NYS ROUTE 13 / 366
CORRIDOR MANAGEMENT PLAN

Dryden, New York

Prepared for:

Tompkins County
Ithaca, NY 14850

Prepared by:

FISHERASSOCIATES
135 Calkins Road, Rochester, NY 14623
Phone: 585-334-1310
www.fisherassoc.com

TROWBRIDGE & WOLF
Landscape Architects Planners

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Advisory Team:

Barbara Caldwell
Fernando DeAragon
Gene German
Mike Hattery
Dan Kwasnowski
Michael Lane
Ed Marx
Bob Porteus
Martha Robertson
David Weinstein

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I. INTRODUCTION

Tompkins County has crafted an inspiring vision for the community. The recently adopted Comprehensive Plan outlines "Principles, Policies, and Actions" to lead the community to an exciting future. The Plan focuses on a thriving economy for both the urban and rural areas, preservation of the agricultural and forest resources, and growth centered on existing population centers and "new villages" or nodal centers created through local community plans. The principles included in the Plan are consistent with the 2002 Tompkins County Vital Communities Initiative developed to assist local municipalities in achieving their local vision.

The Town & Village of Dryden and Hamlet of Varna have also independently completed Comprehensive Plans that are consistent with the Tompkins County Plan and Vital Communities Initiative. The plans provided specific focus on the Route 13 and Route 366 corridors with concerns related to congestion, speeding, as well the opportunity for new development near existing nodal development.

The **NYS Route 13/366 Corridor Management Plan (CMP)** offers a perfect "next step" in the evolution of creating the vision. Keys to the success of the CMP are to clearly define nodal development points that accommodate the increase in development while safely and efficiently moving commuters into and out of Cornell, the City of Ithaca, Village of Dryden, Hamlet of Varna, and to Cortland.

The NYS Route 13/366 Corridor (Corridor) is a heavy commuter route that is steadily increasing in traffic volume. It is the primary of five corridors into and out of Tompkins County and the City of Ithaca and connects directly into the heart of Cornell, the largest employer in Tompkins County. The Corridor also provides access to the Hamlet of Varna, Village of Dryden, City of Cortland, and Interstate 81.

The Village of Dryden and rural surrounding areas offer affordable housing and a suburban lifestyle for people working at Cornell and in the City of Ithaca. The nature of use, and location of the Corridor, makes it a prime candidate for convenience development (bank, drycleaner, car service, food services, etc.) as commuters travel between work and home. This development, however, is occurring in a scattershot manner as businesses are gaining access to the corridor from individual parcels. Speeds along the Route 13 portion of the Corridor vary, with the majority of the undeveloped areas posted at 55 MPH, however, motorists typically travel upwards of 60 – 65 MPH creating a significant safety concern with the uncontrolled driveways and side roads along the Corridor.

The Corridor needs Land Use/Zoning, Access Management, and Traffic Calming Regulation to promote nodal development and preserve the agricultural land and open space while providing for safe and efficient passage for the motoring public.

Figure 1 depicts the study area.

II. DESCRIPTION OF TRANSPORTATION NETWORK

The NYS Route 13/366 corridor is located in the Town of Dryden and extends along NYS Route 13 from the Cortland County border westward to the overlap section with NYS Route 366. The corridor then follows NYS Route 366 to the Town of Ithaca border. See **Figure 1** for the Study Area Map.

Route 13 is classified as a Rural Principal Arterial. A principal arterial serves major through movements between important centers of activity in a metropolitan area and a substantial portion of trips entering and leaving the area. It connects freeways with major traffic generators. Route 13 is the only principal arterial highway in Tompkins County.

Route 366 is classified as an Urban Minor Arterial for its entire length within the study area. A minor arterial connects and augments the principal arterial system. A minor arterial places more emphasis on land access than a principal arterial.

The NYS Route 13/366 corridor is the primary corridor into and out of Tompkins County and the City of Ithaca. It connects directly into the heart of Cornell University. The corridor also provides access to the Hamlet of Varna, Village of Dryden, City of Cortland, and Interstate 81.

The corridor was reviewed for the following to establish the existing physical and operational characteristics of the roadway. These characteristics will assist in determining the preferred future development scenario along NYS Route 13 & 366:

- Physical roadway attributes
- General roadway and intersection operations
- Speed data
- Accident data
- Public Transit Routes
- Bicycle and Pedestrian provisions
- Parklands, trails, recreational facilities, and municipal buildings
- Environmentally sensitive areas
- Land use
- Town of Dryden zoning
- Village of Dryden zoning
- Off-Street parking
- Roadway Signage
- School bus and emergency vehicle operations
- Right-of-Way

A. PHYSICAL ROADWAY ATTRIBUTES

The NYS Route 13/366 corridor has five distinct sections. These sections are described as follows:

- NYS Route 366: Ithaca Town Line to NYS Route 13 – This is a two-lane section of roadway with eleven foot wide travel lanes and five foot wide shoulders on both sides. The posted speed limit is 40 mph from the Ithaca Town line to approximately Freese Road and 45 mph from Freese Road to NYS Route 13.

- NYS Route 13: NYS Route 366 Overlap – This is a two-lane section of roadway with twelve and a half foot wide travel lanes and ten foot wide shoulders on both sides. The posted speed limit is 45 mph.

- NYS Route 13: NYS Route 366 to Dryden Village Line – This is a two-lane section of roadway with twelve and a half foot wide travel lanes and ten foot wide shoulders on both sides. The posted speed limit is 55 mph. As Route 13 approaches the Village of Dryden (approximately one half mile to the west of the Village Line) the posted speed limit is reduced to 45 mph.

- NYS Route 13: Dryden Village Line to NYS Route 392/NYS Route 38 – This is a two-lane section of roadway with eleven and a half foot wide travel lanes, five foot wide shoulders and curbs on either side. The posted speed limit is 30 mph. This is the only section of the corridor that contains a continuous network of sidewalks.

- NYS Route 13: NYS Route 392/NYS Route 38 to Freeville Road (NYS Route 38) – This is a two-lane roadway section from the NYS Route 392/NYS Route 38 intersection to Pratt Street, then widens to a three-lane section of roadway with thirteen foot wide lanes, no shoulders, and curbs on both sides. The center lane is a shared turn lane for access to the businesses located along the corridor. The posted speed limit is 30 mph.

- NYS Route 13: Freeville Road (NYS Route 38) to Cortland County Line – This is a two-lane section of roadway with twelve foot wide travel lanes and ten foot wide shoulders on both sides. North of Freeville Road, the posted speed limit is 45 mph for approximately one and a quarter miles. At this point the posted speed limit becomes 55 mph for the remainder of the corridor.

  There are four signalized intersections within the project limits. These intersections are:

- NYS Route 366 / NYS Route 13 (adjacent to NYSEG)
  - Note that the northbound approach from Route 366 to Route 13 eastbound is controlled by a yield sign

- NYS Route 13 / NYS Route 38-NYS Route 392
- NYS Route 13 / Freeville Road (NYS Route 38) – Lee Road
- NYS Route 13 / Tompkins-Cortland Community College Entrance

All other intersections within the project limits are stop sign controlled.

B. GENERAL ROADWAY AND INTERSECTION OPERATIONS

Traffic observations were made during the AM and PM peak travel hours. Observations indicated that all signalized intersections were operating at acceptable Levels of Service (LOS). While no significant queuing was present during the field observations, residents have indicated AM peak period queuing at the Route 13 / Route 366 signalized intersection, primarily during the winter months and/or during inclement weather.

Traffic accessing the corridor at the unsignalized intersections and driveways experienced high delays due to the limited gaps created by the high volume of vehicles on NYS Route 366 and NYS Route 13. Side street traffic could wait up to a minute or more to turn onto the corridor. Due to the low volume of vehicles at these locations no significant queues were observed.

The 2005 NYSDOT Traffic Volume Report indicates the following traffic volumes along the corridor:

- **NYS Route 366:**
  - Ithaca Town Line – Route 13: 7,250 vehicles traveling on the roadway per day (vpd)

- **NYS Route 13**
  - Start Route 366 Overlap – End Route 366 Overlap: 17,790 vpd
  - End Route 366 Overlap – Start Route 38 Overlap: 11,590 vpd
  - Start Route 38 Overlap – End Route 38 Overlap: 14,000 vpd
  - End Route 38 Overlap – Cortland County Line: 11,080 vpd

As noted previously, the NYS Route 13 corridor is the primary corridor into and out of Tompkins County. As a point of reference, NYS Route 34 carries approximately 2,200 vpd at the Cayuga County line while NYS Route 79 carries 3,800 vpd at the Tioga County line. Traffic on the NYS Route 13/366 corridor was heavy but steady throughout the entire day. No significant congestion or delays were noted on the roadways.

C. SPEED DATA

Travel runs were completed during the AM and PM peak travel hours and non-peak conditions to determine the average speeds along the corridor. Speeds were consistent throughout the day along the entire corridor. Drivers typically traveled at or above the speed limit with a small number of drivers excessively speeding through the corridor.

Speeds typically ranged from the speed limit to ten miles an hour above the speed limit along all five sections of roadway in the corridor.

D. ACCIDENT DATA

NYSDOT Safety Information Management System accident summaries were reviewed, for the three-year period from January 1, 2001 to December 31, 2003, to determine high accident locations and accident patterns within the NYS Route 13/366 corridor. A total of 419 accidents were documented along the corridor with one fatality and 95 non-fatal injuries. **Table 1** documents the project intersection and segment accidents (by severity) along with the accident rates.

The NYS Route 13/NYS Route 366 (Dryden Road) intersection and the segment of NYS Route 366 from the Ithaca Town Line to NYS Route 13 had rates higher than the statewide average for similar roadways. Table 1 is a summary of accident patterns at these locations.

- NYS Route 13/NYS Route 366 (Dryden Road) – Rear end accidents were the predominant accident type, accounting for 42.9% of the total accidents at this intersection. Two thirds of the rear end accidents (66.7%) involved northbound vehicles. The common cause for all of the northbound rear end accidents was following too closely. The northbound right-turn (Route 366) movement is controlled by a yield sign. When traffic is at its busiest there are limited gaps in traffic for vehicles on this approach and vehicles will follow closely to get through. The remaining accident types and locations were scattered with no identifiable patterns.

- NYS Route 366 from the Ithaca Town Line to NYS Route 13 – Predominant accident types included Deer Hits (21.0%), Rear End (13.6%), and Fixed Object (12.3%). High speeds and wet road surfaces were common causes for the rear end and fixed object accidents. Accident locations were scattered with no identifiable patterns.

The fatality occurred 1/10 mile south of Old Dryden Road on the segment of NYS Route 13 from Freeville Road (Rt. 38) to the Cortland County Line. It was a collision with an earth element/rock/ditch. The driver was driving at an unsafe speed on a slushy surface.

E. PUBLIC TRANSIT ROUTES

The Town of Dryden is served by the Tompkins Consolidated Area Transit System (TCAT). There are three TCAT bus routes along the NYS Route 13/366 corridor; Route 41, Route 43 and Route 45. There is one Park and Ride lot located within the corridor at the Dryden Village Hall on South Street. The bus routes are presented in **Figure 2**. The following is a brief description of each route:

Table 1 – Accident Summary

Location	Total	Fatal	Injury	Property Damage	Non-Reportable	Length (Miles)	Accident Rate	NYSDOT Average Accident Rates
Intersection								
Rt. 366 / Rt. 13	21	0	8	6	7	-	0.79*	0.59
Rt. 13 / Rt. 392 / Rt. 38	8	0	5	2	1	-	0.53	0.60
Rt. 13 / Freeville Rd. (Rt. 38) / Lee Rd.	2	0	0	0	2	-	0.11	0.60
Rt. 13 / Tompkins-Cortland Community College	1	0	0	1	0	-	0.08	0.35
Segment								
Rt. 366: Ithaca Town Line to NYS Rt. 13	81	0	10	20	51	2.5	3.74*	2.81
Rt. 13: Rt. 366 (Dryden Rd.) to Dryden Village Line	182	0	46	38	98	5.1	2.79	2.81
Rt. 13: Dryden Village Line to Rt. 38/Rt. 392	27	0	6	2	19	0.9	2.74	3.66
Rt. 13: Rt. 38/Rt.392 to Freeville Rd. (Rt. 38)	42	0	11	5	26	0.7	4.37	4.98
Rt. 13: Freeville Rd. (Rt. 38) To Cortland County Line	87	1	22	22	42	3.6	2.05	2.81

*: Denotes accident locations with rates higher than the statewide average.

- Route 41: This route travels between Ithaca Commons and Tompkins Cortland Community College (TC3) via Cornell University, Etna, and Freeville. It runs year round on weekdays only. There are currently six outbound and five inbound trips.

- Route 43: This route travels between Ithaca Commons and TC3 via Cornell University, Varna, and Dryden Village. It runs year round on weekdays only. There are currently seven outbound and six inbound trips.

- Route 45: This route travels between Pyramid Mall and TC3 via Etna and the Village of Dryden. It runs year round on weekends only. There are currently three outbound and three inbound trips.

TCAT offers multiple options for commuters. Standard fare for a single ride is $1.50 for adults, $1.25 for youth, and $0.75 for senior citizens and persons with disabilities. Cards and passes are also available, ranging from a ten-ride card to a 1-day pass to an annual pass.

Paratransit is a service available for elderly and disabled members of the general public, Cornell faculty and staff, and Cornell students. This service provides door-to-door, demand-responsive transportation.

TCAT also provides bicycle racks on every bus to service cyclists. This is a free service.

F. BICYCLE AND PEDESTRIAN PROVISIONS

A majority of the corridor requires bicyclists and pedestrians to share the roadway with vehicular travel. Pedestrians and bicyclists use the roadway shoulder. The Village of Dryden has sidewalks along the entire stretch of NYS Route 13. No exclusive bicycle lanes existed within the project limits.

Trails exist within the study area for pedestrians and bicyclists. However, a majority of the existing trails are only usable for recreational activities (discussed in the next section). The trails do not provide the connectivity to make them an option for pedestrian and bicycle travel. There is one trail in the study area that can be used for travel purposes and one is under development; the Jim Schug Trail and the Dryden Freeville Trail. The following is a brief description of each trail.

- The Jim Schug Trail: This 4.2 mile trail travels from Route 13 in the Village of Dryden to Dryden Lake Park to the Town of Harford in Cortland County, at which point it merges with the Finger Lakes Trail. Primarily a recreational trail, it can also be used for travel due to its connectivity.

- The Dryden-Freeville Trail: This trail is under development. The trail will be 3.3 miles and will travel from Route 13 in the Village of Dryden to the Village of Freeville. This trail will connect to the Jim Schug Trail in the Village of Dryden.

Currently no trails provide complete connectivity along the corridor. Projects to extend the Dryden-Freeville Trail into local hamlets such as Varna are being planned along with larger projects that would connect the Town of Dryden to Cortland and/or Ithaca.

G. PARKLANDS, TRAILS, RECREATIONAL FACILITIES, AND MUNICIPAL BUILDINGS

Parklands, trails, recreational facilities, and municipal buildings exist throughout the project limits and are presented in **Figure 3**. The following is a brief description of each.

- Parklands: Three parks exist within the project limits. The Village of Dryden's Time Square pocket park and the Village Green are located on the northeast and northwest corners of the NYS Route 13, 394, & 38 intersection. The one-acre Montgomery Park is owned by the Village of Dryden and is located on Elm Street and is adjacent to NYS Route 13 (Main Street). Lawn, playground, a basketball court and a bandstand are available at Montgomery Park for use by the public.

  There are also a few other areas that currently are under consideration for public use:

  - Town of Dryden is establishing a 54-acre Conservation Area on the east side of NYS Route 366 in the Hamlet of Varna.
  - An area of wetlands in the Village (behind the businesses on North Street) was recently acquired by the Town to develop trails/parkland.

- Trails: Five trails/trail networks exist within the project limits. These trails are:

  - Jim Schug Trail
  - Dryden-Freeville Trail
  - Etna Nature Preserve
  - Monkey Run Preserve
  - Freeville Trail

The Jim Schug and Dryden-Freeville Trails were discussed in the Bicycle and Pedestrian provisions section. The following is a brief description of the remaining three trails:

  - Etna Nature Preserve: This 12-acre preserve is located near the intersection of NYS Route 13 and NYS Route 366 (Main Street) in the hamlet of Etna. A trail travels through the preserve for hiking/walking only; all vehicles are prohibited.

- Monkey Run Preserve: This 500+ acre preserve is owned by Cornell University and is located between NYS Route 13 and NYS Route 366 (Dryden Road). Trails travel throughout this preserve offering activities such as hiking and skiing.

- Freeville Trail: This travels along the Freeville owned portion of the abandoned railroad from the sewage treatment plant near George Junior Republic, through Freeville, across Johnson Road and Virgil Creek to the end of the sewer outfall.

- Recreational Facilities: There are no public recreational facilities within the project limits. The Varna Community Association provides private recreational facilities for its residents and Viking Lanes bowling alley is located on NYS Route 13 (North Street) in the Village of Dryden. In addition, Ringwood Raceway is located off the corridor on Ringwood Road.

- Municipal Buildings: Multiple municipal buildings exist within the project limits. The following is a summary of the municipal buildings:

  - The Varna Volunteer Fire Company: NYS Route 366 in the Hamlet of Varna.
  - The Neptune Hose Company: NYS Route 13 (North Street) in the Village of Dryden.
  - The New York State Police: NYS Route 13 to the near east of the intersection with NYS Route 366 (Main Street).
  - Covenant Love Community School: NYS Route 13 to the near east of the intersection with NYS Route 366 (Main Street).
  - The Dryden Post Office: In the Village of Dryden near the intersection of NYS Route 13 and NYS Route 392.
  - The Dryden Police: In the Village of Dryden near the intersection of NYS Route 13 and NYS Route 392.
  - The Dryden Village Hall: In the Village of Dryden near the intersection of NYS Route 13 and NYS Route 392.
  - The Dryden Public Library: In the Village of Dryden near the intersection of NYS Route 13 and NYS Route 392.
  - The Tompkins Cortland Community College: Just north of the Village of Dryden. Its entrance has a signalized intersection with NYS Route 13.

  The New York State Department of Transportation residency for Tompkins and Cortland Counties is also planned for construction on Ellis Drive, near NYS Routes 13 & 38.

H. ENVIRONMENTALLY SENSITIVE AREAS

There is a significant amount of permanently preserved open space in the Town of Dryden, approximately 10,760 acres. Much of this is in close proximity to the NYS

Route 13/366 corridor, particularly adjacent to NYS Route 366 (Dryden Road) west of the intersection with NYS Route 13. The majority of this land is private preserves and/or land owned by Cornell University. These preserves protect ecological resources such as stream corridors, wetlands, and highland hardwood forests. The Etna Nature Preserve and Monkey Run preserve, discussed in the Parklands, Trails, Recreational Facilities, and Municipal Buildings section, are two of these preserves. **Figure 4** presents all open spaces within the project limits.

The Tompkins County Environmental Management Council has identified areas harboring rare or endangered flora and fauna, unique geological features, or containing ecosystems or biotic communities. These areas are designated as Unique Natural Areas (UNAs) and have no formal protection. The UNAs are located in the same general geographical area surrounding the corridor as the preserved open spaces. **Figure 5** presents all UNAs within the project limits.

I. LAND USE

Land use along the NYS Route 13/366 corridor is primarily a mix of commercial development, residential development, industrial development and agricultural. **Figure 6** presents the land uses within the project limits. The following is a general overview of the land use along the different sections of the corridor:

- NYS Route 366: Ithaca Town Line to NYS Route 13 – Primarily a mix of commercial and residential development.
- NYS Route 13: NYS Route 366 to Dryden Village Line – Mix of agricultural, commercial, and residential development.
- NYS Route 13: Dryden Village Line to NYS Route 392/NYS Route 38 – Primarily residential and commercial development.
- NYS Route 13: NYS Route 392/NYS Route 38 to Freeville Road (NYS Route 38) – Commercial development with a mix of institutional, senior housing, light industry, and vacant buildings. Note that the Village is attempting to reclaim this section of roadway as a Village street rather than the current strip development.
- NYS Route 13: Freeville Road (NYS Route 38) to Cortland County Line – Primarily agricultural with commercial and residential development spreading from the Village of Dryden and from Cortland.

J. TOWN OF DRYDEN ZONING

The Town of Dryden currently has six zoning classifications as outlined below and shown in **Figure 7**, Town of Dryden Zoning Map:

- R-B: Low Density Residential (Article VII);
- R-B-1: Low Density Agricultural/Residential (Article VII-A);
- R-C: Moderate Density Agricultural/Residential (Article VIII);
- R-D: Higher Density Agricultural/Commercial/Residential (Article IX);
- M-A: Manufacturing & Assembly (Article XII); and
- M-AA: Adult Uses.

The purpose of this section is to summarize the regulatory language and requirements of the zoning districts located along the NYS Route 13/366 Corridor Management Plan Study Area. As a result, there is no summary of the M-AA: Adult Use Land Use Category.

1. R-B: Low Density Residential

The intent of the R-B District is, "to preserve the quality and appearance of established low density residential communities and to preserve existing farms." The permitted uses in the R-B District include one and two family homes, farm operations, and community uses (i.e. schools, churches, etc). Specially permitted uses consist solely of home occupations. The table below summarizes the bulk and setback regulations for the Low Density Residential District.

Table 2 - Bulk, Area, & Yard Requirements for the "R-B" District

Code Section	Requirement Without Public Utilities	Requirement With Public Utilities
Lot Width	125 ft	100 ft
Lot Size	30,000 sq ft	20,000 sq ft
Lot Coverage	15%	30%
Front Setback	70 ft	70 ft
Side Setback	15 ft	15 ft
Rear Setback	25 ft	25 ft

A review of the Town Zoning Map and the corridor study boundary indicates that the R-B District abuts the south side of Route 366 in the Hamlet of Varna on either side of Turkey Hill Road. In addition, there is a small area of land zoned R-B on the east side of Route 13 at the intersection of Simms Hill Road.

2. R-B-1: Low Density Agricultural/Residential

The intent of the R-B-1 District is, "to preserve the quality and appearance of low density residential areas compatible with farm use." The permitted uses in the R-B-1 District include farm operations, one and two family homes, community uses, recreational facilities, and mobile homes. Specially permitted uses consist of neighborhood scale retail establishments (including gasoline stations) as well as

home occupations. The bulk, area, and yard requirements for the R-B-1 District are identical to the R-B District outlined in **Table 2**.

A review of the Town Zoning Map and the corridor study boundary indicates that the R-B-1 District abuts the Route 13 and Route 366 at the following locations:

- East of Freese Road on the north side of Route 366 in the Hamlet of Varna;
- West of Main Street/Route 366 to Mineah Road on both sides of Route 13; and
- North of Dutcher Road to the eastern town boundary on both sides of Route 13.

3. R-C: Moderate Density Agricultural/Residential

The intent of the R-C District is, "to identify and establish areas where farming is one of the principal economic activities, where residential and other development should be compatible with farm use, and where rural residential development on large lots may be necessary to keep densities low in areas where public utilities are unlikely." The permitted uses in the R-C District include one, two, and multi-family dwellings, farm operations, and community uses (i.e. schools, churches, etc), public uses, offices, banks, home occupations, and mobile homes. Specially permitted uses consist of retail uses, gas station, lodging, storage yards, research facilities, planned developments, and mobile home parks. **Table 3** summarizes the bulk and setback regulations for the Moderate Density Agricultural/Residential District.

Table 3 - Bulk, Area, & Yard Requirements for the "R-C" District

Code Section	Requirement Without Public Utilities	Requirement With Public Utilities
Lot Width	125 ft	100 ft
Lot Size	30,000 sq ft	15,000 sq ft
Lot Coverage	20%	30%
Front Setback	70 ft	70 ft
Side Setback	15 ft	15 ft
Rear Setback	25 ft	25 ft

A review of the Town Zoning Map and the corridor study boundary indicates that the R-C District abuts Route 366 on either side of the road beginning at the western town line to east of Freese Road in the Hamlet of Varna. In addition, there is land zoned R-C located on the east side of Route 13 between the village line and Mott Road. It should be noted that majority of this land is occupied by the Tompkins Cortland Community College (TCCC) campus.

4. R-D: Higher Density Agricultural/Commercial/Residential

The intent of the R-D District is, "to establish areas adjacent to most major highways and urban concentration where there is potential for higher density development." The permitted uses in the R-D District include those allowed in the R-C District with limited exceptions. Specially permitted uses consist of uses specially permitted in the R-C District, light manufacturing, warehousing, and retail shopping centers. Salvage or junk yards are prohibited in the R-D Zone. **Table 4** summarizes the bulk and setback regulations for the Higher Density Agricultural/Commercial/Residential district.

Table 4 - Bulk, Area, & Yard Requirements for the "R-D" District

Code Section	Requirement Without Public Utilities	Requirement With Public Utilities
Lot Width	125 ft	80 ft
Lot Size	30,000 sq ft	12,000 sq ft
Lot Coverage	30%	30%
Front Setback	90 ft	90 ft
Side Setback	15 ft	15 ft
Rear Setback	25 ft	25 ft

A review of the Town Zoning Map and the corridor study boundary indicates that the R-D District abuts the Route 13 and Route 366 at the following locations:

- West of Turkey Hill Road to the east of Baker Hill Road on both sides of Route 366 in the Hamlet of Varna;
- Beginning at Mineah Road, east to the village line on both sides of Route 13; and
- Beginning at Mott Road to Dutcher Road on both sides of Route 13.

5. M-A: Manufacturing & Assembly

The intent of the M-A District is, "to establish and identify specific areas where small and intensive retail business and industrial and manufacturing development will be encouraged." The permitted uses in the M-A District include retail and office, lodging, warehousing, automobile related facilities (sales, car washes), farming, manufacturing, food processing, and assembly of parts. Specially permitted uses consist of "any use not specifically enumerated" in the permitted use section. Prohibited uses include mobile homes, mobile home parks, residences, and junk yards. **Table 5** summarizes the bulk and setback regulations for the Manufacturing and Assembly District.

It should be noted that there is a buffering requirement for any manufacturing use that is adjacent to a residential use. The Town requires a landscaped buffer strip at least 30 feet in width be provided by the manufacturing use.

Table 5 - Bulk, Area, & Yard Requirements for the "M-A" District

Code Section	Requirement Without Public Utilities	Requirement With Public Utilities
Lot Width	Not Applicable	Not Applicable
Lot Size	Not Applicable	Not Applicable
Lot Coverage	60%	60%
Front Setback	70 ft	70 ft
Side Setback	15 ft	15 ft
Rear Setback	15 ft	15 ft

A review of the Town Zoning Map and the corridor study boundary indicates that there are two Manufacturing Districts within the study area. The first is located east of the intersection of Route 13 with Route 366 and extends eastward to the west of Main Street on either side of the road. The second is located on the west of Route 13 beginning at the village line and extending north to Mott Road.

K. VILLAGE OF DRYDEN ZONING

The Village of Dryden currently has six zoning classifications as outlined below and shown in **Figure 8**, Village of Dryden Zoning Map:

- RA: One Family Residential (Article 303);
- RB: Two Family Residential (Article 304);
- MR: Multiple Family Residential (Article 305);
- B: Business (Article 306); and
- I: Industrial (Article 307).

The purpose of this section is to summarize the regulatory language and requirements of the zoning districts located along the NYS Route 13/366 Corridor Management Plan Study Area. As a result, there is no summary of the MR: Multiple Family Residential Land Use Category.

1. RA: One Family Residential

The Village Zoning Code does not contain a statement of purpose or intent for each zoning classification. However, the intent can be inferred from the name of the various districts. As a result, the purpose of the RA District is to maintain and establish single family, residential neighborhoods. The permitted uses in the RA District include one family dwellings and accessory appurtenances. In addition, the following uses are allowed in conjunction with a single family home: home occupations, living quarters for a domestic employee, and up to four roomers. Specially permitted uses consist solely of the parking of a commercial or

recreational vehicle. **Table 6** summarizes the bulk and setback regulations for the One Family Residential District.

Table 6 - Bulk, Area, & Yard Requirements for the "RA" District

Code Section	Requirement
Lot Width	100 ft
Lot Size	15,000 sq ft
Lot Coverage	30%
Front Setback	40 ft
Side Setback	15 ft
Rear Setback	30 ft

In addition, the RA District language includes a minimum principal building size of 1,000 sq ft. The code also states that no front yard parking will be used for vehicular parking.

A review of the Village Zoning Map and the corridor study boundary indicates that the RA District abuts the south side of Route 13 beginning at the western Village boundary and terminating at Highland Drive.

2. RB: Two Family Residential

The purpose of the RB District is to maintain and establish residential neighborhoods that contain single and two family homes along with community services that may be appropriately located in a residential area. The permitted uses in the RB District include one and two family dwellings as well as places of worship and educational institutions. In addition, the following uses are allowed in conjunction with a single family home: home occupations, living quarters for a domestic employee, and up to four roomers. Specially permitted uses consist solely of the parking of a commercial or recreational vehicle. **Table 7** summarizes the bulk and setback regulations for the Two Family Residential District.

Table 7 - Bulk, Area, & Yard Requirements for the "RB" District

Code Section	Requirement
Lot Width	75 ft
Lot Size	11,250 sq ft
Lot Coverage	40%
Front Setback	40 ft
Side Setback	10 ft
Rear Setback	30 ft

In addition, the RB District language includes a minimum principal building size of 1,000 sq ft. The code also states that no front yard parking will be used for vehicular parking.

A review of the Village Zoning Map and the corridor study boundary indicates that the RB District abuts the north side of Route 13 beginning at the western Village boundary and terminating at Virgil Creek. In addition there are a limited number of parcels zoned RB at the intersection of Route 13 with Mill Street and Library Street.

3. B: Business

The intent of the B District is to establish and identify areas to accommodate commercial activity. The permitted uses in the Business District include those permitted in the three residential zones, retail and office uses, lodging, personal service establishments, and bus stations. Specially permitted uses consist of restaurants, gas stations, and mobile home parks. **Table 8** summarizes the bulk and setback regulations for the Business District.

Table 8 - Bulk, Area, & Yard Requirements for the "B" District

Code Section	Requirement
Lot Width	50 ft
Lot Size	Not Applicable
Lot Coverage	Not Applicable
Front Setback	10 ft
Side Setback	Not Applicable
Rear Setback	Not Applicable

It should be noted that outdoor storage of rubbish or refuse is not permitted in the B District.

A review of the Village Zoning Map and the corridor study boundary indicates that there are two Business Districts within the study area. The first begins at the intersection of Route 13 with Highland Drive and extends eastward to Lewis Street on either side of the road. The second is located east of Mill Street and extends to the Main Street/Route 13/South Street intersection where it extends north to the Village boundary along both sides of Route 13.

4. I: Industrial

The intent of the I District is to establish and identify areas to accommodate industrial and manufacturing activity. The permitted uses in the Industrial District include, "all uses not otherwise prohibited by law." Prohibited use include, "all uses of land that may be noxious or injurious by reason of the

production of dust, smoke, odor, vibration, etc." **Table 9** summarizes the bulk and setback regulations for the Industrial District.

Table 9 - Bulk, Area, & Yard Requirements for the "I" District

Code Section	Requirement
Lot Width	Not Applicable
Lot Size	Not Applicable
Lot Coverage	Not Applicable
Front Setback	25 ft
Side Setback	50 ft
Rear Setback	25 ft

If the industrial property abuts a residential district the side and rear yard setbacks increase to 500 feet.

A review of the Village Zoning Map and the corridor study boundary indicates that there is one Industrial District within the Village limits. It should be noted that there is virtually no industrial frontage along Route 13. The Industrial District begins at the intersection of Route 13 with Rochester Street and widens at it extends to the northwest.

L. OFF-STREET PARKING

Off-street parking requirements are contained in Section 30917 of the Village Code and Article XIV of the Town Code. **Table 10** contains a comparison of the parking requirements for specified uses in the Town and Village. A review of these code sections indicates that the Town, on average, has higher parking requirements than the Village. For example, the Town requires approximately three times the number of parking spaces than the Village for office and retail type uses. This approach may reflect the ability to access goods and services on foot in the Village, reducing the dependence on traveling by motor vehicle.

Table 10 - Off-Street Parking Requirements
Number of Spaces Per 1,000 sq ft of Floor Area

Land Use	Town	Village
Place of Worship	1 per 4 seats	1 per 8 seats
Office	10 (+ 1 per employee)	3 1/3
General Business/Retail	10	3 1/3
Restaurant without bar	13 1/3	10
Restaurant with bar/Tavern	13 1/3	20
Institutional/Semi-Public	5 (+ 1 per employee)	Planning Board Decision
Manufacturing	1 per 2 employees	Planning Board Decision

M. ROADWAY SIGNAGE

Roadway signs were inventoried and examined for clarity, logicality and functionality. All regulatory, warning, and guide signs were legible and placed logically to inform drivers of roadway regulations, hazards, and route/road locations.

In addition to the roadway signs, the study includes a review of the sign requirements contained in Section 320 of the Village Code and Article XV of the Town Code. **Tables 11 and 12** contain a summary of the signage requirements for specified uses in the Town and Village respectively. A review of the Town code indicates that the Town regulates signs based on the type of land use. By comparison, the Village regulates signs by zoning district.

Table 11 – Town Sign Requirements

Land Use	Max. Number of Signs/ Max. Size Per Sign	Other Requirements
Roadside Farm Stands	3 / 16 sf	NA
Camps, Public & Semi-Public	2 / 24 sf	NA
Single Family Residential	1 / 1 sf	NA
Multi Family Residential	1 / 10 sf	+ 1 additional sign up to 1 sf
Home Occupation	1 / 1 sf	+ 1 additional sign up to 1 sf
Retail Business not in Plaza	2 / 40 sf	Up to 25% of facade
Retail Business in Plaza	1 / 16 sf	NA
Shopping Center or Plaza	2 / 160 sf	Up to 20% on facade
Manufacturing or Industrial	2 / 160 sf	Up to 20% on facade
Service Related Uses	2 / 80 sf	Up to 20% on facade
Automobile Sales & Service	2 / 80 sf	Up to 20% on facade
Motels	2 / 80 sf	Up to 20% on facade
Recreation & Entertainment	2 / 80 sf	Up to 20% on façade
Offices & laboratories	1 / 80 sf	Up to 20% on facade
Gasoline Stations	2 / 32 sf	Up to 10% on facade

The review of both sign codes indicated some similarities and differences between the Town and Village regulations. For example, flashing lights or roof mounted signs are not permitted in either municipality. The most notable difference is the prohibition of off-site signage in the Village and the permitting of billboards in the Town.

Table 12 – Village Sign Requirements

Use District	**Sign Requirements**
Home Occupation	1 sign up to 6 sf + cannot be located in front yard
Commercial & Industrial (A)	Attached signs are permitted 1½ sf of signage per 1 foot of building façade not to exceed 60% of the total façade or 50 sf
Commercial & Industrial (B)	Detached signs may be up to 12 sf and up to 10 ft in height and must be set back at least 4 ft from any public street or highway in combination with any attached sign not to exceed 1 sf of signage per 1 foot of building frontage. Total signage shall not exceed 50 sf
Multiple Tenants (A)	24 sf per business
Multiple Tenants (B)	30 sf per property

Notes: Commercial or industrial uses may choose either Option "A" or Option "B."

N. SCHOOL BUS AND EMERGENCY VEHICLE OPERATIONS

The NYS Route 13/366 corridor is served by the Dryden Central School District and the Ithaca City School District. These school districts were contacted to discuss bus operations on the project corridor. The Ithaca City School District covers the western portion of the corridor; primarily NYS Route 366 (Dryden Road). Buses frequently use this section of Route 366 with approximately 10 bus routes traveling on the roadway. Approximately two bus routes travel on NYS Route 13 east of the intersection with NYS Route 366 (Dryden Road).

The Dryden Central School District covers the entire corridor to the east of the NYS Route 13/ NYS Route 366 (Dryden Road) intersection. Buses frequently use NYS Route 13; it is a primary roadway in many of the bus routes. Approximately five bus routes use this roadway.

As discussed in the Parklands, trails, recreational facilities, and municipal buildings section, there are two fire departments within the project limits. These are The Varna Volunteer Fire Company and the Neptune Hose Company. Both of these companies have driveways onto the project corridor.

The Varna Volunteer Fire Company estimates 70 percent of their emergency calls use the corridor, approximately 210 per year. High rates of speed on the corridor contribute to a significant number of motor vehicle crashes. The large number of curb cuts on Route 366 also creates a problem when responding to an emergency as extra time and care is required to ensure no vehicles pull out into the path of the emergency vehicle.

O. RIGHT-OF-WAY

The following is a summary of the approximate right-of-way for the five segments of the NYS Route 13/366 corridor:

- NYS Route 366: Ithaca Town Line to NYS Route 13 – 70 feet
- NYS Route 13: NYS Route 366 to Dryden Village Line – 80 feet
- NYS Route 13: Dryden Village Line to NYS Route 392/NYS Route 38 – 65 feet
- NYS Route 13: NYS Route 392/NYS Route 38 to Tompkins County Community College – 65 feet
- NYS Route 13: Tompkins County Community College to Cortland County line – 95 feet .

Figure 9 presents the parcel map for the project area.

III. COMMUNITY PREFERENCE SURVEY

A Community Meeting was held on November 1, 2007 to introduce the CMP to the community and to gain feedback on the desired type, density, and style of development along the corridor. A Community Preference Survey (CPS) was completed that presented a set of photographs to the attendees to be individually rated on a scale of 1 – 10. The photographs included examples of commercial signs, building architecture, density and mix of development, streetscape and roadside features, and the general environment surrounding development.

The results of the CPS were tallied and posted on the Tompkins County website for review by all attendees and are attached as **Appendix A** – Community Preference Survey. In general the lowest rated photographs were those that showed little to no pedestrian amenities, congested roadway conditions, strip plaza development, and limited architectural style.

The highest scoring photographs tended to be rural landscapes with limited development or with architecture that blended well with the surrounding buildings. Development with pedestrian friendly features that separated vehicles from pedestrians also scored high with the community.

In addition to the CPS, break-out sessions at the Community Meeting allowed residents to voice any other concerns or proposed solutions to issues experienced along the corridor. The Community Meeting attendees were divided into four groups, each with a moderator to record the comments. The group members were asked to identify any concerns they had related to travel along the corridor, the type and style of existing and future development, and any solutions to the identified concerns.

After the issues/solutions had been recorded, the group members were each asked to identify the top three items on the list. The results were summarized and posted along with the CPS. The top issues were:

1. High speeds and traffic volume through the corridor make accessibility on and off difficult and unsafe (24 attendees chose this as a "top three" issue)
2. Route 13 / 366 intersections are unsafe (18)
3. Separate through traffic from local traffic (Route 13 by-pass, new Route 13 location, frontage roadways) (12)
4. Concerns over cut-though traffic avoiding Route 13 congestion (11)
5. Character of Varna and lack of sidewalks (9)
6. Maintain open space / agriculture (7)
7. Utilize alternate modes of travel (5)

The seven items listed above were the obvious concerns/solutions posed by the meeting attendees. All other items voiced in the break-out groups did not receive more than one or two votes as a top concern/solution.

The results indicated speed, safety, and traffic volumes/congestion are the primary concern of those attending the meeting. The attendees expressed that the increase in traffic and development on NYS Route 13 was diminishing the character of the communities and that a change in existing pattern of development would be necessary to reduce the negative effects of the traffic through the corridor. A group-by-group summary of the break-out sessions is included in **Appendix A**.

IV. FUTURE DEVELOPMENT SCENARIOS

The Town and Village of Dryden and rural surrounding areas offer affordable housing and a suburban lifestyle for people working at Cornell and in the City of Ithaca. The nature of use, and location of the corridor, makes it a prime candidate for convenience development (bank, drycleaner, car service, food services, etc.) as commuters travel between work and home. This development, however, is occurring in a scattershot manner as businesses are gaining access to the corridor from individual parcels. Speeds along the NYS Route 13 portion of the corridor vary, with the majority of the undeveloped areas posted at 55 MPH, however, motorists typically travel upwards of 60 – 65 MPH creating a significant safety concern with the uncontrolled driveways and side roads along the corridor.

Tompkins County, the Town and Village of Dryden, and the Hamlet of Varna have all recognized the uncontrolled pattern of development occurring along the corridor. Each has identified the concerns over the significant number of driveways, traffic congestion, and safety and have included corrective measures in the recent planning updates. One significant measure supported by all communities is the idea of Nodal Development. Nodal Development focuses new development and re-development at distinct node points along the corridor. Within the nodal points a mix of uses is encouraged with high density residential, commercial, office, institutional, and industrial all coexisting in a well planned community.

Two future scenarios have been developed to assess the benefits of Nodal Development versus the existing pattern of development currently occurring along the corridor. Each development scenario assumes 1,800 new dwelling units, 55 acres of commercial development, and 125 acres

of industrial development as contained in the 20-year planning horizon of the Town of Dryden Comprehensive Plan. The Town Plan assumes 1 to 1.3 dwelling units per acre while noting that the Town should strive to have 2 to 2.5 dwelling units per acre.

A. EXISTING DEVELOPMENT SCENARIO

The Existing Development Scenario is shown in **Figure 10**. Note that this is one of many development scenarios that could occur in the Town of Dryden. The intent of this scenario is not to identify individual parcels for development, rather to identify that overall impacts to the NYS Route 13 / 366 corridor if development were to occur in the manner portrayed in **Figure 10**.

The Existing Development Scenario assumes the remainder of the frontage along the corridor is developed as residential or commercial land use. The industrial development is focused near the airport in the western end of the Town, north of NYS Route 13. Consistent with historical patterns, no new development is proposed for the Village of Dryden. Outside of the corridor, scattered residential development fills out the remainder of the new dwelling units. Note that the Existing Development Scenario assumes the new residential development will have one dwelling unit per acre (or 1,800 total acres of residential development).

B. NODAL DEVELOPMENT SCENARIO

The Nodal Development Scenario is shown in **Figure 11**. This development scenario focuses the next 20 years of development at three distinct node points along the corridor. The graphic presents a drastic difference between the Existing Development Scenario shown in **Figure 10** and the Nodal Development Scenario. Most notably, the remaining agricultural / vacant frontage parcels along the corridor are left undeveloped under the Nodal Development Scenario. In addition, a significant portion of the scattered residential development shown in the Existing Development Scenario has been consolidated into the three node points. Under this development scenario, residential development density has been increased to an average of two dwelling units per acre, consistent with local planning efforts to reduce the overall amount of developed land.

The first node point is the Hamlet of Varna. Many of the existing frontage parcels in Varna are either occupied by residential or commercial development or are environmentally sensitive areas owned by Cornell. The Nodal Development Scenario assumes that over time parcels will be developed to accommodate greater density and a mix of uses.

The second node point is centered around the westernmost intersection of NYS Route 13 / NYS Route 366. This node point contains the NYSEG property. The area north and south of NYS Route 13, east of the NYSEG property would be developed as a mix of industrial, commercial and residential uses. The third and largest node point is the

Village of Dryden. Under the Nodal Development Scenario, a majority of the Village is developed as residential, commercial, or industrial land use. The commercial use is located along NYS Route 38, immediately adjacent to future industrial property. The Village will also see an area wide growth in residential property to virtually build-out the remaining portions of developable land.

V. FUTURE DEVELOPMENT SCENARIO IMPACTS

The Existing and Nodal Development Scenarios would each have a wide range of impacts on the Town of Dryden, Village of Dryden, and Hamlet of Varna. The Corridor Management Plan (CMP) will focus on the transportation related impacts of one scenario versus the other. In particular, the CMP will assess the following items:

- Access Control Measures
- Roadway Signage
- Conceptual Roadway Vehicle Capacity and Delay
- Conceptual Roadway Design Modifications
- Traffic Signalization
- School Bus and Emergency Vehicle Operations
- Roadway Safety
- Bicycle & Pedestrian Safety and Accessibility
- Transit Opportunities
- Right of Way Needs
- Traffic Calming Measures

The following is a discussion of each item and how it relates to the Existing and Nodal Development Scenarios.

A. ACCESS CONTROL MEASURES

The NYS Route 13 / 366 corridor currently has a significant number of uncontrolled driveways and side streets. These access points can create significant congestion, safety, and driver frustration concerns. The number of uncontrolled driveways and side street access points onto the corridor is currently over 250. This equates to approximately 23 access points per mile and this figure does not include the Village of Dryden which has a significant number of additional access points, however, the Village of Dryden is essentially built-out along the corridor and has a dramatically different character than the reminder of NYS Route 13 / 366. A discussion of the Village follows at the end of this section.

If the corridor were to continue to develop as proposed in the Existing Conditions Scenario, it is estimated that the corridor could see an additional 170 driveways as the roadway frontage is divided into smaller parcels and residential and commercial development in-fills. After full build-out of the Existing Condition Scenario, the corridor

could have approximately 420 access points, or 38 access points per mile (one every 140 feet). This assumes each parcel would have at least one access point onto the corridor.

Contrast this with the estimated 10 new driveways that could be added should the communities promote a well planned Nodal Development Scenario. Each small parcel could have one access point and the larger commercial and industrial development areas could have one centralized access point with frontage roads or cross-access to various businesses. The second and third layer parcels would have cross-access to the corridor or direct access onto a side street.

The Village of Dryden has an urban character with smaller parcels and a continuous network of sidewalks. The corridor frontage is essentially built-out with primarily re-development anticipated over the next 20 years. The Existing Development Scenario does not include a change in access control for the existing intersections or driveways as it is assumed that re-development will re-use the existing driveways or re-establish the same number of driveways that currently exists.

Under the Nodal Development Scenario, the Village will experience an in-fill of residential development, primarily off the NYS Route 13 corridor. This scenario would include higher density residential development along the outer edges of the Village along with commercial and industrial along NYS Route 38. Within the 20 year planning horizon, it is unlikely that the Nodal Development Scenario will significantly change the number and types of access points on the corridor as not enough properties will turn over to create a significant change.

Therefore, it is assumed that the number of access points along the corridor in the Village will be similar under both the Existing and Nodal Development Scenarios.

B. ROADWAY SIGNAGE

The corridor currently has a number of small service and convenience businesses throughout the length, each with a sign as allowed by the current regulations. These signs are business specific with no standard look or theme and add to the lack of continuity of the corridor.

As new commercial businesses develop along the corridor under the Existing Development Scenario, the Town of Dryden should expect this trend to continue. The number of signs will increase with each new business and create what can be referred to as “sign clutter” along the roadway. The additional signs will add information to drivers’ field of vision and detract from response time and decision making abilities. This, in conjunction with the additional number of access points and vehicles turning on and off the corridor, will decrease the safety of the roadway and further exacerbate the safety concerns of the residents who are currently having a difficult time entering and crossing the roadway.

Under the Nodal Development Scenario, very little, if any new signage will be constructed along the corridor. New signs will be focused at the nodal centers and the individual signs can be combined onto one larger sign. The layout and look of the larger sign can also be regulated by the municipality to meet the aesthetic standards of the node point. As shown in the Community Preference Survey, the residents favored combining signs under a consistent theme versus the cluttered look of business specific signs.

C. CONCEPTUAL ROADWAY VEHICLE CAPACITY AND DELAY

A significant portion of the Route NYS Route 13 / 366 corridor is a rural, two-lane highway with many points of access onto the corridor. The capacity of a two-lane highway is defined by the speed on the corridor. The speed is a function of the type of terrain (level, rolling, mountainous, etc.), access point density (number of driveways and side streets), and vehicle mix (percent cars versus heavy trucks). The current high speeds on the corridor indicate the existing traffic conditions and access point density have not reached the capacity of the roadway. Drivers continue to feel comfortable traveling at or above the existing speed limits.

The Existing and Nodal Development Scenarios were provided to the Ithaca-Tompkins County Transportation Council (ITCTC) to be analyzed in the Tompkins County afternoon peak hour regional model. The model essentially uses land use distribution to determine the volume of traffic that will travel on various routes to connect home, to work, to recreation areas, and to shopping centers. For this study the model was used to determine how the Existing and Nodal scenarios might impact the volume of traffic on the roadway during the PM peak hour.

As discussed previously, the Nodal Development scenario focuses development at three key points along the corridor, Varna, the NYS Route 13 / 366 Overlap section, and the Village of Dryden. The following is a summary of the amount of new development in each of the three areas, as well as the remainder of the Town. Note that the redevelopment areas shown on the maps are not included in this tabulation:

Location	Residential (acres / units)	Commercial (acres)	Industrial / Manufacturing (acres)
Varna	96 / 192 (2 units / acre)	0	0
Overlap Section	77 / 308 (4 units / acre)	35	57
Village	256 / 763-1024 (3-4 units / acre)	17	68
Remainder of Town	463 / 232 - 463 (.5-1units / acre)	3	0

The Nodal Development Scenario assumes the residential development will vary dependent on the specific area. In Varna, the residential development is assumed to be 2 units per acre, the Overlap Section and Village is assumed to be 4 units per acre, while the Remainder of the Town is assumed at 1 unit per 2 acres. For purposes of traffic

modeling 2 units per acre was used to assess the impacts of the future development scenarios on the roadways in the Town.

The results of the modeling effort did not show a significant difference in traffic volumes on the corridor during the afternoon peak hour (5 – 6 PM) for the Existing and Nodal Development Scenarios. Each scenario had traffic volumes that were higher in some areas and lower in others, dependent on the projected development surrounding each roadway link. Aggregating the entire Town, however, the ITCTC concluded that the Nodal Development Scenario would result in approximately 3,400 less vehicle miles traveled during the afternoon peak hour than the Existing Development Scenario and approximately 34,000 less vehicle miles traveled for an entire day.

As discussed above, the Existing Development Scenario can expect a significant increase in the number of driveways and access points along the corridor. As roadway capacity is influenced by the number of access points, the new driveways constructed under the Existing Development Scenario will effectively reduce the capacity of the roadway by as much as 10 percent. Therefore, even though the traffic volumes on the corridor were projected to be similar under both scenarios, the Existing Development Scenario can be expected to have increased congestion and higher vehicle delay. The added vehicles turning on and off the corridor will create undue delay for those both on the corridor and those others attempting to enter and exit the corridor.

D. TRAFFIC CONTROL / SIGNALIZATION

There are currently four signalized intersections within the project limits. These intersections are:

- NYS Route 366 / NYS Route 13 (adjacent to NYSEG)
  - Note that the northbound approach from Route 366 to Route 13 eastbound is controlled by a yield sign
- NYS Route 13 / NYS Route 38-NYS Route 392
- NYS Route 13 / Freeville Road (NYS Route 38) – Lee Road
- NYS Route 13 / Tompkins-Cortland Community College Entrance

These locations are the intersection of two or more NYS highways or the entrance to a significant development as is the case with TCCC.

The Existing Development Scenario will increase the number of vehicles entering and exiting the corridor as new residential and commercial development is constructed along the vacant roadway frontage. As discussed above, the additional access point will reduce the capacity of the roadway and create congestion for the traveling public. Under these conditions, it is common and likely that new traffic signals will be proposed and constructed along the corridor. Logical locations include the following intersections:

- NYS Route 366 / Freese Road
- NYS Route 13 / eastern intersection with NYS Route 366
- NYS Route 13 / Ringwood Road
- NYS Route 13 / North Road

The Existing Development Scenario could also see an additional signalized intersection on NYS Route 13, east of North Road, dependent on the type of development ultimately constructed. These traffic signals will likely be necessary to accommodate the increased congestion on NYS Route 13 and to mitigate the increased safety concerns for vehicles attempting to exit commercial developments or side streets along the corridor. The new traffic signals would provide increased access to side streets and commercial development and result in a 19 percent decrease in accidents at the intersections. **Appendix B** – NYSDOT Accident Reduction Factors, contains a comprehensive list of roadway modifications, including the installation of traffic signals, to improve safety along the roadway.

Planning for the Nodal Development Scenario would likely include the implementation of new traffic control devices at the node points. This is in contrast to the reactive installation of traffic signals likely to occur under the Existing Development Scenario. Rather than construct traffic signals, the node points could have roundabouts. Roundabouts typically manage traffic as well as, or better than, traffic signals and provide the opportunity for additional landscaping and other amenities. A roundabout can help create a sense of place and identify for the node points. In addition, roundabouts act as an excellent traffic calming device to slow travel speeds through the nodes.

In the Village of Dryden, the traffic signal would likely be retained as the current conditions do not provide adequate space for a roundabout. However, roundabouts could be incorporated at the edges of the Village to notify drivers of the entrance to the Village and control speeds throughout the Village portion of the corridor.

E. CONCEPTUAL ROADWAY DESIGN MODIFICATIONS

In conjunction with the installation of traffic signals, the Existing Development Scenario would likely need additional turn lanes to accommodate the traffic queuing at the intersections, similar to the current conditions near the NYSEG facility. The Existing Development Scenario volume projections do not indicate additional through travel lanes would be required along the corridor however, dependent on the final spacing of the traffic signals and the volume of traffic entering and exiting the roadway, portions of the corridor may need to be generally widened to three lanes to provide for left-turn lanes and / or a two-way left-turn lane (TWLTL). The widening for turn lanes and /or a TWLTL may require spot or strip right-of-way takings dependent on the roadway alignment and intersection layout. A raised center median could be considered, however, it is unlikely that future traffic would warrant such a change.

The Nodal Development Scenario would not encounter the same traffic and congestion issues as the Existing Development Scenario. If roundabouts were implemented at the node points and edges of the Village, additional lanes would not likely be necessary. The roundabouts will acceptably handle the volume of traffic projected to be traveling through all nodes. The roundabouts would likely require right-of-way acquisitions at the corners as roundabouts require more space than a typical traffic signal. The existing corridor between the node points would not likely require additional modifications to accommodate the traffic projections.

F. ROADWAY SAFETY

Roadway safety was identified at the Community Meeting as one of the top concerns related to the NYS Route 13/366 Corridor. The residents did not feel safe entering the corridor or attempting to cross the corridor. The accident data indicated NYS Route 366 experienced 21 accidents in 3 years and was above the Statewide average accident rate for similar corridors. All other segments were below the Statewide average accident rates.

The NYS Route 13 / NYS Route 366 intersection (western intersection) was also above the Statewide average accident rate. The remaining intersection accident rates were below Statewide averages.

The segment of NYS Route 366 that is above the Statewide average accident rate currently has approximately 42 access points per mile. The remainder of the corridor (excluding the Village of Dryden) has approximately 18 access points per mile and an average an accident rate below the Statewide average rate. If the corridor were to develop as shown in the Existing Development Scenario, the number of access points along NYS Route 13 would increase to approximately 38 access points per mile. It follows, then that the accident rate can be expected to increase proportionally and exceed the Statewide average rate. If the Existing Development Scenario were to progress and the average accident rate on NYS Route 13 increased to the current rate on NYS Route 366, there would be an additional 46 accidents along NYS Route 13 every year.

The Nodal Development Scenario does not propose to increase the number of access points along the corridor, but rather focus development at distinct locations where access is controlled. This scenario should not experience an increase in accident rates and could decrease accident rates if access points could be eliminated or consolidated during re-development.

In conjunction with the reduction of access points on Route 366 in Varna, this report recommends the elimination the passing zone on Route 366 though the hamlet. A passing zone does not promote safe, controlled speeds though the hamlet and the sense of place desired by the community.

In addition to the elimination of the passing zone to improve safety, the community should seek a speed limit reduction on the roadway and the installation of traffic calming

measures. Street furniture and trees, as well as gateway features will improve safety by heightening drivers' awareness of the hamlet. These measures will further enhance the viability of Varna as a node and improve the safety for drivers and pedestrians.

Finally, sidewalks should be constructed throughout the hamlet to ensure the safety of pedestrians. Currently, the lack of sidewalks requires pedestrians to share the roadway in a high speed passing zone. As redevelopment occurs, sidewalks should be required along with high visibility crosswalks.

G. BICYCLE & PEDESTRIAN SAFETY AND ACCESSIBILITY

Currently there are no sidewalks along the corridor outside of the Village of Dryden which has an excellent network of pedestrian accommodations. Pedestrians are expected to use the shoulders immediately adjacent traffic that is traveling as fast as 65 MPH. Bicycles are also expected to use the shoulders as no bicycle lanes have been provided along the roadway.

The Existing Development Scenario does not promote bicycle and pedestrian travel as services would be spread throughout the length of the corridor and no "destination" points would be created to attract pedestrians. Travel to the existing destinations (Village of Dryden, Ithaca, etc.) would continue to occur with a vehicle. For any pedestrians that do use the roadway shoulders, the traffic signals could provide a safe crossing location.

One key component of Nodal Development is the promotion of pedestrian and bicycle activity. All services could be provided within walking distance of the residential development and in many instances could be provided within the same building. Retail development could be provided on the first floor of a building with residential located on the upper floors. New and re-development in the nodes could be required to provide sidewalks and/or an off-street network of trails to connect the entire node. Beyond the nodes, the community could create a network of trails to connect nodes to one another and to the Jim Schug and Dryden-Freeville trails as well as other conservation areas or recreational facilities.

H. TRANSIT OPPORTUNITIES

Three TCAT transit routes service the corridor, Routes 41, 43, and 45. These routes connect Ithaca, Varna, Etna, Dryden, and Freeville to Cornell, TCCC, and Pyramid Mall.

Continuation of the existing development patterns would not promote the use of transit along the corridor as there would not be logical destinations for new transit service. Each parcel would have a curb cut and driveway, promoting the use of single occupancy vehicles. The existing transit routes would continue to be warranted and sufficient to service the demand. If the corridor did fully build out and demand warranted, TCAT

could add a route with stops every quarter or half mile along NYS Route 13 and 366 although transit infrastructure would likely be required (shelters, signs, sidewalks, etc.).

The Nodal Development Scenario would include destination areas that could provide transit stops. Shelters and sidewalks could be designed into Varna and the Route 13/366 node to allow quick, easy access to the bus. Residents would not be required to walk long distances along the shoulder of the roadway to wait at a bus stop. Dependent on demand, satellite bus service and routes could be provided within the nodes, especially the Village of Dryden, to promote alternate modes of travel.

I. SCHOOL BUS AND EMERGENCY VEHICLE OPERATIONS

The NYS Route 13/366 corridor is served by the Dryden Central School District and the Ithaca City School District. The Ithaca City School District covers the western portion of the corridor; primarily NYS Route 366 (Dryden Road). Buses frequently use this section of Route 366 with approximately 10 bus routes traveling on the roadway. Approximately two bus routes travel on NYS Route 13 east of the intersection with NYS Route 366 (Dryden Road).

The Dryden Central School District covers the entire corridor to the east of the NYS Route 13/ NYS Route 366 (Dryden Road) intersection. Buses frequently use NYS Route 13; it is a primary roadway in many of the bus routes. Approximately five bus routes use this roadway.

The Existing Development Scenario would have little impact on the City School District routes along NYS Route 366 as virtually all of the roadway frontage has already been developed or designated as Cornell land / Conservation areas. Any routes outside the corridor in Varna would expand to include additional stops.

The Dryden bus route that picks up students along NYS Route 13 would require a significant number of additional stops for the new residential driveways. In addition, the congestion and safety concerns resulting from the Existing Development Scenario would carry over to impact the bus traffic as well. The sign clutter, additional driveways, and vehicles entering/exiting the roadway could create the potential for additional accidents as buses stop to pick up students.

The Nodal Development Scenario would accommodate the school buses in a similar fashion to the transit stops. Centralized bus stops could be provided to allow groups of students to wait in one area for the school buses. These could be located off the primary corridor to reduce the potential for bus stop accidents on NYS Route 13 or 366. Routes on the corridor in the Village of Dryden would not likely be impacted by either development scenario.

Discussions with the emergency service providers in the area have indicated high rates of speed have contributed to the motor vehicle crashes along the corridor. In addition, the

significant number of curb cuts are a serious concern as they slow response times to emergencies. The Existing Development Scenario does not provide corrective measures for these situations and will further exacerbate the current concerns. The additional curb cuts will be problematic for the responders and the increased congestion on the roadway could slow response times.

The Nodal Development Scenario should provide for smooth traffic flow and adequate facilities for emergency responders. The node points through Varna and NYS Route 13/366 may have slower speeds than the remainder of the corridor, slightly slowing emergency response vehicles, however the design of the nodes should provide for clear direct movement with little driveway and side street interaction. Emergency response along the corridor in the Village of Dryden will likely remain unchanged under either development scenario.

In summary, the Existing and Proposed Future Development Scenarios will have significantly different impacts on the NYS Route 13 / 366 corridor. Should the current pattern of development continue, the roadway will experience increased congestion and decreased safety. The look and feel of the corridor will also deteriorate as sign clutter, driveways, and traffic signals overwhelm the roadway. Pedestrian, bicycle, and transit opportunities will be lost as the corridor reacts to provide for the development and traffic flow.

If desired, the community has the opportunity to alter the current development patterns and focus on node points along the corridor. New and re-development can be centered in these areas. The nodes can be designed to optimize capacity, improve safety, bicycle & pedestrian mobility and promote transit.

The following sections of the report present graphics of potential node points and draft regulatory language for communities to tailor and adopt to support the creation of nodal centers along the corridor.

VI. NODAL DEVELOPMENT GRAPHICS

As shown in **Figures 10 & 11** and discussed above, nodal development can have a significant positive impact on the Route 13/366 corridor. The future of the corridor can be dramatically changed should the local communities follow a pattern of nodal development. To assist in understanding and implementing a pattern of nodal development, **Figures 12 - 19** have been prepared to present potential nodal development patterns. Note that these figures are intended to show the types and density of development that could occur in the identified nodes. The local communities, landowners and/or developers should not consider these the preferred or only development patterns for these areas.

Figures 12 – 15 present a pattern of nodal development in the Village of Dryden. **Figures 12 & 13** highlight the remaining undeveloped areas in the Village and a potential development pattern

for these areas. Residential development could fill in a significant portion of the undeveloped lands while commercial, industrial, and professional office could be constructed in the northern portion of the Village. Concentration of residential development in the Village should also promote retail development and re-development in the Village center filling empty storefronts and/or supporting struggling businesses.

Traffic calmed entrances into the Village could include roundabouts to control speed and alert drivers to the change from the rural landscape to the Village setting.

Figures 14 & 15 present conceptual site layouts for two areas in the Village. Again, these are conceptual and intended to visually present the concepts analyzed in this study. **Figure 14** presents moderate density single and multi-family homes behind the new Town Hall and future Town Park. The photos in the figure are representative of other areas implementing moderate density residential development that could be implemented in Dryden.

Figure 15 presents a development pattern for the lands across from the Dryden High School on Freeville Street. The Village would like to promote a mix of residential and retail/professional office in this area. Again, higher density residential is shown in the form of multi-family residential buildings. One common access point reduces the number of driveways on the roadway, minimizing traffic congestion and increasing safety for motorists.

Figures 16 – 19 present a nodal development concept for the Varna and NYSEG areas. **Figures 16 & 17** highlight the lands that can be developed or re-developed to promote a nodal pattern. As Varna is significantly built out, opportunities for nodal development will need to take the form of re-development as homes and businesses turn over.

Primarily, Varna should be re-developed to include sidewalks and traffic calming measures to slow traffic through the Hamlet. The existing passing zone in Varna should be eliminated and a double yellow line should be installed throughout this portion of Route 366. The draft regulatory language in the following section will provide the community with additional regulatory measures that can further promote nodal development.

Figure 18 presents a simple bubble diagram of the NYSEG area with a concept of what could be accomplished with nodal development. This area has significant potential for creative and forward thinking nodal development patterns as there is a significant amount of open land.

The concept in this area is to transition from the rural character of Route 13, east of the NYSEG area, into mixed use commercial and residential development, then to the existing industrial center. **Figure 19** presents a concept layout of the area with single and multi-family homes adjacent to the future Dryden Trail, transitioning into commercial development along Route 13. The south side of Route 13 is limited by the existing topography and the concept presented contains commercial and industrial development along this area. It is recommended that the Town coordinate with NYSEG on the relocation or shielding of the existing power lines and substation, north of Route 13. These facilities could detract from the final layout, look, and feel of the area.

Further, as recommended above, the access to the development should be centralized and traffic calmed. A roundabout would be one possible way to slow traffic through the area and improve the safety. A second roundabout could be located at the western Route 13/366 intersection to again calm traffic and improve safety for the traveling public.

VII. DRAFT REGULATORY LANGUAGE

The primary mechanism to implement nodal development is regulatory zoning language. The following recommendations are intended to be a starting point for making a change in the local codes to promote nodal development. These recommendations are based on the Town, Village, Hamlet, and County Comprehensive Plans, results of the Community Preference Survey, input from the Steering Committee, and feedback provided at the two public meetings held as part of the study. In order to achieve the preferred development pattern it is recommended that the Town and Village consider incorporating some or all of the following recommendations into the existing regulatory framework.

Note that it is the responsibility of the Town and Village to develop final regulations that promote nodal development. This process should involve additional community outreach and public hearings to finalize the land use and zoning language updates.

The preferred development pattern for the corridor consists of three distinct areas;

- Hamlet & Village Center Districts – These areas consist of the Hamlet of Varna and the Village's downtown district.
- Within Nodes – These areas consist of the existing commercial area within the Village and Town along Route 13 north of Neptune Drive, North Road, and along North Road to Mott Road and the developed and undeveloped land surrounding the Route 13/366 split.
- Outside Nodes - The relatively undeveloped areas located north of the North Road intersection to the Town line, and from the Village to the area east of Route 366 and Route 13 intersection.

OUTSIDE NODES

The area outside of the nodes can still be described as rural in character. Currently there are a variety of land uses scattered along the roadway including agricultural, residential, commercial, and industrial operations. It is recommended that zoning and regulatory provisions be put in place within these areas that preserve the low density of land development. In order to accomplish this, the Town should consider creating a Rural Corridor (RC) District. The proposed limits of the RC District are shown in green in **Figure 20**: Proposed Zoning Classification Map.

Purpose

The purpose of the Rural Corridor (RC) District is to support the goals, objectives, and policies adopted as part of the 2006 Comprehensive Plan. More specifically, the RC District is intended to allow the development of a variety of uses including residential, commercial, and industrial activity in a manner that preserves the undeveloped nature of certain areas along NYS Route 13. In order to accomplish this, the RC District regulates the location, design and use of structures and land to create a low concentration of activity in a rural setting and to ensure the safe and efficient movement of vehicles along the corridor.

Permitted Uses

The following uses are to be permitted within the RC District:

1. Farming Operations
2. Public & Semi-Public (private schools, fire halls, etc) uses
3. Parks, Recreational Facilities, etc
4. Single-Family Residential

Specially Permitted Uses

The following uses are to be allowed by special permit within the RC District:

1. Retail & Service
2. Office
3. Automobile Repair
4. Warehousing & Storage
5. Outdoor Storage

Dimensional Requirements

1. Minimum Lot Size – 5 acres
2. Minimum Lot Width - 300 feet
3. Maximum Lot Coverage - 15%
4. Front Yard Setback
    a. Minimum - 90 feet
    b. Maximum – Not Applicable
5. Side Yard Setback
    a. Minimum – 20 feet
    b. Maximum – Not Applicable
6. Rear Setback
    a. Minimum – 25 feet
    b. Maximum – Not Applicable
7. Maximum Building Height – 40 feet for a habitable structure. Does not include accessory structures such as silos or grain elevators which may be taller in height.

Parking & Site Access

No parking should be permitted in the front yard. Side and rear yard parking shall be permitted. The lack of front yard parking, combined with the 90 foot front setback will create continuous green space along the corridor within the RC District.

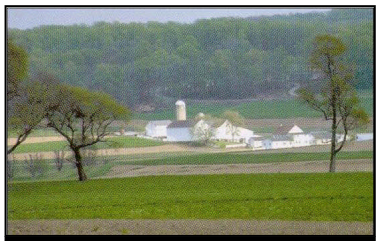
The parking requirements for the Town can generally be described as very high. For example suburban retail and plaza uses typically are required to provide from four to seven parking spaces per 1,000 sq. ft. of retail space. By comparison, the Town of Dryden requires 10 parking spaces per 1,000 sq. ft. It is recommended that the Town revise and reduce their town wide parking requirements as part of their zoning code update. However, due to the large lot sizes proposed in the RC District, the existing parking requirements could be accommodated in this district.

Only one driveway or access should be permitted per parcel within the RC District. This provision combined with the 300 foot minimum lot width eliminates the need for traditional driveway spacing standards that are based upon speed or trip generation in order to limit the proliferation of driveways along the corridor. The Planning Board should strive to maximize the distance between driveways on adjacent parcels through site plan review. Two access points may be permitted on a single parcel if cross access provisions are in place with adjacent property owners.

Bicycle and pedestrian activity could be accommodated through the development of an off road, multi-use trail.

Non-Residential Architectural Standards

It is recommended that structures within the RC District be constructed to mimic the appearance of building types typically found in rural landscapes. These include but are not limited to farmhouses, barns, stables, and country stores. This is accomplished through the use of building materials, roof lines, and decorative treatments. The images shown below are intended to illustrate how this might look.



Agricultural Operations

Retail or Office Building

Large Scale Facility (Farm, Industrial Operation, etc)

WITHIN NODES

As previously stated, the area north of Neptune Drive along Route 13 within the Village is an existing area of commercial activity. The concentration of development in this area is consistent with the level of activity that is appropriate and reasonable to encourage in the node at the Route 13/366 split. However, the style and layout of the development within the proposed node should reduce the transportation and visual impacts of the automobile by prohibiting front yard parking and the number of curb cuts permitted onto Route 13/366. In order to accomplish this, the Town should consider creating a Medium Density Mixed-Use (MU-M) District. The proposed limits of the MU-M District are shown in blue in **Figure 20**: Proposed Zoning Classification Map.

Purpose

The purpose of the Medium Density Mixed-Use (MU-M) District is to support the goals, objectives, and policies contained in the Town and County Comprehensive Plans. More specifically, the MU-M District is intended to foster the creation of a moderately dense node of activity with a wide variety of uses including residential, commercial, and industrial activity. In order to accomplish this, the MU-M District regulates the location, design and use of structures and land to create a cluster of activity in a nodal fashion and to ensure the safe and efficient movement of vehicles along the corridor.

Permitted Uses

The following uses are permitted within the MU-M District:

1. Retail & Service
2. Office
3. Public & Semi-Public uses
4. Single-Family Residential
5. Multi-Family Residential Units

Specially Permitted Uses

The following uses are to be allowed by special permit within the MU-M District:

1. Farming Operations
2. Parks, Recreational Facilities, etc
3. Drive Through Facilites as a stand alone operation or in conjunction with a permitted use
4. Automobile Repair
5. Gas Sales
6. Light Industrial

Dimensional Requirements

1. Minimum Lot Size – Determined Through Site Plan Review
2. Minimum Lot Width - Determined Through Site Plan Review
3. Maximum Lot Coverage - 55%
4. Front Yard Setback
    a. Minimum - 25 feet
    b. Maximum – 40 feet
5. Side Yard Setback
    a. Minimum – 10 feet
    b. Maximum – 20 feet
6. Rear Setback
    a. Minimum – 20 feet
    b. Maximum – None
7. Maximum Building Height – 80 feet or 4 stories

In addition, the Town should consider modifying its Planned Unit Development (PUD) requirements within the nodal area. The Town code currently requires a minimum of 100 acres in order to apply for a PUD designation. Within the nodal area, the minimum acreage necessary for a PUD should be reduced to 3 - 5 acres. This will allow developers more flexibility in creating a site layout that is consistent with the purpose of the MU-M District.

Parking & Site Access

No parking should be permitted in the front or side yards of parcels abutting Route 13. The lack of front yard parking, combined with the 25 to 40 foot front setback requirements will create consistent building placement as well as a continuous green space within the MU-M District that will help to create a sense of place that is less rural than the RC District. The lack of side yard parking and smaller side yard setbacks will result in structures that are closer together, resulting in the moderate density development pattern described in the purpose statement.

As previously stated, the parking requirements for the Town can generally be described as very high. Typically, nodal development characterized by a mix of uses in close proximity to each other has lower parking requirements than stand alone uses. This can be attributed to the fact that visitors will park once and walk to multiple destinations. As a result, the Town can 1) develop a second set of parking requirements for the nodal areas (including the Hamlet) or 2) adopt a shared parking ordinance. A shared parking ordinance is defined as follows.

> Shared parking may be applied when land uses have different parking demand patterns and are able to use the same parking spaces/areas throughout the day. Shared parking is most effective when these land uses have significantly different peak parking characteristics that vary by time of day, day of week, and/or season of the year. In these situations, shared parking strategies will result in fewer total parking spaces needed when compared to the total number of spaces needed for each land use or business separately. Land uses often used in specific shared parking arrangements include office, restaurants,

retail, colleges, churches, cinemas, and special event situations. Shared parking is often inherent in mixed-use developments, which include one or more businesses that are complementary, ancillary, or support other activities. (Stein Engineering).

Site access directly from Route 13 shall be prohibited. Access should only be provided from a lower volume side road. Where no road currently exists, developers should be required to; 1) begin to construct all or part of an access road as part of their project or 2) provide a cross access easement and an agreement or performance bond in order to ensure their participation in the construction of the road upon development of the adjacent parcel. The Planning Board should strive to maximize the distance between access roads within the MU-M District through site plan review.

The intent of the nodal area at the Route 13/366 split is to provide for a mix of employment, neighborhood retail and residential development that is linked to the broader community by a multi-modal transportation network. Once someone parks their bike after leaving the trail, gets off the bus, or parks their car at home or work, they should be able to reach all the destinations within the node via a complete network of sidewalks and pedestrian paths. In order to accomplish this, pedestrian accommodations and connections should be required throughout the node; including a sidewalk along both sides of Route 13. This will allow visitors to park their car once and patronize several businesses. It will also allow residents living within the node to access goods and services on foot. The development of an off road, multi-use trail, north of Route 13/366 will also provide access to the nodal area for non-motorized traffic from points to the east and west.

Non-Residential Architectural Standards

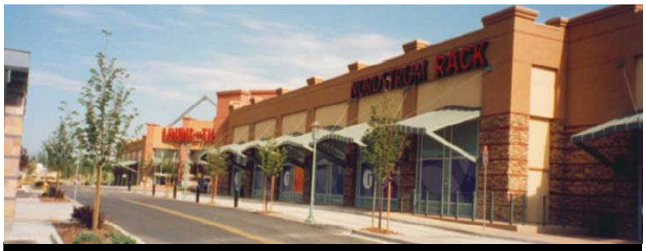
It is recommended that structures within the MU-M District have a minimum level of design that meets the following standards.

1. Facades, roof lines and exterior walls should have three dimensional variation to provide visual interest and variety.
2. Facades that face public streets or adjacent development shall be subdivided and proportioned using features such as windows, entrances, arcades, arbors, awnings, trellises with vines, along no less than 60% of the façade.
3. Building entrances shall face Route 13 and provide a direct connection to the sidewalk system. A second entrance may be placed to the rear to serve visitors entering from the parking area. Entrances should be obvious, attractive, in scale with the building façade and have weather cover. Individual tenants should have separate entrances.
4. Large wall surfaces must be broken up visually into a series of smaller units.
5. The use of reflective glass, concrete block units or metal siding on a façade is prohibited.
6. The composition of a multi-story building shall present a clearly recognizable base, middle, and top.
7. Ground and roof mounted HVAC units must be screened from view with a treatment that is integral with the design of the building (i.e. parapet wall, mansard roof or garden wall)

8. Dumpsters must be screened in with materials and colors that are consistent with the building that it serves (i.e. a brick building must have a dumpster screened with brick walls).
9. Canopies covering gasoline pump islands, which are freestanding or attached to the building should not be backlit, except for any approved signage or logo. Canopies shall also reflect the architectural style of the primary building (i.e. materials, colors, and architectural details).
10. Landscaping shall be provided based upon the perimeter of the lot. For every 15 linear feet of perimeter distance, one shrub shall be planted. For every 50 feet of perimeter, one tree shall be planted.

The images shown below are intended to illustrate how this might look.

Retail/Office Building



Large scale Retail Store

It should be noted that the Village may want to incorporate some or all of these recommendations for the existing commercial area north of Neptune Road. Over time, the use of these recommendations will serve to improve the overall appearance and function of this area as properties re-develop.

HAMLET & VILLAGE CENTER DISTRICTS

The Hamlet of Varna constitutes one of the three nodes identified along the corridor. In addition, the Village's downtown district represents the core of the existing Village node. These two areas are the most densely developed portions of the community. The development pattern consists of a variety of uses in close proximity to each other on relatively small lot sizes with little or no front setbacks. In order to ensure new and in-fill development complements the existing character of these two distinct areas, the Town and Village should consider creating a Hamlet District and a Village Center District. The proposed limits of the H and VC Districts are shown in blue in **Figure 20**: Proposed Zoning Classification Map.

Purpose

The purpose of the Hamlet (H) & Village Center (VC) Districts is to support the goals, objectives, and policies adopted as part of the Village, Town, and County Comprehensive Plans. More specifically, these districts are intended to foster the development of a small-scaled, mixed use area for convenient shopping and services that cater to the community in a manner that is consistent with the pedestrian-oriented and historical character of the districts. In order to

accomplish this, the H and VC Districts regulate the location, design and use of structures and land to create a dense concentration of activity with a high degree of amenities that create a comfortable environment for visitors arriving on foot, bicycle, or by motor vehicle.

Permitted Uses

The following uses are permitted within the Hamlet and Village Center District:

1. Retail & Service
2. Office
3. Public & Semi-Public uses
4. Single-family Residential (Permitted in the Hamlet District not in Village Center)
5. Multi-Family Residential Units

Specially Permitted Uses

The following uses are to be allowed by special permit within the Hamlet and Village Center District:

1. Parks, recreational facilities, etc
2. Gas Sales

Dimensional Requirements

1. Minimum Lot Size – Determined Through Site Plan Review
2. Minimum Lot Width - Determined Through Site Plan Review
3. Maximum Lot Coverage - 80%
4. Front Yard Setback - Village Center District
    a. Minimum - 0 feet
    b. Maximum – 5 feet
5. Front Yard Setback - Hamlet District
    a. Minimum - 10 feet
    b. Maximum – 25 feet
6. Side Yard Setback
    a. Minimum – Determined Through Site Plan Review
    b. Maximum – Determined Through Site Plan Review
7. Rear Setback
    a. Minimum – Determined Through Site Plan Review
    b. Maximum – Determined Through Site Plan Review
8. Maximum Building Height – 30 feet or 2 stories

In addition, the Town should consider modifying its Planned Unit Development (PUD) requirements within the Hamlet area. As previously stated, the Town code currently requires a minimum of 100 acres in order to apply for a PUD designation. Within Varna, the minimum

acreage necessary for a PUD should be reduced to 3 - 5 acres. This will allow developers more flexibility in creating a site layout that is consistent with the purpose of the Hamlet District.

Parking & Site Access

No parking should be permitted in the front or side yards of parcels abutting Route 13/366. The lack of front yard parking, combined with the 0 to 5 foot front setback requirements will create consistent building placement as well as a continuous architectural presence within the Hamlet and Village Center Districts that will help to create a human scaled, sense of place. The lack of side yard parking and potential elimination of side setbacks should result in structures that are very close together or that abut each other. This approach results in a traditional development pattern that is very dense along the corridor.

As previously stated, nodal development characterized by a mix of uses in close proximity to each other has lower parking requirements than stand alone uses. This can be attributed to the fact that visitors will park once and walk to multiple destinations. As a result, the Town and Village can 1) develop a second set of parking requirements for the Hamlet and Village Center Districts or 2) adopt a shared parking ordinance. A shared parking definition is provided in the Mixed Use Medium Density District Summary.

Site access directly from Route 13/366 should be prohibited. Access should only be provided from a lower volume side road. Where no road currently exists, developers should be required to; 1) begin to construct all or part of an access road as part of their project or 2) provide a cross access easement and a performance bond in order to ensure their participation upon development of the adjacent parcel. The Planning Board should strive to achieve a block length of 300 to 500 feet between access roads within the Hamlet and Village Center Districts through site plan review.

The intent of the Hamlet and Village Center Districts is to create an area that balances the needs of the motorists with the needs of the pedestrian. In order to accomplish this, pedestrian realm accommodations such as sidewalks, street trees, and benches should be required on all public streets. This will promote pedestrian activity and help to calm traffic along Route 13 and Route 366.

Non-Residential Architectural Standards

Building Scale & Location

1. Maximum square footage of the principal structure is a 3,000 square foot building footprint.
2. New construction shall have a maximum setback of zero (0) to five (5) feet (in Village) / ten (10) to twenty-five (25) feet (in hamlet) from the public right-of-way. Relief from this provision may be provided for pedestrian amenities such as recessed entries or chamfered corners.

3. New construction shall be or appear to be two stories in height.
4. New construction or remodeling should incorporate a roof form which reflects the adjacent 19th or early 20th century buildings. Flat roof slopes shall slope to the back and will have a decorative cornice at the top of the building. Peaked or gable roofs shall have significant overhangs and decorative brackets are encouraged.
5. Entry points shall be located to afford direct access from the sidewalk. Corner buildings may have two separate entry points or a single entry point at the corner.
6. All of the facades of the building which face a public street shall be architecturally consistent (i.e. building materials, style, etc.) with each other.

Facades

1. Building façades shall reflect the 19th or early 20th century style of the Village and Hamlet.
2. The pedestrian zone (2' to 8' above the sidewalk) shall have a minimum of 60% clear glass. Opaque or heavily tinted glass is not permitted.
3. The pedestrian zone should not be obscured to allow visual access to the interior of the building. Displays that do not completely obstruct the visual access shall be permitted.
4. A minimum of 25% percent of the façade for the upper floor shall incorporate transparent glass openings.
5. Existing windows shall not be covered up or changed in size unless the proposed change is part of an effort to restore the original appearance of the building.
6. No external security devices (coiling shutters, accordion gates, etc) shall be utilized. Alternative security systems such as lighting, alarms, and interior barriers are to be used when necessary.
7. A visual separation shall be provided between the first and second story of a building. This element may consist of decorative trim, awnings, or a change of material that creates added relief in order to add a shadow line that delineates the end of the first story.
8. Large buildings, greater that 40 feet in width, shall be designed to look like multiple smaller buildings.

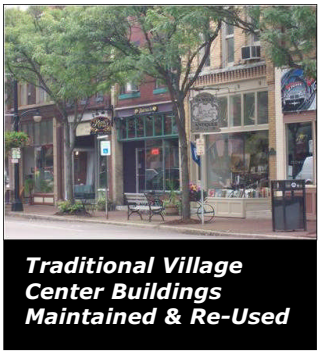
Materials

1. All new construction or remodeling that is visible from the public right of way shall utilize materials that appear to be smaller in scale such as brick or clapboard. Larger scale materials, such as concrete block, shall be limited to the rear of the building.
2. Brick selected for new construction or renovation shall reflect the surrounding 19th or early 20th century buildings.
3. Vertical siding is permissible if it reflects the 19th or early 20th century style architecture.
4. All wood shall be finished using either stain or paint. All metal shall be colored; clear coated aluminum or stainless steel is not permitted.

Awnings, Doors, & Windows

1. Multi-pane glass or the appearance of multi-pane glass may be used to break up larger windows.
2. Awnings shall be consistent with materials used in the 19th or early 20th century (i.e. canvas, wood, etc)
3. If awnings are placed on a façade they shall be consistent with shape of the window that they are located over. For example, an awning placed over an arched window shall be arched and an awning placed over a rectangular window shall be a flat topped awning.
4. Awnings shall have a triangular or curved profile.
5. Awnings may not be backlit.
6. Doors should allow visual access to the interior of the building. If the door is solid, it shall be multi-panel. All doors shall be painted or stained to accent the building.

The images shown below are intended to illustrate how this might look.



Traditional Village Center Buildings Maintained & Re-Used

Village Center Retail/Office Building

Village Center or Hamlet Bank w/ Drive Thru

Hamlet Retail or Office Building

Hamlet Residential

REQUIREMENTS APPLYING TO ALL DISTRICTS ALONG THE CORRIDOR

Signage

The existing sign regulations within the Town can generally be described as excessive in term of overall size and configuration. However, the size and number of signs currently allowed are sufficient to implement the Rural Corridor District. Within the Mixed Use Medium Density District, the overall size allotment for signs should be reduced by 25% and the sharing of sign

structures required. In the Hamlet and Village Center Districts, it is recommended that 1 sq. ft. of signage be permitted for every linear foot of building frontage up to a maximum of 50 sf. ft. In addition, no more than 25% of the façade may be used for signage in the H and VC Districts. Other signage recommendations include:

1. No off site signage is permitted.
2. Pole signs are prohibited.
3. Signs shall not obstruct the visibility of traffic entering or leaving NYS Route 13/366.
4. On all street frontages, signage material shall be integrated into the overall design of the building.
5. Signs shall be located to complement the architectural features of a building such as above the building entrance, storefront opening, or other similar feature.

Landscaping

Parking Lots

1. One landscaped island shall be provided for each 20 parking spaces within the parking lot area. Trees shall be a minimum of 3" caliper and planted within an island with a minimum dimension of 200 sq. ft. The tree planting island must be further planted with ground cover, grass, or shrubs.
2. Parking areas shall be screened from the adjacent roadway by a solid shrub hedge, berm, fence, wall, or a combination of these treatments. These treatments shall be a minimum height of three (3) feet. The maximum fence height shall be four (4) feet in height along a roadway. Side yard fences may be up to six (6) feet in height. The height of screening materials shall be measured from the surface of the adjacent parking area.
3. Parking lots with a surface area greater that 5,000 sq. ft. must be paved with asphalt, concrete, or other solid surface and have raised curbing. Pervious paving treatments (such as modular paving systems or reinforced grass block) may be used with Planning Board approval.

Street Trees

1. A minimum of one (1) tree shall be planted for each linear 40 feet of frontage. Each tree will be a minimum 3" caliper.
2. All required street trees shall be placed between the edge of the road and the parking area or front building line, whichever is closest.

VIII. CONCLUSION

The Route 13/366 Corridor Management Plan was undertaken to assess the current development scenario along the corridor versus a nodal development scenario. The Existing Development Scenario assumed the remainder of the frontage along the corridor is developed as residential or

commercial land use. The industrial development is focused near the airport in the western end of the Town, north of NYS Route 13. Consistent with historical patterns, no new development is proposed for the Village of Dryden. Outside of the corridor, scattered residential development fills out the remainder of the new dwelling units. Note that the Existing Development Scenario assumes the new residential development will be built at a density of one dwelling unit per acre (or 1,800 total acres of residential development).

The Nodal Development Scenario focused the next 20 years of development at three distinct node points along the corridor. This represented a drastic difference from the Existing Development Scenario. Most notably, the remaining agricultural / vacant frontage parcels along the corridor were left undeveloped under the Nodal Development Scenario. In addition, a significant portion of the scattered residential development shown in the Existing Development Scenario was consolidated into the three node points. Under this development scenario, residential development density was increased to an average of at least two dwelling units per acre, consistent with local planning efforts to reduce the overall amount of developed land.

This study has found that nodal development can have a significant positive impact on the Route 13/366 corridor and can addresses many of the residents' primary concerns. The recommendation to the Town, Village, and Hamlet is to use the regulatory language provided as a starting point in the revision of the local code to promote nodal concepts. While this study does not recommend a specific site plan or layout for any node point or property, the graphics presented offer ideas as to how the nodes could be developed.

The following specific recommendations are being made to the communities to lay the groundwork for nodal development and/or address short term concerns consistent with a pattern of nodal development:

- Work with NYSDOT to remove the existing passing zone through the Hamlet of Varna. This is an important first step in achieving the character desired by residents,
- Contact NYSEG to explore the viability of removing, minimizing, or screening the power lines and substation in the overlap section of Route 13 and Route 366. This area is important for the nodal development pattern and anything that can be done to improve the viability of the node point should be explored.
- Coordinate with TCAT on the number of routes and reliability of service in the area. Comments gathered during the study indicated the transit service was not as reliable as desired to use for the daily commute.
- Work with NYSDOT on a redesign of the western Route 13/366 intersection to improve safety. This should include consideration of the applicability of a roundabout.
- Work with NYSDOT on a redesign of North Road at Route 13 to make a four way intersection at the traffic signal at Bahar Drive (TCCC entrance road).

APPENDIX

NYS ROUTE 13 / 366
CORRIDOR MANAGEMENT PLAN

Dryden, New York

Prepared for:

Tompkins County
Ithaca, NY 14850

Prepared by:

FISHERASSOCIATES
135 Calkins Road, Rochester, NY 14623
Phone: 585-334-1310
www.fisherassoc.com

T&W TROWBRIDGE & WOLF
Landscape Architects Planners

Project No. 065015

March 2008
(revised June 2008)

NYS ROUTE 13/366
CORRIDOR MANAGEMENT PLAN

APPENDIX A. COMMUNITY PREFERENCE SURVEY

- **Community Preference Survey**
- **Break-Out Session Summaries**

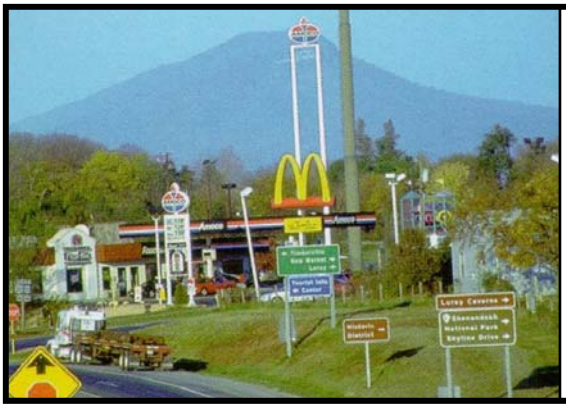
Community Preference Survey Results

For Town/Village of Dryden & Hamlet of Varna, November 2006
Route 13/366 Corridor Management Plan

These images summarize the CPS results from the November 1, 2006 Community Workshop. The images are presented based upon the results of the Town surveys; beginning with the Least Desirable images (lowest possible score was 0) to the Most Desirable images (highest possible score was 10).

Slide #5	Avg. Score
Town	1.26
Village	1.44
Varna	1.63

Slide #44	Avg. Score
Town	1.48
Village	1.67
Varna	1.38



Slide #34	Avg. Score
Town	1.96
Village	2.44
Varna	2.13

Slide #4	Avg. Score
Town	2.09
Village	2.22
Varna	1.50

Slide #24	Avg. Score
Town	2.48
Village	2.67
Varna	2.13

Slide #38	Avg. Score
Town	2.70
Village	3.67
Varna	2.63

Slide #16	Avg. Score
Town	2.78
Village	3.44
Varna	2.00

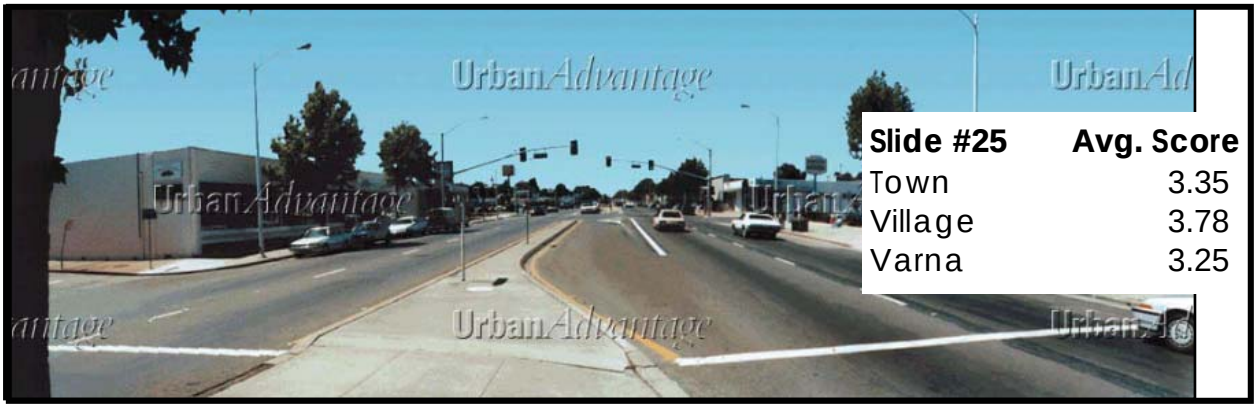
Slide #48	Avg. Score
Town	2.87
Village	3.33
Varna	1.75

Slide #13	Avg. Score
Town	2.96
Village	3.33
Varna	3.25

Slide #9	Avg. Score
Town	3.00
Village	3.44
Varna	2.63

Slide #3	Avg. Score
Town	3.17
Village	2.11
Varna	2.00

Slide #17	Avg. Score
Town	3.30
Village	3.78
Varna	3.00



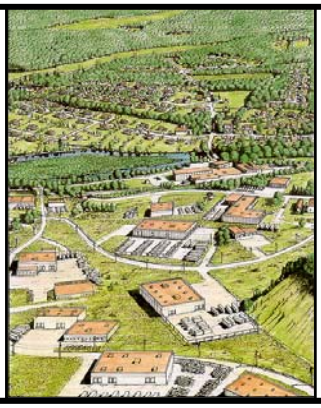
Slide #25	Avg. Score
Town	3.35
Village	3.78
Varna	3.25

Slide #46	Avg. Score
Town	3.74
Village	3.89
Varna	2.63

Slide #18	Avg. Score
Town	3.78
Village	4.33
Varna	3.75

Slide #30	Avg. Score
Town	3.78
Village	5.11
Varna	3.88

Slide #1	Avg. Score
Town	3.87
Village	3.89
Varna	2.63



Slide #50	Avg. Score
Town	3.87
Village	4.56
Varna	3.00

Slide #45	Avg. Score
Town	4.00
Village	5.22
Varna	3.13

Slide #10	Avg. Score
Town	4.04
Village	4.00
Varna	3.13

Slide #36	Avg. Score
Town	4.04
Village	5.44
Varna	3.00

Slide #37	Avg. Score
Town	4.13
Village	6.33
Varna	3.38

Slide #22	Avg. Score
Town	5.00
Village	4.78
Varna	5.00

Slide #23	Avg. Score
Town	5.00
Village	6.33
Varna	5.00

Slide #20	Avg. Score
Town	5.04
Village	5.11
Varna	3.63

Slide #12	Avg. Score
Town	5.22
Village	6.67
Varna	5.63

Slide #31	Avg. Score
Town	5.39
Village	5.44
Varna	6.25

Slide #42	Avg. Score
Town	5.39
Village	6.33
Varna	6.00

Slide #26	Avg. Score
Town	5.52
Village	6.22
Varna	7.00

Slide #41	Avg. Score
Town	5.57
Village	6.44
Varna	6.13

Slide #21	Avg. Score
Town	5.87
Village	6.44
Varna	5.13

Slide #11	Avg. Score
Town	6.00
Village	7.00
Varna	6.00

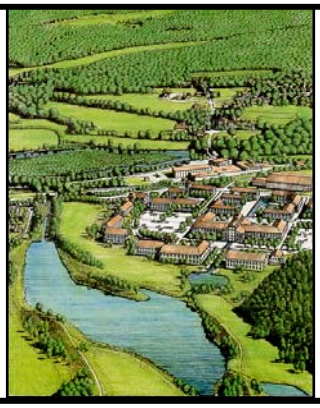
Slide #29	Avg. Score
Town	6.09
Village	6.44
Varna	6.25

Slide #32	Avg. Score
Town	6.09
Village	6.56
Varna	5.38

Slide #35	Avg. Score
Town	6.17
Village	6.33
Varna	5.88

Slide #33	Avg. Score
Town	6.30
Village	6.00
Varna	6.13

Slide #39	Avg. Score
Town	6.52
Village	7.11
Varna	6.50



Slide #51	Avg. Score
Town	6.57
Village	7.78
Varna	7.75

Slide #47	Avg. Score
Town	6.78
Village	8.22
Varna	7.50

Slide #49	Avg. Score
Town	6.83
Village	7.67
Varna	6.88

Slide #6	Avg. Score
Town	6.91
Village	7.33
Varna	5.88

Slide #2	Avg. Score
Town	7.17
Village	7.44
Varna	6.63

Slide #27	Avg. Score
Town	7.22
Village	7.22
Varna	7.25

Slide #8	Avg. Score
Town	7.35
Village	7.67
Varna	7.63

Slide #7	Avg. Score
Town	7.43
Village	7.11
Varna	7.63

Slide #15	Avg. Score
Town	7.57
Village	8.11
Varna	7.50

Slide #28	Avg. Score
Town	7.70
Village	7.56
Varna	8.50

Slide #19	Avg. Score
Town	8.00
Village	7.89
Varna	6.25

Slide #40	Avg. Score
Town	8.91
Village	8.00
Varna	8.50

Slide #43	Avg. Score
Town	9.26
Village	8.56
Varna	9.13

NOTES:

1. **Image #14 and #37 were the same picture. As a result, there is no image #14 included in this summary.**
2. **Image sources: Urban Advantage, The Conservation Fund, SPG, Rural By Design, and NYSDOT.**
3. **These pictures may not be re-produced without written permission.**

Village of Dryden
Town of Dryden

FOR QUESTIONS

REGARDING THE WORKSHOP OR STUDY

PLEASE CONTACT

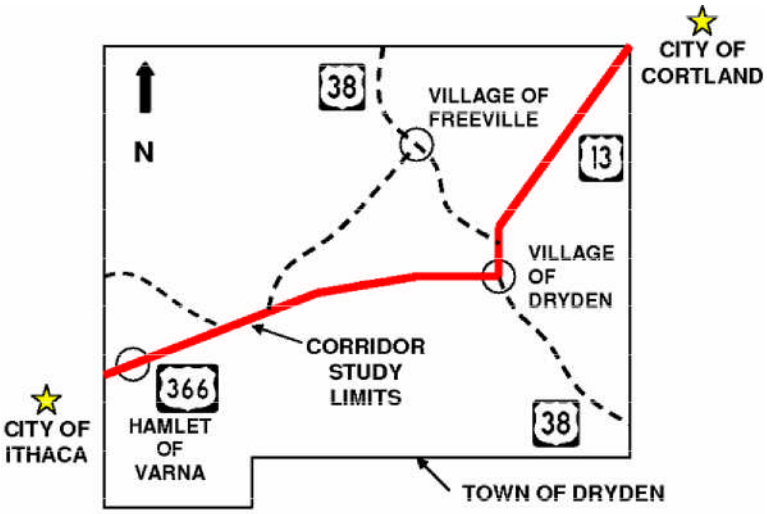
MR. ED MARX,

TOMPKINS COUNTY PLANNING,

AT (607) 274-5560

FISHERASSOCIATES
Study Consultants

Route 13 & 366 Corridor Input
Break - Out Session Results
Overall Brainstorm Session Summary



CORRIDOR STUDY LIMITS

The following lists the highest ranking corridor needs or suggestions discussed at the Brainstorming Break-out Sessions. The number in parentheses is the number of priority dots given by all groups combined:

1. High speeds and traffic volume through the corridor make accessibility on and off difficult and unsafe (24)
2. Route 13 / 366 intersections are unsafe (18)
3. Route 13 by-pass, new Route 13 location, frontage roadways (12)
4. Concerns over cut-though traffic avoiding Route 13 congestion (11)
5. Character of Varna and lack of sidewalks (9)
6. Maintain open space / agriculture (7)
7. Utilize alternate modes of travel (5)

Route 13 & 366 Corridor Input
Break - Out Session Results
Group 1

Comments (number of priority dots given by group):

1. Route 13/366 and NYSEG intersections are dangerous. Route 13 traffic will stop to let trucks turn. (16)
2. Exiting driveways in Varna, lack of double line, should be no passing in Varna. (5)
3. Varna has lots of walkers but no sidewalks. (4)
4. Unsafe speeds with icy conditions and blowing snow. (4)
5. Turkey Hill/Route 366 blind hill and high rate of speed. (1)
6. Making lefts from side roads in Varna or crossing Route 366 is dangerous. (1)
7. North Road intersection unsafe. (1)
8. Mt. Pleasant into Varna is dangerous in the winter. (0)
9. Dangerous turn into/out of the Sunoco, east of NYSEG, lack of site line. (0)
10. Freeville traffic getting worse because Route 13 is over capacity. (0)

Suggestions / Solutions (number of priority dots given by group):

1. Express hour (0)
2. Dryden is looking great (0)
3. “Ithaca is a great place to live because it is near Varna.” (0)

Route 13 & 366 Corridor Input
Break - Out Session Results
Group 2

Comments (number of priority dots given by group):

1. Traffic backing up at Four Corners in Village of Dryden results in traffic short cuts through neighborhoods. (2)
2. Concern for the elderly with visibility and accessibility. (2)
3. An increase in traffic for those who live on Route 13. This will increase speed, noise, and safety issues. (1)
4. Development on Route 13 will affect the surrounding communities, (i.e. shortcuts and bypassing the Village; Lewis Street) (0)
5. Keep traffic out of residential neighborhoods. (0)

Suggestions / Solutions (number of priority dots given by group):

1. A new Route 13 corridor is needed for future use. (5)
2. Traffic calming needed for trucks, safety issue crossing the street to mailboxes. (3)
3. Add a climbing lane out of Dryden towards Cortland. (2)
4. Add an overlap zone to protect the land and overlap Route 13 and Route 366 separately. (1)
5. The need of services for development. (1)
6. Use frontage roadways along commercial property in order to limit driveways on the corridor. (0)

Route 13 & 366 Corridor Input
Break - Out Session Results
Group 3

Comments (number of priority dots given by group):

1. Maintain open space and agricultural lands which bring character to the area. (7)
2. Safety, farm equipment, and unsafe passing on Irish Settlement Rd. (6)
3. Speed in Varna, no sidewalks for pedestrians, Varna is “visually disconnected”. (5)
4. TC3 students drive on back roads; Livermore Road (4)
5. Shoulders are too wide in Dryden. There is unused asphalt and it “could be green”. (2)
6. Trucks and cars using Route 366 to avoid Dryden impacts adjacent small villages. People bypassing Dryden (2)

Suggestions / Solutions (number of priority dots given by group):

1. Directly connect Cornell to Route 13 around Varna. (3)
2. Construct frontage road along the Route 13 / 366 overlap (2)
3. Park & Ride and Transit. (1)
4. Bring back street trees to the west side of Route 13. (0)
5. Dense housing, alternate modes of travel with the energy costs, light rail. (0)
6. Maintain size of Dryden and Varna. (0)
7. Construct 4 lanes on the Route 13 / 366 overlap section. (0)
8. Put in bicycle trails along the rail road. (0)

Route 13 & 366 Corridor Input
Break - Out Session Results
Group 4

Comments (number of priority dots given by group):

1. Varna has no sidewalks and no place for bikes or pedestrians (3)
2. Etna being used as a bypass for vehicles and will get worse if Route 13 is traffic calmed. (3)
3. It is difficult to get onto Route 13 from 366 southbound because of high volume and speeds on Route 13. Density and volume of traffic is too high. Speeding on Route 13 makes access difficult from any street or driveway. Difficult access onto Route 13 from side streets due to new and increasing number of points. (4)
4. Speeding on Route 13 makes access difficult from any street or driveway. (2)
5. Maintain the character of Varna while development is occurring. (2)
6. Need to protect the beautiful view along Route 13 Northbound. (1)
7. Dense development outside of nodes is difficult due to lack of water/sewer. (1)
8. Route 366/Friese Road is a dangerous intersection. (0)
9. It is difficult to pass between the Village and Route 366. Extra lane needed. (0)

Suggestions / Solutions (number of priority dots given by group):

1. Improve trail system to provide alternate methods of travel. (2)
2. Traffic calming needed in Varna due to high speeds and high posting. (2)
3. Four-lane Route 13 bypass around Village. (1)
4. Park and Ride facilities needed within the corridor. (1)
5. Commuter rail line between Village of Dryden and Cornell. (1)

NYS ROUTE 13/366
CORRIDOR MANAGEMENT PLAN

APPENDIX B. NYSDOT ACCIDENT REDUCTION FACTORS

TABLE 1A
AADT > 5000/LANE
ACCIDENT REDUCTION FACTORS (RF)

Traffic Engineering and Safety Division
Safety Program Management Bureau
NYS DOT Revision 5/00

Improvement Codes	Description	Reduction Factor (%)	Remarks
	INTERSECTION IMPROVEMENTS		
10	CHANNELIZATION	37	Right angle 58%, Rear end/OT 30%, Rt. Turn 51%
101	Add left turn lane w/physical separation	26	Head On/SS 79%@
102	Add left turn lane w/painted separation	45	Reduces right-angle acc. by 63%, rear-end/OT 39%, left turn 35%@
103	Add right turn lane w/physical separation	*	
104	Addition of pavement markings to reduce size of intersection	*	
105	Other channelization	24	Rt Angle 47%, Rear End/OT 33%@
11	TRAFFIC SIGNALS/DEVICES	19	Right angle 34%, Rear end/OT 26%, Left Turn 18%, Head On/SS 36%
110	Other signal improvements	15@	Reduces right-angle acc. 22%@, rear-end/OT 25%
111	Install 4-way stop signs	73*	Reduction factor from Reference 2.
11A	Install stop ahead signs	15+	
112	Install minor-leg stop control	1*	
11B	Install Yield signs	23+	
113	Install new flashing red/yellow signal	26@	Reduces right-angle acc. 36%@
114	Change in operation to a flashing red/yellow signal	*	
115	Installation of a new red/yellow/green signal	20	Reduces right-angle acc. by 43%, rear-end/OT 20%@
116	Upgrading of a red/yellow/green signal (Includes larger lenses, more/better placed heads, phase adjustment, and general signal upgrades.)	19	Reduces right angle acc. by 37%,rear-end/OT 26%,left turn 26%@,Head On/SS 52%
117	Add left turn protection (change # of phases)	36	Reduces right-angle acc. 56%, rear-end/OT 35%, left turn 46%.
118	Add pedestrian signals	13*	Reduction factor from Reference 5.
119	Change in signal operation, from pretimed to traffic-actuated	28	Reduces right-angle acc. 32%,rear-end/ss 26%,Head On/SS 60%@,Left Turn 30%

Unless otherwise noted, accident reductions reflect accident trends at SELECTED locations improved by categorical safety funded projects. When reduction factors for Low Cost Accident Counter Measures (LCAC) or reduction factors from other sources were tabulated a + appears with the reduction factor or a note appears in the remarks column.

Non-reportable accidents were not used to calculate the safety project reduction factors tabulated.

Reduction factors should only be used to ESTIMATE safety benefits for respective improvements.

* Insufficient number of locations for factor calculation or no statistically significant change in accident rate. If a factor is present the source for the factor is shown in remarks. @= State Wide Average

+ Reduction Factors updated using 1992 Low Cost Accident Counter Measure Evaluations.

Improvement Codes	Description	Reduction Factor (%)	Remarks
12	COMBINATION OF CHANNELIZATION (10) & SIGNALS/DEVICES (11)	8	Right angle 30%, Rear end/OT 26%@
121	Add left turn lane w/signal (physical)	19	Reduces right-angle acc. 55%@, rear-end/OT 28%, left turn 24%@
122	Add left turn lane w/signal (painted)	16@	Reduces right-angle acc. 49%@
123	Add right turn lane w/signal	*	
124	Add left and right turning lane w/signal	14	Reduces right-angle acc. 42% and rear-end/ss 38%@
13 & 131	INTERSECTION SIGHT DISTANCE IMPROVEMENT	31*	Reduction factor from reference 4.
19 & 191	OTHER INTERSECTION WORK	*	
	Prohibit parking	32*	Reduction factor from reference 5.
	Prohibit turns	40*	Reduction factor from Reference 5.
	CROSS-SECTIONAL IMPROVEMENTS		
20	PAVEMENT WIDENING, NO LANES ADDED	59	Reduces left turn accidents 69%@
201	Widen travel way from 9 feet	*	
202	Widen travel way from 10 feet	59	Reduces left turn acc. by 69%@
21	LANES ADDED, WITHOUT NEW MEDIAN	31	Reduces Right Angle acc. 45%, Rear End/OT acc. 52%, Head On/SS 44%
211	Add additional lanes same alignment	31	Reduces rear-end/OT acc. 52%, head-on/ss 44%, right angle 45% Increases right turn acc. 79%@
212	Add climbing lane	*	
22	HIGHWAYS DIVIDED, NEW FLUSH MEDIAN ADDED	44	Reduces Rear end/OT acc. 41%, Left turn acc. 78%, Head On/SS 57%
221	Flush median added	52	Reduces left turn acc. 78%
222	Flush median added w/refuge for left turns	44	Reduces rear-end/OT acc. 40%, left turn 77%, head-on/ss 52%@ Increases right turn acc. 95%@
223	Widen flush median	*	

Unless otherwise noted, accident reductions reflect accident trends at SELECTED locations improved by categorical safety funded projects. When reduction factors for Low Cost Accident Counter Measures (LCAC) or reduction factors from other sources were tabulated a + appears with the reduction factor or a note appears in the remarks column.

Non-reportable accidents were not used to calculate the safety project reduction factors tabulated.
Reduction factors should only be used to ESTIMATE safety benefits for respective improvements.

* Insufficient number of locations for factor calculation or no statistically significant change in accident rate. If a factor is present the source for the factor is shown in remarks. @= State Wide Average
+ Reduction Factors updated using 1992 Low Cost Accident Counter Measure Evaluations.

Improvement Codes	Description	Reduction Factor (%)	Remarks
23	SHOULDER WIDENING OR IMPROVEMENT	*	
231	Shoulder stabilization	*	
232	Widen existing shoulder	17*	Reduction factor from reference 6, for 2-lane roads only
24	ADD ADDITIONAL LANES W/MEDIAN, SAME ALIGNMENT	20*	Reduction factor from reference 1, general reconstruction
25	SKID TREATMENT W/GROOVING	22@	Rear End/OT 35%, Wet Road Reduced 54%, ROR 40%, Fxd Obj 19%
251	Longitudinal grooving	21@	Reduces wet-road acc. 54%, ROR 40%, rear-end/OT 35%, Fxd Obj 19%
252	Transverse Grooving	*	
26	SKID TREATMENT W/OVERLAY	20	Open-graded mix most effective. Rt Angle 23%@, Fxd. Obj 34% Reduces wet-road acc. 50%, head-on/ss 61%
261	Resurfacing w/skid resistant pavement	13	Reduces wet-road acc. 42%, right-angle 23%
262	Resurfacing and superelevation	28@	Reduces wet-road acc. 51%@
263	Resurfacing w/open-graded mix	75@	Reduces wet-road acc. 91%@, coll. w/fixed obj 93%@, head-on/ss 90%@
264	Resurfacing w/Verglimit	31@	Reduces icy-road acc. 52%@
27	SIDE SLOPES	45@	Reduces coll. w. F.O. 62%
271	Flattening of side slopes	45@	Reduces coll. w/fixed obj 62%
272	Flattening or clearing of side slopes	*	Refer to Improvement Code 271

Unless otherwise noted, accident reductions reflect accident trends at SELECTED locations improved by categorical safety funded projects. When reduction factors for Low Cost Accident Counter Measures (LCAC) or reduction factors from other sources were tabulated a + appears with the reduction factor or a note appears in the remarks column.

Non-reportable accidents were not used to calculate the safety project reduction factors tabulated.

Reduction factors should only be used to ESTIMATE safety benefits for respective improvements.

* Insufficient number of locations for factor calculation or no statistically significant change in accident rate. If a factor is present the source for the factor is shown in remarks. @ = State Wide Average

+ Reduction Factors updated using 1992 Low Cost Accident Counter Measure Evaluations.

Improvement Codes	Description	Reduction Factor (%)	Remarks
	IMPROVEMENT AND/OR REPLACEMENT OF STRUCTURES		
30 & 300	WIDENING EXISTING BRIDGE OR OTHER MAJOR STRUCTURE	65*	Reduction factor from reference 4. Applicable to only coll. w/ bridge structure accidents.
31 & 310	REPLACEMENT OF BRIDGE OR OTHER MAJOR STRUCTURE	25*	Reduction factor from reference 7
32 & 320	CONSTRUCTION OF NEW BRIDGE OR MAJOR STRUCTURE	19*	Reduction factor from reference 3
33 & 330	CONSTRUCTION OR IMPROVEMENT OF MINOR STRUCTURE	*	
34 & 340	CONSTRUCTION OF PEDESTRIAN OVER OR UNDER CROSSING	*	
39 & 390	OTHER STRUCTURE WORK	*	
	ALIGNMENT WORK		
40 & 400	HORIZONTAL ALIGNMENT CHANGES	41	Reduces fixed-object acc. 87%, ROR 79%, head-on 64%, Rear End/OT 24%
41 & 410	VERTICAL ALIGNMENT CHANGES	*	
42 & 420	COMBINATION OF 40 and 41	20* 21*	Reduction factor from reference 1 Reduction factor from reference 4
43 & 430	SUPERELEVATION AND RESURFACING	See Code 262	

Unless otherwise noted, accident reductions reflect accident trends at SELECTED locations improved by categorical safety funded projects. When reduction factors for Low Cost Accident Counter Measures (LCAC) or reduction factors from other sources were tabulated a + appears with the reduction factor or a note appears in the remarks column.

Non-reportable accidents were not used to calculate the safety project reduction factors tabulated.

Reduction factors should only be used to ESTIMATE safety benefits for respective improvements.

* Insufficient number of locations for factor calculation or no statistically significant change in accident rate. If a factor is present the source for the factor is shown in remarks. @ = State wide Average

+ Reduction Factors updated using 1992 Low Cost Accident Counter Measure Evaluations.

Improvement Codes	Description	Reduction Factor (%)	Remarks
	ROADSIDE APPURTENANCES		
60	TRAFFIC SIGNS	14@	Reduces rear-end/OT accidents 18%, Rt Turn 59%
600	Installation or upgrading of traffic signs	13@	Lt Turn 34%@
	Replacement of standard w/large Stop signs	19+	
601	Install/improve warning signs	*	
602	Install/improve curve warning signs	*	
603	Install/improve advance curve warning flashers	54*	Reduces night accidents 62%. Reduction factors from reference 2.
604	Install/improve other signs (Arrow signs)	34+	
605	Protection/removal of fixed object	17@	Rear End/OT 44%
606	Make breakaway or install breakaway signs and/or light supports	32@	Rear end/OT 70%@
607	Install clearance and/or hazard markers	*	
62	INSTALLATION/IMPROVEMENT OF ROAD EDGE GUIDERAIL	13@	Rear end/OT 28%@, Fixed Object 14%@
622	Replacement or upgrading of deficient guiderail	9@	Red. coll. w/guiderail 31%@,coll. w/fixed obj 18%@,ROR 32%@,Rear End/OT 27%@
624	Protection or removal of fixed object in gore	*	Refer to Improvement Codes 605 & 702
625	Installation or upgrading of culvert and bridge railing	20@	Reduce collision w/bridge or culvert 38%@, Rear end/OT 32%@
626	Install road edge guiderail at new location	10*@	Red. coll. w/fixed obj 4%*@,inc. coll. w/guid. 51%@,ROR 18%*@,RE/OT 34%@
627	Removal of guiderail (w/o other improvements)	-19*@	Increase coll. w/ditch/cut/bank 360%@

Unless otherwise noted, accident reductions reflect accident trends at SELECTED locations improved by categorical safety funded projects. When reduction factors for Low Cost Accident Counter Measures (LCAC) or reduction factors from other sources were tabulated a + appears with the reduction factor or a note appears in the remarks column.

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Reduction factors should only be used to ESTIMATE safety benefits for respective improvements.

* Insufficient number of locations for factor calculation or no statistically significant change in accident rate. If a factor is present the source for the factor is shown in remarks. @ = State Wide Average

+ Reduction Factors updated using 1992 Low Cost Accident Counter Measure Evaluations.

Improvement Codes	Description	Reduction Factor (in %)	Remarks
63	INSTALLATION OR IMPROVEMENT OF MEDIAN BARRIER	20@	Right-Angle 53%@,Rear End/OT 32%@,Left Turn 44%@,ROR 42%@
631	Replace deficient median barrier	*	
632	Install median barrier	19@	Reduces right angle acc. 54%
633	Install/improve median barrier near gore area	17@	Reduces ROR acc. 56%@; Increases coll. w/guiderail 57%@, Rear End/OT 39%@
64	PAVEMENT MARKINGS AND/OR DELINEATORS	9@	13% - Reduction noted in reference 4
640	Install raised snowplowable pavement markers	*	
641	Centerline striping	5*	Reduction factor from reference 1
	No-passing striping	66*	Reduction factor from reference 2
642	Road edge restriping	38	Reduces coll. w/fixed obj acc 59%@, Rear-End/OT 50%
643	Delineation of shoulders	9*	Delineation group factor. Also, see code 645.
644	Delineation of curves	30*	For curves of radius <500 ft. Reduction factor from reference 2.
645	Thermoplastic pavement markings	35	Reduces coll. w/fixed obj 80%
647	Thermoplastic pavement markings, spot locations	22*	NYS DOT PIES
	OTHER ROADSIDE APPURTENANCES		
65 & 651	ROADWAY LIGHTING INSTALLATION	9*	Reduction factor from reference 4.
	Spot locations only	36@	Reduction factor from reference 2. Reduces nighttime accidents 67%@
66 & 661	IMPROVE DRAINAGE AND/OR DRAINAGE STRUCTURES	32@	
67 & 671	INSTALL FENCING	*	
68 & 681	INSTALL IMPACT ATTENUATORS	4*	NYS DOT PIES
69 & 691	INSTALL SHOULDER RUMBLE STRIPS	*	

Unless otherwise noted, accident reductions reflect accident trends at SELECTED locations improved by categorical safety funded projects. When reduction factors for Low Cost Accident Counter Measures (LCAC) or reduction factors from other sources were tabulated a + appears with the reduction factor or a note appears in the remarks column.

Non-reportable accidents were not used to calculate the safety project reduction factors tabulated.
Reduction factors should only be used to ESTIMATE safety benefits for respective improvements.

* Insufficient number of locations for factor calculation or no statistically significant change in accident rate. If a factor is present the source for the factor is shown in remarks. @ = State Wide Average

+ Reduction Factors updated using 1992 Low Cost Accident Counter Measure Evaluations.

Improvement Code	Description	Reduction Factor (%)	Remarks
70	IMPROVEMENTS AT GORES	31	Right angle 60%,Rear End/OT 44%,Head On/SS 43%,ROR 52%
700	Protection of fixed objects/improvements of positive guidance in gore area	35	Reduces rear-end/ss acc. 45%, ROR 46%@, coll. w/fixed obj 18%@ Head-on/SS 36%, Right-angle 62%, ROR 51%
701	Thermoplastic striping & delineation in gore area	94	Reduces rear-end/ss acc. 64%@
702	Removal or protection of fixed objects in gores	7*@	Reduces rear-end/ss acc. 32%, ROR 74%@

Unless otherwise noted, accident reductions reflect accident trends at SELECTED locations improved by categorical safety funded projects. When reduction factors for Low Cost Accident Counter Measures (LCAC) or reduction factors from other sources were tabulated a + appears with the reduction factor or a note appears in the remarks column.

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Reduction factors should only be used to ESTIMATE safety benefits for respective improvements.

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+ Reduction Factors updated using 1992 Low Cost Accident Counter Measure Evaluations.

Sources used in preparation of this table:

Unless otherwise noted, the accident reduction factors were calculated using selected locations within New York State that had improvements funded with Safety Funding. Reduction factors were calculated using the Post Implementation Evaluation System (PIES).

Reduction factors for Low Cost Accident Counter measures (LCAC) tabulated were implemented with State highway maintenance staff.

Questions about the accident reduction factors can be directed to Jeff Thorn, Safety Program Management Bureau, NYS DOT, 518-457-6305.

Other References cited in this table:

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Part 2 - Safety Lighting	1967
Part 3 - Delineation	1968
Part 4 - Guard Rail	1968
Part 5 - Left Turn Channelization	1967
Part 6 - Signs	1968

(Before and after studies of projects in California, tabulated statistics included.)

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NYS ROUTE 13 / 366
CORRIDOR MANAGEMENT PLAN FIGURES

Dryden, New York

Prepared for:

Tompkins County
Ithaca, NY 14850

Prepared by:

FISHERASSOCIATES
135 Calkins Road, Rochester, NY 14623
Phone: 585-334-1310
www.fisherassoc.com

TROWBRIDGE & WOLF
Landscape Architects Planners

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