville Road and Ohioville Road were 19-22 mph, with actual running speeds at 27-28 mph.¹

Travel time trials were also conducted during a weekday mid-day period and a Saturday mid-day period. Table 3-10 shows the summary results for all periods. Acute congestion is indicated for the Saturday trial run, where nearly 70% of the total travel time was recorded as stopped time for the westbound direction. This finding is consistent with the general flow of tourist traffic from the Thruway to points west of the Wallkill that can be observed on touring Saturdays.

Table 3-10: Comparison of Stopped, Running, and Total Travel Time, Westbound on Route 299 from Ohioville Road to Springtown Road, Various Time Periods

	Westbound		
	Weekday	Weekday	Saturday
	PM Peak	Mid-Day	Mid-Day
Travel Time (min)	8.5	7.3	18.5
Stopped Time (min)	2.2	1.3	12.8
Running Time (min)	6.3	6.0	5.8
Travel Speed (mph)	20	23	9
Running Speed (mph)	27	28	30

Table 3-11: Comparison of Stopped, Running, and Total Travel Time, Eastbound on Route 299 from Ohioville Road to Springtown Road, Various Time Periods

	Eastbound		
	Weekday	Weekday	Saturday
	PM Peak	Mid-Day	Mid-Day
Travel Time (min)	9.1	8.0	10.0
Stopped Time (min)	3.1	2.1	3.8
Running Time (min)	6.0	5.9	6.2
Travel Speed (mph)	19	21	17
Running Speed (mph)	28	29	27

Travel speeds between signalized intersections ranged from 12 mph to 49 mph. Higher speeds, in the 30 to 50 mph range, occur along the rural area of Route 299 west of the Wallkill River. The slowest travel speeds occur between the village downtown and Cherry Hill Road (Table 3-12).

¹ Running speeds represent the average speed of the trial car while running, and does not include time spent stopped. Average travel speed for the corridor incorporates stopped time at intersections or in queues.



Table 3-12: Average Travel Speeds On Route 299, 2003 Weekday PM Peak Hour

Segment	Direction	Average Travel Speed
Ohioville-Thruway	WB	22
Thruway-Ohioville	EB	25
Thruway-Putt Corners	WB	26
Putt Corners-Thruway	EB	24
Cherry Hill-Thruway	WB	12
Thruway-Cherry Hill	EB	13
Rt 32/Manheim-Cherry Hill	WB	21
Cherry Hill-Rt 32/Manheim	EB	16
Rt 32/Manheim-Front/Plattekill	WB	21
Front/Plattekill-Rt 32/Manheim	EB	15
Front/Plattekill-South Chestnut	WB	12
South Chestnut-Front/Plattekill	EB	16
South Chestnut-Walkill River Bridge	WB	22
Walkill River Bridge-South Chestnut	EB	17
Walkill River Bridge-Springtown Road	WB	35
Springtown Road-Walkill River Bridge	EB	33
west of Springtown Road	WB	39
west of Springtown Road	EB	49

During the Saturday runs, the delay for the westbound direction increased to over eighteen minutes primarily due to an increase in traffic volumes on a day of special events including local craft fairs, festivals and fall leaf viewing. Other traffic data presented earlier support the conclusion that weekend travel conditions tend to be worse than weekday travel conditions, and can become acute during special event weekends.

3.2.5 Safety

NYSDOT currently rates the following roadway sections in New Paltz as being high accident locations (HALs):

- Route 299 from approximately Joalyn Road to Cherry Hill Road (Reference Markers 1067-1070)
- Route 299 from approximately Putt Corners Road to the NYS Thruway (Reference Markers 1071-1072)
- Route 299 from approximately NYS Thruway to the NYS Thruway Off Ramp (Reference Markers 1073-1074)
- Route 299 from approximately Paradise Lane to east of Ohioville Road (Reference Markers 1076-1079)



- Route 32 from approximately Brookside Road to South Putt Corners Road (Reference Markers 1093-1096)
- Route 32 from approximately Plattekill Avenue through the overlap with Route 299 to Briarwood Court (Reference Markers 1112-1121)
- Route 32 from approximately Hummel Road to Shivertown Road (Reference Markers 1131-1134)

While there are 7 classified HALs, they tend to occur in 4 major clusters (Table 3-13).

Table 3-13: Analysis Locations by HAL

State Route	Reference Marker Range		Intersections
	From	To	
Route 32 South	1093	1096	Brookside Jansen South Putt
Route 32/299	1112	1121	Manheim Millrock Grove Plattekill Church Route 209
Route 32 North	1131	1134	Shivertown
Route 299	1067	1079	New Paltz Plaza Putt Corners NYState Thruway Ohioville Road

NYSDOT has retained a consultant to conduct a detailed accident analysis of the Route 299 roadway segments.

Detailed reports for all accidents that occurred in New Paltz along Route 32 between 1 June 1999 and 31 May 2002 were obtained from the NYSDOT Safety Information Management System (SIMS) to conduct an in depth analysis for the NYSDOT HALs along Route 32. High accident locations were analyzed as a complete segment. Additionally, if 5 or more accidents occurred at any road reference marker or intersection, that location was analyzed separately.

3.2.5.1 Safety on Route 32 South

Figure 3-16 shows the locations of the Route 32 South High Accident Location. There were a total of 40 accidents between 1 June 1999 and 31 May 2002 on the section of Route 32 from Reference Marker 32

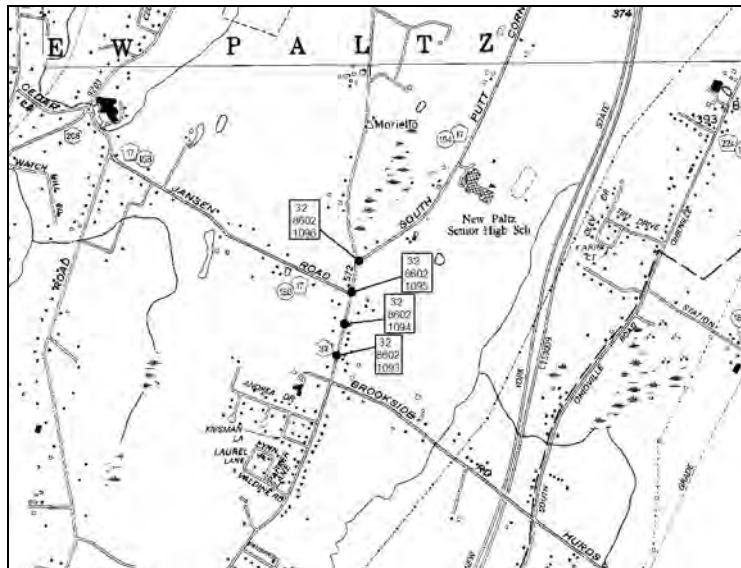


8602 1093 to Reference Marker 32 8602 1096. Of these 40 accidents, 13 were non-reportable¹ and 88% occurred on a weekday.

The following statistics are based on the 27 reportable accidents:

- 1 accident involved a bicycle (at a non-intersection at Reference Marker 32 8602 1094), and 78% were collisions with motor vehicles.
- 42% of accidents occurred between 3:00 PM and 6:00 PM.
- 37% of accidents were right angle collisions, and 26% were rear end collisions.
- 89% of accidents occurred when the weather was clear or cloudy, and 85% occurred on dry pavement.
- 44% of accidents involved turning vehicles, and 26% involved vehicles slowing, stopping, or starting in traffic

Figure 3-16: Route 32 South High Accident Location Reference Markers 1093-1096

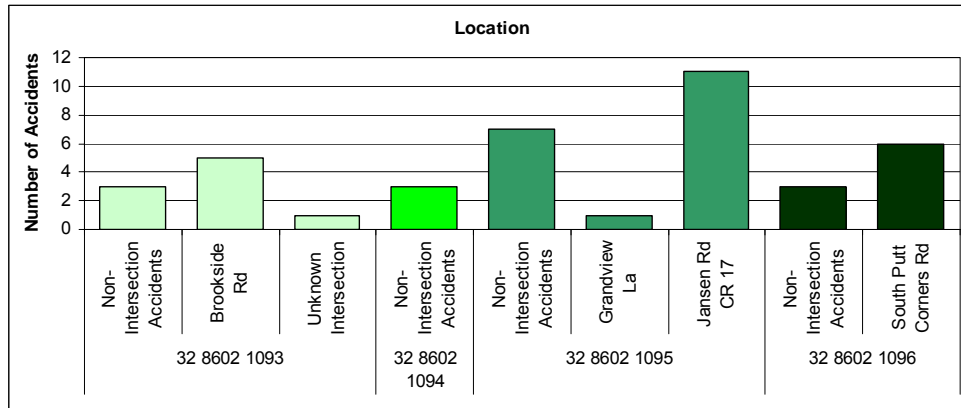


The locations of the accidents by reference marker and intersection, when known, are given in Figure 3-17.

¹ Accidents are classified as non-reportable when there are no fatalities or injuries, and when the estimate of property damage is \$1,000 or less.



Figure 3-17: Locations of Accidents from Reference Marker 32 8602 1093 to Reference Marker 32 8602 1096



Failure to yield right of way (12 instances), *following too closely* (5 instances), and *driver inattention* (3 instances) were the most frequently cited apparent factors in the accidents.

In addition to an analysis of the entire road segment, intersection-related accidents were also analyzed separately in cases where there were 5 or more crashes during the analysis period.

3.2.5.2 Intersection: Brookside Road

- 5 accidents occurred at Brookside Road, 3 of which were non-reportable.
- The 2 reportable accidents were both right angle collisions between a southbound and eastbound vehicle caused by a failure to yield right-of-way.

3.2.5.3 Intersection: Jansen Road

- 11 accidents occurred at Jansen Road, 4 of which were non-reportable.
- Of the 7 reportable accidents, there were 3 rear end collisions and 3 right angle collisions.
- 3 of the accidents also involved vehicles turning left.

Four accidents cited failure to yield right-of-way as a cause of the accident, and 3 accidents cited following too closely as a cause.

3.2.5.4 Intersection: South Putt Corners Road

- 6 reportable accidents occurred at South Putt Corners Road between the study dates, 3 of which were right angle collisions
- 4 accidents involved left turns made by vehicles traveling southwest.



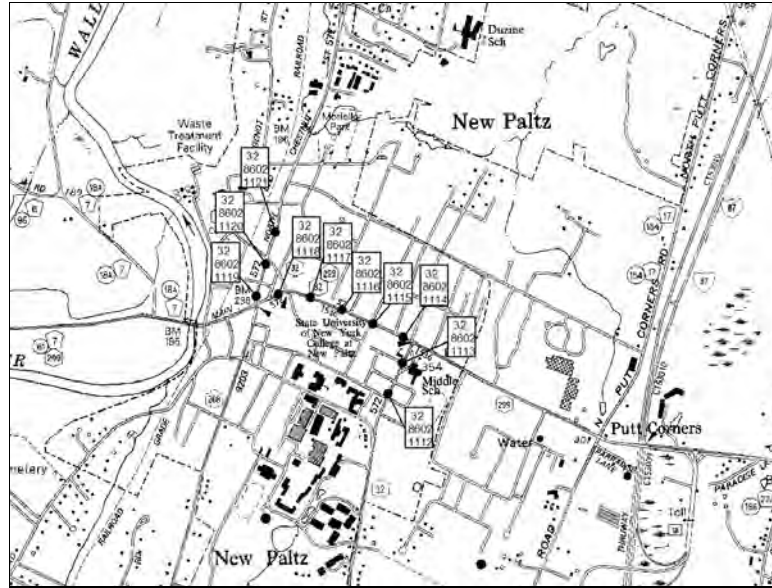
- 1 accident was a single car collision with a light support/utility pole due to alcohol involvement.

Failure to yield right-of-way was listed as a cause of 3 accidents.

3.2.5.5 Safety on the Route 32/299 Overlap (Main Street)

Figure 3-22 shows the accident location reference markers for accidents that occurred on Route 32 proximate to its overlap with Route 299.

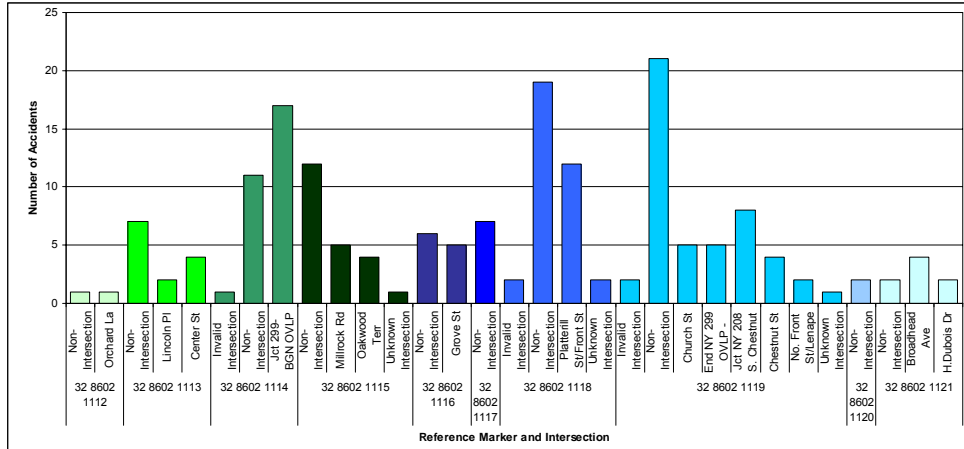
Figure 3-18: Route 32/299 High Accident Location Reference Markers 1112-1121



There were a total of 177 accidents between 1 June 1999 and 31 May 2002 on the section of Route 32 from Reference Marker 32 8602 1112 to Reference Marker 32 8602 1121. The locations of the accidents by reference marker and intersection, when known, are given in Figure 3-19.



Figure 3-19: Locations of Accidents from Reference Marker 32 8602 1112 to Reference Marker 32 8602 1121



Of these 177 accidents, 55 were non-reportable and 79% occurred on a weekday.

The following statistics are based on the 122 reportable accidents:

- 1 accident involved a bicycle (at the Plattekill Avenue/Front Street intersection), and 2 accidents involved pedestrians (at a non-intersection at Reference Marker 32 8602 1113 and at the Plattekill Avenue/Front Street intersection).
- 27% of the accidents occurred between 12:00 PM and 3:00 PM, and 24% occurred between 3:00 PM and 6:00 PM.
- Only 7% of accidents occurred during the AM peak period (6:00 AM – 9:00 AM).
- 24% of accidents were right angle collisions, and 23% were rear end collisions.
- 76% of accidents occurred when the weather was clear or cloudy, and 18% occurred when the pavement was wet.
- 10% of the accidents involved a collision between an eastbound and a northbound vehicle, and 24% of the vehicles involved in the total number of accidents were eastbound.
- 19% of accidents involved turning vehicles.
- *Failure to yield right of way* (29 instances), and *following too closely* (12 instances) were the most frequently cited apparent factors in the accidents.

In addition to an analysis of the entire road segment locations where clusters of accidents occurred were analyzed separately:



3.2.5.6 Reference Marker 32 8602 1113

There were 13 accidents that occurred at Reference Marker 32 8602 1113, 8 of which were reportable.

- 5 out of the 8 reportable accidents involved turning vehicles (3 left turns and 2 right turns)
- 2 accidents occurred at the Lincoln Place intersection, and 4 accidents occurred at the Center Street intersection.
- 5 accidents occurred during the PM peak period of traffic (3:00 PM-6:00 PM).
- 1 of the 8 accidents involved a pedestrian.
- Out of the 17 vehicles involved in reportable accidents, 2 vehicles were eastbound, 8 vehicles were northbound, and 4 vehicles were southbound.

There was no pattern in manner of collision or directionality of the vehicles.

3.2.5.7 Reference Marker 32 8602 1114

Twenty-nine accidents occurred at this reference marker, with 17 occurring at the Route 32-Route 299 intersection with Manheim Boulevard. Fourteen accidents were non-reportable, and there were no collisions with bicyclists or pedestrians.

- Of the 15 reportable accidents, there were 4 rear end collisions and 5 right angle collisions.
- 3 accidents occurred when the pavement was wet.
- 3 of the accidents involved vehicles turning left.
- Out of the 31 vehicles involved in reportable accidents, 9 vehicles were eastbound, 5 vehicles were westbound, 7 vehicles were northbound, and 4 vehicles were southbound.

Failure to yield right-of-way was cited as a cause of the accident 4 times, and *following too closely* was cited 3 times.

3.2.5.8 Intersection: Route 299-Manheim Boulevard

Seventeen accidents occurred at the intersection of Route 32/Route 299 and Manheim Boulevard, 8 of which were non-reportable. Seven of the accidents occurred on a Saturday. There were no collisions with bicyclists or pedestrians. Of the 9 reportable accidents:

- There were 4 rear end collisions.
- 1 accident involved a vehicle turning left, 1 accident involved a vehicle turning right, and 1 involved a vehicle backing.
- Of the 18 vehicles involved in reportable accidents, 4 vehicles were eastbound, 2 vehicles were westbound, 4 vehicles were northbound, and 2 vehicles were southbound.

There was no pattern in apparent factors of the accidents.



3.2.5.9 Reference Marker 32 8602 1115

Twenty-two accidents occurred at this reference marker, with 5 occurring at the Route 32-Millrock Road intersection. Thirteen accidents were non-reportable, and there were no collisions with bicyclists or pedestrians. Four accidents took place during the PM peak period (3:00 PM-6:00 PM), and 3 accidents took place in the late morning period (9:00 AM-12:00PM). Of the 9 reportable accidents:

- There were 5 rear end collisions and 2 right angle collisions.
- 2 vehicles failed to yield right-of-way, and 4 vehicles were following too closely.
- 2 of the vehicles involved in the accidents were turning left, 1 of the vehicles was turning right, and 4 vehicles were stopped in traffic.
- Of the 19 vehicles involved in reportable accidents, 12 vehicles were eastbound.

Slippery pavement was cited as an accident factor twice, and *alcohol involvement* was cited once.

3.2.5.10 Intersection: Millrock Road

Five accidents occurred at the Route 32-Millrock Road intersection, but only 2 were reportable. Glare was cited as an accident factor once, and alcohol involvement was also cited once. One of the vehicles involved in the accidents was turning left, and 2 vehicles were stopped in traffic. Of the 5 vehicles involved in reportable accidents, 3 vehicles were eastbound, 1 vehicle was westbound, and 1 vehicle was southbound.

3.2.5.11 Reference Marker 32 8602 1116

Eleven accidents occurred at this reference marker, with 5 occurring at the Route 32-Grove Street intersection. Six accidents were non-reportable, and there were no collisions with bicyclists or pedestrians. Of the 5 reportable accidents:

- There were 2 rear end collisions and 2 overtaking collisions.
- 6 of the 9 vehicles involved in reportable accidents were traveling westbound.
- 2 vehicles were in the process of turning before the accident.

There was no pattern in apparent factors in the accidents at this reference marker.

3.2.5.12 Intersection: Grove Street

Five accidents occurred at the Route 32-Grove Street intersection, and 3 of these accidents were reportable. Of the 3 reportable accidents, there was no pattern in manner of collision. Four of the 5 vehicles involved in reportable accidents at this intersection were westbound. Two of the 5 vehicles were in the process of turning before the accident. There was no pattern in apparent factors in the accidents at this intersection.



3.2.5.13 Reference Marker 32 8602 1117

Seven accidents occurred at this reference marker, and no accidents occurred at a specific intersection. Three accidents were non-reportable, and there were no collisions with bicyclists or pedestrians. Of the 4 reportable accidents:

- 2 accidents were rear end collisions.
- 5 of the 8 vehicles involved in reportable accidents were westbound.
- 2 of the 8 vehicles were in the process of turning right before the accident.

There was no pattern in apparent factors in the accidents at this reference marker

3.2.5.14 Reference Marker 32 8602 1118

Thirty-five accidents occurred at this reference marker, and 12 occurred at the Route 32-Plattekill Avenue-Front Street intersection (analyzed separately below). Eighteen accidents were non-reportable. Thirteen accidents occurred between 12:00 PM-3:00 PM. There was 1 collision with a pedestrian and 1 collision with a bicyclist, both at the Route 32-Plattekill Avenue-Front Street intersection. Of the 17 reportable accidents:

- There were 3 rear end collisions, 7 right angle collisions, and 3 left turn (with other car) collisions.
- 4 accidents (24%) occurred when the pavement was wet.
- 9 of the 35 vehicles (26%) involved in reportable accidents at this reference marker were eastbound, and another 9 vehicles were southbound.¹
- 7 of the 35 vehicles (20%) were turning prior to the accident.

Failure to yield right-of-way was cited as a cause of the accident 10 times.

3.2.5.15 Intersection: Plattekill Avenue-Front Street

Twelve accidents occurred at the Route 32-Plattekill Avenue-Front Street intersection. Four of these accidents were non-reportable. Out of the 8 reportable accidents:

- 1 was a collision with a pedestrian and 1 was a collision with a bicyclist.
- 4 accidents (50%) were right angle collisions.
- 4 of the 16 vehicles (25%) involved in reportable accidents at this intersection were eastbound, and 4 were southbound.²



- 5 of the 16 vehicles were turning left prior to the accident.

Failure to yield right of way was cited 7 times (54%).

3.2.5.16 Reference Marker 32 8602 1119

Forty-eight accidents occurred at this reference marker, with 5 occurring at the Route 32-Church Street intersection and 17 occurring at the Route 32-Route 208-Chestnut Street intersection. Both intersections are analyzed below.

Twenty-six accidents were non-reportable, and there were no collisions with bicyclists or pedestrians. Six accidents occurred between 9:00 AM-12:00 PM, 6 accidents occurred between 12:00 PM-3:00PM, and 7 accidents occurred between 3:00 PM-6:00 PM. Of the 22 reportable accidents:

- There were 3 rear end collisions, 4 right angle collisions, 4 collisions classified as “other,” and 3 overtaking collisions.
- 4 accidents (18%) occurred when the pavement was wet.
- 10 of the 39 vehicles (26%) involved in reportable accidents were southbound, 5 vehicles (13%) were eastbound, 6 vehicles (15%) were westbound, 6 vehicles (15%) were northbound, and 5 vehicles (13%) were headed northwest.
- 9 of the 39 vehicles (23%) were turning prior to the accident, and 4 vehicles (10%) were stopped in traffic.

Failure to yield right-of-way was cited as a cause of the accident 5 times, *unsafe speed* was cited 4 times, and *unsafe lane change* was cited 3 times.

3.2.5.17 Intersection: Church Street

Five accidents occurred at the Route 32-Church Street intersection, and 4 were non-reportable. The single reportable accident was a single-car collision with a sign post of a vehicle headed northeast.

3.2.5.18 Intersection: Junction NY 208-Chestnut Street

Seventeen accidents occurred at the Route 32-Route 208-Chestnut Street intersection, 7 of which were non-reportable. There were no collisions with bicyclists or pedestrians. Of the 10 reportable accidents:

- There were 3 rear end collisions and 3 right angle collisions.

¹ It is possible that vehicles characterized as traveling southbound in the accident report could also be considered traveling westbound.

² It is unclear on which approach southbound vehicles are traveling. It is possible this refers to eastbound/westbound vehicles turning or vehicles exiting the intersection and headed southbound.



- 6 of the 19 vehicles (32%) involved in reportable accidents at this intersection were southbound, 5 vehicles (26%) were northbound, and 3 vehicles (16%) were eastbound.
- 6 of the 19 vehicles (32%) were turning prior to the accident.

Failure to yield right-of-way was cited as a cause of the accident 3 times, *driver inattention* was cited 2 times, *unsafe speed* was cited 2 times, and *unsafe lane change* was cited 2 times.

3.2.5.19 Reference Marker 32 8602 1121

Eight accidents occurred at this reference marker, with 4 occurring at the Route 32-Broadhead Avenue intersection and 2 occurring at the Route 32-Henry Dubois Drive intersection. One accident was non-reportable. There were no collisions with bicyclists or pedestrians. Three accidents (43%) occurred between 3:00 PM-6:00 PM. Of the 7 reportable accidents:

- There were 2 collisions (29%) with a light support/utility pole.
- There were 2 right angle collisions and 4 collisions classified as “other.”
- 3 of the 13 vehicles (23%) involved in reportable accidents at this reference marker were southbound, 2 vehicles (15%) were westbound, 4 vehicles (31%) were northbound, and 3 vehicles (23%) were eastbound.
- 3 of the 13 vehicles (23%) were turning left prior to the accident, and 2 vehicles (15%) were stopped in traffic.

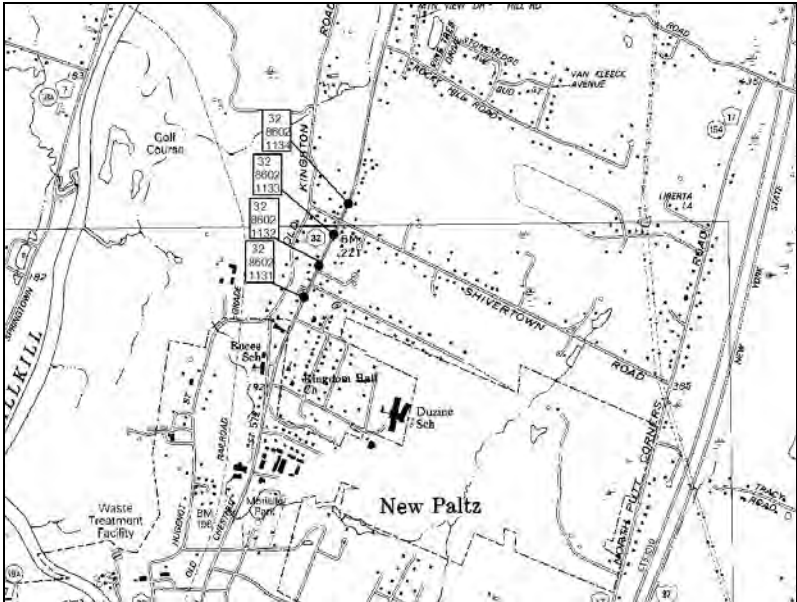
Failure to yield right-of-way was cited as a cause of the accident 3 times and *view obstructed/limited* was cited 2 times.

3.2.5.20 Safety on Route 32 North

Figure 3-20 shows the reference marker locations of the accidents that occurred within the HAL on Route 32 North.

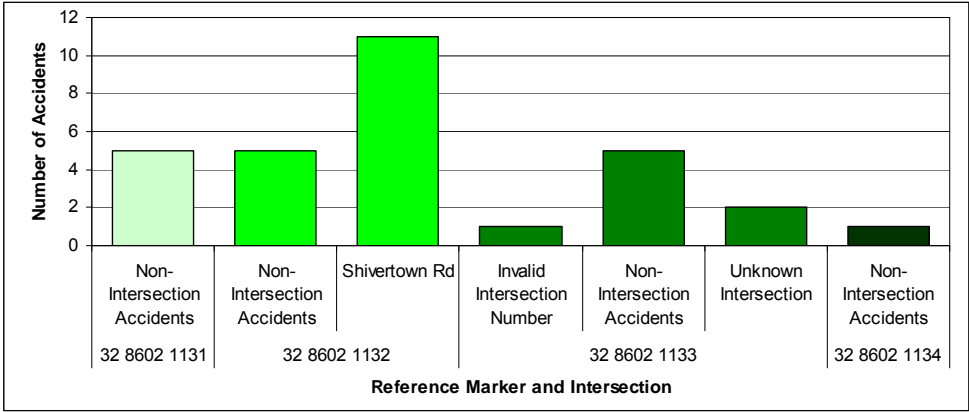


Figure 3-20: Route 32 High Accident Location Reference Markers 1131-1134



There were a total of 30 accidents between 1 June 1999 and 31 May 2002 on the section of Route 32 from Reference Marker 32 8602 1131 to Reference Marker 32 8602 1134. The locations of the accidents by reference marker and intersection, when known, are given in Figure 3-21.

Figure 3-21: Locations of Accidents from Reference Marker 32 8602 1093 to Reference Marker 32 8602 1096



Of these 30 accidents, 9 were non-reportable and 77% occurred on a weekday. The following statistics are based on the 21 reportable accidents:

- No accidents involved a bicycle or pedestrian, but there were 3 collisions with an animal and 1 collision with a tree.
- 11 accidents occurred at the Shiverstown Road intersection.
- Accidents were not concentrated during a specific time period but generally peaked in the mid-afternoon hours between 12:00 PM and 3:00 PM.
- 9 accidents (43%) were right angle collisions, 4 (19%) were rear end collisions, and 6 (29%) were classified as “other.”
- 81% of accidents occurred when the weather was clear or cloudy, 81% occurred on dry pavement, 10% occurred when the pavement had snow/ice, and 10% occurred when the pavement was wet
- 16 of the vehicles (44%) involved in these accidents were southbound vehicles, 9 (25%) were northbound vehicles, and 7 (19%) were eastbound vehicles
- Out of the 36 vehicles involved in reportable accidents, 4 vehicles (11%) were turning prior to the accident.

Failure to yield right of way was cited 9 times, *pavement slippery* was cited 3 times, *animal's action* was cited 3 times, and *following too closely* was cited 2 times as apparent factors in the accidents.

In addition to an analysis of the entire road segment, there were 4 accident clusters that were analyzed separately.

3.2.5.21 Reference Marker 32 8602 1131

Five accidents occurred at this reference marker with none occurring at a specific intersection. Two accidents were non-reportable. Of the 3 reportable accidents:

- 2 accidents (67%) were collisions with an animal.
- 2 accidents (67%) occurred between 9:00 PM-12:00 AM.
- All 3 reportable accidents were single-car collisions.
- 2 of the vehicles were southbound, and 1 vehicle was northbound.
- All 3 vehicles were going straight ahead prior to the accident.

Pavement slippery was cited as a cause of 1 of the accidents, *animal's action* was cited as a factor in the other 2 accidents.



3.2.5.22 Reference Marker 32 8602 1132

Sixteen accidents occurred at this reference marker with 11 occurring at the Route 32-Shivertown Road intersection.¹ Three accidents were non-reportable, and there were no collisions with bicyclists or pedestrians. Of the 13 reportable accidents:

- There was 1 collision with an animal and 1 collision with an earth element/rock cut/ditch.
- The pavement was wet in 2 of the accidents.
- There were 7 right angle collisions, 2 rear end collisions, 2 left turn (against other car) collisions, and 2 single-car collisions.
- 12 of the 24 vehicles (50%) involved in reportable accidents were southbound, 6 vehicles (25%) were eastbound, and 3 vehicles (13%) were northbound.
- 3 of the 24 vehicles (13%) were turning left prior to the accident.

Failure to yield right-of-way was cited as a cause of the accident 8 times.

3.2.5.23 Intersection: Shivertown Road

Eleven accidents occurred at this intersection, of which 1 accident was non-reportable. There were no collisions with bicyclists or pedestrians. Of the 10 reportable accidents:

- There were 7 right angle collisions.
- The pavement was wet in 2 of the accidents.
- 8 of the 19 vehicles (42%) involved in reportable accidents at this intersection were southbound, 6 vehicles (32%) were eastbound, and 3 vehicles (16%) were northbound.
- 2 of the 19 vehicles (23%) were turning left prior to the accident.

Failure to yield right-of-way was cited as a cause of the accident 7 times.

3.2.5.24 Reference Marker 32 8602 1133

Eight accidents occurred at this reference marker with none occurring at a specific intersection. Three accidents were non-reportable, and there were no collisions with bicyclists or pedestrians. There was 1 single-car collision with a tree. Of the 5 reportable accidents:

- There were 2 right angle collisions and 2 rear end collisions.

¹ Figure 3-20 indicates that Reference Marker 32 8602 1132 is further from Shivertown Road than Reference Marker 32 8602 1133. However, the accident reports indicate Shivertown Road intersects Route 32 at Reference Marker 32 8602 1132. We have represented the data in the police reports using the reference marker in the accident report, not Figure 3-20.



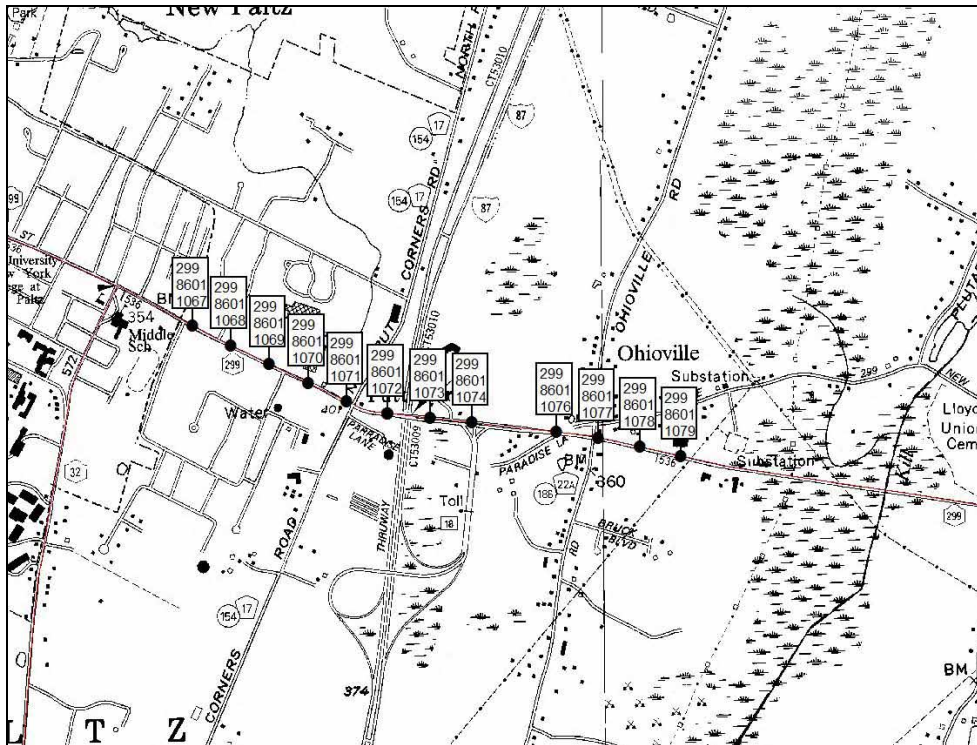
- 5 of the 9 vehicles (56%) involved in reportable accidents were northbound, 2 vehicles (22%) were southbound, 1 vehicle (11%) was eastbound, and 1 vehicle (11%) was westbound.
- 1 of the 13 vehicles (11%) was turning right prior to the accident.

There was no pattern in apparent factors in the accidents as no single factor was cited more than once.

3.2.5.25 Safety on Route 299

NYSDOT has retained a safety expert to conduct a detailed accident analysis for the Route 299 roadway segments of concern. The segment of Route 299 being analyzed is shown in Figure 3-22.

Figure 3-22: Route 299 HALs



To help interpret the frequency of crashes that occur at intersections within New Paltz, the Institute of Transportation Engineers has established procedures for statistically analyzing crash data to determine whether the actual accident rate differs significantly from the statewide-average.¹ The resulting Critical Accident Rate is compared to the Actual Accident Rate. If the Actual Rate exceeds the Critical Rate (ratio >1.0), the intersection is considered to be a High Accident Location.

Table 3-14 shows the calculated accident rate at each intersection and the calculated critical accident rate. The data are expressed in accidents per million entering vehicles (MEV).

Table 3-14: Accident Summary for New Paltz Intersections, Based on Accidents Occurring June 1999 – May 2002

Inter. Num.	Intersection	Total					Accident Rate (MEV)		Critical Rate	Actual/ Critical Ratio	HAL
							Actual Rate				
1	NY 299 - NY 208	8	0	1	2	5	0.42		1.31	0.32	
5	NY 299 - Front Street/Plattekill Ave	12	0	6	2	4	0.76		0.76	1.00	
6	NY 299 - NY 32 South	17	0	3	6	8	0.76		1.26	0.60	
8	NY 299 - Putt Corners Road	36	0	12	9	15	1.08		1.15	0.93	
9A	NY 299 - NYS Thruway On-Ramp	18	0	6	4	8	0.57		0.58	1.15	HAL
10	NY 299 - Ohioville Road	20	0	6	5	9	0.84		1.25	0.67	
11	NY 299 - Springtown Road	3	0	0	2	1	0.28		0.57	0.50	
22	NY 299 - Libertyville Road	3	0	2	1	0	0.38		0.61	0.63	
25	NY 299 - Water Street/Hugenot Road	1	0	0	1	0	0.08		0.80	0.10	
26	NY 299 - Cherry Hill Road	12	0	0	6	6	0.54		1.27	0.42	
2	NY 32 - North Front Street	4	0	0	3	1	0.33		1.47	0.23	
3	NY 32 - Henry Dubois Drive	2	0	2	0	0	0.14		0.53	0.27	
4	NY 32 - Shivertown Road	11	0	6	4	1	1.05		0.84	1.24	HAL
7	NY 32 - Hasbrouck Avenue	1	0	1	0	0	0.09		0.84	0.11	
12	NY 32 - South Putt Corners Road	6	0	5	1	0	0.58		0.57	1.02	HAL
17	NY 32 - Brookside Road	5	0	1	1	3	0.55		1.06	0.52	
19	NY 32 - Horsenden Road	5	0	1	3	1	0.46		0.56	0.82	
24	NY 32 - Jansen Road	11	0	3	4	4	1.03		0.57	1.82	HAL
14	NY 208 - Cedar Lane Road/Jansen Road	4	0	1	0	3	0.59		1.15	0.52	
15	NY 208 - Hasbrouck Avenue	3	0	2	1	0	0.39		0.61	0.64	

MEV - Million Entering Vehicles
N/R - Non-Reportable Accidents
PDO - Property Damage Only

The analysis surfaces 4 intersections that are also within the NYSDOT high accident roadway segment list:

- Route 32/Jansen Road,
- Route 32/Shivertown Road
- Route 299/NYS Thruway On-Ramp
- Route 32/South Putt Corners Road

Route 299/Front Street/Plattekill Avenue is a borderline high accident intersection, with an Actual/Critical ratio of 1.0.

¹ This analysis is based on calculating a Critical Accident Rate for the intersection and comparing the Critical Accident Rate with the average rate for similar intersections in a region/state. The analysis determines whether there is a significant statistical difference such that it can be determined that a high accident rate is caused by roadway/intersection/behavior elements as opposed to random factors. Source: ITE, Manual of Traffic Engineering Studies.



Detailed charts of the following accident characteristics for reportable accidents, except where noted, are available in Appendix D:

- Day of week (includes non-reportable accidents)
- Time of day
- Type of accident
- Manner of collision
- Weather, road surface condition, and light condition
- Direction of travel
- Pre-accident action
- Apparent factors

3.2.6 Special Event Traffic

The most acute traffic congestion in New Paltz occurs during special events. During special event weekends it is common for traffic to queue on NY 299 from downtown New Paltz through the New York State Thruway tollbooths. The project team observed this extreme congestion during the October 2003 origin-destination study. Traffic counts and observations made during this study recorded a significantly higher percentage of out of state license plates as compared with the weekday count. Cross-town travel times increased by 10 minutes or more.

This degree of congestion often causes many drivers to seek alternate routes in and around New Paltz during peak events. In this way, special event traffic can cause secondary impacts on local roads throughout the entire network. Special event congestion may also hinder access and response time for emergency vehicles, particularly at key network chokepoints such as at the Wallkill River Bridge or at the Route 299 intersections.

Table 3-15 shows the major special events that take place in the New Paltz area.



Table 3-15: Month and Location of Special Events in New Paltz, Estimated Daily Attendance

Event	Month	Location	Estimated Daily Attendance	General Trend of Attendance
Ulster County Fair	August	Ulster County Fairground, Libertyville Road	10,000	Increasing
Woodstock-New Paltz Art and Craft Fair	May and September	Ulster County Fairground, Libertyville Road	3,000 - 6,000	Steady
Taste of New Paltz	September	Ulster County Fairground, Libertyville Road	2,500	Increasing
Colonial Street Festival	August	Huguenot Street	2,000	Steady
Elting Memorial Library Antiques Show	June and September	Ulster County Fairground, Libertyville Road	1,750	
St. Joseph's Festa	July	34 South Chestnut	1,650	Steady
Apple Fest	October	Dutch Reformed Church, Huguenot Street	500 - 750	Steady
Lobster Fest	September	Rivendell Winery	550	Unknown
Opening Day at Huguenot Street	May	Huguenot Street	50 - 80	Increasing
SUNY New Paltz Graduation	May	SUNY Campus	3,000	Steady
Independence Day Celebration	July	SUNY New Paltz campus, also Ulster County		
New Paltz Regatta	May	Walkill River		Increasing
Arts on the Bridge Festival	June	Walkill River Bridge		
Community Festival in the Park	August			
Elting Memorial Library Fair	July	Main Street, New Paltz		
Hudson Valley Rail Trail Winterfest	January			

As discussed above NYSDOT conducted roadway volume counts for select roadway segments. One set of counts was conducted twice – once during the month of May and a second time in July during the week of the Ulster County Fair. Table 3-16 shows average hourly volumes for this particular directional flow, and indicates that traffic during the Fair averages 35-40% heavier during common travel periods.

Table 3-16: Comparison of Average Roadway Volumes on Route 299 Eastbound Near Libertyville Road

		Weekdays			Weekends		
		3pm-4pm	4pm-5pm	5pm-6pm	3pm-4pm	4pm-5pm	5pm-6pm
Route 299 500' East of Libertyville Road, EB	first week of May 2003	268	270	292	331	333	328
Route 299 1/4 mile East of Libertyville Road, EB	last week of July 2003	416	416	476	595	518	532
	% difference	36%	35%	39%	44%	36%	38%

Twenty-four hour road tube counts taken by NYSDOT were also placed during special events such as the Ulster County Fair (July), Walkill River Regatta (April) and the SUNY New Paltz graduation (May). A review of the traffic volume figures indicates that the traffic volume on Libertyville Road where the Fairgrounds are located shows an increase over the normal peak hour. This difference is most



pronounced when the Fair closes at night whereby it has northbound traffic over 600 vehicles per hour compared to the normal 100 vehicles per hour. For events at the Ulster County Fairgrounds large parking areas are provided on the opposite side of Libertyville Road.

Ulster County Area Transit (UCAT) offers a shuttle service for special events upon request by a municipality. Most of the events that UCAT serves are in small towns with small areas to maneuver in. Thus, UCAT tends to use 30' or 35' buses with a total capacity of up to 60 passengers.

Generally traffic planning/management for special events is limited, focused on access/parking at the venues only. Significant improvements to traffic flow during special events can result by including traffic management within the overall special event planning framework.

3.3 ORIGIN-DESTINATION SURVEY

A primary purpose of an origin-destination survey is to help build a more complete understanding of travel behavior within and through an area. In particular, the survey quantifies vehicle trips that begin or end inside or outside of New Paltz. By establishing a screen line around the Town of New Paltz and recording license plate tag information at major entry and exit points, we are able to construct a table of trip routes and tendencies. This understanding of trip routing, travel times, and volumes is an important input for subsequent traffic modeling efforts for the Town of New Paltz.

The New Paltz origin-destination survey was conducted on two separate days to capture both PM weekday peak trip characteristics and weekend midday trends. The PM weekday peak origin-destination survey was conducted on Wednesday, October 15, 2003 from 3:30 PM to 6:00 PM. The conditions were clear and windy.

The weekend origin-destination survey was conducted on Saturday, October 18, 2003. The conditions were overcast and cool. For most of the Saturday survey extensive vehicle queuing along Route 299 through the NYS Thruway tollbooths was observed, attributable to foliage viewers and a nearby Fall Festival. The Saturday survey was conducted from 11AM to 3PM. A significantly higher percentage of out of state license plates was recorded during the weekend count as compared with the weekday count.

To collect the license plate data, traffic technicians were assigned to designated positions at major entry and exit points surrounding the Town of New Paltz. For both counts, the traffic technicians were posted at the following locations (Figure 3-23):

- Station #1: NY 299 west of bridge over Wallkill River
- Station #2: Route 32 north of Horsenden Road
- Station #3: Route 208 south of Jansen Road
- Station #4: Route 32 south of Jansen Road
- Station #5: NY Thruway (I87) Access Road
- Station #6: NY 299 at NY Thruway Access



Figure 3-23: New Paltz Origin-Destination Survey Area (Stations Where Data Were Collected)



Figure 3-24, a schematic overview of the area, shows the total number of entering and exiting vehicles captured in the survey at each of the six stations (screenlines) during the Wednesday PM peak period (2.5 hours). The schematic shows the highest volumes at the east and west NY 299 station and the NY 32 south station.



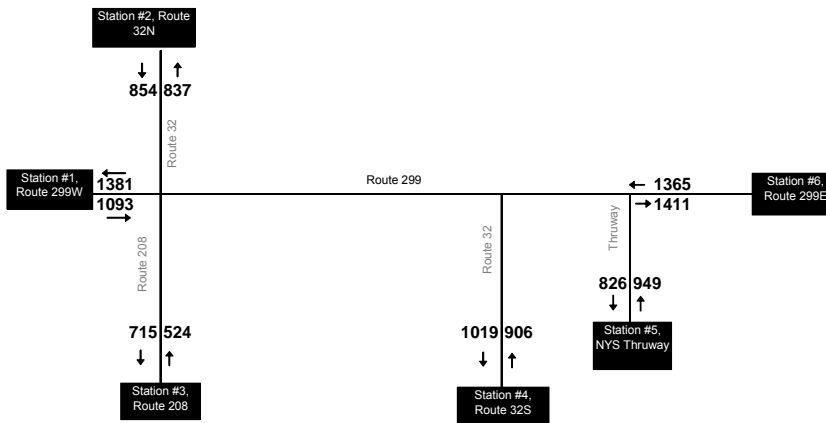
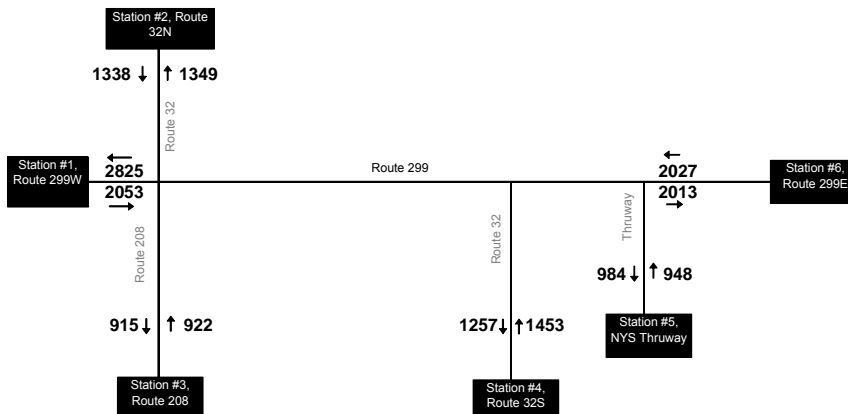
Figure 3-24: Total Trips Captured in Survey - Wednesday PM Peak (2.5 hours)

Figure 3-25 shows the total number of entering and exiting vehicles captured in the survey at each of the six stations during the Saturday midday peak period. The schematic shows the highest volumes at the east and west NY 299 Stations. The total incoming number of vehicles at Station #5 (NYS Thruway) shown in Figure 3-25 is not complete due to data collection difficulties at this location.

Figure 3-25: Total Trips Captured in Survey - Saturday Midday Peak (approx. 4 hours)

A data matching subroutine was employed to match each license plate entry according to its entrance and exit point. Matches were screened based on a maximum reasonable travel time between stations. Travel times between all station pairs were also obtained from direct trials. For the PM weekday count, these



times ranged from 10 to 20 minutes depending on their distance and relative level of congestion experienced. For the midday Saturday count the travel time maximums were as high as 35 minutes. This higher through travel time is directly related to the higher traffic levels experienced during the survey period.

3.3.1.1 Wednesday PM Peak Period Results

Table 3-17 shows the total number of trips between the six stations during the Wednesday PM peak (3:30 PM – 6:00 PM) survey. We can assume that the trips displayed within the ‘other’ row/column either:

- Began their trip or had a final destination within the study area,
- made an intermediate stop within the study area,
- entered or exited the study area along a route not surveyed, or
- were not matched in our analysis.

For example, of the 837 trips entering the study area at Station 2 (Route 32 North), 56 trips traveled straight through and exited at Station 6 (Route 299 East), while 615 trips ended their trip within the study area, made an intermediate stop within the study area, or exited the study area along a route not surveyed. Similarly, of the 798 trips exiting at Station 5 (NYS Thruway), 65 trips entered at Station 1 (Route 299 West) while 626 trips began their trip within the study area, made an intermediate stop within the study area, or entered the study area along a route not surveyed.

Table 3-17: Total Trips between Stations- Wednesday PM Peak¹

	Station 1, Route 299W	Station 2, Route 32N	Station 3, Route 208	Station 4, Route 32S	Station 5, NYS Thruway	Station 6, Route 299E	Other	Total
From Station 1, Route 299W	--	20	30	55	65	94	676	940
Station 2, Route 32N	57	--	32	43	34	56	615	837
Station 3, Route 208	23	15	--	26	17	28	321	430
Station 4, Route 32S	47	22	29	--	35	43	610	786
Station 5, NYS Thruway	78	44	47	61	--	27	669	926
Station 299E	104	41	51	68	21	--	765	1,050
Other	964	571	495	750	626	1,026	--	
Total	1,273	713	684	1,003	798	1,274		

Figure 3-26 - Figure 3-31 show the percentage of traffic entering at each station that also exits within a time period that would classify the traffic as through traffic.

¹ Note that the totals in tables may not match those shown in figures because the records marked as a ‘miss’ were removed for the results in tables.



Figure 3-26: Percentage of Traffic Entering New Paltz on Route 299W (Station #1) That Travels Through New Paltz (PM Peak Period)

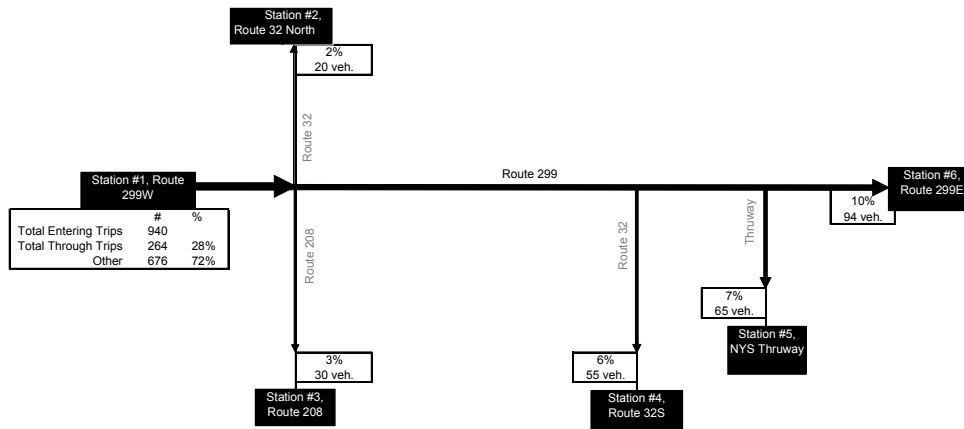


Figure 3-27: Percentage of Traffic Entering New Paltz on Route 32 North (Station #2) That Travels Through New Paltz (PM Peak Period)

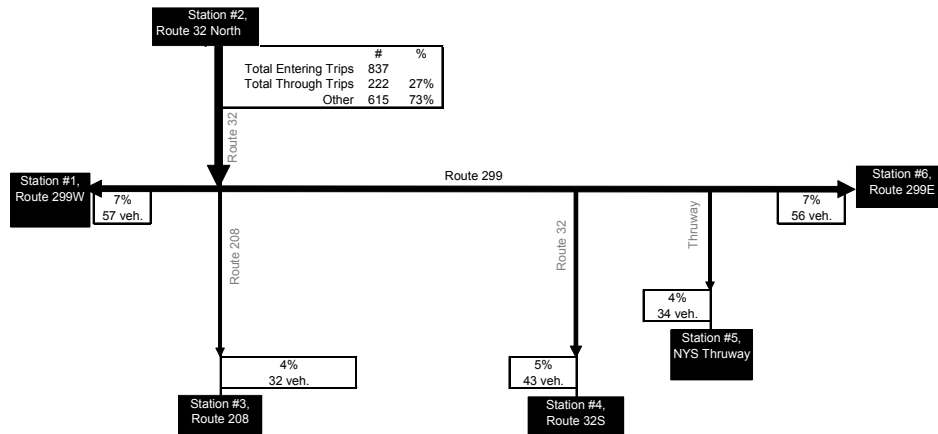


Figure 3-28: Percentage of Traffic Entering New Paltz on Route 208 (Station #3) That Travels Through New Paltz (PM Peak Period)

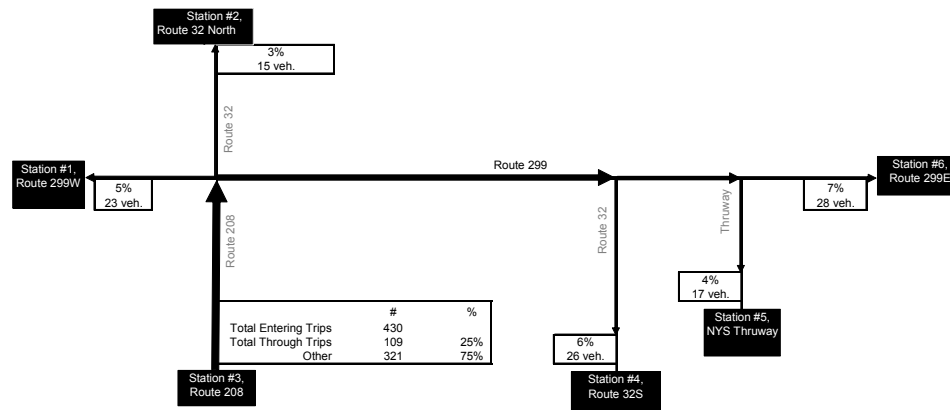


Figure 3-29: Percentage of Traffic Entering New Paltz on Route 32 South (Station #4) That Travels Through New Paltz (PM Peak Period)

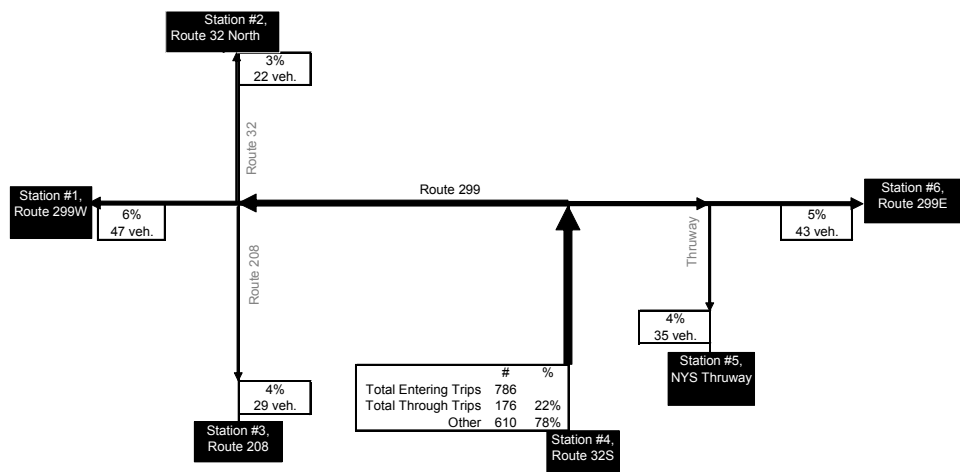


Figure 3-30: Percentage of Traffic That Enters New Paltz on the NYS Thruway (Station #5) That Travels Through New Paltz (PM Peak Period)

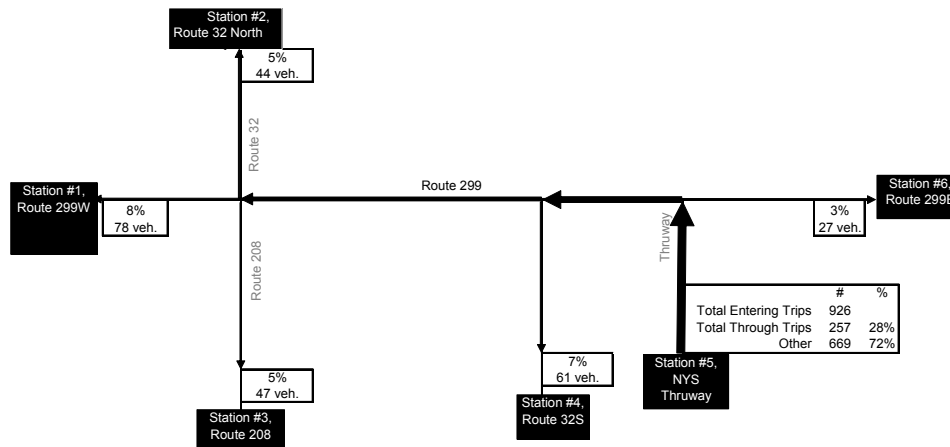
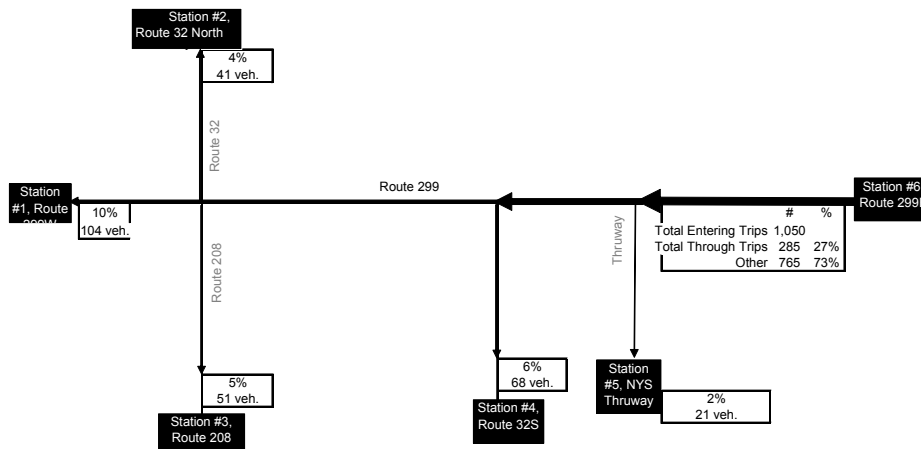


Figure 3-31: Percentage of Traffic That Enters New Paltz on Route 299 East That Exits New Paltz (PM Peak Period)



During the PM peak period, approximately 22-31% of all traffic entering on the main arterial roadways to New Paltz also exits within a time period that would classify the traffic as through traffic. The matching procedure used in this survey will tend to under-estimate the through traffic due to missed license plate tags or other errors that could occur during such a survey (e.g. transcription errors). For this reason it is very probable that the through travel rates tend toward the higher end of the range for all stations.



By comparing the number of entering vehicles in the license plate survey to actual counts of vehicles conducted during a similar time period, we have determined that the license plate survey did not survey 100% of the vehicles entering at each station. Actual traffic counts conducted during the same time period indicate that entering traffic closely matched the entering volumes recorded in the license plate survey. The supporting data are shown in Table 3-18.

Stations 5 and 6 – the NYS Thruway exit and Route 299 East – showed an undersampling of 20-22%. This is due to the generally heavier traffic flows at these two locations, which makes recording tag numbers more difficult and prone to errors or “misses”.

Table 3-18: Comparison of Vehicles Recorded in License Plate Survey to Actual Traffic Counts at Stations, PM Peak Hour

Enter at:	# of Vehicles Recorded During 2.5 Hour License Plate Survey	Adjusted to Peak Hour	Corresponding Peak Hour Count
Route 299 West	1,093	442	435
Route 32 North	854	345	389
Route 208	524	212	233
Route 32 South	906	366	304
187	949	384	490
Route 299 East	1,365	552	702

3.3.1.2 Saturday Midday Results

Table 3-19 shows the total number of trips between the six Stations during the Saturday midday (11:00 AM – 3:00 PM) survey. As before, we can assume that the trips displayed under the vertical ‘other’ column either: 1) had a final destination within the study area, 2) made an intermediate stop within the study area, 3) exited the study area along a route not surveyed, or 4) were not matched in our analysis. Similarly, we can assume that trips displayed under the horizontal ‘other’ column either: 1) began their trip within the study area, 2) made an intermediate stop within the study area, 3) entered the study area along a route not surveyed, or 4) were not matched in our analysis.

For example, of the 907 trips entering the study area at Station 2, 46 trips exited at Station 6, while 738 trips either ended their trip within the study area, made an intermediate stop within the study area, or exited the study area along a route not surveyed. Similarly, of the 970 trips exiting at Station 5, 112 trips entered at Station 1 while 723 trips began their trip within the study area, made an intermediate stop within the study area, or entered the study area along a route not surveyed.



Table 3-19: Total Trips Between Pairs- Saturday Midday Peak

Station>	Station 1, Route 299W	Station 2, Route 32N	Station 3, Route 208	Station 4, Route 32S	Station 5, NYS	Station 6, Route 299E	Other	Total
Station 1, Route 299W	--	55	56	78	112	201	1,513	2,015
Station 2, Route 32N	56	--	23	28	16	46	738	907
Station 3, Route 208	50	43	--	50	31	58	620	852
Station 4, Route 32S	101	54	53	--	44	143	1,054	1,449
Station 5, NYS Thruway	149	27	19	21	--	17	706	939
Station 6, Route 299E	267	81	43	90	44	--	1,493	2,018
Other	2,091	1,074	687	918	723	1,379	--	
Total	2,714	1,334	881	1,185	970	1,844		

3.3.1.3 Findings of the Origin-Destination Survey

The New Paltz license plate survey examined trip routes through New Paltz during a weekday PM peak period and a Saturday midday period.

The following conclusions can be drawn from the license plate survey:

- It is reasonable to expect that 22-30% of all traffic entering New Paltz on the main arterials also exit New Paltz within a time frame that would classify such traffic as traveling through the town to destinations external to the town. These percentage estimates hold for both PM peak hour and Saturday peak hour periods.
- The largest through-traffic volumes were recorded at the following locations:
 1. NY 299 over Wallkill River (Station #1, both PM and Saturday peak),
 2. NY 299 at Thruway Access (Station #5, both PM and Saturday peak), and
 3. NY 32 south of Jansen Road (Station #4, for the Saturday peak).
- During the PM peak the highest entry volumes were recorded at Station 6 (NY 299 at Thruway Access). For these trips entering at Station 6, the largest percentage of through trips exited at Station 1 (NY 299 over Wallkill River). The largest number of exiting vehicles were observed at both Station 1 (NY 299 over Wallkill River) and at Station 6 (NY 299 at Thruway Access).
- The PM peak survey likely captured a number of commuting trips originating within the cordon area on their way home from work.
- During the weekend midday period the highest entry volumes were recorded at Station 1 (NY 299 over Wallkill River) and 6 (NY 299 at Thruway Access). For the trips entering at Station 1, the largest percentage of through trips exited at Station 1. Conversely, for the trips entering at Station 6, the largest percentage of through trips exited at Station 1.



- A significant percentage (>15%) of through traffic tracked in this survey traveled along NY 299 between Station 1 (NY 299 over Wallkill River) and Stations 5 and 6 (NY 299 at Thruway Access, and Route 299 easterly of the Thruway Access).

3.4 TRAFFIC CONTROL SIGN INVENTORY

A sign inventory was taken along all of the major roadways within the Town and where the project intersections were located. These data were used as part of the traffic model input for speed limits, intersection control type, and curve warning speed limits. Schematic diagrams showing sign legend and approximate location are included in Appendix E.

3.5 BICYCLE AND PEDESTRIAN FACILITIES

Currently there are no formal, adopted Bicycle/Pedestrian Plans for the Town or Village of New Paltz. The Town's Comprehensive Master Plan, adopted in 1995, sets forth the general policy to

“(P)romote pedestrian circulation and freedom of movement by the establishment of footpaths, sidewalks, and bike paths for nonvehicular travel.” The Master Plan generally encourages “installing pedestrian and bicycle ways”. More specifically, the Master Plan recommends “(E)ither painting stripes on streets for bicycles or constructing new pedestrian/bicycle ways on Route 32 North and 208 South.”

Both the Town and Village subdivision and zoning ordinances provide the respective Planning Boards with the authority to require sidewalk and pathway construction on arterial, collector, and local roadways. The Planning Board may also require the establishment of easements to provide for eventual pedestrian passage (Village Zoning Ordinance, Chapter 31, Article IV-45).

Neither the Town and Village Zoning and Subdivision Ordinances provide specific authority with regard to establishing bicycle infrastructure such as off road pathways or bicycle racks. In addition neither the Town nor Village has a formal Bicycle/Pedestrian Plan, which would set forth goals and objectives for improving bicycle/pedestrian mobility and safety. Such a Plan would typically culminate with a specific, prioritized list of needs, which can include specific improvements (e.g. crosswalks, pedestrian phases at signals, official designations of bicycle routes, etc.) and needs for more detailed study of specific areas for future improvements.

The Ulster County Regional Transportation Plan describes a Long-Term Bicycle/Pedestrian Plan as follows:

“A long-term strategic plan provides a consistent direction for subsequent actions and investment decisions. This is important because enhancing bicycle and pedestrian facilities will continue and evolve over time. As communities grow, the magnitude and location of needs change but resource constraints remain.”



3.5.1 Bicycle/Pedestrian Subcommittee

The Ulster County Regional Transportation Plan recommends that local governments begin by creating a Transportation Committee to address bicycle/pedestrian needs. Under the aegis of this project, the CAC commissioned a Bicycle/Pedestrian Subcommittee in July 2004, which is charged with advancing the bicycle/pedestrian improvements recommended by this project (Table 3-20).

Table 3-20: Members of the Bicycle/Pedestrian Subcommittee of the CAC

Bike/Ped Subcommittee
Alan Stout, Chair
Steve Greenfield
Sheila Hamilton
Raymond Zappone
Al Wegener
Lee Reich
Julia Walsh
Maureen Rogers
Rebecca Rotzler

The Committee will meet periodically throughout the remaining phases of the Project. Future planned meetings will be posted on the project website, as well as meeting minutes and memorandums/documents. Memorandums and documents pertaining to bicycle and pedestrian issues are posted under Study Documents as they become available.

The Committee's focus is on recommending, refining and prioritizing various bicycle and pedestrian improvements formulated throughout the Phase A portion of the project. Current projects include mapping the location of bicycle racks, a survey of hazardous road grates, exploring bicycle linkages to the Rail Trail, and working toward improving the roadway crossings of the Rail Trail.

The following sections describe existing and proposed bicycle and pedestrian facilities in the Town and Village of New Paltz.

3.5.2 Bicycle Facilities

A major facility for bicyclists as well as pedestrians is the Wallkill Valley Rail Trail, a converted railroad right-of-way, which officially opened in October 1993. Within the Town limits, the Town and Village own the Rail Trail. The trail runs parallel to the Wallkill River at the west limit of the Village and Town and it stretches 12.2 miles from the New Paltz/Rosendale town line to the Gardiner/Shawangunk town line on the south.

It was noted during the sign inventory that Henry DuBois Drive had bike route signs posted. However, none of the roadways in town have designated lanes for bicycles. Thus, the rules of the road apply where bicycles share the travel way with vehicles.



Of particular interest to regional planning officials, which is reinforced by this project, is the need to establish paved and lined shoulders on the County roadways in Town. The Ulster County Transportation Plan recommends providing “continuous shoulders on state, county, and local roads.” Past efforts were focused on establishing a paved shoulder on Libertyville Road (CR 6) from Route 299 to the Fairgrounds. These efforts were abandoned. Another high priority need is to establish a bicycle lane on South Putt Corners Road (CR 17) from Route 299 to the High School.

The County Highway Commission maintains 450 miles of County Roads in Ulster County. The County Highway Department has the resources to address improvements to approximately 50 miles of roadway every year. Such improvements include superficial improvements to the paved surface such as crack sealing, and can also include more comprehensive reconstruction of the road base and/or surface drainage system. In many cases, County Roads are within restricted rights-of-way, ranging from 32’ to 50’ in width.

Given staffing, scheduling, and budgetary constraints, providing bicycle lanes, or extending paved surfaces by 2’ on each side of the highway, has not been a priority of the County Highway Department. Extending paved surfaces often requires more extensive reconstruction. For example drainage facilities or utilities may need to be relocated or, more significantly, the compacted subsurface roadbed may need to be extended beyond the existing paved surface. For these reasons providing additional paved shoulders may require more extensive reconstruction as opposed to a superficial treatment on the edges of the existing travel way.

The Ulster County Transportation Plan notes that “most bicycling in Ulster County is done on or along public roads...” and goes on to recommend 4’ – 6’ paved shoulders as the appropriate shoulder width, providing bicycle/pedestrian safety as well as a recovery area for vehicles and an area to facilitate snow removal from the travel way. The Plan goes on to list Route 299 as a State Highway that has been designated as a future bicycle route by NYSDOT. With this designation future improvement projects along the Route 299 mainline will seek to incorporate a 6 foot paved shoulder. Once an adequate segment has been constructed with paved shoulders the route can be signed as an official bicycle route.

Figure 3-32 shows existing and future proposed bicycle routes or trailways in New Paltz.



Figure 3-32: Existing and Proposed Bicycle Routes in New Paltz

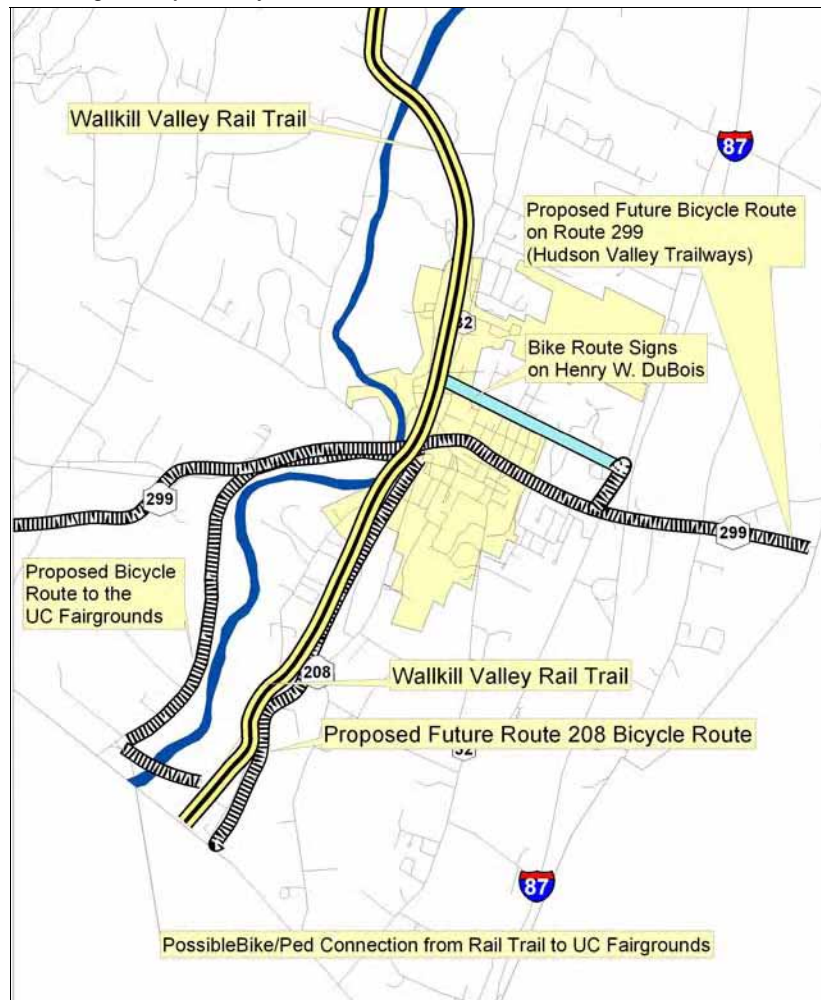


Figure 3-32 shows the existing Wallkill Valley Rail Trail and the signed bicycle route along Henry DuBois Drive. The remaining routes that are shown in Figure 3-32 show future potential bicycle route linkages that have been formally targeted or discussed at public meetings.

The proposed bicycle route on Routes 299 and 208 are shown as “Future Proposed Routes” on the Hudson Valley Bikeways and Trailways map (<http://www.transalt.org/info/maphudson.html>).



NYSDOT has committed to allowing the Route 299 right-of-way to be used to connect the Hudson Valley Trailway, a paved multi-use trail on the Maybrook Abandoned Rail right-of-way, with the Wallkill Valley Rail Trail. Future plans call for establishing a multi-use trail along the south side of the Route 299 right-of-way to Elting Corners Road, from which point the multi-use path would switch to the north side of Route 299 to North Putt Corners Road. At North Putt Corners Road, the formal trailway could extend to Henry DuBois Drive and thence to the Wallkill Valley Rail Trail.

The Ulster County Transportation Plan also mentions Route 32 as “not (being) indicated on the DOT Future Bike Route map, despite its providing useful connections. The Plan’s map showing “Major Bike Routes and Pedestrian Zones” (Figure 2.10) does, however show Route 32 and Henry DuBois Drive as a “Bike Route with Shoulder Improvements”.

Local interest in providing alternative access to the Ulster County Fairgrounds has focused on two potential alignments. One alignment follows the existing roadways on Route 299 and Libertyville Road (CR 7). Establishing this alignment as a safe bicycle route would involve constructing paved shoulders along the state and county routes. The second alignment involves a connection from the Wallkill Valley Rail Trail crossing the Wallkill River at a point near the Fairgrounds. Crossing the Wallkill would require a bridge or some other method to ferry pedestrians and bicycles. The Bike/Ped Committee is researching the possibility of this alignment, possibly in connection with a future event at the Fairgrounds.

The Bicycle-Pedestrian Subcommittee of the CAC has mapped out the locations of bicycle racks in town, and has determined areas where additional racks would be desirable (Table 3-21, Figure 3-33). Three other locations have been identified (not shown in Figure 3-33): New Paltz High School, Ulster County Pool, and Lenape School. In conducting this work the Committee determined that 4 locations could benefit by making the bike racks more visible. These are at Elting Library, La Stazione, Village Hall, and at the Ulster County Pool.

Table 3-21: Bike Rack Locations and Issues

Number	Location	Comment
1	Moriello Pool	10' Single Sided; against fence near entry gate
2	Village Pizza (Route 32)	12'; in front of Village Pizza
3	The Bicycle Rack – The Bakery	6' wave design; in front of shops
4	Elting Library	10' rear of building
5	Main Street Bistro	5'; on Church Street side of building
6	La Stazione	3'; at north end of building
7	The Gilded Otter	5'; in front of building
8	Gottlieb's Parking Lot, 30 Main Street	5'; NE corner of lot
9	Mountain Laurel School	5'; near school entrance
10	Village Hall	10'; west side near Bldg. Dept. entrance
11	Peak Performance Sport	10'; in front of building
12	NP Middle School	10'; in front of building
13	Ulster Savings Bank	10' in alcove along west side of building
14	New Paltz Plaza	5''; in front of movie theater
15	Teen Seen	6'; near rear entrance



Figure 3-33: Locations of Existing and Proposed Bicycle Rack Locations

The Committee also described general locations where bicycle racks would be useful. These locations are shown in letter code in Figure 3-33, and are described in Table 3-22.

Table 3-22: Proposed Bike Rack Locations

Letter Code	Location	Letter Code	Location
A	Ulster BOCES	H	Water Street Market
B	New Paltz Town Hall	I	Municipal Parking Lot on Plattekill Ave.
C	Parking Lot proximate to Huguenot Historic District, Ball field	J	Hasbrouck Park
D	Municipal Parking Area New WWT Plant	K	Mini Mall at Main St/Manheim Blvd
E	Post Office Plaza	L	Eckerd Plaza
F	Municipal Parking Lot Behind Main Street Bistro	M	Cherry Hill Plaza
G	Bus Station		



3.5.3 Pedestrian Facilities

The Village of New Paltz is centered on Route 299 with numerous shopping establishments, restaurants, access to Huguenot Street, nearby SUNY, local grade schools, the Elting Memorial Library, Hasbrouck Park, craft fairs and many festivals. Sidewalks currently exist and are in reasonable condition along Route 299, generally within the village limits between the Wallkill River and Putt Corners Road intersection. However sidewalks along Route 299 have not generally been constructed with curb ramps.

A few known exceptions for lack of sidewalks are in front of the New Paltz Plaza, the north side approaches to the Wallkill River Bridge, and along Mohonk Ave between Route 208 and Plains Road, which would be desirable to connect with the Rail Trail. Figure 3-34 shows the existing sidewalk network in New Paltz Village. As shown most residential streets intersection with Main Street do not currently have sidewalks.

Figure 3-34: Existing Sidewalk Network in New Paltz¹



¹ The sidewalks shown in Figure 3-34 come from a GIS datalayer provided by Ulster County Planning. The underlying orthophotograph shows more sidewalks than the datalayer. Where possible, these additional sidewalk segments were added manually to the figure. Sidewalks need to be field checked in subsequent phases of the project.



Both the Town and Village zoning ordinances provide guidance to the Planning Boards to “encourage the development of comprehensive bicycle and pedestrian circulation networks.” Throughout the zoning ordinance there appears to be substantial authority for the Planning Board to require construction of appropriate pedestrian facilities associated with development proposals. Establishing new sidewalks along public roads and streets should be a normal part of the site planning and land use permitting process. Further, desired off street/road connections for pedestrian travel should be established within a formal framework and plan for system-wide connectivity.

3.6 TRANSIT FACILITIES AND SERVICE

The New Paltz Bus Depot is centrally located at the Route 299 (Main Street)/Prospect Street intersection. Ulster County Area Transportation (UCAT) provides intercity service to Kingston and other Ulster County communities. UCAT also operates a local New Paltz shuttle which departs from the Depot four times daily to serve a 23-minute loop connecting SUNY with plazas along Route 299 (described below).

3.6.1 Intercity Bus Service

UCAT operates two intercity routes running Monday through Friday using the Bus Depot as a hub. Service to the Ulster County Community College and Kingston operates with five AM departure times and three PM departure times (\$1.50 fare). The Wallkill/Plattekill/New Paltz route operates with one AM and one PM departure time with stops in Rosendale, Modena, Gardiner, Wallkill, and the Kingston Plaza. UCAT also operates a Saturday service with stops at UCCC, Rosendale, and Woodstock.

The Bus Depot is a hub for other transportation service as well:

- Adirondack Trailways - provides service to and from the Port Authority in New York City.
- Arrow Bus Lines, Inc. - provides service between to the Poughkeepsie Railroad Station.
- Glenn Stagecoach Lines and Discount Taxi Company

A shuttle limo service is provided to the airport by Premiere Express with a pick-up and drop-off point at the New Paltz Plaza.

In July 2004 UCAT assumed the New Paltz to Newburgh service formerly served by Lester Lines. The schedule of this service has been modified to better serve the clientele, and to better connect to the other routes operating out of the Bus Depot. The Newburgh service currently has two AM departure times and three PM departure times, and costs \$1.00. UCAT currently has no plans to expand intercity services beyond those described above.

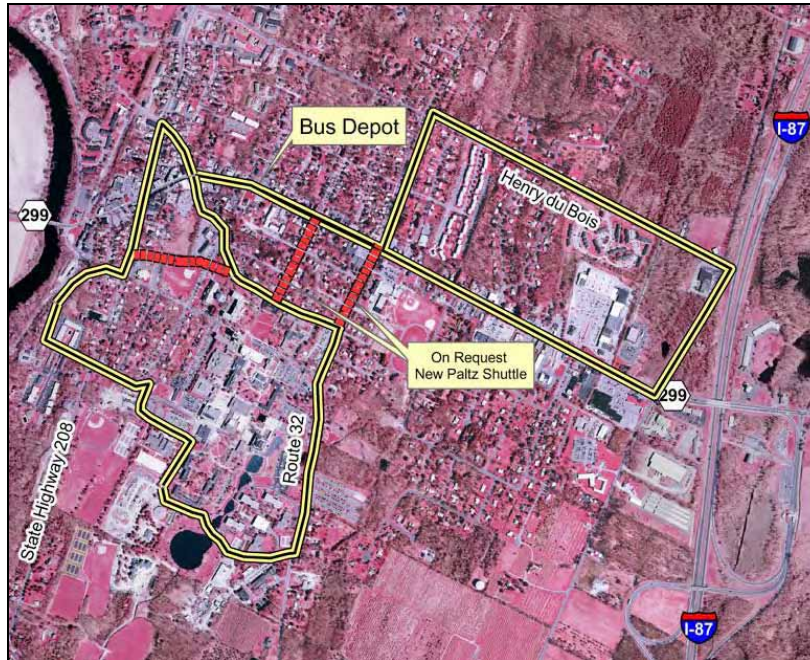
UCAT does not have any bus stations. UCAT is currently building a bus transit facility with space for administrative offices, training, indoor bus storage, and maintenance facilities. The facility is located in Kingston on Danny Circle, off of Golden Hill Drive. The other bus facility used by UCAT is the Bus Depot in New Paltz.



3.6.2 Local New Paltz Service

As mentioned, there is a UCAT shuttle circulator that operates in New Paltz. This service operates as a flagstop and does not have any fixed stopping points. The fare is \$0.75. The route of the New Paltz shuttle is shown in Figure 3-35. The shuttle departs the Bus Depot 4 times daily, twice each in the morning and afternoon. The published schedule and stops of the New Paltz shuttle are shown in Table 3-23.

Figure 3-35: Route of the UCAT New Paltz Shuttle



The New Paltz shuttle service officially starts at the Route 208/Main Street intersection and travels south to Southside Drive. The shuttle drives through the SUNY campus on the Southside Loop, emerging on Route 32 near the SUNY Service Building. The shuttle progresses north on Route 32 to Plattekill Avenue, thence westerly, then northerly on Plattekill Avenue back to Main Street. The shuttle then progresses easterly on Main Street to Manheim Boulevard and performs the northern circuit of its loop on Henry DuBois Drive and North Putt Corners Road. The shuttle serves the former Ames Plaza before completing its trip back to the Bus Depot.

UCAT offers an “On Request” service that can return any passenger back along any portion of the route after the shuttle completes its service to its last stop at UC Mental Health. A passenger can request that the shuttle bring them back to any point along the main service route. The bus driver has the discretion



to take alternate routes on returning an “On Request” passenger, which is why Oakwood, Hasbrouck Avenue, and Route 32 are highlighted in Figure 3-35, as these streets tend to be utilized more often for the On Request service.

Table 3-23: Schedule of the New Paltz Shuttle

Route 208/Main	852	1130	1252	1452
Mohonk Ave.	852	1130	1252	1452
Pencil Hill Rd.	852	1130	1252	1452
Southside Ave.	853	1131	1253	1453
Southside Loop	854	1132	1254	1454
SUNY NP	854	1132	1254	1454
Route 32	858	1136	1258	1458
Plattekill Ave.	859	1137	1259	1459
Main St.	900	1138	1300	1500
Main/Prospect	901	1138	1300	1500
North Manheim	901	1139	1301	1501
H. Dubois Rd.	902	1140	1302	1502
No. Putt Corners	903	1141	1303	1503
Ames Plaza	904	1142	1304	1504
Shop Rite Plaza	905	1143	1305	1505
UC Mental Health*	910	1148	1310	1510
Main/Prospect	915	1153	1315	1515
Route 32	*	*	*	*
Southside Loop	*	*	*	*
Southside Ave.	*	*	*	*
Pencil Hill Rd.	*	*	*	*
Mohonk Ave.	*	*	*	*
Route 208/Main	*	*	*	*
Hasbrouck Ave.	*	*	*	*
Plattekill Ave.	*	*	*	*
South Oakwood	*	*	*	*
Main/Prospect	920	1200	1320	1530

UCAT maintains general ridership records for their New Paltz services (Table 3-24). The data show fairly poor ridership performance for three of the four service times. The mid-day service (11:30 AM) shows the highest ridership performance.

Table 3-24: Annual Boardings on the New Paltz Shuttle, by Time of Route, 2003 and 2004

	9:00 AM	11:30 AM	1:00 PM	3:00 PM
2003	148	469	87	120
2004	137	635	88	206



UCAT generally tries to establish bus shelters along any of their routes. Currently UCAT does not own any bus shelters. There is one bus shelter that SUNY installed on Route 32, which is on the current circulator route. More bus shelters will be put up in the spring of 2005. The town and village have made recommendations but the final locations have not yet been decided.

According to UCAT, New Paltz could use several shelters. UCAT is in the process of going out to bid for the bus shelters, which will be offered to the towns in the county according to priority lists developed jointly by the municipalities and UCAT. The expectation is that UCAT will be able to install 2-3 new bus shelters each year.

The final rankings for bus shelters in the village in order of priority are:

1. Main and Prospect (in front of Trailways terminal)
2. This stop would be used by Trailways, Arrow, and UCAT. It would provide service to Newburgh, Poughkeepsie, and to the north. All logos of the different companies would be displayed.
3. Route 32 and Jewish Community Center near Broadhead Avenue
4. Route 32 and Henry DuBois Drive
5. Main Street at Teen Scene (Youth program)
6. South Manheim Boulevard and Plattekill Avenue

Other locations that may be considered are at Oakwood/Plattekill Avenue, Route 32 near the SUNY dormitories, Route 32 North near the Town Hall, within the former Ames Plaza, and Henry DuBois Drive by Meadowbrook. Currently housing proposals in front of the Village Planning Board may also provide reasonable locations for new bus shelters. There's a new senior citizen development that will need a bus shelter.

In addition to providing protection from the elements for transit riders, bus shelters are marketing devices for the transit service. They convey to the public that transit is active and permanent in the community and, in this way, help support ridership for the system. In some areas, bus shelter space is rented for advertising revenues which can be used to support system operations. Both the Town and Village of New Paltz have a policy of not allowing such public advertising.

UCAT also operates some routes as demand-responsive, where patrons can phone for curbside pickup. Dial-a-ride service is currently available on Monday mornings and is used heavily by seniors in New Paltz. Next to senior citizens, the most prevalent riders are students traveling to Ulster County Community College

According to UCAT New Paltz has the lowest ridership and lowest growth in ridership in the entire county. In the rest of the county, growth has been about 9-14% per quarter. The reasons for the low ridership support are not clear, but may be due to the fact that New Paltz is a very walkable town and to the fact that the highest concentration of potential riders – SUNY students – are relatively close to the New Paltz downtown.



3.7 PARKING INVENTORY/CONDITIONS

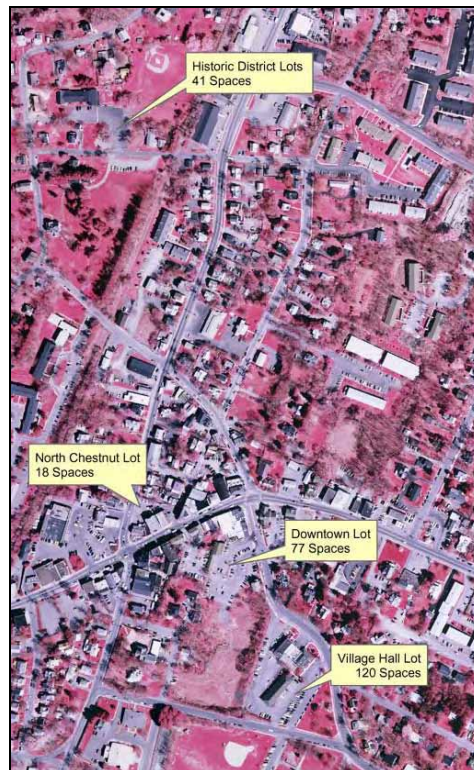
Parking associated with the village Central Business District (CBD) is a mix of on-street parking and surface lots. Four municipal surface lots have a combined parking capacity of 256 spaces (Table 3-25). Parking in the municipal lots is free.

Table 3-25: Municipal Surface Parking Lots in New Paltz Village

Location	Inventory
North Chestnut	18
Historic District	41
Village Hall	120
Downtown Lot	77
	256

The location of these lots is shown in Figure 3-36

Figure 3-36: Location of Downtown Municipal Parking Lots



On street parking within the village core is metered.

During the October 2003 field inventory, a parking inventory was taken along Route 299 and within the immediate Central Business District with the results shown in Table 3-26. Existing parking in New Paltz consists of a blend of municipal, on-street parking and private parking, with private parking (usually associated with a private business) comprising the vast majority of available parking (approximately 83%).

Table 3-26: New Paltz Parking Inventory

	LOCATION	PRIVATE PARKING LOTS	PUBLIC PARKING LOTS	ON-STREET PARKING	TOTAL
Central Business District	(Bounded by Huguenot, Mohonk, Hasbrouck, Plattekill, and Front Streets)	670	95	214	979
Route 299	Oakwood to Route 32 to Harrington Street	156	-	106	262
	Cherry Hill Road to I-87	1514	-	3	1517
	I-87 to Thruway Ramp	44	78	-	122
	Ohioville Road Area	113	-	-	113
	TOTAL	2497	173	323	2993

*Inventory taken Oct 2003 along Route 299

Overall	
Public Parking =	17%
Private Parking =	83%
CBD	
Public Parking =	32%
Private Parking =	68%

The parking inventory shown in Table 3-26 does not include new on-street spaces that were striped during the repaving project on Route 299 that occurred over the summer of 2003. A new section of on-street parallel parking was created along Route 299 from the Bus Depot east to Millrock Road.

During the October 2003 inventory it was observed that on-street and municipal parking lots within the Central Business District were utilized to capacity. This observation differs from a more formal study of downtown parking commissioned by the Village Parking Committee in 1999.¹ That study concluded that there was “adequate available parking in Downtown New Paltz on both weekdays and weekends...There is almost always space capacity on streets within reasonable walking distance from Downtown.”

The Downtown Business Association (DBA) has contacted the Project to register their concern regarding parking in the village core. The DBA’s concerns include improving the management of the existing public and private parking inventory and the need to provide more spaces proximate to the Village. The DBA endorses the concept of connecting adjacent parking lots, which the Planning Board is authorized to require during site plan review.

¹ Village of New Paltz Downtown Parking Study. John O’Toole. December 1999.



The DBA has in the past advocated for the metering of the downtown municipal lot, which could result in there being more short-term parking spaces available for downtown business patrons. The DBA, however, has acknowledged that this might have undesirable consequences, as some of the municipal spaces are used by downtown employees who need a long-term parking option. For this reason, the DBA advocates creation of additional capacity proximate to the downtown, and has cited a currently vacant lot adjacent to the Village Hall as a candidate location.¹

The Downtown Parking Study found that some Main Street business employees park in the metered parallel spaces on Main Street. While some Main Street businesses have surface parking on-site or reserved in another surface lot, others do not. For these businesses, a program to encourage employees to park off of Main Street was recommended.

The large New Paltz Plaza parking lot is chronically underutilized. The current proposal to construct a “Stop & Shop” grocery store at this location will change the utilization of this surface lot.

SUNY New Paltz maintains 39 separate surface parking facilities to serve the institution, encompassing approximately 2500 parking spaces. Approximately 400 spaces are reserved for on-campus residents. SUNY administers a formal parking program and policy, which requires an application and fee to obtain a parking permit (hangtag). Freshmen students are not eligible to register or park a car on campus. Fees range from \$10 per semester for faculty and staff to \$30 per semester for students. Specific lots are designated for overnight parking.

There are also two known Park and Ride Lots. These are located at the Thruway Interchange 18 (78 spaces) and at the intersection of Route 299/Route 9W. The Park and Ride lot at the Thruway interchange was observed several times during the data collection period to be at capacity usage. This lot has a cul-de-sac shaped entrance driveway that gives an easy drive entering and exiting for busses to pick up or drop off. The Park and Ride lot at the intersection of Route 299/Route 9W was observed to be underutilized.

4.0 LAND USE AND ENVIRONMENTAL CONSTRAINTS

Land use and transportation are inextricably linked. The concentration and geographic distribution of the Town’s and Villages residences, institutions, and commercial establishments place a demand upon the collective transportation facilities of the Town and Village of New Paltz. Ultimately the Town’s and Village’s Zoning Ordinances, modified by environmental constraints, imply a future land use pattern. Implicit within this land use pattern is a future demand for transportation.

Subsequent phases of the New Paltz Transportation/Land Use Project will investigate the balance between the land uses that are permitted by virtue of the Zoning Ordinances and the transportation system that needs to serve the travel demand created by those land uses.

¹ The parcel in question may have environmental constraints to development.



This section identifies and describes the existing land uses and the environmental constraints that occur within the municipal boundaries of the Town and Village of New Paltz. This section also describes the current Town and Village Zoning Ordinances that set forth the concentration and distribution of future land uses in the Town and Village.

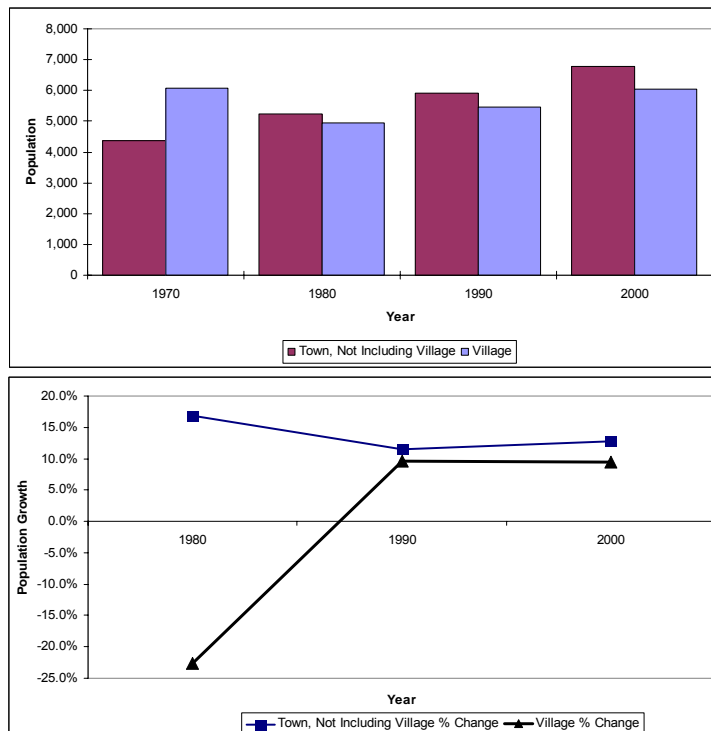
4.1 LAND USE IN NEW PALTZ

Land use can be described by its environmental features, such as soils and slopes, and by its use features, such as housing and jobs.

4.1.1 Housing and Population

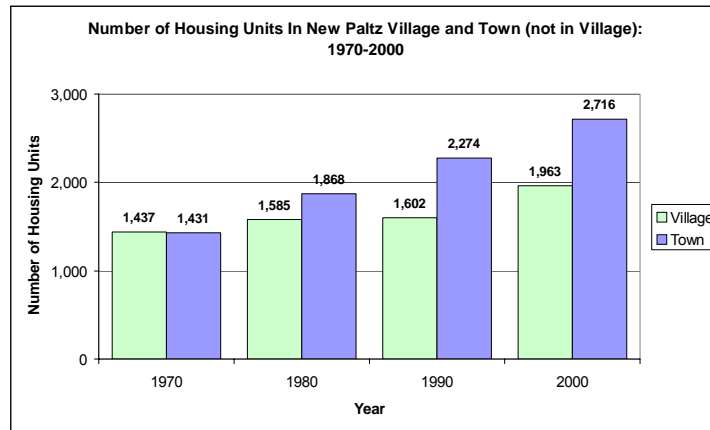
In recent decades, the New Paltz population has averaged approximately 1.1% annual growth. Population in New Paltz declined in the 1970s through the 1980s. The closing of the Kingston IBM plant in the early 1990s further depressed growth in New Paltz and the region. Population in the area has rebounded since the mid-1990s. The Census data shown in Figure 4-1 show these trends.

Figure 4-1: New Paltz Population, 1970 – 2000



Of significance from a land use standpoint is how the Town and Village have accommodated this increased population. Figure 4-2 shows how the housing stock within the Village and Town (outside of the Village) has changed from 1970-2000. The data in Figure 4-2 show that over the 30 year period, the Village has absorbed 526 new housing units, while the area of New Paltz outside of the Village has experienced an increase of 1,285 new housing units. Since 1970, over 70% of new housing has been built outside of the Village.

Figure 4-2: Number of Housing Units in New Paltz Village and Town (not in Village), 1970-2000



These data suggest that Village areas have become built-out and additional housing expansion has become more costly as the availability of raw land for development has decreased. Despite the fact that the Village Zoning Ordinance permits greater densities than the Town's Zoning Ordinance, the data indicate the tendency toward dispersed settlement. However, the redevelopment of low density land uses to increasing densities and heights can also be expected in the Village.

4.1.2 Employment

The commercial and institutional land uses of New Paltz are geographically associated with its main arterials – Route 299 and Route 32. The retail and institutional employment concentrations of the town are arrayed along these arterial routes, which are also served by municipal water and sewer. Commercial areas extend easterly along Route 299 toward Ohioville Road.

SUNY is the largest employer in New Paltz, employing over 1,600 full and part-time faculty and staff. The New Paltz Central School District employs more than 100 people, which report to at least 4 different locations. Other major employers with approximately 100 employees or more are given in Table 4-1.



Table 4-1: Employment in New Paltz

Company	Estimated Employment¹
Smiley Brothers (Mohonk Mountain House)	400
The Wood Company	280
NY State Department of Environmental Conservation	200
Research Foundation SUNY	132
New Paltz Nursing Home	110
Ulster County (BOCES)	100

4.2 ENVIRONMENTAL CONSTRAINTS

Figure 4-3 shows the key environmental constraints that impact development in New Paltz. Key environmental constraints include floodplain, wetlands of various designations, and permanently protected land. Each of these precludes or severely limits development.

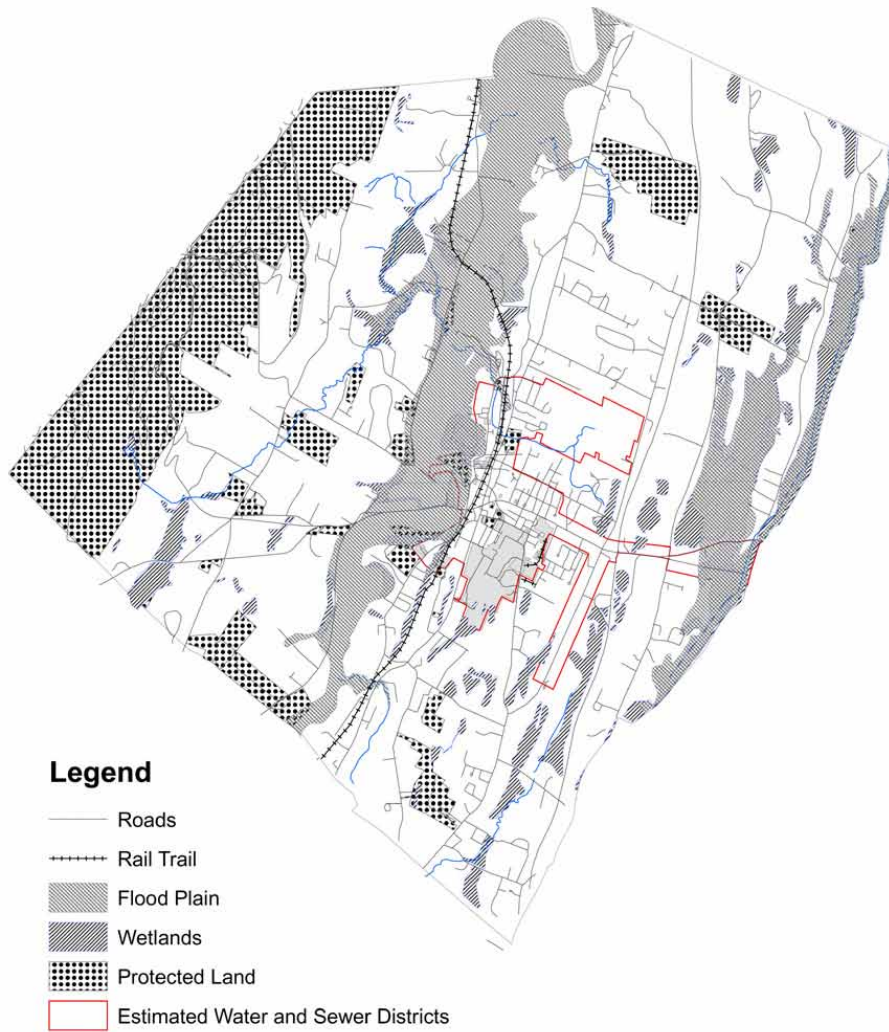
To a lesser degree, land currently designated within Agricultural Districts provides incentives to maintain in agricultural use and, hence, provides disincentive to develop. Other environmental constraints such as steep slopes were not available in a form useable for electronic mapping, but will also constrain development for particular areas/sites. Appendix F provides more specific detail on environmental constraints related to wetlands, surface waters, cultural resources, archaeological resources, historical resources, and significant natural communities and habitats.

The environmental constraints map also shows the approximate boundary of the municipal water and sewer system.

¹ Data are from a 1999 Dun & Bradstreet survey of businesses in Ulster County.



Figure 4-3: Environmental Constraints Map of New Paltz



Inspection of the map suggests that there is sufficient buildable land to accommodate future growth. Phase B of this project will quantify this aspect of future growth in New Paltz through land use modeling.



4.3 MUNICIPAL SEWER AND WATER

Figure 4-3 shows the approximate extent of municipal sewer and water service in the Village and Town.¹ The Village owns and operates the sewage treatment plant and the associated collection system, and the entire Village is served by this system. Currently, the permitted system capacity is approximately 1.5 million gallons per day. There are minor extensions to the sewer system into the Town amounting to a demand of 100,000 – 150,000 gallons per day.

A future potential extension of municipal sewer south along South Putt Corners Road is shown in Figure 4-3, extending to the High School. This extension is related to the Putt Corners Road Corridor Development Plan, and is formalized in an agreement between the Town and Village to allocate 50,000 gallons per day of sewer capacity to this area to accommodate future commercial development. Actual upgrades to sewer service in the Putt Corners Road Corridor Development Plan are anticipated to be accomplished by private investments.

Municipal sewer capacity is limited by the existing treatment plant. Without major upgrades to treatment capacity, the sewer capacity is essentially fully utilized when current commitments and agreements are considered. The desire of the Town and Village to concentrate future development in the Village is significantly constrained by the sewage capacity limits.

There is a general consensus, as expressed at the June 2003 CAC and TRC meetings, that housing growth in New Paltz will likely exceed the historic 1.1% annual growth rate. Near term growth (2004-2010) of 1.5% per year to 2010 translates into a new demand of 437 new housing units. Assuming that the Village absorbs 30% of these units, Table 4-2 shows the resulting new sewage demand by 2010.

Table 4-2: Estimated New Sewage Demand Based on Continuation of Historic Residential Growth Rates in the Village

	Historical Growth Fraction	New Housing by 2010 Assuming Historic Rates	Associated Daily Sewage Flow (gallons)
Village	30%	131	52,467
Town	70%	306	

The estimates shown in Table 4-2 show demand from potential residential development only, and do not include any assumption about demand from additional commercial sources. The projected residential demand alone will not be possible without an upgrade to the Village's permitted treatment capacity.

The majority of the Town is served by on-site septic systems. As a result, residential development is more dispersed, with properties west of the Wallkill River being the least densely settled.

¹ The map delineating sewer service areas included in this report is approximate, and represents a composite of other maps and discussions with Village representatives.



Municipal water service is relatively secure and plentiful. Municipal water sources include a tap of the New York City Aqueduct and village-owned and operated upland reservoirs. The New York City Aqueduct System supplies the primary water source, with the Village's upland reservoirs providing the secondary source. All water sources are treated at the Village-owned Water Treatment Facility located off of Mountain Rest Road. The quality and volume of the municipal water supply appears secure and is not considered a limiting factor to growth in the area at this time.

4.4 LAND USE ZONING IN NEW PALTZ

Figure 4-4 shows the existing land use zones within the Town of New Paltz zoning ordinance. Table 4-3 provides the density controls that are associated with each land use zone. The density control schedule is taken from the 1 May 2003 Code of the Town of New Paltz.

Table 4-3: Density Control Schedule, Town of New Paltz

District	Minimum Lot Area	Lot Width (ft)	Required Lot Frontage (ft)	Minimum Yards (feet)			Maximum Lot Coverage	Maximum Building Height Stories	Maximum Building Height Feet	Min. Required Open Space (%)
				Front	Side	Rear				
A-1.5 ⁵	1.5 acres ¹	150	150	50	20	50	20%	2 1/2	35	65%
A-3 ⁵	3.0 acres ¹	200	200	50	20	50	10%	2 1/2	35	65%
R-1 ⁵	1.5 acres ⁴	100	100	50	20	50	25%	2 1/2	35	65%
B-2 ²	7,500 sq. ft.	75	75	Note ⁶	Note ³	25	50%	3	40	Note ⁷
I-1	15,000 sq. ft.	100	100	50	25	50	35%	3	40	65%
F	3.0 acres	200	200	50	25	50	10%	2 1/2	35	65%

¹ See cluster development regulations, § 140-41.

² Multiple dwellings are permitted in the B-2 District, provided that minimum yard dimensions, maximum lot coverage, minimum lot size, etc., shall apply on the same basis as in the R-V District. See § 140-20.

³ None required, but if provided shall be at least 12.5 feet. Townhouses are permitted in R-V and B-2 Districts.

⁴ One-half acre may be permitted in the R-1 District if municipal water and sewer are provided; not applicable in Floodplain Zone. See § 140-19.

⁵ Floodplain Zone: area between 185 and 190 feet above sea level. Refer to § 140-19.

⁶ In any B-2 Zone, the minimum setback requirements for front yards shall be 35 feet, except in those portions of existing B-2 Zones lying generally northerly and southerly of Route 299 and which are bounded on the east by the westerly edge of North Putt Corners Road on the north and by the westerly edge of South Putt Corners Road on the south and on the west by the municipal boundary line of the Incorporated Village of New Paltz, where in the minimum setback requirements for front yards shall be 65 feet.

⁷ In that portion of the B-2 Zoning District lying generally easterly of the New York State Thruway, the minimum open space required shall be 35%, and in that portion of the B-2 Zoning District lying generally westerly of the New York State Thruway, the minimum open space required shall be 10%.

The existing zoning ordinance, adopted in 1992, is undergoing continuous review in order to bring the code into closer conformance with the Town's Master Plan. While there are several specific efforts underway, most of the discussions pertain to implementing additional environmental protections for environmental constraints such as steep slopes, wetlands, and proximity to surface waters. There is also consideration of zoning changes for properties west of the Wallkill River designed to help maintain the natural, scenic, and cultural aspects of that portion of town. Upzoning (increasing minimum lot size requirements) and cluster housing incentives are being considered for properties west of the Wallkill.



Figure 4-4: Existing Land Use Zones, Town of New Paltz

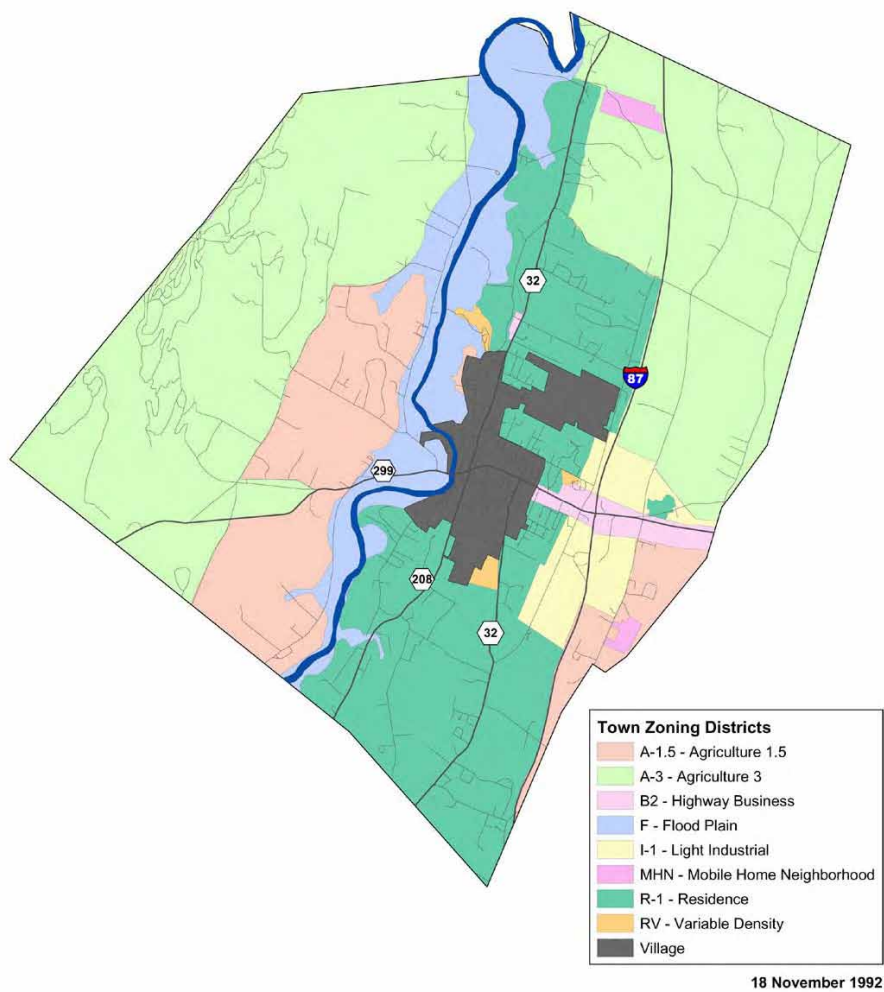


Figure 4-5 shows the zoning map for the Village of New Paltz¹ and Table 4-4 shows the associated density control schedule. The zoning map for the Village was adopted in July 2000. There have been no

¹ Zoning maps were created from non-digital sources and can only be considered approximate.



significant changes to the zone boundaries. The density control schedule was updated on 20 August 2003.

Figure 4-5: Existing Land Use Zones, Village of New Paltz

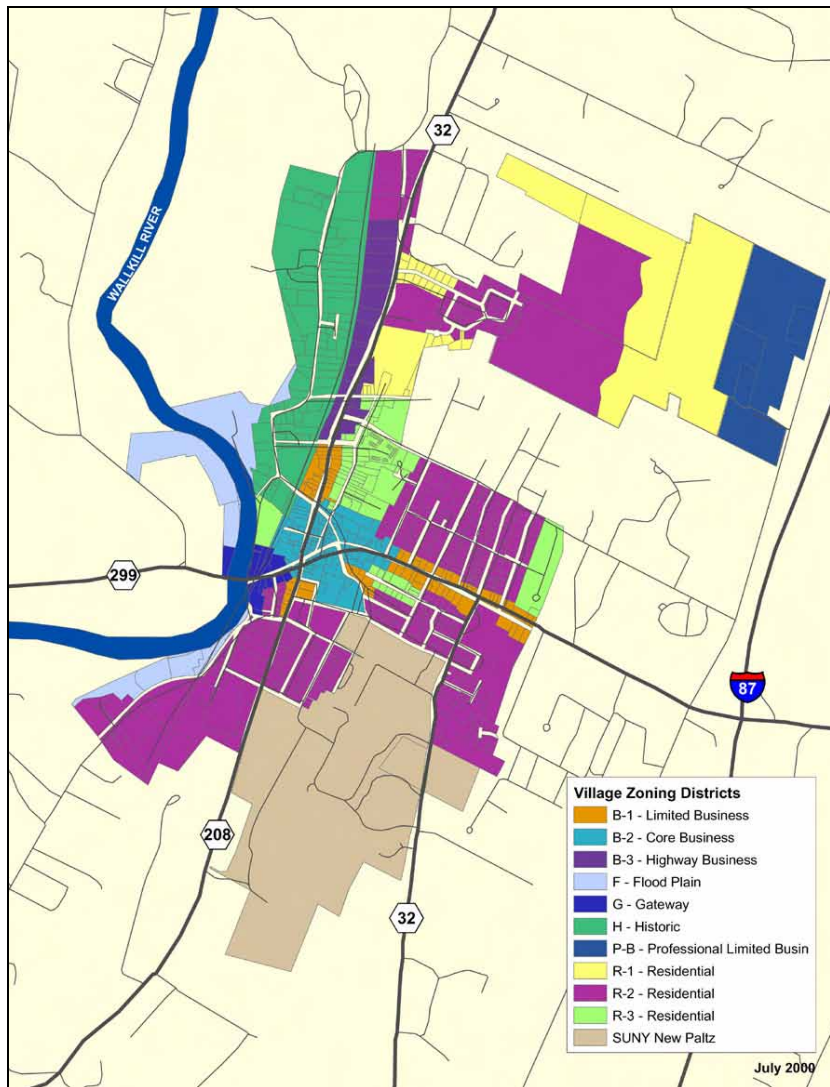


Table 4-4: Density Control Schedule, Village of New Paltz

District	Senior Citizen			All Other	
	Res. Development		Residential	Non-Residential	
	Area per Dwelling*	Area per Dwelling	Building Line	Area per Use* (e)	Building Line
R-1	5,000'	15,000'	100'	15,000'	100'
R-2	3,630'	7,260'	50'	15,000'	75'
R-3	2,420'	3,630'	50'	10,000'	50'
B-1	3,630'	7,260' (c)	50'	5,000'	50'
B-2	-	5,000' (c)	50'	2,500'	(d)
B-3	-	**	-	40,000'	200'
F	-	**	-	40,000'	200'
H	-	20,000'	100'	40,000'	200'
P-B	5,000' (n)	**	-	40,000'	200'
G	-	**	-	2,500'	25'

District	Minimum Yard Dimensions Minimum Width Each			Max. Lot Coverage Including All		Max. Bldg. Heights	
	Front	Side	Rear	Accessory Buildings	Stories	Feet	
R-1	50'	20'	25'	30%	2.5	30'	
R-2	25'	12.5'	25'	30%	2.5	30'	
R-3	25'	12.5'	25'	50%	2.5	30'	
B-1	15'	10'	(a)	60% (m)	2.5	30'	
B-2	(f)	0'	(g)	90%	3	35'	
B-3	25'	10'	10'	50%	2	25'	
F	50'	25'	50'	10%	-	-	
H	50'	20'	20'	30%	2.5	30'	
P-B	50' (b)	20' (b)	20' (b)	50%	2.5	30'	
G	(j)	(k)	(k)	(l)	3.0 (i)	35' (i)	

(a) See § 30.35(E)(8)(b).

(b) See modifications in § 30.35(I)(8)(a), (b), and (c).

(c) See § 30.64(A)(2).

(d) 25' for commercial uses; 50' for residential uses.

(e) Except as may be noted in Article VI of this chapter.

(f) Prevailing setback where applicable; otherwise 5'.

(g) 10' or 10" of lot, whichever is greater.

(h) Maximum impervious surface covering.

(i) Subject of reduced building height regulations by Planning Board to preserve District aesthetics.

(j) Prevailing setback where applicable, except for outdoor seating (see § 30.35(J) and § 30.60); otherwise 0'.

(k) See § 30.35(J)(8)(a) and (b).

(l) See § 30.35(J)(6).

(m) See § 30.35(E)(9).

(n) No dwellings permitted (except as part of a life-care or continuing-care retirement community).

* Area in square feet.

** No dwellings permitted (except one-bedroom or studio apartments above first floor in Gateway District).

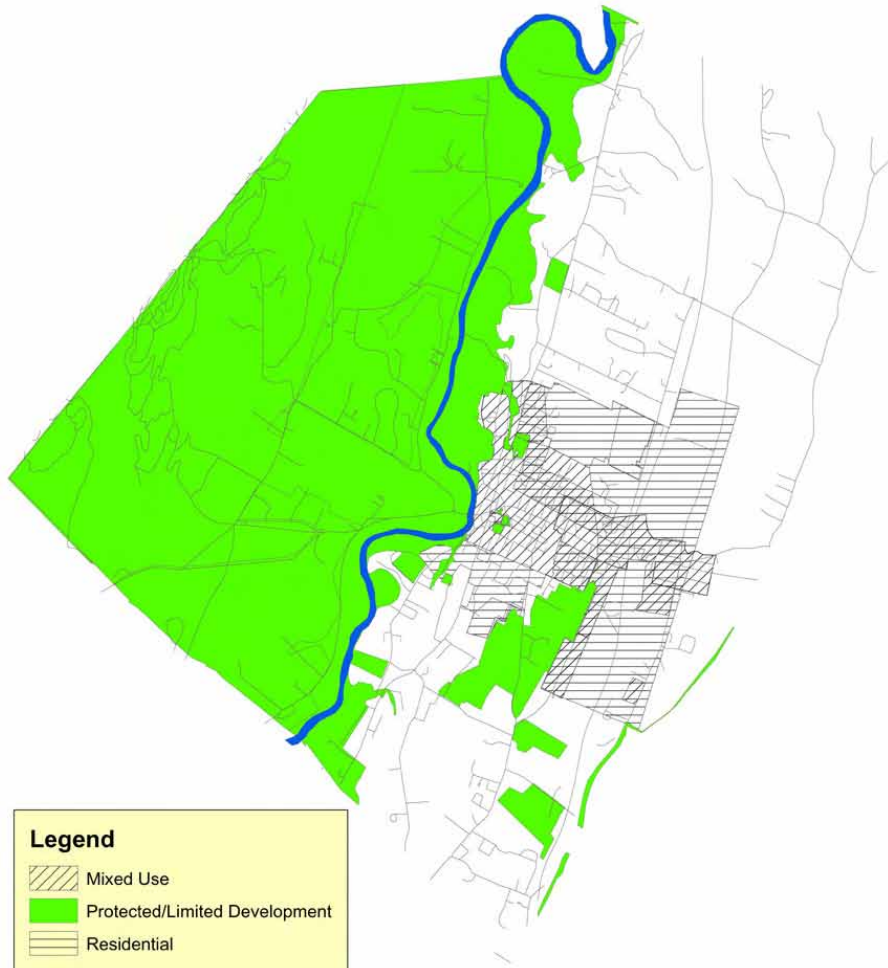
4.5 FUTURE LAND USE

The recent history of population and housing growth runs counter to the intentions of the Town as expressed in its Master Plan. The clear sentiment in the Master Plan is to “channel higher density development to areas with public sewer and water facilities”. This sentiment was echoed at the 13 May 2003 public meeting for the New Paltz Land Use Transportation Project, where participants were asked to develop a map designating areas for future housing and commercial growth.



Figure 4-6 shows a composite map from the 13 May 2003 public session showing areas the participants wanted to encourage development and areas where limited development was desired.

Figure 4-6: Proposed Future Land Use Map of the Town of New Paltz



The attendees of the project's first two public meetings expressed a strong consensus to maintain the open space character of the lands west of the Wallkill River. Open space for agriculture and forestry is a



more dominant feature of the landscape in this section of town, and there is a desire to maintain this general land use pattern.

If the demand for housing grows faster (1.5% annually) than the historical rate (1.1% annually), there will be a need to build an additional 437 housing units by 2010, and to build 912 additional housing units by 2025. A growth pattern that matches the recent history would see the areas outside of the Village accommodate 70% of this housing growth (306 units by 2010 and an additional 639 units by 2025).

As of the writing of this report, there are 3 major housing proposals under discussion with the Village Planning Board. Together, these three proposals for adjacent properties would account for approximately 700 housing units and, hence, would exceed the projections for Village housing stock assuming historical rates.

4.6 SUNY NEW PALTZ

SUNY New Paltz has a major impact on the Town's social fabric, and deserves special treatment with regard to the transportation challenges and opportunities it presents.

New Paltz is a comprehensive, 4-year regional college founded in 1828 and is the 99th oldest collegiate institution in the country. Its campus is 216 acres with 50 non-residence buildings and 13 residence halls set in an area bounded by NY Route 208 on the west, NY Route 32 on the east, Hasbrouck Avenue to the north, and open land to the south. The campus is just a few blocks from the New Paltz Central Business District and Main Street.

From the Thruway motorists travel west on Route 299 and then turn left onto Route 32 (South Manheim Boulevard). The university's website provides an alternative route from the Thruway via a left turn on South Putt Corners Road and a right turn onto Route 32 heading north.

There is no "Main Entrance" on Route 32 but several campus entrances on the westerly side of the road, depending on which part of campus you are visiting. Maps provided by SUNY in both paper and electronic form show the Main Entrance on Route 32 directly in front of the Haggerty Administration Building, and a university sign has been installed at this location on Route 32. SUNY is planning a "West-Side Campus Entrance" off of Route 208 that will replace the Southside Street entrance. When this occurs, Southside Street will be closed to through-traffic and converted to green space.

Figure 4-7 is a Campus Map of SUNY New Paltz.



[illegible]

The total enrollment in Fall 2003 was 7,748 students, with 5,582 full-time and 2,166 part-time students. Table 4-5 provides some historical data on enrollments at the university. Since 1980, the general trend has been toward fewer part time students and more full time students, with overall enrollment varying between 7200 and 8600 students.

Table 4-5: Historic Full-Time and Part-Time Student Enrollment at SUNY New Paltz

SUNY New Paltz Student Population (Full-time and Part-time)				
	1976	1980	1990	2003
Full-time	4968	4593	5196	5582
Part-time	3294	2611	3416	2166
Total	8262	7204	8612	7748

Based on discussions with SUNY New Paltz representatives to this project, there are no plans to increase enrollment substantially beyond existing levels. The SUNY New Paltz President prepares a Memorandum of Understanding (Mission Review Initiative-- <http://www.newpaltz.edu/mri/>) with the State University System wherein key goals and objectives of the University for a 5-year period are established. Areas addressed within the Mission Review Initiative include enrollment, admissions selectivity, faculty development, and facilities planning.

The most recent Mission Review Initiative (currently in draft form) covering the 2005-2010 time period states that the institution is “operating at capacity in terms of what our full-time faculty can teach as well as in our facilities...(T)he institution has reached the upper limits of undergraduate capacity, beyond which the quality of the academic environment and student services would suffer.”

The focus of the institution’s capital plan is on “critical maintenance and the renovation/rehabilitation of existing facilities.” As such, SUNY “plan(s) to remain at about the same enrollment at the undergraduate level and to increase graduate enrollment in areas that do not require specialized facilities.”

The institution has a full-time faculty of 295, approximately 300 adjunct faculty, and approximately 1,000 staff, making the institution the largest employer in New Paltz.

Figure 4-8 shows the geographic distribution of the approximately 1,000 non-faculty SUNY employees. Many, but not all, of these employees travel during normal commuting hours, and are thus part of the peak hour traffic stream. As shown in the map, the great majority of employees are residents of New Paltz (330). Other places with high employee concentrations are Lloyd (54), Gardiner (42), and Kingston (68).



Figure 4-8: Residence Locations of SUNY New Paltz Employees

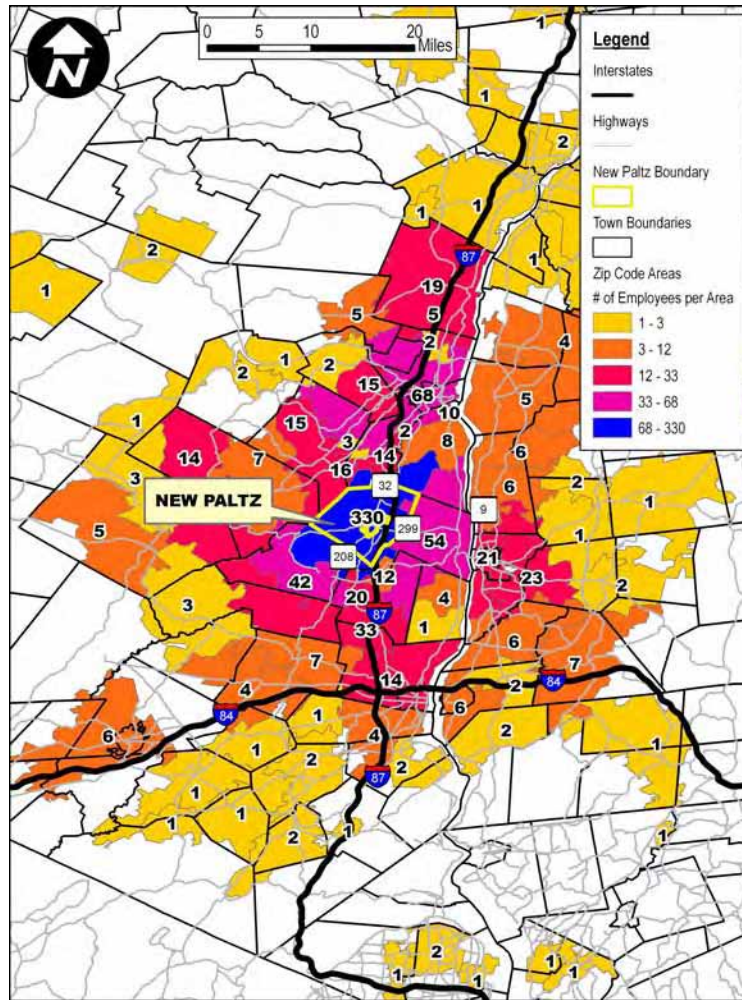
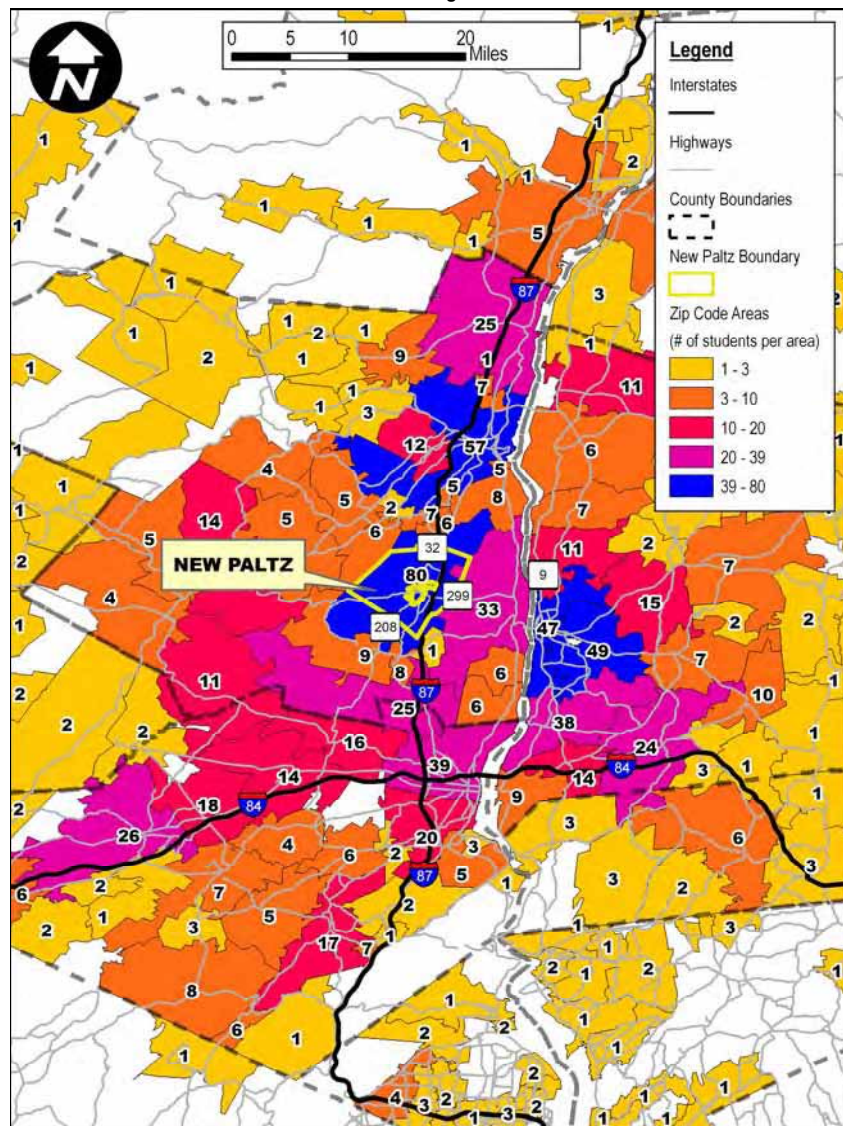


Figure 4-9 shows the geographic distribution of the approximately 1200 commuting SUNY students who have purchased parking permits for the Fall 2004 term.



Figure 4-9: Resident Locations of SUNY New Paltz Commuting Students



SUNY owns and maintains several surface parking facilities that are arrayed around the periphery of the campus. Lots are designated for Faculty/Staff (\$10), Commuter (student)(\$30-\$60), and/or Campus



Resident use only. All on campus parkers are required to purchase a hang tag permit. Resident freshmen are not eligible to register or park cars on campus.

Current and recently-completed construction projects are:

- The 68,000 square foot, 238-bed Lenape Residence Hall. Lenape Hall is located adjacent to the campus athletic fields near the south end of the campus. As part of the project, a 56 space general parking lot has been completed for the newly developed southern end of the campus. Lenape Hall was opened for occupancy in August 2004.
- A new 57,000 square foot Athletic/Wellness center is being developed just south of the Elting Gymnasium, along the west side of campus near NY Route 208, and is due for completion at the end of 2005. Several new athletic fields and parking areas are planned, along with a new “West-Side Campus Entrance”. As mentioned, this new entrance off of Route 208 will replace the existing Southside Street entrance after which Southside Street will be closed to through traffic and converted to green space. The new entrance will connect with the existing campus roadway network and to Route 32.

Plans for the 2005-2010 time period, as mentioned, focus on maintenance of existing facilities.

Maintenance/rehabilitation projects include completing the second phase of the renovation of the van den Berg Learning Center; renovation of Old Main, the oldest building on campus; reconstruction of elements of the steam system; electrical system upgrades; and upgrades to a variety of campus facilities to achieve ADA compliance.

SUNY has experienced growth in the demand for on campus housing. The two most recent on campus residential additions – Esopus Hall (2001) and Lenape Hall (2004) – are fully subscribed. Doubling and tripling of other campus residence halls has occurred to accommodate the demand for on campus housing. SUNY is currently in the design phase for an apartment-style residential building for upper level undergraduates and graduate students.

4.7 NEW PALTZ SCHOOLS

The New Paltz Central School District oversees 4 schools in New Paltz:

- Duzine Elementary School (Hours 9:15AM – 3:25PM)
- Lenape Elementary School (Hours 8:50AM – 3PM)
- New Paltz Middle School (Hours 7:35AM – 2:15PM)
- New Paltz High School (Hours 7:45AM – 2PM)

In addition to New Paltz, the District serves the communities of Gardiner, Rosendale, Esopus, Lloyd, Plattekill, and Rochester. Of the 4 schools, only the Middle School is centrally located. It is notable that the hours of the Middle School are largely offset from the commuting peak hours, which helps to extend the capacity of the existing roadway system.



Several efforts have been made to meet with New Paltz Central School District officials in order to integrate their particular concerns into the Phase A effort. Due to difficult schedules a thorough review of the School District's transportation issues has not yet been conducted, but will be continued through Phase B of the project.

4.8 SHAWANGUNK MOUNTAINS SCENIC BYWAY

Another major local initiative affecting local land use is the effort by the nine towns and two villages which encircle the northern Shawangunk Mountains to gain designation of 82 miles of state and county roads as a State Scenic Byway (Figure 4-10).

This designation would grant "special consideration" to the route for amenities and improvements, qualify Byway projects for additional funding opportunities, and provide for inclusion of the Byway in the State Byway System, which involves State tourism promotion and special indication on official state highway maps.

The Steering Committee for the Byway is made up of the chief elected official or official representative of each of these municipalities, and is aided by an Advisory Group, which includes county planners, community groups and land management organizations on the Shawangunk Ridge.

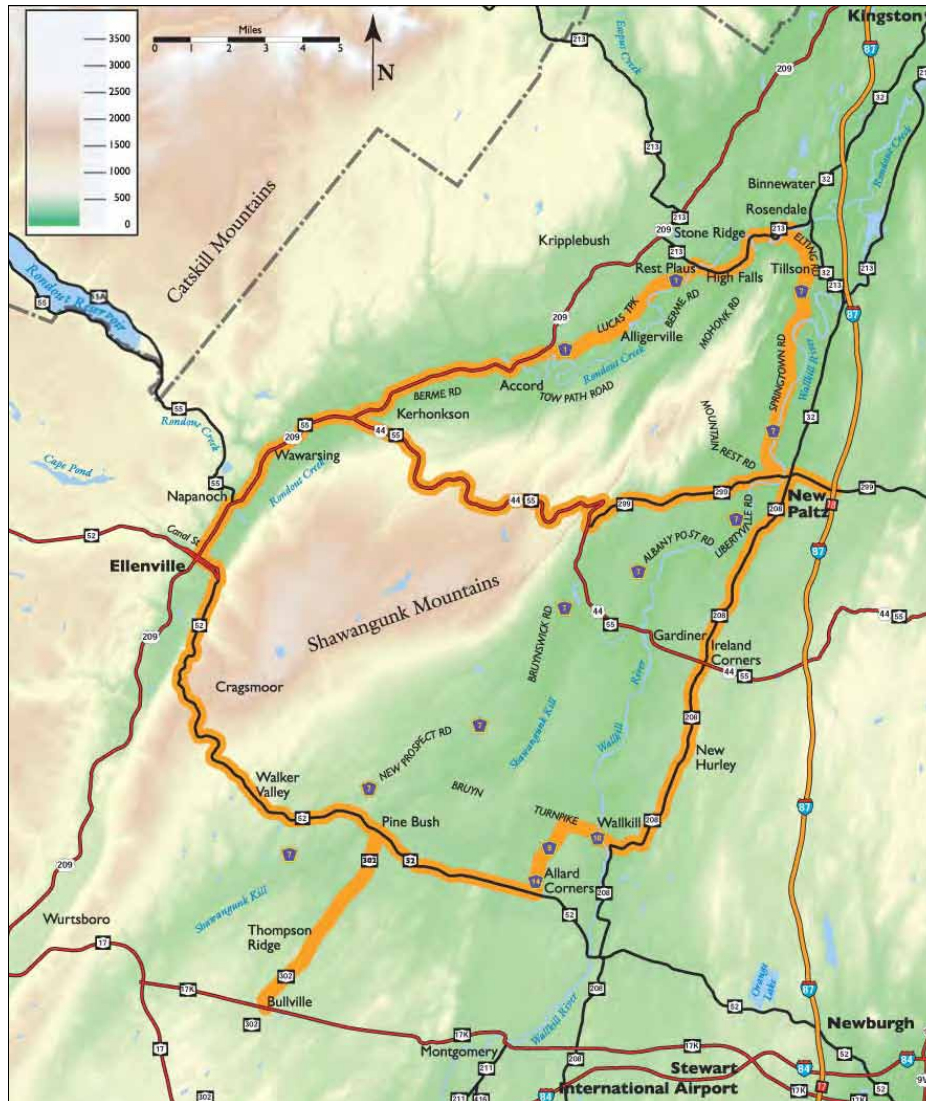
To achieve designation, the committee has prepared an inventory of the scenic, natural, recreational and historic resources of the region that are of statewide significance. A Corridor Management Plan has been developed, outlining goals, strategies, and projects for tourism, transportation, and preservation of resources. This plan has been submitted the State Scenic Byway Committee for approval and designation.

A central objective of the Corridor Management Plan is to encourage the tourism which is attracted to the Region to explore beyond the Ridge, and to experience the other attractions and enjoyments in the Region. This is in order to more broadly distribute the benefits and impacts of tourism throughout the Shawangunk Mountains Region. Achieving this objective could have significant positive impacts on peak event/weekend traffic in New Paltz by extending the tourism attraction of the region beyond the Ridge, thereby spreading the tourism traffic impact over a broader area.

The Plan also emphasizes the importance of preservation of the scenic, natural, recreational and historic resources of the region and includes strategies and projects to achieve this.



Figure 4-10: Location Map of the Proposed Shawangunk Mountains Scenic Byway



The draft Transportation Plan for the Scenic Byway enumerates 11 goals:

1. Utilize consistent design of roadside features to enforce a commonality along the Byway Route.
2. Provide adequate paved shoulders along the state highways and county roads included in the Byway route.
3. Improve safety and reduce congestion by re-designing certain intersections, giving consideration to the use of roundabouts.
4. Improve landscaping along the Byway right-of-way
5. Improve roadway design with raised instead of painted medians.
6. Upgrade the safety and attractiveness of our Main Streets.
7. Utilize access management to reduce traffic conflicts.
8. Encourage the use of bicycles throughout the Byway Region.
9. Study the possible use of a shuttle bus system between the Ridge and nearby villages/hamlets.
10. Improve handicapped access, particularly to nature areas.
11. Extend foot trails.

The Plan acknowledges the New Paltz Land Use/Transportation Project and recognizes that the Byway in New Paltz will be affected by the implementation of this plan. The Byway is represented on the CAC by Al Wegener, Project Manager.

The Byway Plan also makes recommendations for specific roadway segments of the Byway, including sections within New Paltz:

- NY Route 299 from the Thruway to the Wallkill River
 - a. Consider siting a Shawangunk Mountains Scenic Byway regional information center on surplus NYS Thruway property on the northerly sideline of Route 299 immediately opposite the interchange.
 - b. Improve landscaping to create a gateway effect to this portion of the Byway, particularly at the Thruway interchange access road to Route 299, and along the Thruway overpass.
 - c. Increase parking in the New Paltz village downtown area.
 - d. Improve operations of two downtown intersections – Main Street/Water Street and Rt. 208/Rt. 32N/Main Street – and consider a roundabout as a control option.
- UC Route 299 from the Wallkill River bridge to US44/NY55



- a. Consider 2-3' shoulders for bike lanes, rather than the 4' minimum recommended for State-Designated Bike Routes. The narrower widths represent a more context sensitive approach.
- b. Study a pull-off area immediately west of the Wallkill River Bridge. This could include an information kiosk or other ITS technology to route tourists.
- c. Consider burying the utility lines along Route 299 and Springtown Road immediately west of the Wallkill River Bridge as they mar the tremendous views of the mountains along these roadway stretches.
- d. Install signs alerting travelers in advance to local farms and markets.
- e. Eliminate informal pull-offs near Rt. 299/Butterville Road for safety and aesthetic reasons.
- NY Route 208 to Route 299 in New Paltz
 - a. Re-design and narrow the intersection with Jansen Road
 - b. At the intersection of Route 208 and Route 299 in New Paltz, consider a re-design to facilitate left turns. Also consider a detour for bicyclists, which would direct them from Route 208 to Mohonk Avenue and Water Street.
- Springtown Road (UC Route 7) to Rosendale
 - a. Study the possibility of narrow (2'-3') shoulders if this can be done without endangering the trees along the road.
 - b. Consider thinning of trees to open views of the Wallkill River if this is consistent with preservation plans for the river.

Potential findings and recommendations of the New Paltz Land Use/Transportation Project that coincide with the Shawangunk Mountains Scenic Byway should be discussed with the Byway Steering Committee.

5.0 EXISTING TRANSPORTATION DEFICIENCIES AND OPPORTUNITIES

The purpose of this section is to describe the transportation system deficiencies in New Paltz. After field reviews, data collection and analysis, and input from committee members and the general public, numerous existing deficiencies have been identified.

This section also identifies potential improvements that could be initiated to ease congestion and address existing deficiencies. Some recommendations can be considered minor improvements, and span all modes of travel. Other recommended improvements are longer-term, requiring significantly more planning and generally are more costly to implement.



Deficiencies and potential improvements are presented in this section by mode: vehicle, bicycle/pedestrian, transit, and parking.

5.1 VEHICULAR TRAFFIC/ROADWAY DEFICIENCIES

5.1.1 Deficiencies Related to Congestion at Signalized Intersections

Section 3 documents existing congestion at signalized intersections on Route 299. Congestion has been documented for the PM peak hour. This congestion becomes particularly acute on special event weekends and other periods of heavy tourist flow. Specifically, the following signalized intersections have been shown to have adverse operating conditions (LOS E or worse) under normal PM peak hour operating conditions:

- Route 299/Putt Corners Road
- Route 299/Ohioville Road
- Route 299/32/208

Two of these intersections – Route 299/32/208 and Route 299/Putt Corners Road -- also have overcapacity queuing problems, as documented in Section 3.2.5. Route 299/Putt Corners Road is included within a NYSDOT-classified High Crash Location.

Signalized intersections that are closely spaced or irregularly spaced on an arterial like NY Route 299 typically have a direct effect on roadway efficiency resulting in frequent stops and delay. These operating conditions translate into increased fuel consumption, vehicular emissions, and driver frustration.

Coordinated signals reflect a balanced relationship between speed, cycle length, progression efficiency and signal spacing. This balance helps to provide for the continuous movement of traffic along a route at a given speed.

The same Synchro analysis used for the individual signalized intersections along NY Route 299 was also set up as a traffic model that linked the intersections together by known spacing and lane geometry between and on the approaches to the signalized intersections. The analysis results show that coordination is recommended between the following signalized intersections:

- East – West System along Route 299
 - Route 299/Cherry Hill Road/New Paltz Plaza Driveway to Route 299/Putt Corners Road
 - Route 299/Putt Corners Road to Route 299/Thruway Ramp
 - Route 299/Thruway Ramp to Route 299/Ohioville Road
- North – South System along Route 32 (north)
 - Route 299/Route 208/Route 32 (north) to Route 32 (north)/Front Street



Coordinating traffic signals is usually an “early winner” project, where noticeable gains in operating efficiency can be obtained at relatively low cost. Updating signal timing is recommended every 3 years to maximize the benefit of the signal controller technology.

Coordinated signals cannot fully mitigate overcapacity conditions, however, such as occur during special events in New Paltz. Special event signal timing plans should be developed in concert with other traffic management techniques for special events.

Based upon field investigations deficiencies at other intersections are described in Figure 5-1 to Figure 5-6.

Figure 5-1: Field Observed Deficiencies, Route 299/Cherry Hill Road/New Paltz Plaza Intersection



Access management refers to a set of prescriptions designed to organize traffic flow and minimize turning conflicts. Access to properties is managed by controlling, eliminating, or sharing driveway to private properties fronting on public streets/roadways. Controlling access points minimizes the locations where vehicle turning can occur, thereby minimizing conflicts. Creating off-street connections between adjacent lots provide travel options separate from the public road system.



The Route 299 segment between Putt Corners Road and Millrock Road could benefit substantially from a concerted access management program. Access should be reviewed within any land use change application to the New Paltz Planning Board.

Figure 5-2: Field Observed Deficiencies, Route 299/Putt Corners Road Intersection

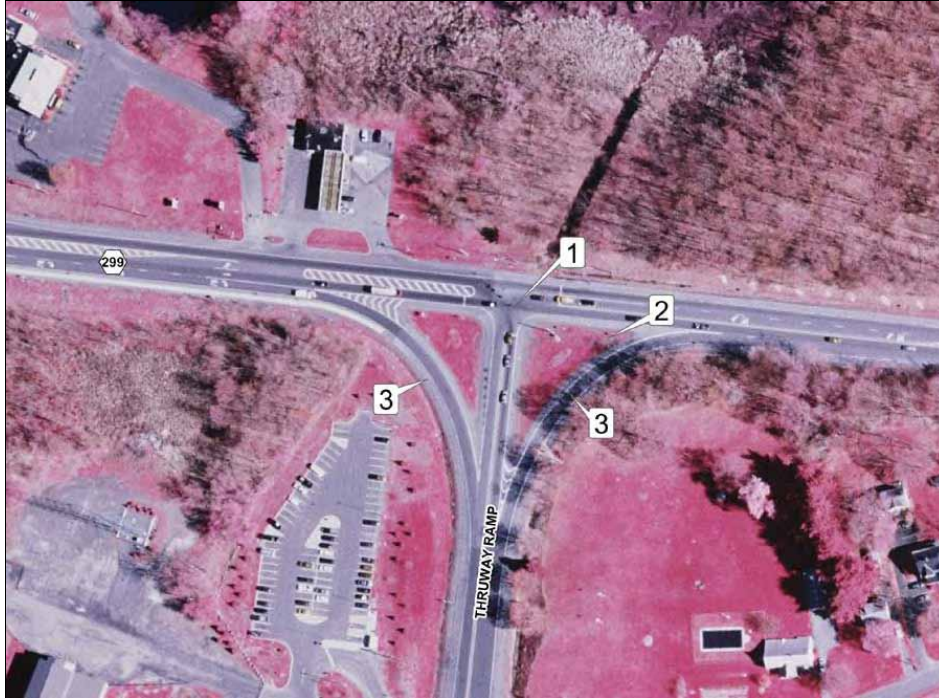


2. When traveling west from the Thruway intersection it is not known if exclusive left and right turn lanes exist until the driver passes over the bridge crest over I87. It appears to be two westbound through lanes.
3. The westbound through queues block access to the left turn lane.
4. NB Putt Corners Road left turners into the Shop-Rite Plaza driveway blocks the NB through traffic. Extending the NB approach is under the jurisdiction of the Ulster County Department of Public Works.
5. Striping is worn on the northbound Putt Corners Road approach. This is a routine maintenance item for the Ulster County Department of Public Works.
6. The gas station driveway in the southwest corner is too close (<50') to the intersection. Driveway throat width can be reduced. Driveway would ideally align with the Terwilliger Lane approach at the southeast corner. This is a long-term issue that could be addressed in the future if the intersection is reconstructed or the gas station redeveloped.
7. The two EB Route 299 departure lanes become one through lane and one right turn lane once the driver passes over the crest vertical curve on the bridge. The driver does not know this until passing over I87 where it becomes visible.



Access management provisions also apply to this intersection as well, particularly with regard to the southwest quadrant. Queue and spillback/blockage problems for the westbound approach should be monitored.

Figure 5-3: Field Observed Deficiencies, Route 299/NY State Thruway Ramp



1. NB vehicles waiting at the stop line make it difficult for WB Route 299 trucks to make a left turn onto the Thruway on-ramp.
2. At the SE corner of the intersection the "Do Not Enter" sign is laying on the ground. This is a routine maintenance item, and the sign has been replaced.
3. The free flow ramp from Route 299 entering the I87 the toll booth area encourages unnecessary high speed prior to a deceleration area.
4. General: evaluate benefits of coordinating signal with adjacent intersections.



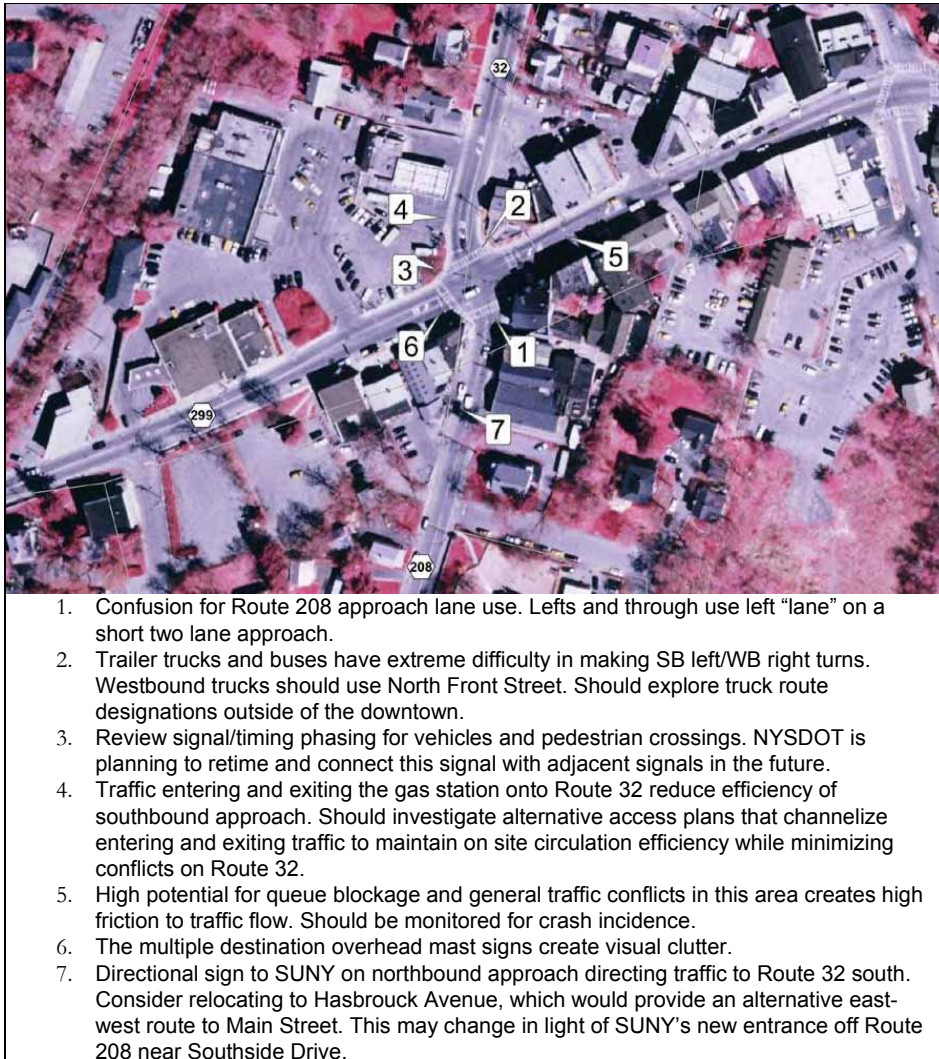
Figure 5-4: Field Observed Deficiencies, Route 299/Ohioville Road Intersection



1. Two driveways northeast corner. Multiple driveways not necessary for reasonable access.
2. Westbound left lane blocked by through traffic.
3. Southbound Right Turn on Red allowed. Accident history should be reviewed to determine whether right turning vehicles are creating unsafe merging conditions with higher speed (≥ 55 mph) Route 299 traffic.
4. No crosswalks or pedestrian signals. Generally light pedestrian demand.
5. WB No Left Turn sign on ground at CITGO. This is a routine maintenance item.
6. No crosswalks at Old 299 intersection with use of wrong pedestrian crossing sign W5-2. This is the jurisdiction of the Town of New Paltz.
7. WB vehicles observed passing queued traffic on right shoulder then making right turn onto Ohioville Road, then a U-turn, then a RTOR or green light to continue WB. This is potentially a problem if pedestrians use the shoulder. Problem needs to be investigated more thoroughly to document frequency of occurrence.
8. Review signal timing/phasing for optimal operation. Investigate benefits of coordinating with adjacent signals.
9. Wide pavement area serving as driveway. This is under Town of New Paltz jurisdiction.

This intersection can also benefit from improved access management – minimizing driveways and creating appropriate separations between driveways and intersections.



Figure 5-5: Field Observed Deficiencies, Route 299/32/208 Intersection

Large overhead mast arm mounted signs are posted on the eastbound and westbound approaches to the Route 299/32/208 intersection. These large “other town location” guide signs are unusual for placement in a Central Business District. The use and effectiveness of these signs at this particular intersection



should be evaluated due to potential “driver overload” at this congested intersection. Smaller signs could be considered that would reduce the visual clutter while retaining the necessary traveler information.

Figure 5-6: Field Observed Deficiencies, Route 32/Front Street Intersection¹



1. Handicap ramps missing on some approaches or need upgrading. This is a mid- to long-term improvement.
2. Pedestrians walking on street pavement of Front Street. This condition may have changed with new striping from 2004 re-paving project.
3. At the Front Street/Church Street intersection there are no crosswalks. NYSDOT to review need for crosswalks for future implementation.
4. Parking on Church Street is too close to the intersection making it difficult for larger vehicles to make right turn from Front Street. Village of New Paltz should review prohibiting parking in the 1-2 spaces closest to the intersection.
5. The westbound Front Street approach is wide with no delineation striping for a one-way street. Providing adequate turning radii for trucks should be analyzed.
6. No pavement delineation on eastbound Front Street. This approach is under the jurisdiction of the Village of New Paltz.

5.1.2 Deficiencies Related to Congestion at Unsignalized Intersections

As indicated, six (6) of the nineteen (19) unsignalized intersections within the project area perform at LOS F on the stop controlled approach, which is generally unacceptable in terms of operation by most

¹ Crosswalks and stop bars have been upgraded as part of the repaving project completed by NYSDOT in 2004.



municipalities. Level of service (delay) is only one measure of operational performance at an unsignalized intersection. Consideration must also be given for v/c ratios, average queue lengths, accident data, and traffic signal warrants.

A review of analysis for the six (6) intersections with LOS F indicates that three intersections have the combination of long queues, high v/c ratios, and long delays:

- Route 32/South Putt Corners Road;
- Route 299/Water Street;
- Route 32/Hasbrouck Avenue/Plattekill Avenue

5.1.2.1 Route 32/South Putt Corners Road

This intersection has been designated by NYSDOT as a high accident location. The most common accident involved southbound vehicles turning left onto South Putt Corners Road. The southbound approach of Route 32 to the intersection with South Putt Corners Road proceeds along a curve with a posted speed of 45 mph. While intersection sight distance minimums are met, it is possible that southbound vehicles are progressing faster than the speed limit thereby increasing the required sight distance beyond what is currently extant in the field. A speed study should be conducted to determine the average and 85th percentile speeds of southbound vehicles.

In addition to the poor safety record, this intersection has severe delays during the PM peak hour for the South Putt Corners Road approach (westbound). Although the accident record doesn't show it, extreme delays on the minor leg (South Putt Corners Road) can lead to motorists accepting smaller gaps in traffic before turning onto the main road. This situation should be monitored. A signal and left turn lane warrant analysis should be conducted for this intersection.

5.1.2.2 Route 299/Water Street/Huguenot Street

This intersection at the west end of the village has multiple modes converging in a relatively small area. There are heavy pedestrian and bicycle crossings east of the intersection due to the crossing of the Wallkill Valley Rail Trail in the immediate vicinity. However, this intersection has not been designated a high accident location by NYSDOT. The Village of New Paltz has jurisdiction over this intersection, and the Ulster County Department of Public Works has jurisdiction over the Wallkill River Bridge and Route 299 west of the bridge.



Figure 5-7: Field Observed Deficiencies, Route 299/Water Street/Huguenot Street Intersection



1. The stop line on Water Street should be moved closer to Route 299.
2. A crosswalk is needed across Huguenot Street.
3. Centerline striping is needed on Water Street and Huguenot Street.
4. The sidewalk access to cross the bridge needs improvement at each end of the bridge.
5. Need separate sign for "Stone Houses" from street name signs.
6. The speed bumps on Huguenot Street need to be striped.
7. The Rail Trail crossings on Route 299 and Water Street both need improvements relative to signs and striping.
8. The intersection should be evaluated for placement of a roundabout to better serve access to and from Huguenot Street and Water Street. The Water Street approach can experience long- to extreme delays.

5.1.2.3 Route 32/Hasbrouck Avenue/Plattekill Avenue

This intersection defines the northeastern corner of the SUNY campus and has been designated as a high accident location by NYSDOT. SUNY's Plattekill parking lot is located immediately adjacent to the intersection. This surface lot has two access points, one of which is within 100' from the intersection. Consideration should be given to reconfiguring the parking lot and eliminating the easternmost access drive.



Large traffic outflow from the parking lot can cause periods of congestion. PM peak hour Level of Service for the eastbound approach (Hasbrouck Avenue) is LOS F.

In addition, intersection sight distance to the north is limited. Field investigations should be conducted to determine how to increase northerly sight distance. Improving safety at this intersection may increase in priority if Hasbrouck Avenue becomes a designated east-west bicycle route in Town. Initial review indicates a possible alternative bike route to Main Street (Route 299) would be to turn south on Route 32 from Main Street (left), west on Hasbrouck Avenue (right), across Route 208, along Mohonk Avenue and then to Plains Road and the Rail Trail.

5.1.3 Special Event Traffic Management

New Paltz is known as a host of many popular special events, many of which take place at the Ulster County Fairgrounds. In addition, the great attractions along the Ridge – the Mohonk Mountain House, Mohonk Preserve, Minnewaska State Park, and other outdoor attractors – create a weekend demand for travel through New Paltz from the NYS Thruway. New Paltz residents are well aware of the significant traffic increases that occur from tourist activities, and plan their trips to avoid Route 299 traffic tie ups. Great gains can be made in managing special event traffic.

It is recommended that the Town, Village, and other stakeholder groups commission a Special Event Traffic Management Committee, whose first task should be to conduct a Special Event feasibility study. Such a study would select a specific special event (e.g. Ulster County Fair) and establish baseline data for the following items:

- Market Analysis
 - Anticipated daily attendance
 - Estimated arrival/departure rates
 - Description of trip origins
 - Travel time/distance analysis
- Parking supply and demand
- Estimated arrival/departure routes, by mode
- Site-specific analysis of access to event site, by mode:
 - Automobile
 - Tour and shuttle bus
 - Bicycle
 - Pedestrian
- Capacity analysis (chokepoints)



- Mitigation plan

Mitigation plans often utilize shuttle busing from satellite lots. The local transit provider, Ulster County Area Transit, offers a special services policy to municipalities. This policy makes UCAT bus service available for municipally-sponsored special events. The cost for the service is \$40/hour per bus plus fuel cost. Shuttle busing typically works in concert with a system of satellite parking facilities.

When possible, buses are afforded their own travel ways between satellite lots and the event venue, including priority passage at chokepoints. These travel advantages improve the attractiveness of shuttle busing over normal automobile travel. Other major events such as the Ulster County Fair, the Arts and Crafts festivals, and the Taste of New Paltz have not, as yet, utilized shuttle busing as a transportation alternative.

Plentiful satellite parking should be available for the duration of the event. The existing park and ride lot at the NYS Thruway ramp is already at capacity and would not provide sufficient parking inventory for intercepting special event traffic. Other strategically located parking facilities include the SUNY parking lots and the surface parking lots associated with the shopping plazas on Route 299. Neither SUNY nor the plaza owners have been contacted regarding use of their parking facilities for these purposes.

Special event traffic management often utilizes traffic control from trained officers. The 2004 Garlic Festival in Saugerties was considered a great success from the standpoint of traffic control. The Garlic Festival utilized extensive traffic control by the State Police.

For managing sustained tourist traffic that is destined for the Ridge, Ridge attractions should provide alternative directions for arriving at and departing their sites. An estimated 80% of Ridge visitors come from points south of New Paltz¹ and, hence, could use alternative routes from the NYS Thruway Exit 17 (Newburgh). Given the long queues that tourists confront when departing the Ridge, this alternative could be attractive.

5.1.4 Neighborhood Traffic Concerns

As a result of poor levels of service at Route 299 intersections, which result in long queues and delays many drivers familiar with the area may divert to the east/west local roads of Henry Dubois Drive, Shivertown Road, and Horsenden Road as alternative roads for access between Route 32 (north) and Route 299.

Over the course of Phase A, members of the public have described traffic and speed increases on local streets. Specifically, the Project has learned of potential increases in cut through traffic on Plains Road, Church Street, and Plutarch Road.

Observations were conducted by the project team on Plains Road, where a spot speed study was conducted to determine the travel speeds of vehicles traveling on Plains Road. Over a 1.25 hour period in

¹ Glenn Hoagland, Executive Director of the Mohonk Preserve. Personal communication.



May 2004, a total of 38 vehicles traversed Plains Road in the vicinity of the cemetery (28 southbound, 10 northbound). The 85th percentile travel speed was recorded as 37 mph, and the road is posted at 30 mph. Generally, Plains Road does not provide a convenient cut through route for a significant number of trips in New Paltz. The Project concludes that the vast majority of traffic on Plains Road can be considered local and should be a matter for neighborhood discussion and self regulation.

A field review was made along Plains Road. The road does not have any striping to delineate the travel way. There are no sidewalks along the length of the Road. The following issues/concepts should be evaluated for implementation:

- Construct sidewalks.
- Use pavement edge striping that gives two-way traffic a 20 foot wide travel way width.
- Install a 3-Way Stop Sign control at the Plains Road/Cedar Lane intersection.
- Post “Shared-Use Roadway/Bicycle” signs along Plains Road.
- If the Roehrs Gravel Pit site is developed for other uses in the future, consideration should be made for use of a roundabout at its intersection with Plains Road as a traffic calming device.
- Provide stop line striping on the Woodland Drive approaches.
- Reconfigure the Water Street/Plains Road/Mohonk Avenue intersection to have less pavement area at its skewed juncture. A four-way stop control is needed at this intersection or other alternative control device. The stop sign on the Pencil Hill Road approach should be moved forward and closer to the intersection.

No special studies of cut through traffic have been performed in other areas of New Paltz. High levels of cut through traffic in neighborhoods can create safety concerns as traffic speeds increase. Neighborhoods and towns often discuss the implementation of traffic calming devices¹ to slow traffic down and to reduce the attractiveness of the route for through travelers. Some municipalities have adopted policies specifying a threshold level of cut through traffic to trigger the deployment of traffic calming infrastructure.

In recent years many traffic calming resources have become available to local communities. The Ulster County Transportation Plan describes many traffic calming measures in its “Transportation Strategies for Quality Communities.” It is recommended that the Town and Village research a “Traffic Calming Policy,” setting forth quantitative thresholds for the magnitude and speed of cut-through traffic that would, in turn, demonstrate a public need for some type of traffic calming initiative.

¹ The Institute of Transportation Engineers (ITE) defines traffic calming as the combination of mainly physical measures that reduce the negative effects of motor vehicle used, modify driver behavior, and improve conditions for pedestrians and bicycles.



5.1.5 Safety

As discussed in Section 3, several intersections and roadway segments in New Paltz are classified by NYSDOT as High Accident Location (HAL) segments. These are shown in Table 5-1.

Table 5-1: High Crash Intersection and Roadway Segments

Roadway Segments	Reference Markers
Route 299 from approximately Joalyn Road to Cherry Hill Road	1067-1070
Route 299 from approximately Putt Corners Road to the NYS Thruway	1071-1072
Route 299 from approximately NYS Thruway to the NYS Thruway Off Ramp	1073-1074
Route 299 from approximately Paradise Lane to east of Ohioville Road	1076-1079
Route 32 from approximately Brookside Road to South Putt Corners Road	1093-1096
Route 32 from approximately Plattekill Avenue through the Route 299 overlap to Briarwood Court	1112-1121
Route 32 from approximately Hummel Road to Shivertown Road	1131-1134

A history of accidents at a particular intersection indicates that further analysis is required to determine the cause(s) of the accidents and to identify what actions could be taken to mitigate the accidents. Typically, as particular improvement projects are recommended more detailed analysis will be required to identify abnormal patterns and clusters of accidents and to incorporate appropriate accident countermeasures or safety improvements into the project.

NYSDOT has commissioned a safety analysis of Route 299 and the results of that analysis will be made available to the Project. This analysis covers the area from Joalyn Road on the west to Ohioville Road on the east. The in depth safety analysis of the Route 32 HALs are available in Section 3.

Given the analysis performed within Section 3 there are 3 areas of major concern outside of the Route 299 corridor, which overlap with intersections. These are:

- Route 32/Jansen Road
- Route 32/South Putt Corners Road
- Route 32/Shivertown Road

The Route 32 south intersections – Jansen Road and South Putt Corners Road – occur within a roadway segment posted at 45 mph. A speed study should be conducted in this area to determine prevailing average and 85th percentile speeds. Intersection- and stopping sight distances should be field measured and compared with the sight distances necessary for safe operation at the 85th percentile speed.



In addition left turn lane warrants should be evaluated for the southbound approach to South Putt Corners Road on Route 32 and for the northbound approach to Jansen Road on Route 32. A signal warrant analysis should be conducted for this intersection.

Similarly, a speed study should be conducted on Route 32 north proximate to Shivertown Road to determine operational speed behavior. For this area there appear to be many animal or fixed object collisions. Site investigations should determine whether there are any wildlife paths that lead to Route 32 from adjacent lands. Determination should be made as to the benefits of signing for wildlife crossing or the benefits of nighttime lighting. A signal warrant analysis should be conducted for this intersection.

5.1.6 Wallkill River Bridge

The existing bridge is a steel through truss bridge built in 1940. The bridge has an overall length of 179 feet, curb to curb width of 25.5 feet and a 5.5 foot wide sidewalk on the north side of the bridge. The bridge is eligible for the National Registry of Historic Places. The structure is owned by Ulster County.

The existing bridge width does not conform to current design standards for new, replacement, or rehabilitated bridges. If the existing bridge were to be replaced or significantly rehabilitated, NYSDOT Local Bridge standards would require that the bridge width match the approach roadway width, which at this location varies to over 30 feet on the approaches.

Based on a review of the NYSDOT 2002 Biennial Inspection Report the bridge is functioning as originally designed. However, a few components of the bridge exhibit signs of serious deterioration and are not functioning as originally designed. The components with serious deterioration include the deck joints, bridge bearings, and concrete pedestals.

There is one known collision between a vehicle and the bridge structure, which occurred in July 2000.

Since the existing bridge width does not conform to current design standards for new, replacement, or rehabilitated bridges, this should be considered in future alternative roadway improvement plans to have this bridge continue as the primary crossing of the Wallkill River. Such improvements are considered long term.

5.1.7 Emergency Vehicle Access

Emergency vehicles for fire, rescue, and police would typically need to traverse roadways that have high delays on the approaches to Route 299. Emergency response to areas west of the Wallkill River is also constrained by there being only one bridge to provide access to the west side of town. Delays to response west of the Wallkill can also be exacerbated during spring and fall flooding periods, where sections of certain roads are under water. To remedy this situation, a fire truck is parked at a residence on the west side during flooded conditions for use during emergency calls.

The Town of Gardiner emergency system has been contacted to respond to emergencies on the west side of the river when excessive response delay is encountered or anticipated.



Possible improvements for an Incident Management System at the interchange area and highest volume segment of Route 299 from Putt Corners Road through the Thruway Ramp intersection should be considered. These improvements include:

- A coordinated emergency response plan to obtain a quicker traffic accident investigation, tow truck utilization and cleaning up of the accident scene (under the jurisdiction of the Town police and/or fire department),
- A plan for an alternate detour route around an accident scene (under the jurisdiction of the Town police and/or fire department), and
- Use of a variable message sign on I87 to inform motorists of anticipated delays and/or of alternate detour routes. (Under the jurisdiction of the Thruway Authority).
- Installation of signal pre-emption devices on all signalized intersections in the Town and Village (under the jurisdiction of NYSDOT, but the cost will be borne by the Town police and/or fire department when justified by the benefits).

5.1.8 New Paltz High School Driveway

During the field review of designated project study intersections, several deficiencies were observed at the South Putt Corners Road/High School Driveway. These were as follows:

- The driveway approach did not have a stop line.
- The driveway approach is two lanes wide but was not striped as such for left and right turns
- The southbound Putt Corners Road approach did not have an exclusive left turn lane. Consideration should be made to provide safety widening to avoid school busses waiting to make a left turn from the southbound through lane.
- When traveling southbound on Putt Corners Road a crest vertical curve is located to the north of the school driveway. The word SCHOOL is striped on the pavement on the south side of this vertical curve where it is not seen by the southbound driver until the driver is over the crest and closer to the school driveway.
- Along the southbound side of Putt Corners Road, just north of the crest vertical curve, a combination of signs “Intersection Warning,” “SCHOOL,” and a warning speed (“30 MPH”) are posted as one assembly. This combination of signs is in violation of the NYS MUTCD relative to posting together as one assembly.

Recommended improvements to these deficiencies are as follows:

- Stripe the driveway approach as two lanes and use a stop line.
- Evaluate use of southbound left turn lane. This most likely will be a longer term solution due to required widening of the pavement.



- Place the same SCHOOL pavement marking in advance of the crest vertical curve along the southbound lane. This will supplement the existing one and provide more advance warning.
- Replace the single assembly of signs as necessary in accordance with the NYS MUTCD. The use of an appropriate school zone speed limit should be evaluated for this rural area school.

Phase B of this project will include a formal evaluation of other major transportation improvements. These could include:

- East-West Connector between South Putt Corners Road, Routes 32 and 208
- Second Crossing of the Wallkill, a further extension of the east-west connection
- Re-Designation/Re-Alignment of Route 32
- Modified access to the NYS Thruway serving South Putt Corners Road directly.

Appendix G has an aerial photo of other project intersections. Deficiencies are noted along with potential solutions, both short term and long term, to improve conditions.

5.2 BICYCLE/PEDESTRIAN DEFICIENCIES/IMPROVEMENTS

The NYSDOT Hudson Valley Bikeways and Trailways map shows future bike routes planned along Route 299 and Route 208 that will link various communities in the mid-Hudson Valley Region. Further the Ulster County Long Range Transportation Plan designates the state routes of 299, 32, and 208 as bicycle routes, which means that paved shoulders should be added to these routes over time as re-paving and/or reconstruction projects occur.

Lacking in the Town and Village are designated east-west connecting routes to the Rail Trail for both pedestrian and bicyclists. Typically the connections are side streets where available. It was noted during field data collection that Henry Dubois Drive had bike route signs posted. It is also desired to have a connecting trail between the Rail Trail and the Ulster County Fairgrounds

The County Roads of CR7, CR6 and CR17 all lack shoulders for use by pedestrians and bicyclists. This makes access to the Ulster County Fairgrounds and the New Paltz High School undesirable by walking or biking. It was also noted that the edges of pavement have drop-offs due to resurfacing of the roads versus milling off old pavement and then resurfacing.

Concerns have been expressed by some New Paltz residents of the condition of the Rail Trail for walking and biking. It was also noted during the intersection field reviews that many of the locations where the trail crosses a local street they were lacking in crosswalk pavement markings or were of poor condition markings. At some crossing locations, stop signs were incorrectly installed. Of particular concern are the street crossings at the following locations:

- Main Street
- Water Street

Comment [RMS1]: Should there be any intro text at all to this section, as there is for previous sections above?

Comment [RMS2]: Rename to something like "Bicycle facility solutions"



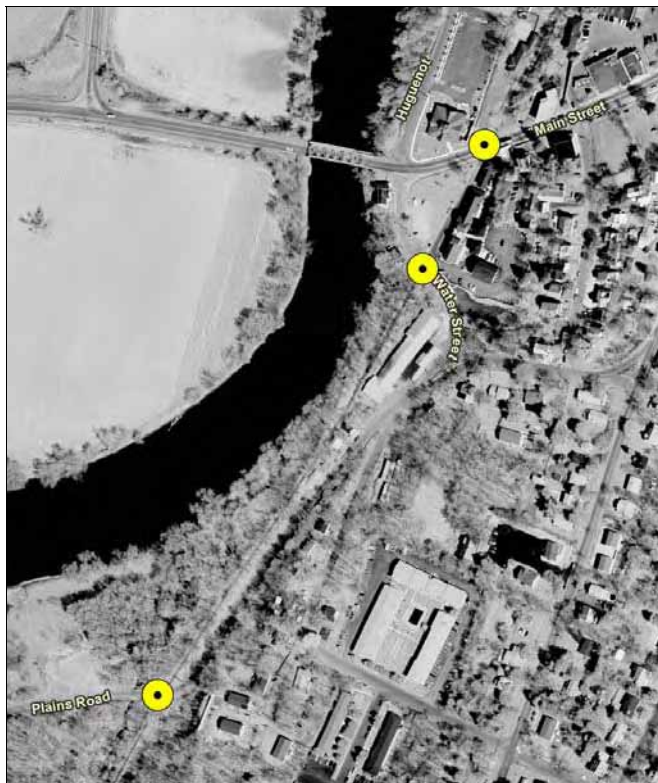
- Plains Road
- North Front Street
- Mulberry Street
- Cedar Lane Road
- Huguenot Street

5.2.1 Potential Improvements

5.2.1.1 Wallkill Valley Rail Trail

As discussed above, there has been widespread concern expressed about the Rail Trail crossings of public streets and roads. Three of these locations are shown in Figure 5-8.

Figure 5-8: Aerial View of Village Section of the Wallkill Valley Rail Trail Showing Deficient Street Crossing Locations



A commonly applied crossing surface involves a textured surface well before and after the actual crosswalk. Some municipalities are experimenting with colored pavements. The Rail Trail crossings at local roadways should be improved with new pavement markings and posting of signs in accordance with the Manual of Uniform Traffic Control Devices. Managing vegetation for improving sight lines is also important. An application to the Ulster County Transportation Council (UTC) Transportation Improvement Plan (TIP) for funding improvements to the Rail Trail crossings was submitted, but was not awarded funding.

The condition of the Rail Trail surface should be improved upon as necessary. Within the most heavily used section of the trail, immediately proximate to Route 299 and the village core, consideration should be given to paving the trail. For outlying sections of the trail, continue posting notices of surface conditions on the Rail Trail website. Consideration should be made for paving sections of the trail at least within the limits of concentrated generators of traffic.

5.2.1.2 Improving Pedestrian Crosswalks

The Manual on Uniform Traffic Control Devices (MUTCD) provides guidance on the location and dimensions of pedestrian crosswalk markings and associated signing. Basic dimensions from the MUTCD (Section 3B.17) state:

- Marked crosswalks should not be less than 6 feet wide and should extend across the full width of the pavement.
- Crosswalk lines shall consist of solid white lines that are not less than 6 inches in width or greater than 24 inches in width.
- For added visibility the area of the crosswalk may be marked with white diagonal lines at a 45-degree angle to the line of the crosswalk or with white longitudinal lines parallel to traffic.
- Crossing signs (W11-2) shall be used adjacent to the crossing location (Figure 5-9). If the crossing location is not delineated by crosswalk pavement markings, the crossing sign shall be supplemented with a diagonal downward pointing arrow plaque (W16-7P) showing the location of the crossing.
- When fluorescent yellow-green background is used, a systematic approach featuring one background color within a zone or area should be used. Mixing of standard yellow and fluorescent yellow-green backgrounds within a site area is not recommended. Fluorescent yellow-green signs are already in use within the Route 32 corridor; hence, these signs should be used uniformly.

For crosswalks, yield lines can be used as an additional warning to vehicles. Yield lines shall consist of a row of isosceles triangles pointing toward approaching vehicles extending across approach lanes to indicate the point at which the yield is intended. Yield lines should be placed 4 feet in advance of and parallel to the nearest crosswalk line. The individual triangles comprising the yield line should have a base of 12-24 inches and a height equal to 1.5 times the base.



Figure 5-9: Pedestrian Crossing Sign Treatments—Frame 1 with actuated flashers; Frame 2 with backlighting; Frame 3 with textured raised crosswalk.



The 2003-2004 repaving projects for Routes 32 and 299 provided an opportunity to establish new crosswalks. During the Phase A field work project staff visited sections of these roadways with NYSDOT personnel to determine places to establish new crosswalks in advance of the repaving. An area that is in need of a new crosswalk is at the western end of Henry DuBois Drive near its intersection with Route 32. The Village Pizza is a pedestrian attractor in this area and many pedestrians cross a relatively wide straight section of Route 32A at a point where no crosswalk exists.

A streetscape improvement study would be in order for the section of Route 32 from its intersection with Route 299 in the downtown to Mulberry Street. The condition and connectivity of sidewalks and crosswalks within this stretch of Route 32 is poor to fair. This corridor would benefit from a comprehensive review of needs and streetscape improvements.

5.2.1.3 Establishing Safer Bicycle Travel on State Roads

The household survey conducted within Phase A asked respondents to give direction as to which types of bicycle/pedestrian improvements should be given priority. The survey asked participants if the Town and Village of New Paltz allocated money for bike and walk path improvements, how and where should this be invested. 558 people responded. Over 250 of those responding suggested more bicycle and/or walking paths along main roads. Specific roadways that were most often mentioned by name were: Routes 299 (Main Street), 32N, 208, Henry Dubois Drive, and South Putt Corners Road.

The NYSDOT Hudson Valley Bikeways and Trailways map shows future bicycle routes along Route 299 and Route 208 that will be part of a region-wide system of long-range bicycle routes. An alternative bicycle route could deviate from Route 299 at Route 32 (heading south), then continue west along Hasbrouck Avenue and across Route 208 to Mohonk Avenue, and thence to the Rail Trail. This route should be investigated for pavement widths, shoulder widths, pavement condition, alignment and other factors that would affect its adaptability to being converted to a bicycle route.



A second alternative that has been discussed is to extend the Route 299 bicycle route north on North Putt Corners Road to Henry DuBois Drive. As mentioned, Henry DuBois Drive is already signed as a bicycle route. Henry DuBois Drive would also need to be investigated for shoulder condition, and overall adaptability to become a formal segment of a state bicycle route. The bicycle route would connect to Route 32 on Henry DuBois Drive, from which point access to the Rail Trail could be gained.

However, Route 299 between Route 32 (Manheim Boulevard) and Prospect Street is extremely wide and could accommodate a bicycle lane on one or both sides. The curb-to-curb pavement width on Route 299 from Prospect Street to Manheim Boulevard/Route 32 (approximately 1500 feet) is notably wide, and accommodates parallel parking along one or both sides. The parallel parking within this section of Route 299 is not heavily used. The potential exists for accommodating a bicycle lane in one or both directions. Table 5-2 shows the pavement widths at selected locations for this roadway segment, and Figure 5-10 shows an aerial view of this area.

Table 5-2: Curb-to-Curb Pavement Widths, Selected Locations on Route 299

Location	Curb-to-Curb Pavement Width
At Prospect Street	38 feet
At Grove Street	40 feet
At Oakwood Street	50 feet
At Millrock Road	46 feet
At Route 32/Manheim Boulevard	41 feet

Figure 5-10: Segment of Route 299 with Wide Curb-to-Curb Pavement Widths



The following dimensional standards guide the consideration of a bicycle lane in this segment:

- Vehicular Travel Lane – 10-12 feet in width for one lane
- Parallel Parking – 8-9 feet in width
- Bicycle Lane – minimum of 5 feet in width when curbing is present
- Shared Parking/Bicycle Lane – 10-13 feet in width¹

Using these dimensions, there are 4 basic types of facilities that can be considered for this roadway segment between Prospect Street and Route 32/Manheim Boulevard.

1. Exclusive bicycle lane on both sides, no on-street parking permitted
2. Exclusive bicycle lane on one side, shared parking/bicycle lane on other side
3. Exclusive bicycle lane on one side, parking only on other side
4. Shared parking/bicycle lane on one side, parking only on other side (no bicycle lane striped)

Each basic type of facility includes two travel lanes (one eastbound, one westbound). Unless otherwise specified, the travel lanes are assumed to be 12 feet in width, including striping. To dimension each alternative, the minimum width of 38 feet should be used, which is the narrowest curb-to-curb width on Route 299 at Prospect Street. Dimensions of all facilities can be increased as desired as the pavement widths increase in the easterly direction. Given this information, 4 alternatives have been identified:

- Exclusive Bicycle Lane on Both Sides, No On-Street Parking Permitted
- Exclusive Bicycle Lane on One Side, Shared Parking/Bicycle Lane on Other Side
- Exclusive Bicycle Lane on One Side, Parking Only on Other Side
- Shared Parking/Bicycle Lane on One Side, Parking Only on Other Side

Other points to consider are:

- Vehicular lane widths can vary to accommodate shared use with bicycles. For example, if there is no bicycle lane on one side of Route 299, the vehicular travel lane on this side can be made wider than the lane on the opposite side.
- Bicycle lane striping should terminate at crosswalks, stop bars, and intersections.
- Bicycle lanes should be considered one-way facilities only, going in the same direction as vehicular traffic.

¹ AASHTO, Guide for the Development of Bicycle Facilities, 1999. This reference recommends a minimum of 11 feet for shared parking/bicycle facilities.



- If only one bicycle lane can be established through pavement striping on Route 299, we recommend that it be the lane on the southerly sideline of the street for travel in the eastbound (uphill) direction.
- At places where bicycle lanes intersect with turning lanes, there is the potential for conflicts between right-turning vehicle and bicycles proceeding through the intersection. Safety can be maximized through proper signing and striping. Please refer to AASHTO striping recommendations for these cases.
- Prior to the repaving project, parallel parking was unstriped, but permitted on both sides of Route 299 in this segment. Some of the alternatives described above would require eliminating parking from one or both sides of Route 299. Affected commercial interests and property owners should be contacted regarding any change to the status of public parking proximate to their properties before striping commences. Ideally the Village will have obtained the consent of affected property owners prior to re-striping although, to our knowledge, there is no legal requirement that the Village provide parking on Route 299 in this roadway segment.
- As Route 299 continues downtown, roadway widths narrow and on-street parking becomes more prevalent and, presumably, more valuable to adjacent businesses. A similar field reconnaissance should be conducted for Route 299 from Prospect Street to its intersection with Routes 208/32 prior to re-striping
- Members of the public who attended the 29 June 2004 Citizen Advisory Committee meeting of the New Paltz Land Use/Transportation Project voiced an interest in establishing colored pavement to help delineate bicycle lanes. Red and green pavement coloring is used commonly in Western European countries. Blue is used in Switzerland, and is being used on a trial basis in Portland, OR to delineate potential points of conflict between cyclists and motorists. Colored pavements help to visually elevate the prominence of the lane, enhancing the safety of the lane for cyclists. The photo below is of a San Francisco street with bicycle lanes on both sides.



Establishing a bicycle route on Route 299, or on parallel local streets, is consistent with regional efforts to establish new bicycle routes and tie together existing routes (e.g. Wallkill Valley Rail Trail). The NYSDOT website describing Hudson Valley Bikeways & Trailways depicts Route 299 in New Paltz as a Future Bike Route. This roadway segment is also contained within the Shawangunk Mountains Scenic Byway, which encourages the use of bicycles as an alternative mode of travel.

5.2.1.4 Establishing Safer Bicycle Travel on County Roads

There is a consensus in New Paltz, and expressed within the Ulster County Transportation Plan, that establishing bicycle routes along County roads in New Paltz is a high priority. Of particular importance in New Paltz is creating a safe bicycle routed along South Putt Corners Road (CR 17) to the High School. Other important county roads that should be considered for paved shoulder bicycle lanes are Jansen Road and Horsenden Road, both of which are County Road 17, and Libertyville Road (CR 7), which could provide safer bicycle access to the County Fairgrounds.

Generally 4'-6' paved shoulders are recommended for bicycle travel. However, 2' shoulders are comfortable for serious bicyclists. Note that the effort surrounding establishing the Shawangunk Scenic Byway recommends that shoulders west of the Wallkill be kept minimal (2-3') in order to balance aesthetic concerns. In the future, Ulster County should consider establishing a typical roadway section design that has a wider roadway which includes paved shoulders for use by bicyclists.

Section 3 describes some of the barriers or limitations to extending the paved surface of County roads such that a paved shoulder for bicycle travel can be accommodated. Generally, if right-of-way constraints do not exist, any projects that involve reconstruction of a County road should be accomplished with expanding the overall roadbed to accommodate a paved shoulder.

5.2.1.5 Access to Fairgrounds

Improving access to the County Fairgrounds for bicyclists and pedestrians has been mentioned often over the course of our work. The idea of constructing paved shoulders on Libertyville Road is described above and has been pursued by New Paltz citizens without success. Other ideas that have surfaced include a pedestrian bridge or ferry across the Wallkill at a point that would efficiently join the rail trail with the county land. The feasibility of this concept has not been investigated in the field.

A local group in Vermont established a ferry service across the Winooski River to join two segments of a rail trail in Burlington and Colchester, Vermont.



The ferry was so successful that it eventually built political support for a pedestrian bridge, which is shown below (see <http://www.localmotionvt.org/islandline/bridge.htm>)



5.2.1.6 Sidewalks on Mohonk Avenue

The lack of safe pedestrian ways along Route 208 in the vicinity of SUNY New Paltz has been cited by several people to be an ongoing concern. Mohonk Avenue appears to be a popular pedestrian route to access the rail trail. Establishing a sidewalk on one side of Mohonk Avenue appears to be a reasonable objective, though the grades make doing this difficult. Right of way constraints are not known at this time.

5.2.1.7 Pedestrian Phases at Signalized Intersections

Through the project website we have received an email from a disabled New Paltz citizen who has asked that audible pedestrian signals be installed as part of the signal hardware upgrade to occur at the intersection of the former Ames Plaza. NYSDOT signal crews will be installing an audible signal at the Route 299/New Paltz Plaza intersection as part of a hardware upgrade.

More information on auditory pedestrian signals can be found at: http://accessforblind.org/aps_abt.html

5.2.1.8 Regulations and Ordinances to Encourage Bicycle/Pedestrian Improvements Through the Land Use Planning/Permitting Process

Street standards are often addressed through the public works/engineering department. However, streets can be incorporated into a zoning overlay district and can specify road widths, streetscape design, and accommodate pedestrians and bicyclists. Washington Township in New Jersey specifies 11 street types as part of their zoning regulations.



To encourage pedestrian-oriented development, zoning can require parking to be located in shared structures, behind buildings, or on-street. Shared structures and rear lots remove large expanses of parking lot pavement from direct view off the street. On-street parking protects pedestrians from vehicle traffic and also reduces speeds on the roadway. Provisions for pedestrian and bicycle amenities can be advanced in a zoning ordinance that is supported by a town-wide bicycle/pedestrian plan.

Both the Village and Town should enact a formal Sidewalk Ordinance requiring ring sidewalks as a part of site approval.

Comment [RMS3]: Rename to something like “Transit solutions”

5.3 TRANSIT DEFICIENCIES/IMPROVEMENTS

Section 3.6 describes the transit services currently provided in New Paltz. In summary, the New Paltz Bus Depot is centrally located at the Main Street/Prospect Street intersection and is the only bus station in New Paltz. The bus depot services intercity transit and a New Paltz shuttle.

Based on comments from committee members and the public there is a strong sentiment that improvements for transit should be pursued. In particular there is a lack of high frequency, low- or no fare bus service within New Paltz. A high frequency, low or no-fare service linking SUNY with the Village and other shopping areas is being considered by UCAT, and they have recently revised their shuttle route (as of November 2004) to more directly serve the SUNY campus..

It is becoming common practice for such services to be sponsored by municipalities, businesses, and institutions. Typical annual operating costs for a high frequency service range from \$40,000 to \$75,000 per year. Colleges and universities often contribute to such services through student fees.

Additionally, there is a desire to install bus shelters along the shuttle route. Some shelters will be installed in the spring of 2005, and future shelters in the UCAT service area are planned to be installed at a rate of roughly 2-3 shelters per year. The locations of the proposed bus shelters in the village in order of priority are as follows:

- Main and Prospect (in front of Trailways terminal). This stop would be used by Trailways, Arrow, and UCAT. It would provide service to Newburgh, Poughkeepsie, and to the north. All logos of the different companies would be displayed.
- Route 32 and Jewish Community Center near Broadhead Avenue
- Route 32 and Henry Dubois Drive
- Main Street at Teen Scene (youth program)
- South Manheim Boulevard and Plattekill Avenue

Other locations that may be considered are at Oakwood/Plattekill Avenue, Route 32 near the SUNY dormitories, Route 32 North near the Town Hall, within the former Ames Plaza, and Henry Dubois Drive by Meadowbrook. Currently housing proposals in front of the Village Planning Board may also provide reasonable locations for new bus shelters. There’s a new senior citizen development that will need a bus shelter. The Planning Board should develop language within its site planning regulations to



establish bus transit support infrastructure (e.g. shelters, pull-offs, signage) for development projects where transit is a viable mode of travel.

In addition, serious consideration should be given to utilizing UCAT shuttle services during special events such as the Taste of New Paltz, New Paltz Craft Fairs, and the County Fair.

5.3.1 Future Multi-Modal Center

The Ulster County Long Range Transportation Plan addresses the need for a Multi-Modal Center (MMC) in New Paltz. The Plan recommends that a formal study be initiated by UCAT, Ulster County Planning (MPO), and the Village and Town of New Paltz to evaluate the feasibility of a Multi-Modal Center.

This idea has also been discussed by the New Paltz Chamber of Commerce and by the Shawangunk Scenic Byway in connection with a surplus parcel of land controlled by the NYS Thruway Authority immediately north of the Thruway ramps on Route 299. The Chamber's interest is in a center for visitors to the area to stop and learn more about the many attractions in the area.

As the name implies an MMC can typically serve multiple modes of travels and functions. These can include parking, shuttle service, and information dissemination.

5.4 PARKING DEFICIENCIES/IMPROVEMENTS

It was observed that on-street and the public parking lots within the Central Business District were utilized to capacity, indicating a shortage of parking spaces. The Park and Ride lot at the Thruway interchange was also observed at capacity usage.

Most likely increased municipal parking will be considered a longer term solution due to the necessity for land purchase if not already owned by the Village or Town. A potential location is expansion to the south of the existing municipal lot on Plattekill Avenue. The Downtown Business community supports public acquisition of this parcel for expanding downtown parking inventory. A feasibility study for a structured parking garage at this location should be conducted.

For special event planning and, eventually, for future Travel Demand Management programs in New Paltz, areas for intercept satellite parking facilities should be identified. The logical locations for these facilities are on the main arterials – Route 299, Route 32 North and South, and on Route 208. Expansion of the existing park and ride facility at the Thruway entrances should be investigated as well.

Comment [RMS4]: Rename to something like "Parking solutions"?

Comment [RMS5]: Add a brief introduction here?

6.0 NEW PALTZ HOUSEHOLD SURVEY

Resource Systems Group performed a household survey in October 2003. The purpose of the household survey was to collect information on travel behavior, demographics, and transportation attitudes from a random sampling of households within New Paltz.¹ These data, in turn, give direction to the overall

¹ "New Paltz" is inclusive of the Village of New Paltz and Town of New Paltz.



project, help establish priority for transportation problems, and provide critical information for constructing and calibrating the traffic model.

The travel diary survey consisted of 3 parts:

- Household Trip Recorder
- Transportation Priorities
- Household Demographics

In recording household trips, households recorded each trip made by each family member from 2 to 7 pm on 23 October 2003. The afternoon-early evening time slot was selected for 2 reasons:

- It is the most chronic (everyday) traffic problems, aside from those associated with weekend events, occur during this time period.
- This time period brackets the PM peak hour, which is the hour of analysis for the traffic model.

A period shorter than 24-hours, which is typical for trip diary surveys, was felt to lessen survey fatigue and thereby increase response rates.

Each survey respondent recorded the start time, end time, purpose, place of origin and destination for each trip made within the survey period.

In the Transportation Priorities section of the survey, respondents were asked several questions regarding alternatives to automobile travel, including carpooling and walking/biking.

Finally, participants were asked for household characteristics such as number of persons in the household, ages of the members in a household, employment status, and number of vehicles. The demographic information allows us to compare the characteristics of survey respondents to the characteristics of the entire New Paltz household population. A good statistical correlation between the trip diary respondents and the overall population is desirable as the trip generation and trip distribution models which will be used for traffic analysis in this project are estimated directly from the trip diary survey.

6.1 CHARACTERISTICS OF THE RESPONDENT HOUSEHOLDS

In total, the surveyed sample of 2946 represents 66% of the household population of New Paltz, while the completed responses (886) represent 20% of all households in New Paltz (Table 6-1).

Table 6-1: Total and Returned Surveys

	# of Surveys	% of New Paltz Households
Issued	2946	66%
Returned Completed	886	20%



The 886 respondent households had an average of 2.3 members per household and 1.9 available vehicles per household. The cross classification of the number of household members and the number of vehicles is shown in Table 6-2. The cross-classification approach is a standard approach to classifying populations in travel surveys and travel modeling.

Table 6-2: Number of Survey Respondent Households as Characterized by Their Household Size and Number of Cars

Vehicles	Household Size			
	1	2	3	4+
0	30	12	3	2
1	148	54	13	5
2	35	249	59	73
3+	7	50	51	70

Table 6-3 provides a comparison of the household size/vehicle ownership characteristics of the survey respondents and all New Paltz households (from the 2000 Census).

Table 6-3: Fraction of Total Households by Household Size/Vehicle Ownership Category, 2003 Trip Diary Survey and 2000 Census

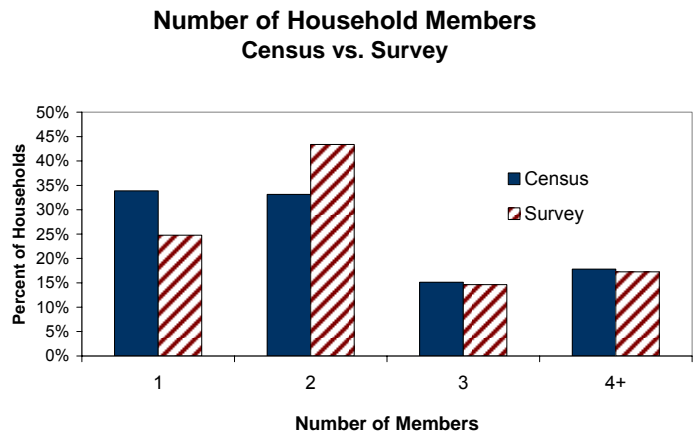
2003 Trip Diary Survey						2000 New Paltz Census					
Vehicles	Household Size				Total	Vehicles	Household Size				Total
	1	2	3	4+			1	2	3	4+	
0	3.5%	1.4%	0.3%	0.2%	5.5%	0	5.0%	3.7%	1.6%	1.5%	11.7%
1	17.2%	6.3%	1.5%	0.6%	25.6%	1	11.1%	11.1%	5.3%	6.1%	33.6%
2	4.1%	28.9%	6.9%	8.5%	48.3%	2	10.5%	12.6%	6.2%	8.3%	37.6%
3+	0.8%	5.8%	5.9%	8.1%	20.7%	3+	4.7%	5.7%	2.9%	3.8%	17.1%
Total	25.6%	42.4%	14.6%	17.4%		Total	31.2%	33.1%	16.0%	19.7%	

With the exception of 0-vehicle households, the mix of survey-respondent households is relatively comparable to the overall New Paltz household population from 2000 census. This is shown by comparing the “Total” results in Table 6-3, which summarize column and row totals.

The survey sample has a smaller proportion of single member households and a higher number of two member households, as shown in Figure 6-1. One person households are generally more difficult to reach in surveys of this type, which partially explains the under-representation of this group in the completed survey sample. Larger household sizes (3 persons and above) are very representative of the overall population.

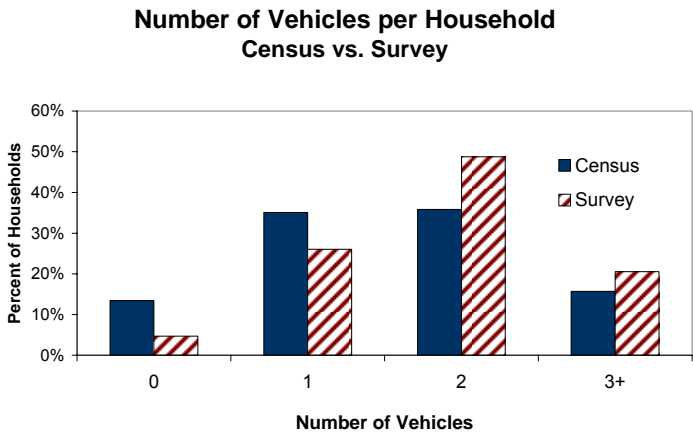


Figure 6-1: Household Sizes of Survey Respondent Households When Compared to the 2000 Census for New Paltz



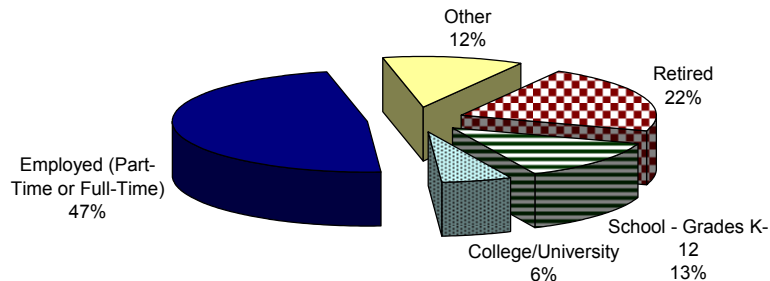
The proportion of households with two cars is greater in the survey sample than in the general population, according to the 2000 census data available. The number of households in the sample with no cars or one car is lower than that of the general populations, as shown in Figure 6-2.

Figure 6-2: Number of Vehicles of Survey Respondent Households When Compared to the 2000 Census



Of the household members responding, 47% are employed, three-fourths of who are employed full time (Figure 6-3). Twenty-two percent of household members are retired. Nineteen percent of household members responding are in school.

Figure 6-3: Employment/Student Status of Survey Participants



Six percent of the survey respondents are in college, which is significantly less than the 32% of the total New Paltz population in college or graduate school, according to the 2000 census. Addresses of SUNY students were not available to the survey administrators. A total of 250 surveys were distributed in dormitories, but these showed a very low response rate.

Some of the discrepancies between the Census household characteristics and survey respondent characteristics are due to this low representation of students in the survey. Thirty-nine percent of full-time college students (2163 out of 5582) at SUNY New Paltz live in college dormitories. The dormitory population is under-represented in the survey sample, which partially explains the under-representation of households with no vehicles.

6.2 TYPES OF TRIPS

The travel diary survey asked for information on trip destination. Respondents were asked to record a trip code (Go to Work; Go to School; Go Shopping; Go Home; Other). From these responses, trips can be categorized by purpose. Trip purposes are important in travel modeling because they have statistically predictable trip lengths. Work trips, for example, tend to be longer than more discretionary trips such as shopping.

Trips can be “typed” in a variety of ways. For the purposes of this project we sought to develop a small number of trip types that occurred with relative similar frequency. Based on the travel survey data, the selected trip types are: work to home; nonwork to home; home to nonwork; and, other (including nonhome-based).

Table 6-4 shows that an estimated 18% of all person trips made in New Paltz during the PM peak hour begin at a workplace and end at home. This trip is the conventional commuting trip. The so-called “non-home based” trip – that is, a trip that does not have the home at either end – is the most prevalent trip



type during the PM peak hour. Any trip that departs the workplace for a destination other than home is a non-home based trip.

Table 6-4 also shows the average trip rate per household for each of the 4 trip types.

Table 6-4: Frequency of Trip Types, as a Fraction of All Trips, New Paltz PM Peak Hour

Trip Type	Frequency of Trip During PM Peak	Average Person Trip Rate per Household (PM Peak Hour)
	Hour	
Work to Home	18%	0.15
Nonwork to Home	24%	0.20
Home to Nonwork	22%	0.18
Nonhome-Base	36%	0.29

6.3 MODE OF TRAVEL

The travel diary survey also enabled us to evaluate the travel modes of trips within New Paltz. Table 6-5 shows the percentage of trips made using four different travel modes, and also shows the mode share for trips between work and home during the PM peak hour. For the PM peak period, over 90% of trips made by New Paltz residents used the automobile. Over 7% of trips were made by walking or biking. Less than 1% of all trips were made by bus.

Table 6-5: Mode of Travel from Work to Home (PM Commute), New Paltz Household Survey

Mode of Travel	Mode Share, Mode Share,	
	All Trips	Work Trips
walk/bike	7.1%	4.4%
drove car	81.6%	82.5%
rode in car	10.7%	11.2%
bus	0.6%	2.0%

Driving a car has the highest mode share (81.6% and 82.5% for all trips and work trips, respectively). When auto passengers are added, over 90% of all person trips during the PM peak hour are accomplished by car. The 2000 Census long form, distributed to a sample of households, provides data on the "Means of Transportation to Work". Respondents are asked to provide the mode of travel they usually use to commute to work in the morning. These data are shown in Table 6-6.

Table 6-6: Mode Share of Work Trips (AM Commute) for Workers Who Reside in New Paltz Village and Town (Outside of Village), 2000 Census Journey-to-Work

	Town (outside Village of Village)		Total
	Village	Town (outside of Village)	
walk/bike	24%	4%	13%
drove car	60%	81%	72%
rode in car	7%	8%	8%
bus	3%	2%	2%
work at home	3%	4%	3%
other	2%	1%	1%



The results of the New Paltz household survey with regard to means of travel for work trips (third column in Table 6-5) are comparable to the Census data (Table 6-6) but differ for several reasons. Most significantly, Census respondents were asked for the means of transportation to work, which, for most workers, an AM period trip. During a typical AM peak hour (730-830 AM), work trips comprise 40-50% of all trips. The New Paltz household survey was conducted for afternoon trips only (2PM – 7PM), where work-to-home commutes comprise a far lesser share of total trip making (18% in the survey sample). For these reasons, the two data sources – Census Journey to Work and the New Paltz Household Survey – are not immediately comparable.

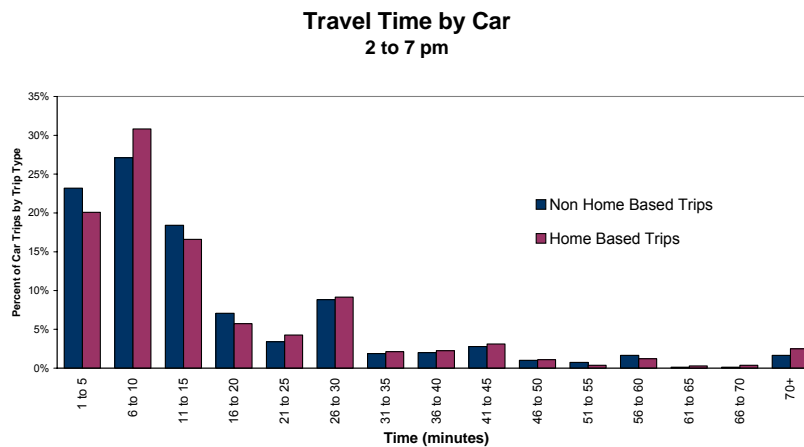
6.4 AUTO OCCUPANCY BY TRIP TYPE

By studying the vehicle trip data as provided by the survey participants, average occupancy rates for the automobile trips were calculated. On each trip involving a car, the average occupancy was 1.48 people per car. Automobile trips that are work-related average 1.20 people per vehicle.

6.5 TRIP LENGTHS

The majority (51%) of trips made by car had a travel time of 10 minutes or less, and 68% had travel times of 15 minutes or less. Trips that originated from or concluded at home (home-based) had slightly longer travel times than trips that were not home based, as shown in Figure 6-4.

Figure 6-4: Trip Lengths for Home-Based and Non-Home-Based Trips, New Paltz, 2PM – 7PM



6.6 TRIP RATES

A central purpose of the trip diary survey is to estimate trip generation rates. Table 6-7 shows the raw results from the trip diary survey. The lack of responses for 0 vehicle households leads to very low or, in the case of 4+ person households, no trip making. These are artificial results. To compensate for the household types with poor response rates, national data will be used for modeling.

Table 6-7: PM Peak Hour Vehicle-Trip Generation Rates, New Paltz

Cars	Number of members			
	1	2	3	4
0	0.10	0.52	0.63	0.00
1	0.49	0.83	0.82	1.50
2	0.61	1.01	1.48	2.18
3+	0.45	1.20	1.69	2.14

One source of data validation for the trip rates shown in Table 6-7 is the Institute of Transportation Engineers (ITE) Trip Generation Manual. This data source provides vehicle trip rates for a variety of land uses, including residential land uses such as Single Family (Land Use 210) and Apartment (Land Use 220). The average PM peak hour vehicle trip generation rates for these uses are 1.01 and 0.62, respectively. The ITE data do not differentiate by household type, as is done with the trip diary data. A “typical” household for ITE’s single family residence would consist of 2-3 people with 1-2 vehicles, which rates are very comparable to those estimated from the trip diary. Apartment residences tend to be smaller household sizes and lower vehicle ownership, and hence roughly correspond to the 1-2 household size range with zero to 2 vehicles.

6.7 TRANSPORTATION PRIORITIES

After completing the travel logs, participants were asked to answer questions regarding their transportation priorities. These questions related primarily to alternative modes of travel, including walking/biking and carpooling.

Participants were asked questions regarding the frequency they walked, cycled or carpooled on trips and were asked for reasons they did not do so more often. The participants were then asked to rate the importance of certain transportation priorities such as congestion, air quality and pedestrian safety. Finally they were asked to rate the relative importance of mobility, safety, and environment.

6.7.1 Walking and Cycling

Based on the number of respondents, 57% of households had members who walked or rode a bike for some kind of trip at least once a week, with 30% walking or riding at least once a day. At the same time, 36% seldom or never walked or rode a bike for any kind of trip. When asked why they did not walk or ride more often, the most frequently-cited reasons were distance (305 responses), inconvenience (259), and inadequate facilities (243) (Table 6-8).



Table 6-8: Walking and Cycling

Frequency of walking or riding trips			Reasons why do not walk or ride more often	
More than once/day	103	12%	Distance	305
Once a day	121	14%	Takes too long/inconvenient	259
Twice a week	132	15%	Inadequate bike/walk paths	243
Once a week	71	8%	Safety	228
Once a month	57	6%	Bad weather	210
Total responses	754	-	Other	145

When asked if there were more adequate biking or walking paths, would participants be more willing to bike or walk, 415 responded affirmatively, and 471 responded no. Those that responded in the affirmative were asked how far would they be willing to walk or ride and how often. 375 households specified distances they would be willing to walk, as shown in Table 6-9. Eighty-eight percent of those who said they were willing to walk or ride, replied that they would be willing to travel one to five miles, with 46% willing to walk or ride one to two miles. An additional 9% were willing to walk or ride six to ten miles.

Table 6-9: Distance Survey Participants Would Be Willing to Walk or Ride Assuming Improved Bike/Ped Facilities

Distance	Households	Percent of Positive Respondents
1 to 5 miles	330	88%
6 to 10 miles	33	9%
11 to 15 miles	6	2%
More than 15 miles	6	2%

The survey also asked participants if the Town and Village of New Paltz allocated money for bike and walk path improvements, how and where should this be invested. 558 people responded. Over 250 of those responding suggested more bicycle and/or walking paths along main roads. Specific roadways that were most often mentioned by name were: Routes 299 (Main Street), 32N, 208, Henry DuBois Drive, and South Putt Corners Road.

Several people made general comments about the lack of adequate sidewalks, poor sidewalk maintenance, lack of adequate crossing facilities, poor lighting, and the discontinuity of the existing sidewalk network. Several respondents mentioned that they would like wider sidewalks and wider shoulders. The lack of adequate pedestrian and cycling facilities for everyday use appears to be the main issue.

About a dozen people mentioned that they would like to see paths that lead to the County Pool/Fairgrounds. Others mentioned that there was inadequate bicycle parking. A safe route to school was another area respondents indicated was deserving of improvements.

Over 80 people also had comments regarding the Rail Trail, and many of these were supportive and stated they enjoyed using the Rail Trail. Over 60 people cited that money allocated for bike and walk path improvements should be directed toward the Rail Trail. Improvement suggestions included better access



and linkage to other paths and facilities (such as schools), safer crossing locations, benches for resting, improved drainage, improved personal security, pruned overgrown vegetation, improved maintenance, litter bins, and parking facilities.

Enforcement was also an issue. Some mentioned motorcyclists, ATV's and motorbikes illegally using and destroying the trail. Paving the Rail Trail seems to be a controversial issue. Some like the trail the way it is and specifically stated on their survey not to pave the trail, others suggested paving the trail.

About 30 people cited improved safety as an area to make transportation improvements. Suggestions included traffic calming, enforcing/reducing speed limits, and improving street lighting. Several people mentioned that they do not cycle because they do not feel safe.

Two dozen people commented that money should not be spent on improving walk or bike paths. Some participants noted that they would not use them while others thought that taxpayer money would be better spent elsewhere or that more paths were not necessary.

6.7.2 Carpooling

When participants were asked how often they carpoolled, 72% of participants that replied stated that they seldom or never carpoolled, while 23% carpoolled at least once a week (Table 6-10). The main reasons people gave as to why they didn't carpool more often, was that they did not have anyone to carpool with, they had schedule issues, they felt it was inconvenient, and they preferred to have their own vehicle.

Table 6-10: Carpooling

Frequency of carpooling			Reasons why do not carpool more often	
More than once/day	21	3%	don't have anyone to carpool with	292
Once a day	27	4%	Schedule	289
Twice a week	67	9%	Inconvenient	178
Once a week	47	7%	prefer to have own vehicle	163
Once a month	60	8%	Distance	68
Seldom or never	515	72%	prefer traveling alone	63
Total responses	737	-	travel time	53

6.7.3 Local Transportation Priorities

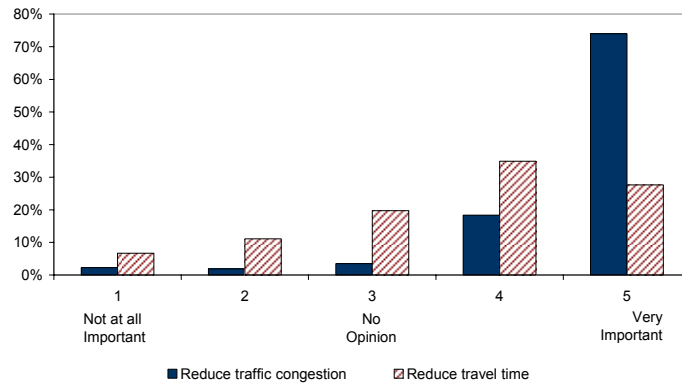
Survey participants were asked to rank ten local transportation priorities on importance, on a scale from 1 to 5, with 5 being very important. 552 households rated reducing traffic congestion as being very important, the highest of all priorities. The average rating for traffic congestion is 4.6. Reducing travel time, a corollary of reducing congestion, was slightly less of a priority.

The issue with the second highest average (4.1) and ranking of very important (358) is improving pedestrian safety and issues. Figure 6-5 thru Figure 6-9 show the responses of participants to the rankings of local transportation priorities.



Figure 6-5: Importance of Traffic Congestion

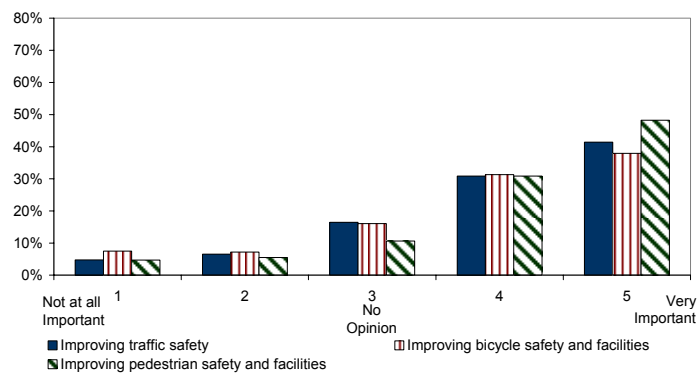
On a scale of 1 to 5, with 5 being very important, how important are reducing traffic congestion and reducing travel time?



Improving traffic safety, bicycle safety and facilities and pedestrian safety and facilities was also a high priority among survey households, with a similar ranking in each category.

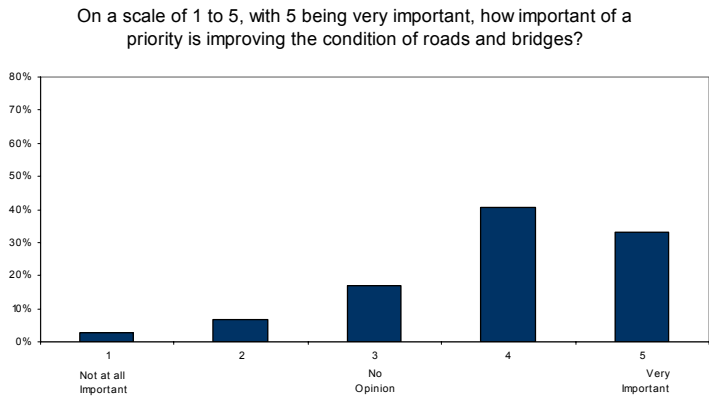
Figure 6-6: Importance of Improving Bicycle/Pedestrian Safety

On a scale of 1 to 5, with 5 being very important, how important are improving traffic safety, bicycle safety and facilities, and pedestrian safety and facilities?



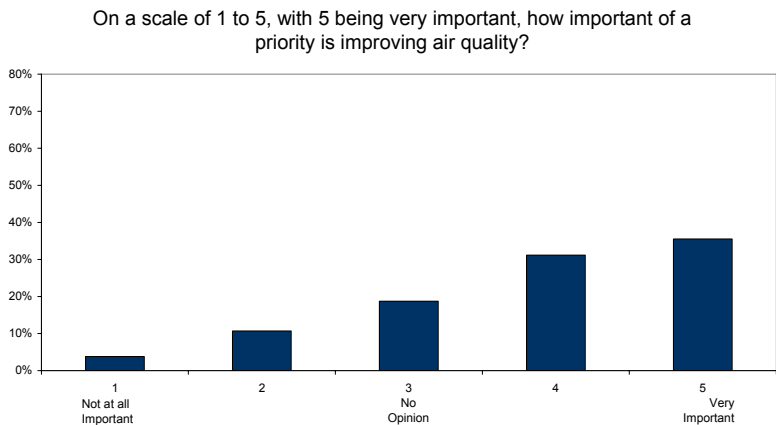
Improving the condition of roads and bridges was another high priority, with an average ranking of 3.9 and 74% of those responding rating it at 4 or 5.

Figure 6-7: Importance of Improving Road and Bridge Condition



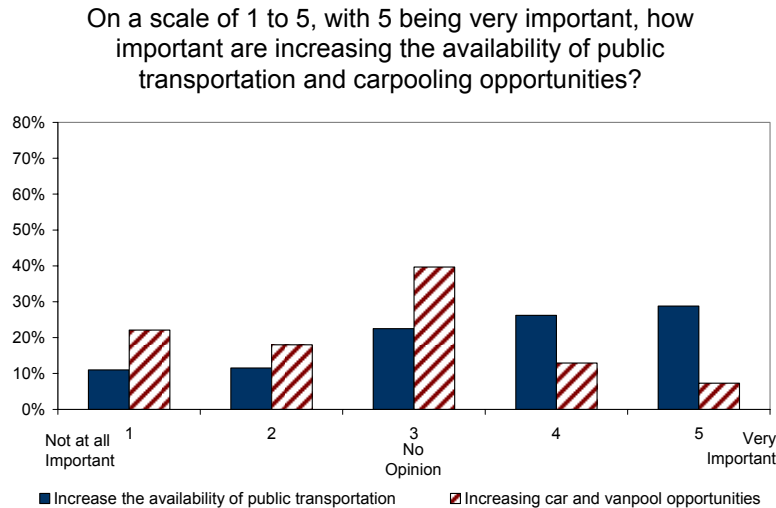
Improving air quality was another priority, with 67% rating the priority a 4 or 5.

Figure 6-8: Importance of Improving Air Quality



Increasing car and vanpool opportunities had the lowest ratings of the listed priorities, with an average rating of 2.7 and 40% rating it 1 or 2 and 40% having no opinion. Improving public transportation was given a higher priority with an average rating of 3.5.

Figure 6-9: Importance of Increasing Public Transportation/Carpooling



6.7.4 Mobility, Safety and the Environment

The final question in the Transportation Priorities section of the survey was for participants to rate the importance of mobility, environment and safety against each other. The survey results were analyzed using the Analytic Hierarchy Process, which requires that respondents make pairwise comparisons of the three attributes. The data are quantitatively evaluated and normalized to indicate the relative priority of each attribute. The results of that analysis are given in Table 6-11.

Table 6-11: Results of the Analytic Hierarchy Process

		Normalized
Mobility	Driving or riding where you need to go as quickly as possible with a minimum of congestion	0.30
Safety	Knowing that conditions are as safe as possible for travel by car, bus and/or foot	0.42
Environment	Having a transportation system that minimized environmental impact and provides alternatives to travel by car.	0.28



The survey participants rated safety as the highest priority, with mobility and the environment with similar ratings.

6.7.5 Open Ended Comments

Survey respondents were given the opportunity to comment openly about transportation and land use issues in New Paltz. Over 470 of the returned surveys contained comments, which have been provided verbatim in Appendix H.

Table 6-12 provides a classification of these responses.

The open-ended comments are entirely consistent with the findings from the Transportation Priorities, which clearly ranked traffic congestion as being the number one transportation problem. The open-ended comments were intensely focused on the congestion problems faced on the major and minor arterials in New Paltz. Most comments relating to a possible bypass were favorable in tone.

Table 6-12: Classification of Open-Ended Responses

Category of Comment	Frequency	Sample(s)
Bypass/Alternative Routes	82	Need bypass around business district desperately.
Main Street/299	55	As a family, we avoid driving anywhere in New Paltz after 4 PM Thursday through the weekend because traffic is so horrendous. We often drive miles out of our way to avoid the Main St. Congestion. Our own street is unsafe to bike or walk on.
Land Use/Open Spaces	54	
Traffic	53	Get the congestion out of the downtown.
Cycling/Bike Paths	43	Living in the village means I walk to many places I want to go.
Pedestrian Issues	41	
Transit	30	Is a town public transportation a utopian impossibility?
Intersection of Main/Route 32/Manheim	14	
Speeding	14	I am concerned about increased traffic and speed on Henry DuBois -what can be done to slow cars down?
Route 32 Intersections	12	
Police Enforcement	12	
Intersection of Main/Chestnut	11	

These findings are slightly at odds with the results of the Analytic Hierarchy Process, where addressing safety issues gained the highest priority over mobility issues (i.e. reducing congestion) and environmental issues. The AHP process forces respondents to prioritize by making pair wise comparisons and, hence, requires more thoughtful consideration of two options.



Nevertheless, the strong direction provided to this project from the travel diary survey is to seek ways to improve the mobility and safety of automobile travel in and around New Paltz. Automobile travel accounts for over 90% of the peak hour travel in the Town. It is the predominant mode and, on the surface at least, a lot of people are very concerned about the difficulty of travel during peak periods. Chronic congestion in New Paltz is perceived as a major inconvenience and nuisance, and has caused many people to modify their travel behavior by choosing not to travel, changing their departure times, and changing their travel routes.

7.0 TRANSPORTATION MODEL DEVELOPMENT

7.1 INTRODUCTION

An important analytical tool for evaluating future land uses and transportation improvements is the New Paltz Transportation Model. This section of the Phase A technical report summarizes the status of this model.

7.2 DATA SOURCES

The New Paltz Transportation Model combines several sources of information into an analytical tool that estimates the PM peak hour of travel within New Paltz. These data include:

- Land use data,
- Travel behavior data,
- Transportation network data, and
- Data/information from the Ulster County Transportation Model

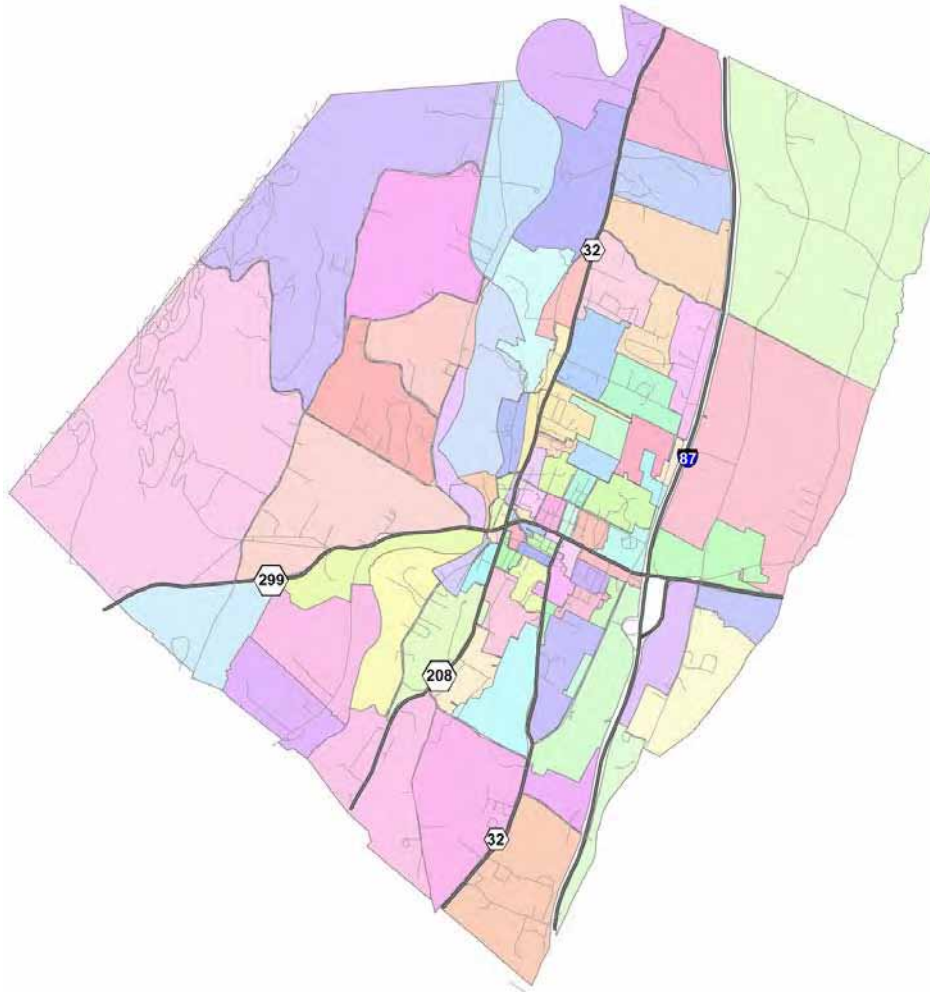
All data are enumerated within a geographic unit called a Transportation Analysis Zone (TAZ). TAZs incorporate a high level of demographic detail into the model. TAZ boundaries were created to be consistent with the following other geographies:

- 2000 U.S. Census tracts and block groups
- New Paltz zoning
- New Paltz parcel data
- Ulster County Regional Model TAZs

Figure 7-1 show the TAZ boundaries for the entire model area. Figure 7-2 provides an exploded view of the TAZs in the New Paltz downtown.

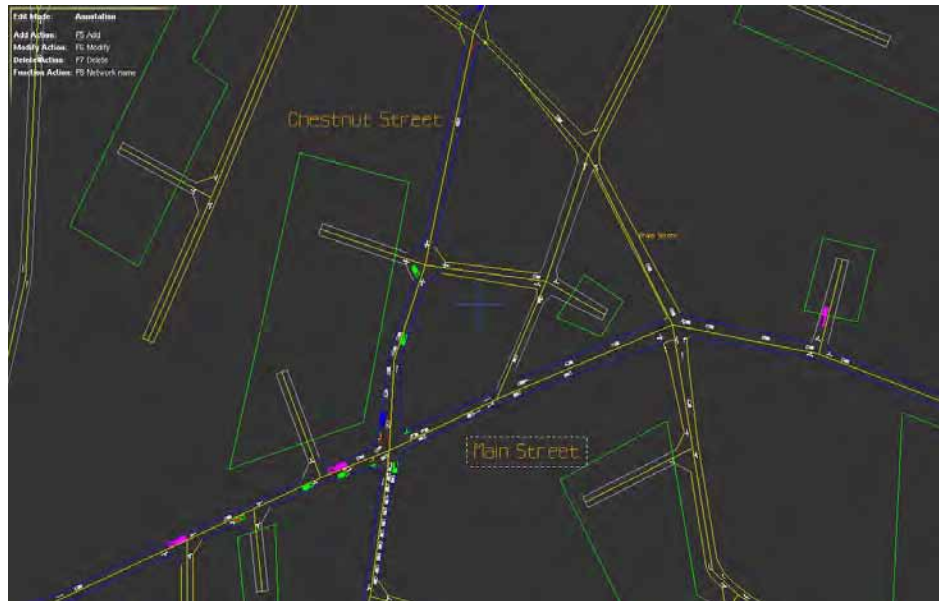


Figure 7-1: Transportation Analysis Zones (TAZs) Boundaries



In Figure 7-2, an outlined polygon represents a Transportation Analysis Zone (TAZ), which, from a modeling standpoint, is a collection of land uses such as housing units, parking, retail jobs, and non-retail jobs. It is this collection of land uses that generate and attract vehicle trips.



Figure 7-2: Exploded View of Village Downtown Showing TAZ Boundaries and Traffic Simulation

The connection between TAZs and the roadway network are somewhat artificial, as what might in reality be multiple points of access (e.g. many driveways) are represented as one or two points of access. Beyond the connectors between the TAZ and the roadway network, the model realistically portrays the network and routing options that are available to motorists.

Table 7-1: shows the correspondence between the geographies used in the New Paltz Transportation Model (TAZs), the Ulster County Regional Model (TAZs), and the US Census Tract/Block Groups for New Paltz. The New Paltz Transportation Analysis Zones were determined partly on their consistency with these other data sets. There are a total of 85 internal TAZs to the New Paltz Transportation Model.

There are also 19 external zones where traffic enters or exits the New Paltz traffic model. Each of these 19 external zones represents a specific roadway, as shown in Table 7-2. Traffic for each external station is loaded into the model based on traffic counts and, for major arterials such as Route 299, on traffic flows from corresponding roadway segments in the Ulster County Travel Demand Model.



Table 7-1: Correspondence Between New Paltz Model TAZs, Ulster County Model TAZs, and Census Block Groups

New Paltz Model TAZ	Ulster County Regional Model TAZ	US Census Tract Block Group
1	171	953400-2
2	171	953400-2
3	171	953400-2
4	171	953400-2
5	171	953400-2
6	169	953400-2
7	169	953400-2
8	168	953400-3
9	168	953400-3
10	168	953400-3
11	168	953400-3
12	168	953400-3
13	168	953400-3
14	168	953400-3
15	168	953400-3
16	168	953400-3
17	168	953400-3
18	171	953400-2
19	171	953400-2
20	171	953400-2
21	179	953400-3
22	179	953400-3
23	179	953400-3
24	179	953400-3
25	166	953300-1
26	166	953300-1
27	166	953300-1
28	160	953300-1
29	160	953300-1
30	160	953300-1
31	166	953300-1
32	166	953300-1
33	167	953400-1
34	167	953400-1
35	167	953400-1
36	167	953400-1
37	167	953400-1
38	167	953400-1
39	177	953500-2
40	172	953500-1
41	172	953500-1
42	172	953500-1
43	172	953500-1
44	170	953500-3
45	170	953500-3
46	170	953500-3
47	170	953500-3
48	172	953500-1
49	170	953500-3
50	170	953500-3
51	170	953500-3
52	172	953500-1
53	173	953500-2
54	173	953500-2
55	173	953500-2
56	177	953500-2
57	177	953500-2
58	176	953500-3
59	176	953500-3
60	174	953500-3
61	174	953500-3
62	175	953300-3
63	175	953300-3
64	164	953300-3
65	165	953300-3
66	165	953300-3
67	163	953300-3
68	163	953300-3
69	162	953300-3
70	162	953300-3
71	161	953300-1
72	161	953300-1
73	161	953300-1
74	159	953300-2
75	178	953300-2
76	178	953300-2
77	178	953300-2
78	178	953300-2
79	158	953300-2
80	158	953300-2
81	159	953300-2
82	159	953300-2
83	159	953300-2
84	159	953300-2
85	159	953300-2



Table 7-2: External Transportation Analysis Zones Represented in the New Paltz Traffic Model

External Zone	
TAZ	Description of External Zone
100	N. Ohioville Rd./Cow Hough Rd.
101	Plutarch Rd.
102	Blackcreek Rd.
103	Old State Route 299
104	Route 299 (E)
105	Station Rd.
106	Hurds Rd.
107	S. Ohioville Rd.
108	Route 32 (S)
109	Dubois Rd.
110	Route 208 (S)
111	Route 7/Libertyville Rd.
112	Albany Post Rd.
113	Route 299 (W)
114	Mountain Rest Rd.
115	Springtown Rd.
116	Route 32 (N)
117	I-87 On
118	I-87 Off

TAZs internal to New Paltz number 1 through 85. External zones number 100 through 118. The 15 zones from 86 – 99 are held in reserve for future detailed modeling.

7.3 LAND USE DATA

All land use data are geocoded to the 85 TAZs internal to New Paltz Town and Village. The land use data underlying the model consist of geolocated household and employment data and, for zones representing SUNY New Paltz, parking information. The household data are based on 2000 Census information. Census information for the Town and Village of New Paltz is provided in Tract and Block Group geographies. A total of 9 Block Groups define the entire geography inclusive of the Town and Village.

Through inspection of detailed aerial orthophotographs of the area, the Census household information was geographically divided into 85 internal zones of the Transportation Model. Census information on household types also enabled characterizing households depending on the number of household members (ranging from 1 to 4+) and the number of vehicles per household (ranging from 0 to 3+). This type of cross-classification (household size x number of vehicles) is a common analytical approach in travel models, and links directly to the results from the household survey described in Section 6.0.



The employment data are handled in a different way. The primary source for employment data is the Ulster County regional travel demand model, developed for the Ulster County Transportation Council. The Ulster County model includes retail and non-retail employment, geo-coded to 23 Transportation Zones within the Town and Village of New Paltz. This information was further split into the 85 internal zones of the Transportation Model used in this project, using building footprint area as a guideline for allocating employment.

In the model traffic related to SUNY New Paltz is generated based on parking and jobs. Figure 7-3 shows the section of the model encompassing the SUNY New Paltz campus (TAZs 48, 52, 53, 54). SUNY provided parking inventories for this modeling effort, which are shown in Table 7-3.

Figure 7-3: Exploded View of Model Showing SUNY New Paltz TAZs

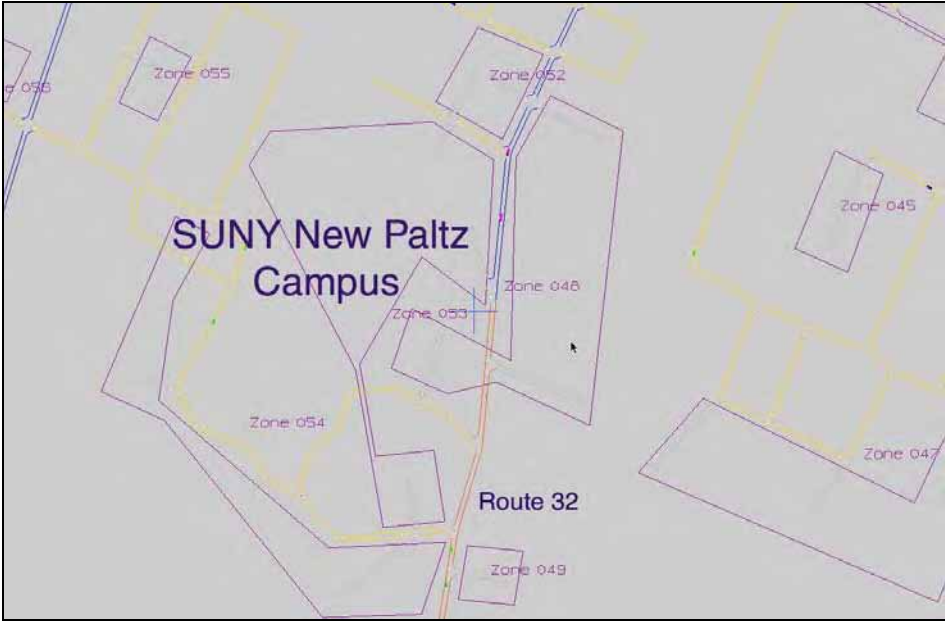


Table 7-3: SUNY New Paltz TAZs and Parking, by User Class

TAZ	Parking					Lot # SUNY
	Commercial	Residential	Staff/Faculty	Commuter Students	Residential Students	
48			152	130	308	11,12,23,28
52			161	101	26	1,18,19,29,31,32
53	12		449	218	115	2,3,4,11,12,14,15,16,20,21,22,24,25,27,39
54	15	51	495	206	34	5,6,7,8,9,10,13,17,26,30,33,34,35,36,38



7.4 TRAVEL BEHAVIOR DATA

The travel information collected from the household survey (Section 6.0) provides a rich data source with which to estimate several important travel demand factors used in the model. The details of the survey are described elsewhere in this report. These factors include:

- Trip frequency (number of trips by time of day)
- Mode of travel (auto, carpool, bus, walk/bike, etc.)
- Trip purpose (work- or nonwork-related)
- Demographics of responding household (household size, number of vehicles operated)

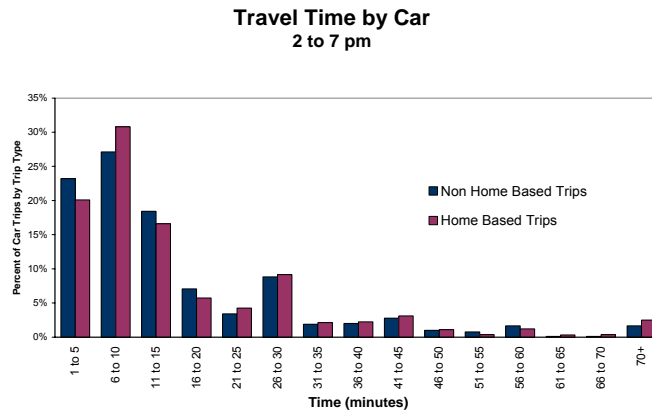
For the purposes of traffic modeling, all trip making is first categorized by trip type. Trip types were selected based on the frequency of response. Table 7-4 shows the frequency of trips by trip type and the person trip generation rate results from the trip diary survey. For example, the data in Table 7-4 indicate 18% of the person trips made during the PM peak hour (4:30-5:30 PM) are leaving the workplace to go directly home and each New Paltz household averages 0.15 of these trips every PM peak hour.

Table 7-4: Trip Types, Frequency of Trip Types, and Average Person Trip Rate, PM Peak Hour

Trip Type	Frequency of Trip During PM Peak	Average Person Trip Rate per Household (PM Peak Hour)
	Hour	
Work to Home	18%	0.15
Nonwork to Home	24%	0.20
Home to Nonwork	22%	0.18
Nonhome-Base	36%	0.29

From the survey data, we were able to calculate the duration of trips made by car. The travel time results, by trip type, are shown in Figure 7-4.

Figure 7-4: Travel Time by Car



The 2000 Census reports that average travel times to work average 21.7 minutes and 25.1 minutes for the Village and Town of New Paltz (inclusive of the Village), respectively. These data are not immediately comparable to the data in Figure 7-4, as they are for work trips only and mostly represent AM travel times.

7.5 TRANSPORTATION NETWORK DATA

The road network was coded using Paramics, a microscopic traffic simulation software package. Figure 7-5 shows a representation of the New Paltz road network.

Figure 7-5: Major Routes in the Paramics Model



Road links are color-coded to represent road types, which are differentiated by capacity (number of lanes and lane width) and the speed limit. Table 7-5 lists out the road types used in this model.

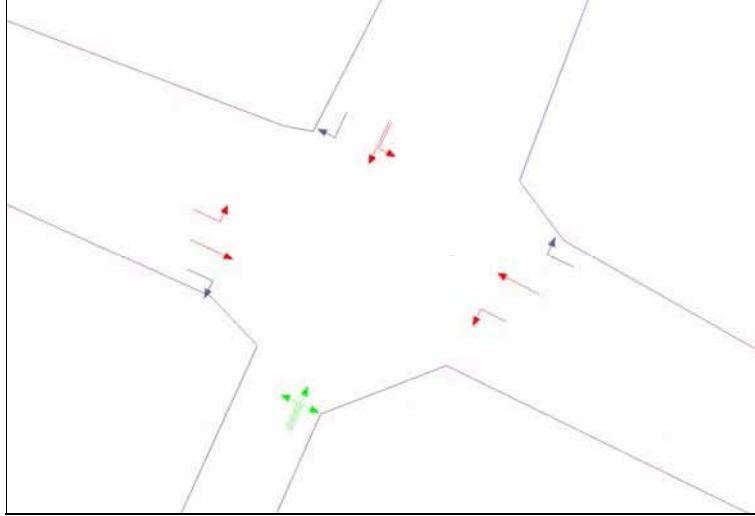
Table 7-5: Paramics Road Types

Speed	# Lanes	Lane Width	Functional Classification
10 mph	1 lane	11'	Thruway toll
25 mph	1 lane	11'	local
25 mph	2 lanes	11'	local
30 mph	1 lane	11'	local/collector
30 mph	2 lanes	11'	local/collector
35 mph	1 lane	12'	collector
35 mph	2 lanes	12'	collector
35 mph	3 lanes	12'	collector
40 mph	1 lane	11'	minor arterial
40 mph	2 lanes	11'	minor arterial
45 mph	1 lane	12'	minor/major arterial
45 mph	2 lanes	12'	minor/major arterial
45 mph	3 lanes	12'	major arterial
50 mph	1 lane	12'	major arterial
50 mph	2 lanes	12'	major arterial
65 mph	2 lanes	12'	principal arterial



The model includes such detail as traffic volumes, intersection controls (i.e. stops, signals), and lane designations. For example, Figure 7-6 shows the lane configuration at the Route 299-Simmons Plaza-Cherry Hill Road intersection.

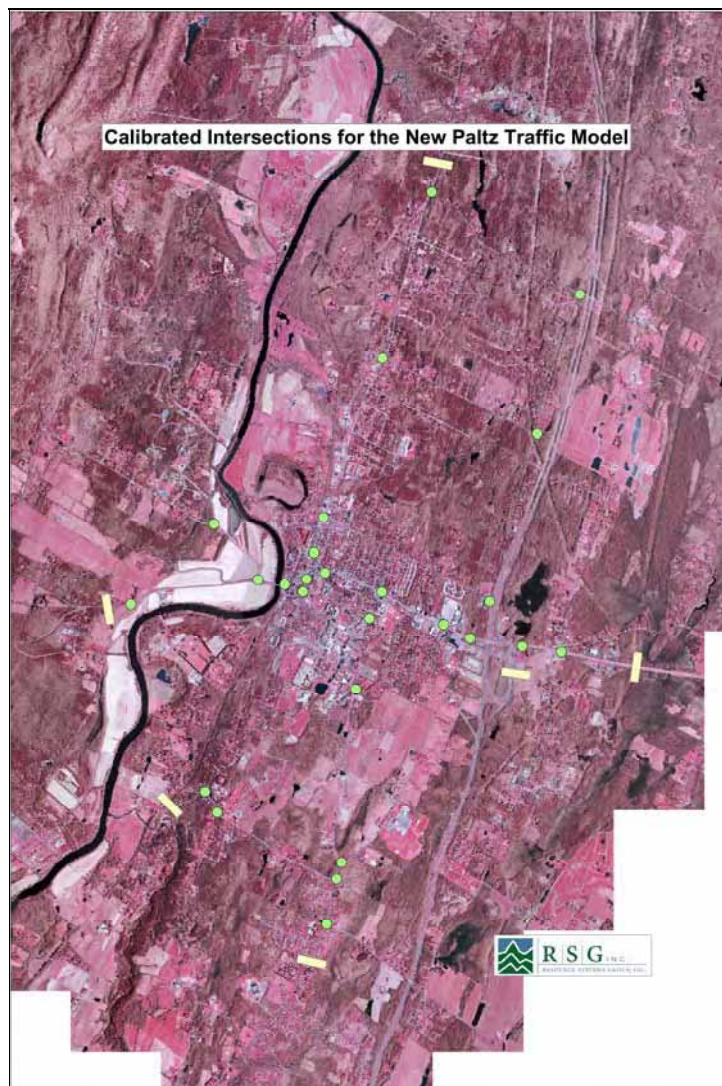
Figure 7-6: Example of Lane Configurations in the Model



The model is calibrated to 237 PM peak hour counts taken between April and October 2003. Figure 7-7 shows the location of these counts.



Figure 7-7: Calibration Count Locations



At present the standards applicable to calibration of travel models are set forth by FHWA.¹

	Goal	Value (Model)
Coefficient of Correlation (r)	≥ 0.88	0.92
Percent Error (Region)	+/- 5%	2%
Percent Error (Freeways)	7%	-18%
Percent Error (Principal Arterials)	10%	-4%
Percent Error (Minor Arterials)	15%	1%
Percent Error (Collectors)	25%	36%

The model currently meets or exceeds the FHWA standards except with regard to percent error for Freeways and Collectors. Calibration efforts will continue into Phase B of the project.

7.6 ULSTER COUNTY MODEL

The Ulster County Transportation Council has developed a 4-step travel demand model estimating PM peak hour travel in Ulster County. The model contains 441 Transportation Analysis Zones, of which 23 are defined within the boundaries of New Paltz. The 85 Transportation Analysis Zones of the New Paltz model are finer partitions of the base Ulster Model TAZ geography.

A major component of the Ulster County Model is the estimate of employment by TAZ. This information is used as a starting point for estimating retail and non-retail employment in the New Paltz traffic model. Minor changes in the geolocation of employment have been made during the model calibration process.

The Ulster County model is an important input to the New Paltz traffic model. Because it captures regional travel, the Ulster County model can generate traffic inputs to the New Paltz traffic model. In this way, major developments external to New Paltz, but which would affect travel through New Paltz, can be evaluated. The Ulster County Model thus generates external traffic to New Paltz, or attract traffic from New Paltz.

8.0 FUTURE DIRECTIONS OF PROJECT

This report completes the first phase of the New Paltz Transportation-Land Use Project. There are two outcomes from this first phase. First, there are a small number of short-term improvements that can be advanced for further investigation or implementation. The project team will be working closely with NYSDOT to advance a subset of these projects that can be integrated with ongoing or planned projects in New Paltz.

Second, the project has established the Existing Conditions of the multi-modal transportation system, with a clear identification of the system's deficiencies across all modes of travel. This baseline

¹ "Calibration and Adjustment of System Planning Models," December 1990. FHWA ED 90-015, page 35.



information will continue to inform the project and the project's stakeholders and will ultimately be translated into an Action Plan for all modes of travel.

The key direction of Phase B of this project is to evaluate alternative land use futures and to provide insight into how the transportation system performs under these alternatives. The traffic model developed in Phase A is the key tool for evaluating the effectiveness of major transportation improvements designed to serve the alternative land uses.

Based on input from the New Paltz public, the project will be considering at minimum the following land use futures:

- Continuation of the historical settlement pattern. This land use scenario can be termed "business as usual" and would involve accommodating increased housing primarily in the more rural sections of town, as has been the pattern over the most recent 10 year period.
- Concentration of housing growth to areas served by sewer and water. Based on the input from the second public meeting (13 May 2003) there was broad consensus that future housing growth should be concentrated in areas served by municipal sewer and water. Most of these areas are within New Paltz village, but some extend to portions of the Town of New Paltz (e.g. proximate to South Putt Corners Road toward the High School).
- Consideration of modifications to current zoning regulations, as are currently discussed by public and municipal officials.

Land use variations including establishing a hospitality district and other commercial mixes within the municipal sewer/water area may be evaluated. The project team will work to define additional land use scenarios in consultation with the projects' Citizens Advisory Committee and Technical Review Committee.

The project will evaluate land uses in 2025, assuming a higher-than-historic growth rate, as directed by the Technical Review Committee and by NYSDOT. A "Base Case" will be evaluated assuming no major transportation improvements. This base case provides the foundation for understanding the relative changes in mobility that are created through the major transportation improvements recommended for evaluation. The project will proceed to evaluate alternative transportation investments designed to mitigate adverse impacts related to future land use growth.

Major transportation improvements include:

- East-West Connector between South Putt Corners Road and Route 208
- Reconfigured access to Thruway to align with the connector roadway.
- Second Crossing of the Wallkill, a further extension of the east-west connection
- Re-Designation/Re-Alignment of Route 32

