
Putnam County
COMMERCIAL CORRIDORS
Planning and Feasibility Study

Table of Contents

APPENDICES

INTRODUCTION

Putnam County commissioned AKRF and Hudson Valley Pattern for Progress to conduct a planning and feasibility study of 10 key commercial corridors throughout the County. The purpose of the study is to establish recommendations towards the revitalization and improvements for each corridor. These recommendations are based on a thorough transportation and traffic assessment, current economic conditions, socio-economic demographics and spending analysis and an existing conditions survey. Additionally, the analysis included a community engagement process of local stakeholders and elected officials as well as local business leaders and owners. This study was made possible through grant funds from Empire State Development (ESD) and the New York Metropolitan Transportation Council (NYMTC).

A comprehensive analysis was carried out in each corridor, encompassing a variety of components that impact the vitality of a commercial corridor. Specifically, the analyses included assessments of transportation infrastructure, traffic patterns, local regulations, consumer demographics, spending behaviors, and the mix of existing businesses. The development patterns and community character of the commercial corridors varies considerably from corridor to corridor. As a result, certain types of analysis were carried out in some corridors and not in others.

This report includes all 10 commercial corridors; however, each section is designed to act as a "stand-alone" mini report for each corridor. Each commercial corridor section includes research and analysis on transportation, infrastructure and community and economic development. Recommendations for each commercial corridor are found at the end of these sections. This report also includes a grant and incentive resource guide. The resource guide provides a wealth of information about available funding sources that could be utilized to support the recommendations found in this report.

It is also important to note and understand that this study and report represents a "snapshot in time" due to the type of research, data, methodology, assessment and analysis. The existing conditions, occupancy, transportation data and the business and consumer survey data will likely change based on fluctuations in economic conditions of the local communities, the county and the region as well as changing consumer preferences.

The ten commercial corridors are as follows:

1. **Main Street in the Village of Cold Spring and the Village of Nelsonville (Town of Philipstown).**
   From the Hudson River to Peekskill Road.

2. **NYS Route 52 & U.S. Route 6 in the Hamlet of Carmel (Town of Carmel).**
   From Vink Drive to Willow Road.

3. **U.S. Route 6 in the Hamlet of Mahopac (Town of Carmel).**
   From Tomahawk Street to Baldwin Lane.

4. **U.S. Route 9 in the Town of Philipstown.**
   From Fishkill Road to Briars Road.

5. **Oscawana Lake Road and Peekskill Hollow Road in the Town of Putnam Valley.**
   From Morrissey Drive to Lockwood Road and from Oscawana Lake Road to Putnam Valley High School.

6. **NYS Route 52 in the Town of Kent and the Town of Carmel.**
   From Horsepound Road to the Shoprite Shopping Plaza.

7. **NYS Route 311 and Front Street in the Town of Patterson.**
   From Maple Avenue to Burdick Road and from Route 311 to Townsend Street.

8. **NYS Route 22 in the Town of Southeast.**
   From Route 312 to Milltown Road.

9. **Main Street in the Village of Brewster (Town of Southeast).**
   From North Main Street to East Main Street.

10. **U.S. Route 6/202 in the Town of Southeast.**
    From Starr Ridge Road to the Connecticut State Line.

METHODOLOGIES

Given the scope and breadth of this study, there were six techniques used to identify specific areas of focus in order to capture and analyze local information and existing conditions. These six techniques include the Trade Area Delineation, Corridor Prioritization, Consumer and Business Survey, Community Outreach and Infrastructure Assessment.

Trade Area Delineation

For this study, trade areas were defined using drive time, established through the use of ArcGIS, a web-based mapping program offered by ESRI, which is an industry standard. Three trade areas were defined for each of the corridors in this study using drive times of 5, 10 and 15 minutes.

- 5-minute trade areas provide insight about the immediate area surrounding each commercial corridor.
- 10-minute trade areas broaden the scope to include households and businesses at an intermediate distance from the commercial corridor.
- 15-minute trade areas encompass a large area around the commercial corridor, providing the broadest view of the surrounding area.

It is important to note the 15-minute trade areas in this study often reach and encompass areas within other counties, such as Dutchess, Westchester and Orange, as well as the State of Connecticut.

Corridor Prioritization

In preliminary meetings with Putnam County staff, three of the commercial corridors were selected for additional outreach and analysis. The three selected corridors were Main Street in the Village of Cold Spring, Route 52/6 in the Hamlet of Carmel, and Route 6 in the Hamlet of Mahopac. These corridors were selected in part because they all presented opportunities for significant transportation and community development improvements. Additional data collection was carried out in each of these priority corridors, including consumer surveying and outreach to local business owners.

Community Outreach

Pattern staff convened and facilitated business forums to solicit input from the local business owner community in each of the three priority corridors (Main Street in the Village of Cold Spring, Route 52/6 in the Hamlet of Carmel, and Route 6 in the Hamlet of Mahopac). The forums were organized with the help of local community leaders, the Putnam County Chamber of Commerce, and local chambers of commerce. The forums were held on weekday evenings at central locations within each of the priority corridors. Pattern staff led a discussion about the opportunities and challenges facing business owners in each community.

Outreach was also conducted with mayors and town supervisors from every commercial corridor in this study to discuss their opinions about the opportunities and challenges facing the business community in the municipality. Pattern staff was able to reach an elected official from the majority of the commercial corridors in this study.

Consumer Survey

Surveys were developed by Pattern staff for each of the three priority corridors in this study (Main Street in the Village of Cold Spring, Route 52/6 in the Hamlet of Carmel, and Route 6 in the Hamlet of Mahopac). The surveys were designed to gain insight into consumer preferences and behavior.

The surveys were administered by Pattern staff to pedestrian shoppers in central commercial/retail locations in each of the priority corridors. Surveying was conducted in each priority corridor at three different time slots: a weekday afternoon, a weekday evening, and a weekend afternoon. These time slots were selected to obtain a representative sample of pedestrians and shoppers.

Individuals who were unwilling to take the survey in person were offered a note card with a link to an online version of the survey. With the help of local chambers of commerce, these note cards were also distributed to various business owners in the priority corridors to hand out to their shoppers. The online version of the survey was also distributed to Putnam County staff, as the main office and County seat is located in the Hamlet of Carmel.

Schedule of Consumer Surveying

	Village of Cold Spring	Hamlet of Carmel	Hamlet of Mahopac
Location	Intersection of Fair Street and Main Street	Intersection of Route 52 and Fair Street	South Lake Boulevard
Weekday Afternoon Time	Tuesday, August 1, 2017 12pm – 2pm	Tuesday, July 18, 2017 12pm – 2pm	Wednesday, July 26, 2017 12pm – 2pm
Weekday Evening Time	Tuesday, August 1, 2017 5pm – 7pm	Tuesday, July 18, 2017 5pm – 7pm	Wednesday, July 26, 2017 5pm – 7pm
Weekend Afternoon Time	Saturday, September 9, 2017 12pm – 2pm	Saturday, July 22, 2017 12pm – 2pm	Saturday, August 29, 2017 12pm – 2pm

Traffic Assessment

The traffic conditions for each corridor were assessed based on traffic volume, parking, and crash data. In addition, AKRF staff conducted field visits to observe traffic, parking, pedestrian, bicycle and general roadway conditions for each corridor. Based on the data collected and observations conducted for each corridor, recommendations have been developed to improve traffic and transportation conditions. These recommendations have been itemized by category:

- Short Term -- 1 to 3 years
- Medium Term -- 3 to 5 years
- Long Term -- 5 or more years

The recommendations presented for each corridor can be utilized by both the municipalities and the County as a guide to prioritize improvements, develop budgets for funding these improvements as part of infrastructure planning and identify grants that can be obtained to assist with the implementation and construction of the recommended improvements.

Infrastructure Assessment

An infrastructure assessment was conducted for six of the 10 corridors identified as part of this study. The six corridors were selected by the County during conversations with the consulting team and include the following:

1. U.S. Route 6 (Hamlet of Mahopac)
2. Oscawana Lake Road and Peekskill Hollow Road (Town of Putnam Valley)
3. NYS Route 52 (Towns of Carmel and Kent)
4. Route 311 and Front Street (Town of Patterson)
5. NYS Route 22 (Town of Southeast)
6. U.S. Route 6 / 202 (Town of Southeast)

The existing infrastructure review was based entirely on readily available data provided by town representatives and the County. Additional information was gathered from environmental review documents prepared for the larger projects identified by the County in studied corridors. Representatives in the Towns where each of the six studied corridors are located were contacted via email and/or phone during which relevant infrastructure information was requested. This was followed up by in-person interviews of Town Staff and Freedom of Information Law (FOILs) requests where the information was not available electronically. The materials provided were reviewed to understand the existing conditions of water and sewer infrastructure in each of the studied corridors and to make an initial assessment as to whether or not new and/or expanded sewer and water services could potentially benefit continued economic development along the corridor. Where a potential benefit to providing water and/or sewer service was found, options that could result in new or additional capacity were identified and mapped.

OVERVIEW OF INFRASTRUCTURE AS AN ECONOMIC DEVELOPMENT TOOL

Each of the corridor sections of this report include an infrastructure assessment, which provides options for Putnam County and the Towns to consider where new and/or expanded water and sewer services may benefit economic development in the corridor. Additional feasibility studies and coordination with agencies and service providers along with buy-in from those in a new or expanded districts would be required prior to making a final decision to implement possible improvements. Owners and/or operators of existing WWTPs and Water Supply Systems were not contacted to discuss any of the options noted in this report.

The economic development potential of individual parcels is limited by the ability to process groundwater and wastewater. Both upfront infrastructure costs and long term operating expenses associated with these processes are often cost prohibitive based upon the number and type of end users. However, the reliance on an on-site septic system results in development constraints that can limit the type of uses, development mix, and density (e.g., square footage, number of units, number of patrons, number of hotel rooms, etc.) that can be sited on any given parcel. Additionally, septic systems are also land intensive and require buildable land to be set aside for the construction and operation of the septic system.

As a result, even in locations where a building site could support additional development, project sponsors and property owners must examine the financial viability of advancing a project. Infrastructure costs forces developers to choose between what can physically fit on a design constrained site and those which can operate below the maximum wastewater flow volumes that can be processed by an on-site septic system. For example, if a larger site would be a good location for a higher flow use like a restaurant, which typically has a smaller footprint than a straight commercial use, the remaining volume available in the septic system could limit other uses in such a way as to result in a portion of the parcel remaining vacant or under-developed thus impacting the financials of the project.

The limiting nature of a septic system also reduces the ability of a project to be developed as mixed use. It becomes difficult to combine residential units with commercial, hotel and restaurant uses, again leaving the project sponsor in a position where a choice must be made between the highest and best use of a project site and the types of uses that would work best within the wastewater processing constraints of an on-site septic system. This balancing act can discourage investment and limit economic diversity by creating an excess of certain uses that

have low wastewater flow volumes relative to those uses that may have greater demands on a septic system. Further, wastewater processing limitations can cause projects to sit on the economic development sidelines waiting for market conditions to change or for the provision of a WWTP and/or WWCS that will permit more robust and varied development potential. For towns and counties looking to improve economic development opportunities, the installation of a WWTP and/or WWCS is critical to attracting a wide variety of users and retaining investment in the corridor.

An additional benefit of a municipal wastewater system is the ability to connect existing uses with dated and failing septic systems to a WWCS and WWTP that can properly treat the effluent. This can improve environmental conditions, limit impacts to individual water supplies and provide additional land for development.

As with reliance on individual septic systems to process wastewater, to depend on individual water supply wells for delivering water in a commercial corridor can be problematic and also limit the potential to realize the fullest extent of economic development. Wells can be impacted by a number of factors including groundwater contamination from failing septic systems, chemical release from industrial, commercial and/or residential uses, and a fluctuating water table (depending on the depth of an existing well). In locations where a property owner must locate both a septic system and water supply well on the same parcel, maintaining the regulated well-head separation distance between the two systems can result in underdevelopment and, in the more physically constrained situations, can prevent development entirely.

Citing a water supply well on an individual development parcel, while not necessarily as land intensive as a septic system, also requires the use of land that could otherwise support additional square footage, more residential units and/or additional hotel rooms. When combined with the installation of a septic system, dependence upon on-site provision of water further restricts the development options and thus the economic viability of a parcel.

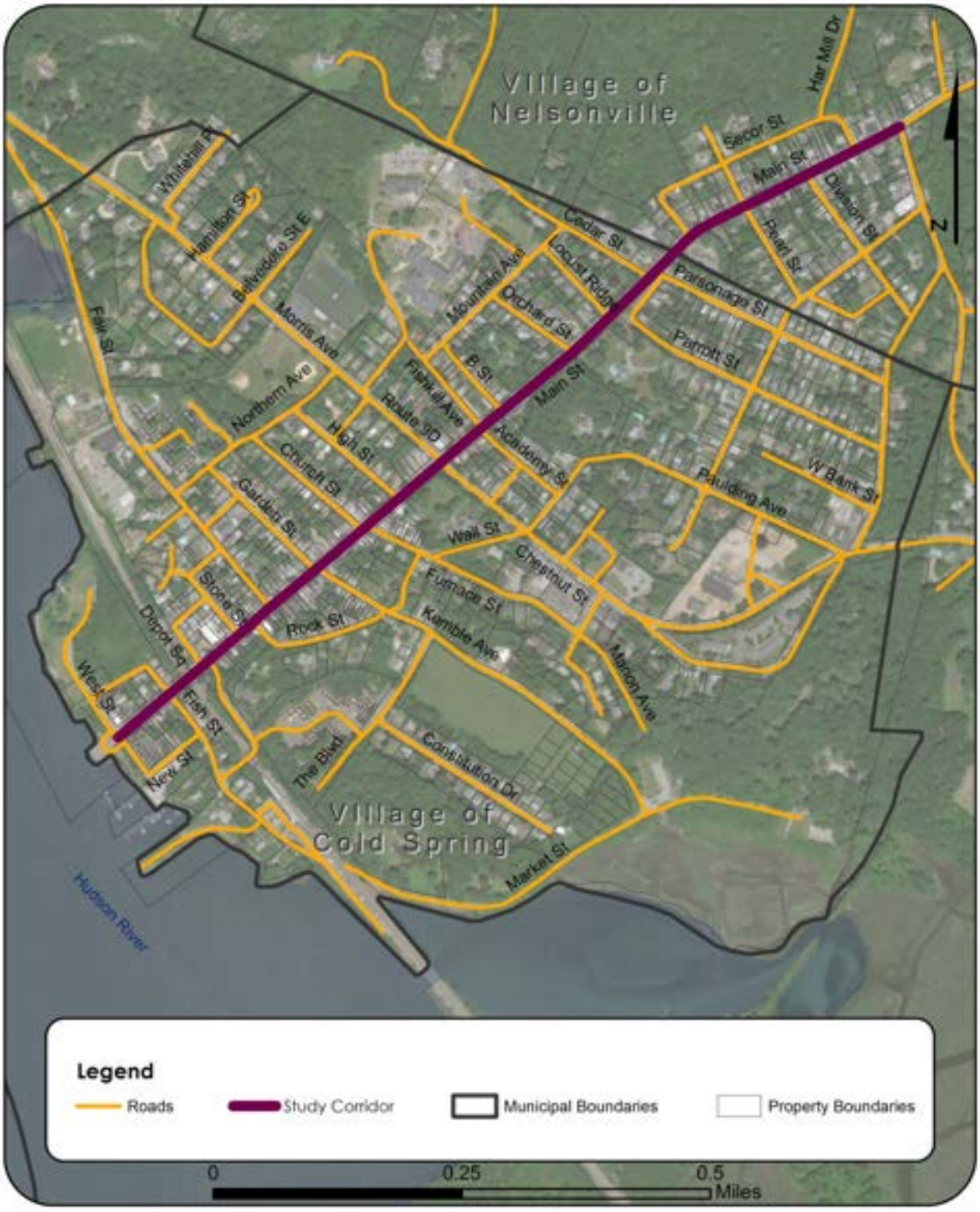
Overall, the development of a water supply system in certain situations can increase the economic potential of a commercial corridor by way of eliminating the need to protect individual well heads from impacts as well as provide more water pressure and volume to areas where individual on-site wells may be limited. Similarly, the development of wastewater treatment facilities also has the potential to enhance economic development opportunities as opposed to the use of individual septic systems.

CORRIDOR 1

MAIN STREET

VILLAGE OF COLD SPRING AND VILLAGE OF NELSONVILLE

MAIN STREET
Village of Cold Spring and Village of Nelsonville



CORRIDOR OVERVIEW

Corridor Description

This Study Corridor runs the entire length of Main Street in the Village of Cold Spring from the Hudson River to the Village Border. The Study Corridor continues into the Village of Nelsonville and ends at the intersection of Main Street and Peekskill Road.

Demographic Snapshot

The charts below depict demographic information about households and the population within a 5-minute drive (5-minute trade area) to the study corridor. Population growth in the Village of Cold Spring is relatively low. From 2000 to 2017 the population in the 5-minute trade area increased by 7% from 2,508 in 2000 to 2,691 in 2017. This represents an average increase of 10 people per year.

According to ESRI Business Analyst, the median household income in the 5-minute trade area ($79,159) is lower than the median household income of Putnam County ($101,430). Within the 5-minute trade area there is a significant difference between the median household income and the average household income; average household income is $32,964 higher than median household income. This indicates that there is wide range of household incomes.

POPULATION
2,691

MEDIAN AGE
47

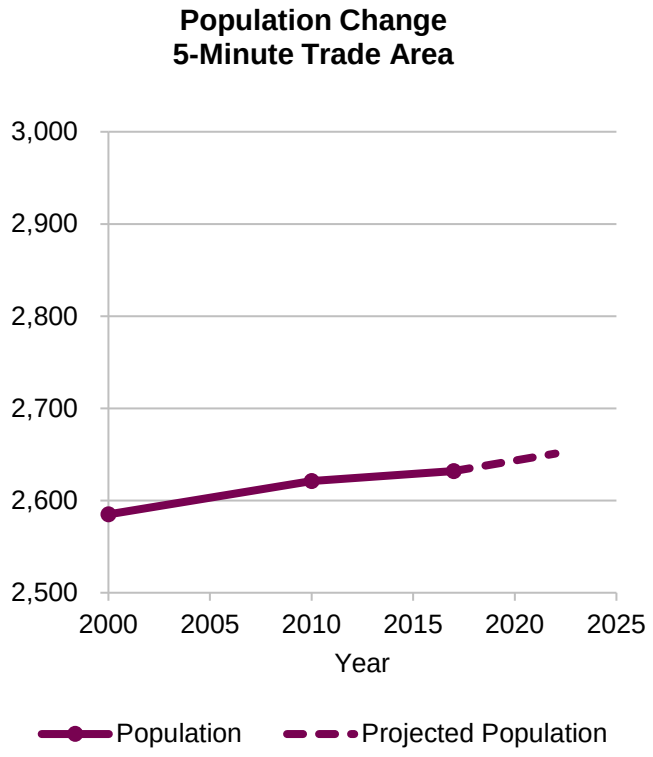
NUMBER OF HOUSEHOLDS
1,182

AVERAGE HOUSEHOLD INCOME
$112,123

MEDIAN HOUSEHOLD INCOME
$79,159

MEDIAN DISPOSABLE INCOME
$57,821

HOUSEHOLDS IN POVERTY
4%



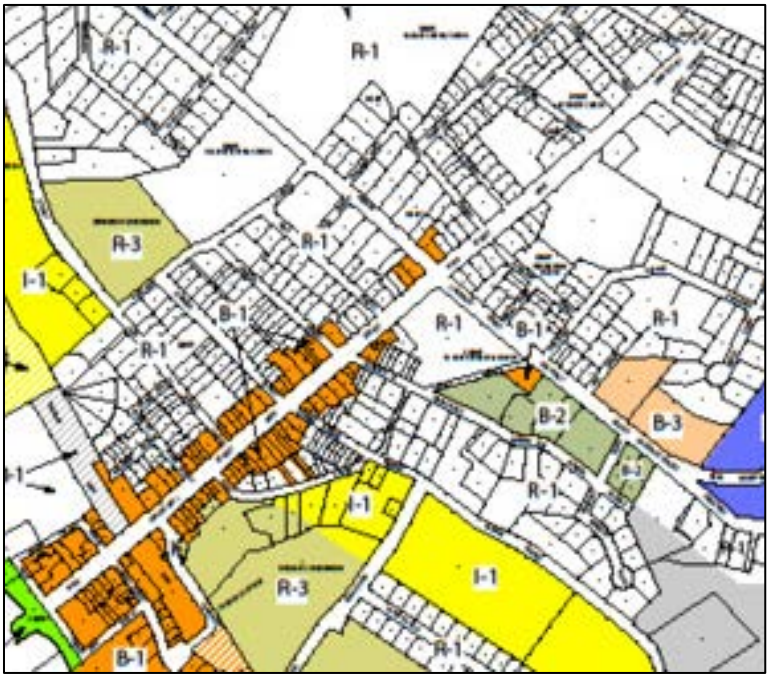
Source: ESRI Business Analyst 2017

ZONING

The study corridor is primarily in the General Business District (B-1) and the One-Family Residence District (R-1) in Cold Spring. The section of the Study Corridor in Nelsonville is completely within the Village Business District (VB). All three of these districts allow single-family residential as a principal permitted use. The B-1 District in Cold Spring allows for office and business development as principal permitted uses.

Village of Nelsonville Zoning Map

Village of Cold Spring Zoning Map



Village of Cold Spring Residential District (R-1)

Principal Permitted Uses	Special Permit Uses
• One- family dwelling • Churches or places of worship • Municipal recreation uses • Schools • Public Libraries • Municipal Buildings	• Conversion to residential use • Hospitals • Medical centers • Nursing and convalescent homes • Philanthropic institutions

Village of Cold Spring Business District (B-1)

Principal Permitted Uses	Special Permit Uses
• One- family dwelling • Churches or places of worship • Municipal recreation uses • Schools • Public Libraries • Municipal Buildings • Retail businesses • Newspaper and job printing • Banks • Theaters • Offices • Restaurants • Wholesale sales and incidental storage • Car sales (franchised dealers only) • Hotels, motels and boarding houses	• Conversion to residential use • Hospitals • Medical centers • Nursing and convalescent homes • Philanthropic institutions • Public garages • Filling stations

Village of Nelsonville Village Business District (VB)

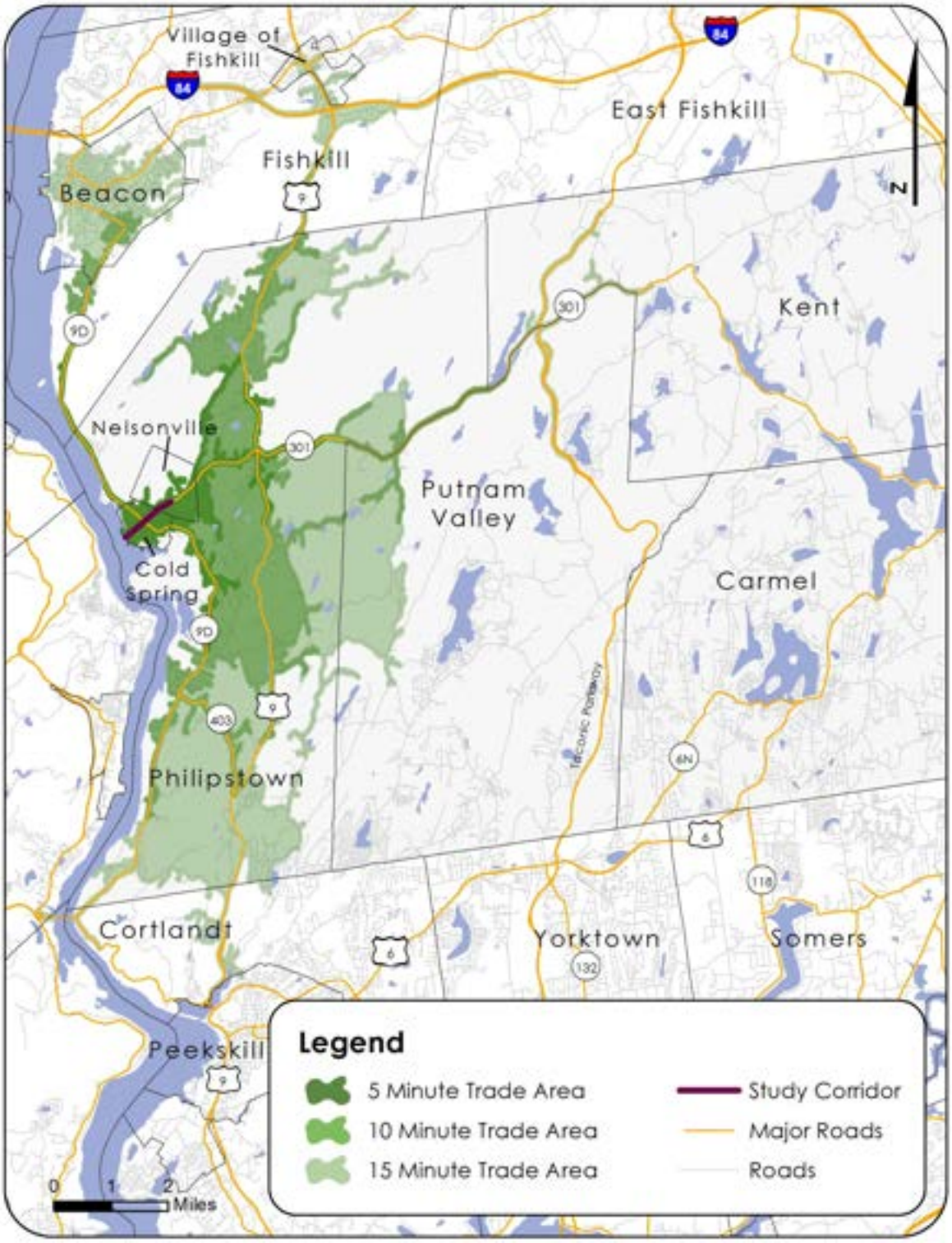
Principal Permitted Uses	Special Permit Uses
• Single family residential • Duplex residential • Municipal buildings • Underground public utilities	• Outdoor recreation facilities • Churches/places of worship • Emergency service facilities • Day care centers • Public Utilities • Retail stores • Offices • Restaurants • Manufacturing

Table 1-A - Bulk Requirements

	Village of Cold Spring Business District (B-1)	Village of Cold Spring Residential District (R-1)	Village of Nelsonville Village Business District (VB)
Minimum Lot size	10,000 sq ft	7,500 sq ft	9,000 sq ft
Maximum Floor to Area Ratio(FAR)	-	-	-
Maximum Building Coverage	35%	30%	25%
Minimum Front Setback for Principal Building	40 ft	25 ft	20 ft
Minimum Side Setback for Principal Building	5 ft	10 ft	12 ft
Minimum Rear Setback for Principal Building	10 ft	20 ft	12 ft
Maximum Building Height	2 ½ stories / 35 ft	2 ½ stories / 35 ft	2 ½ stories / 35 ft

TRADE AREAS

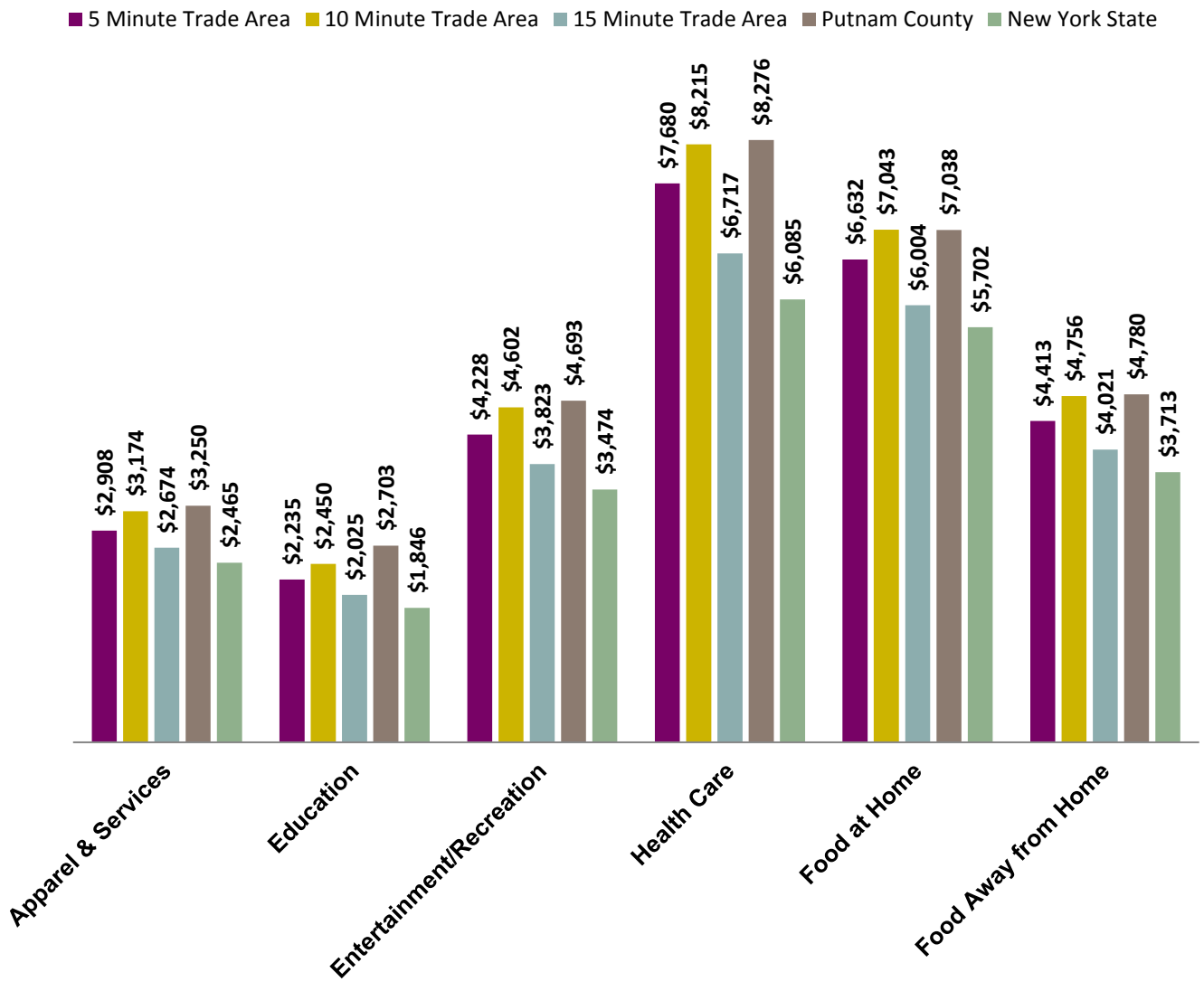
Main Street – Village of Cold Spring and Village of Nelsonville



Household Spending

Table 1-B depicts an estimate of average annual household spending by category for households in the 5, 10, and 15-minute trade areas, Putnam County, and New York State. Average annual household spending is highest in the 10-minute trade area.

Table 1-B - Average Annual Household Spending



Source: ESRI Business Analyst 2017

Tapestry Segmentation

Tapestry Segmentation is a tool developed by ESRI, a Geographic Information Science (GIS) company. Tapestry segmentation organizes households in the United States into groups (segments) that share similar demographics, socioeconomic indicators, and lifestyle choices. Tapestry segmentation provides a macro-level understanding of the type of households present in a given area. Below are descriptions of the top three most common tapestry segments represented by households within the 10-minute trade area.

Top 3-Tapestry Segments in the10-Minute Trade Area/Percent of Households

Golden Years

Independent, active seniors nearing the end of their careers or already in retirement best describes Golden Years residents. This market is primarily singles living alone or empty nesters. Those still active in the labor force are employed in professional occupations; however, these consumers are actively pursuing a variety of leisure interests—travel, sports, dining out, museums, and concerts. They are involved, focused on physical fitness, and enjoying their lives. This market is smaller, but growing, and financially secure.

Exurbanites

Exurbanites residents are now approaching retirement but showing few signs of slowing down. They are active in their communities, generous in their donations, and seasoned travelers. They take advantage of their proximity to large metropolitan centers to support the arts, but prefer a more expansive home style in less crowded neighborhoods. They have cultivated a lifestyle that is both affluent and urbane.

Pleasantville

Prosperous domesticity best describes the settled citizens of Pleasantville. Situated principally in older housing in suburban areas in the Northeast (especially in NY and NJ) and secondarily in the West (especially in CA), these slightly older couples move less than any other market. Many couples have already transitioned to empty nesters; many are still home to adult children. Families own older, single-family homes and maintain their standard of living with dual incomes. These consumers have higher incomes and home values and much higher net worth (Index 400). Older homes require upkeep; home improvement and remodeling projects are a priority -preferably done by contractors. Residents spend their spare time participating in a variety of sports or watching movies. They shop online and in a variety of stores, from upscale to discount, and use the internet largely for financial purposes.

Consumer Survey

A survey of shoppers in the study corridor was conducted in an effort to achieve a better understanding of consumer spending habits and the factors that most impact spending decisions. In-person surveying was conducted by Pattern staff on a Tuesday in August from 12pm to 2pm and from 5pm to 7pm. In-person surveying was also conducted on a Saturday in September from 12pm to 2 pm. With help from the local chambers of commerce, flyers with a link to an online version of the survey were distributed to local businesses throughout the study corridor. Between the in-person surveys and the online version of the survey, a total of 61 surveys were collected from the study corridor. Below are the key findings from this survey.

Why are people coming to the Village of Cold Spring?

Retail shopping and dining out were among the top reported reasons for coming to Cold Spring. Forty-five percent (45%) of survey participants reported that they come to Cold Spring for dining out at least once a week. Twenty - nine percent (29%) of survey participants reported coming to Cold Spring for retail shopping at least once a week. Some survey participants come to Cold Spring for these activities less often. These individuals are likely representative of the significant number of tourists that come to Cold Spring frequently, but less often than once a week. Thirty-one percent (31%) of survey participants reported that they come to Cold Spring for retail shopping or dining out once every few months.

When are people shopping in the Village of Cold Spring?

The survey revealed a slight preference for shopping in Cold Spring on the weekend. Weekends are typically a popular time for tourists to visit Cold Spring, especially during the summer and fall seasons. Among survey participants, the most popular time to shop in Cold Spring is from 11:00 am to 2:00 pm on Saturdays.

How are people getting to the Village of Cold Spring?

The majority (70%) of survey participants reported that they use a personal vehicle as their primary method of getting to the Village of Cold Spring. After personal vehicle, the train was the second most common answer with 14% of survey participants reporting that they take the train as their primary method of transportation to Cold Spring. Lastly, one survey participant reported that they primarily use a bicycle to get to Cold Spring.

What type of businesses do consumers want?

In an effort to understand what types of businesses are missing in Cold Spring, survey respondents were asked to choose up to five types of businesses and amenities that they would most like to see developed in the Village. The most common response was clothing stores. Forty-six percent (46%) of survey respondents reported that they want more clothing stores in the Village of Cold Spring. The second most common answer was a café/coffee business (41% of survey respondents) followed by fine dining (39%), antique stores (37%), and bars/breweries (35%).

Local competition

In an effort to identify other commercial areas the Village of Cold Spring is competing with, survey respondents were asked how often they shop nearby locations other than Cold Spring.

- 75% of respondents reported that they never go to the Hamlet of Carmel to shop.
- 83% of respondents never go to the Hamlet of Mahopac to shop.
- 85% of respondents never go to the Village of Brewster to shop. However, several of the respondents reported that they do often shop in the City of Beacon and the Village of Peekskill.
- 40% of respondents reported that they shop in the Village of Fishkill at least once a week.
- The majority of the survey respondents reported that they never go to the eastern part of the County.
- The most common reason given for choosing to shop in Beacon or Fishkill instead of Cold Spring was a better selection of businesses at these locations.

Other Comments

At the end of the survey there was an open ended question asking respondents for any additional comments. Two of the survey respondents discussed the need for better signage for parking, which is a big issue, on the weekends especially. Another respondent expressed a need for more public restrooms.

Other Survey Findings

- More than half of survey respondents eat out for lunch and dinner at least once a week.
- 50% of respondents reported that they do most of their shopping at a main street / downtown.
- 90% of respondents like the look and feel of Cold Spring.
- 47% of respondents disagree that there is plenty of parking in Cold Spring, 37% are neutral, 16% agree.

Supply / Leakage

Table 1-C depicts a leakage/surplus factor for trade areas delineated by a 5, 10 and 15 minute drive from the study corridor. The leakage/surplus factor is a representation of the balance between supply and demand among various industries. In this chart the industries are broken out by North American Industry Classification (NAICS) code. The leakage/surplus factor is measured on a scale from 100 to -100. A value of 100 represents an area where there is household demand but there is no supply so all of the potential retail sales are leaking out of the area. A value of -100 represents an area where there is a surplus of supply but there is no household demand. The closer the value is to zero, the more balance there is between supply and demand.

Table 1-C is color coded on a gradient of green to red with the darkest green representing a value of 100, and the darkest red representing a value of -100. The table shows that the 5-minute trade area has complete leakage in the Electronics & Appliances industry category and significant leakage in the General Merchandise category. Complete leakage in the Electronics & Appliances Store category is also seen in the 10-minute trade area. This means that all potential sales in this industry are being spent outside of both the 5 and 10-minute trade area. Given the high concentration of retailers in downtown Main Street, at first glance it is surprising to see significant leakage in the General Merchandise Stores category. However, this is explained by the fact that many of the businesses that fall into this category are department stores and other big box retailers that are not found in Cold Spring or the surrounding area.

Table 1-C – Leakage / Surplus Factor

Industry	5 Minute Trade Area	10 Minute Trade Area	15 Minute Trade Area
Motor Vehicle and Parts Dealers (NAICS 441)	77.4	73.7	10.3
Furniture/Home Furnishing Stores (NAICS 442)	55.4	74.1	57.4
Electronics & Appliance Stores (NAICS 443)	100	100	48.4
Bldg/Garden Equip/Supply Stores (NAICS 444)	34.9	12.6	14.7
Food and Beverage Stores (NAICS 445)	-21	10.6	-2.7
Health and Personal Care Stores (NAICS 446)	-10.5	29.1	12.6
Gasoline Stations (NAICS 447)	42.5	63	64.5
Clothing/Accessories Stores (NAICS 448)	39.6	54.2	52.5
Sports/Hobby/Book/Music Stores (NAICS 451)	37	67	28.6
General Merchandise Stores (NAICS 452)	90.6	95.8	32.6
Miscellaneous Store Retailers (NAICS 453)	-30.7	-2.1	1.2
Food Services & Drinking Places (NAICS 722)	-25.8	-1.8	-9.6
Total Retail (including Food/Drink Sales)	**14.2**	**32**	**14.6**

Source: ESRI Business Analyst 2017

Table 1-D depicts an estimation of industry leakage and surplus expressed in actual dollar amounts for the 10-minute trade area. Dollar values in the leakage column represent the estimated amount of money leaking out of the 10-minute trade area. Dollar values in the surplus column represent additional sales in the 10-minute trade area that are being generated by households outside of the trade area. These values are calculated by taking the difference between total sales in the trade area (estimated from reported business earnings) and potential sales in the trade area (estimated from household spending trends). When actual sales are lower than potential sales, there is a leakage (households are spending outside of the trade area). When actual sales are higher than potential sales, there is a surplus (households from outside of the trade area are spending in the trade area).

ESRI estimates that $20.7 million in Motor Vehicle and Parts Dealers spending from households in the 10-minute trade area is being spent outside of the 10-minute trade area. However, this is the only industry category where there is leakage. Overall there is an estimated $290.7 million surplus in 10-minute trade area. This means that there is an estimated $290.7 million in retail sales generated in the 10-minute trade area by households outside of the 10-minute trade area.

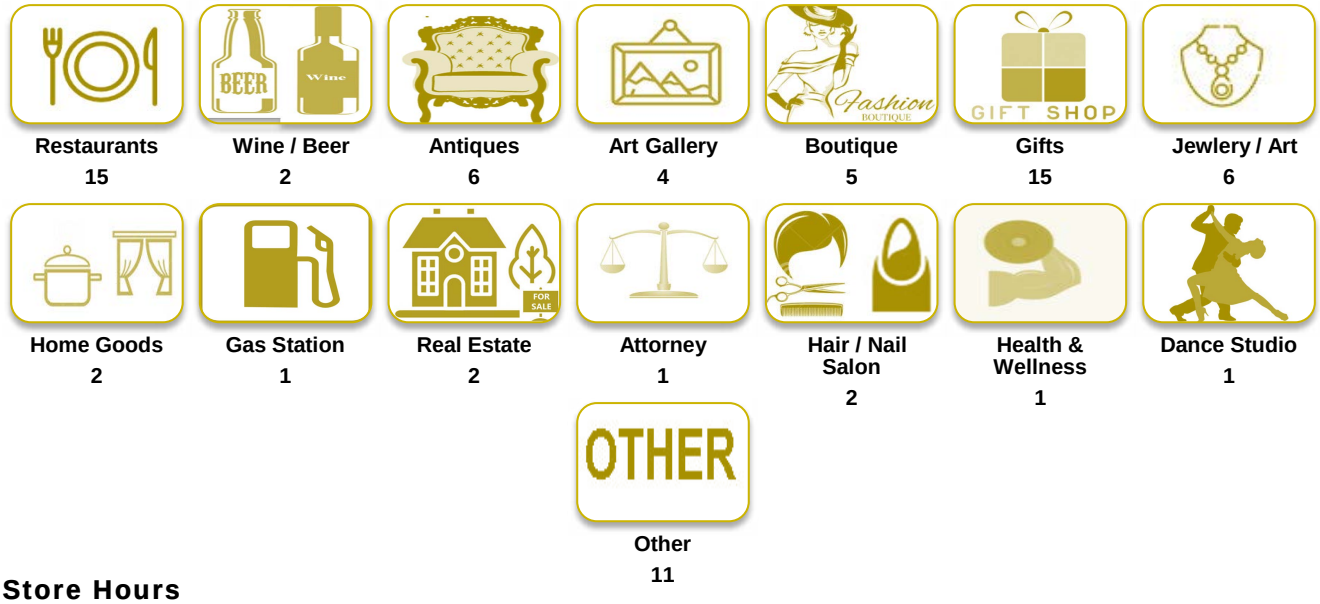
Table 1-D – 10 Minute Trade Area Industry Leakage and Surplus

Industry	Leakage (Millions)	Surplus (Millions)	Leakage Surplus Factor
Motor Vehicle and Parts Dealers (NAICS 441)	$ 20.7		73.7
General Merchandise Stores (NAICS 452)	$ 14.4		95.8
Gasoline Stations (NAICS 447)	$ 9.1		63
Clothing/Accessories Stores (NAICS 448)	$ 7.5		54.2
Electronics & Appliance Stores (NAICS 443)	$ 4.8		100
Health and Personal Care Stores (NAICS 446)	$ 4.7		29.1
Food and Beverage Stores (NAICS 445)	$ 4.1		10.6
Furniture/Home Furnishing Stores (NAICS 442)	$ 3.9		74.1
Sports/Hobby/Book/Music Stores (NAICS 451)	$ 2.9		67
Bldg/Garden Equip/Supply Stores (NAICS 444)	$ 1.7		12.6
Miscellaneous Store Retailers (NAICS 453)		$ 0.2	-2.1
Food Services & Drinking Places (NAICS 722)		$ 0.5	-1.8
Non-store Retailers (NAICS 454)		$ 6.9	-47.1
Total Retail (including Food/Drink Sales)	**$ 66.2**		**32**

Source: ESRI Business Analyst 2017

Existing Businesses

Below is a list of the number of existing businesses in the corridor by business type. This list was developed by Pattern staff during field visits to the corridor. Approximately 80% of businesses in this corridor are retail businesses and approximately 20% of the businesses are service-based businesses. The high percentage of retail businesses can be attributed to the pedestrian-friendly downtown of Cold Spring that contains many businesses that target tourists and promote window shopping.



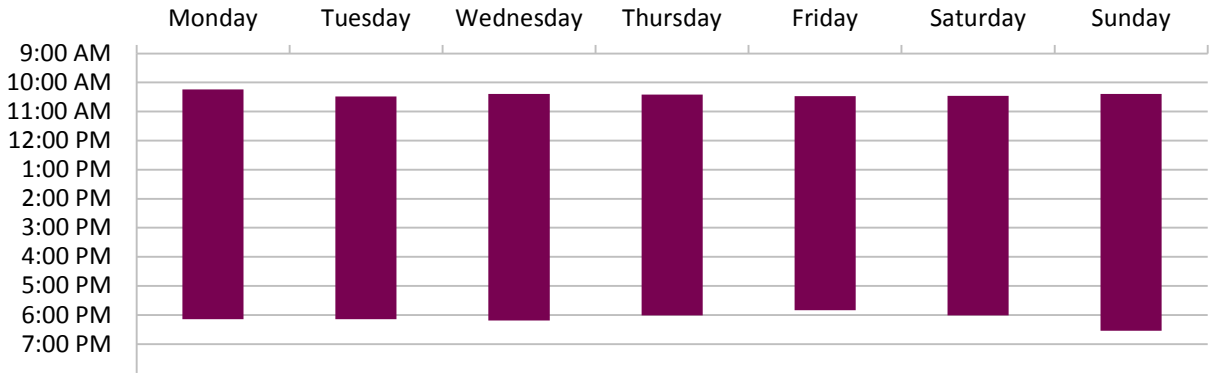
Restaurants 15 | **Wine / Beer** 2 | **Antiques** 6 | **Art Gallery** 4 | **Boutique** 5 | **Gifts** 15 | **Jewlery / Art** 6

Home Goods 2 | **Gas Station** 1 | **Real Estate** 2 | **Attorney** 1 | **Hair / Nail Salon** 2 | **Health & Wellness** 1 | **Dance Studio** 1

Other 11

Store Hours

Hours of operation for businesses in the study corridor were collected during a field visit and supplemented with information available online. The chart below depicts average hours of operation for business in the study corridor where information about hours of operation were available. The most common day of the week that businesses in this corridor are closed is Tuesday. Approximately 35% of businesses are closed on Tuesdays. The second most common day of the week that businesses are closed is Monday. Approximately 25% of businesses are closed on Mondays.



Business Owner Forum

A business owner forum was convened to solicit input from the local business owner community. The forum was held at the firehouse in the Village of Cold Spring. The forum was well attended with approximately 40 people representing over 20 Cold Spring businesses.

The participants at the business forum identified several attributes of the community that positively impact local businesses. For example, Cold Spring is surrounded by the natural beauty of the Hudson River and the Hudson Highlands. These qualities attract visitors and hikers to explore the scenic beauty of the area, especially during the summer and fall. Cold Spring is also easily accessible from New York City. The Metro North train line brings thousands of visitors from New York City and beyond to Cold Spring every year. Another attribute discussed at the forum was the community character of the Village. The Village has a strong sense of place with a historic downtown and proud business owners and residents.

In addition to the above mentioned qualities, the business owner forum also identified several challenges facing the Cold Spring community. There were several comments about traffic congestion and lack of available parking, especially during weekends. Business owners also discussed the difficulty of having an extremely seasonal customer base. Many business owners reported that they have dramatically fewer customers in the winter months.

Many of the issues identified at the business owner forum stem from the challenge of balancing the needs of local residents with the needs of thousands of tourists that arrive in Cold Spring each year. While tourism provides an enormous boost to the local economy, it also strains local infrastructure and contributes to parking constraints and traffic issues. There were several varying opinions about how to address these issues. Some business owners suggested that the Village should double down on tourism and ramp up efforts to market the Village to New York City, increase the number of overnight lodging accommodations, and improve tourist amenities. In contrast, other business owners expressed a concern that with increased tourism the Village may lose its small town charm that makes it attractive in the first place.

Existing Conditions and Data Collection

Corridor Characteristics

Main Street in the Villages of Cold Spring and Nelsonville is a two-lane, east-west roadway that carries approximately 4,720 vehicles per day. West of Route 9D the roadway is classified by the NYSDOT as a Major Collector and is owned by the Village. East of Route 9D the roadway is classified by the NYSDOT as a Minor Arterial and is owned by NYSDOT. The speed ranges from 25 to 30 mph miles per hour. On-street parking and sidewalks are provided along the corridor.

The corridor is serviced by the Metro-North Cold Spring Station as well as the Putnam County Trolley during the summer. It should also be noted that the Village of Cold Spring has recently improved the pedestrian ramps at the street crossings to include ADA rumble pads. A summary of the corridor's transportation characteristics are presented in Table 1-E.

Table 1-E – Corridor Characteristic Summary
Main Street in the Village of Cold Spring and Nelsonville

Average Daily Traffic	Number of Lanes	Speed Limit (MPH)
4,720[1]	2	25-30
On-Street Parking (Y/N)	**Pedestrian Facilities (Y/N)**	**Bike Facilities (Y/N)**
Y	Y	N
	Access to Waterways (Y/N)	**Transit Facilities (Y/N)**
	Y	Y Metro-North

Notes:
1. Automatic Tube Recorder collected May 2017

Parking Utilization

Parking utilization counts were collected during typical weekdays (Tuesday, Wednesday, or Thursday) and weekend days in June 2017 and July 2017 at the following locations:

- Main Street west of Route 9D
- Main Street east of Route 9D

Parking east of Route 9D was underutilized; however, this segment of Main Street is mostly residential land uses. West of Route 9D, where there is a downtown business district as well as access to local hiking trails, the parking operated close to or above capacity (assumed at 85 percent[1]) during the weekday midday time period and the majority of the weekend peak period. To help alleviate the over-utilization of parking on the weekends the Village of Cold Spring has made pay-per-hour parking available at Mayor's Park. Parking utilization was not performed in this area. Table 1-F presents the parking utilization by peak period and time of day.

Table 1-F - Parking Utilization - Villages of Cold Spring and Nelsonville

Time 1	Main Street West of Route 9D		Main Street East of Route 9D	
	Capacity	Parking Utilization	Capacity	Parking Utilization
Weekday – Midday Peak Period				
12:00 PM	122	75%	155	25%
12:30 PM		79%		21%
1:00 PM		80%		20%
1:30 PM		86%		24%
Weekday – PM Peak Period				
4:00 PM	122	74%	155	19%
4:30 PM		68%		17%
5:00 PM		58%		16%
5:30 PM		57%		19%
Weekend – Midday Peak Period				
11:00 AM	122	66%	155	17%
11:30 AM		81%		16%
12:00 PM		96%		16%
12:30 PM		96%		19%
1:00 PM		101%		21%
1:30 PM		99%		23%
2:00 PM		102%		24%
2:30 PM		100%		25%

Notes
1. Highlighted cells considered at capacity (parking at or above 85 percent). Utilization over 100 percent typical indicates cars parking in illegal spaces.
2. Data collected on a two weekdays (6/1/2017 and 7/21/2017) and two weekend days (6/3/2017 and 7/23/2017).

[1] Litman, Todd. Parking Management Best Practices. APA, 2006.

Crash Data

Crash data over a three year period (March 1, 2014 through February 28, 2017) was obtained from NYSDOT. Table 1-G provides a summary on the number and type of crashes on Main Street between West Street and Peekskill Road. Over a three year period, there were 44 crashes along this corridor, with greatest number (14) being overtaking crashes. Overtaking crashes typically occur at congested locations and signalized intersections.

Table 1-G – Crash Summary - Main Street between West Street and Peekskill Road

	2014	2015	2016	2017	Total	*ACC/MVM[1]*
Fatalities	0	0	0	0	**0**	
Injured	1	3	3	0	**7**	
# of Crashes	10	15	18	1	**44**	**7.1**
Over-Taking	3	6	5	0	**14**	
Rear End	1	6	4	0	**11**	
Right Angle	0	0	3	0	**3**	
Left Turn (with other car)	0	0	0	0	**0**	
Left Turn (against other car)	0	0	1	0	**1**	
Right Turn (with other car)	0	0	0	0	**0**	
Right Turn (against other car)	0	1	1	0	**2**	
Side Swipe	0	0	2	0	**2**	
Ped/Bike	0	1	0	0	**1**	
Head On	0	0	0	0	**0**	
Fixed Object	4	0	0	1	**5**	
Animal	0	1	0	0	**1**	
Other	2	0	1	0	**3**	
Unknown	0	0	1	0	**1**	

Notes: Crash Data for March 1, 2014 through February 28, 2017.
1. Accidents per millions vehicle miles traveled = (accidents * 1,000,000)/(365*number of years*AADT*length of corridor)

Source: New York State Department of Transportation (NYSDOT)

NYSDOT provides average accident rates for state highways for different facilities. The 2015/2016 average accident rate for a two-lane, undivided highway is 3.5 accidents/million vehicle miles (ACC/MVM). The study corridor's 7.1 ACC/MVM exceeds the State's average of similar facilities.

Identification of Future Needs

Based on the existing conditions data collection, field visits, and discussions with the County, the following future transportation needs to enhance the corridor were identified:

- Address the parking constraints west of Route 9D.
- Improve wayfinding from Route 9, Route 9D and the Taconic State Parkway (TSP) to Cold Spring.

TRANSPORTATION RECOMMENDATIONS

Proposed transportation enhancements are described below. Many of the recommendations would require coordination with local elected officials and the business community.

Short-Term Transportation Recommendation (1 to 3 Years)

- Add destination signage (to "Cold Spring" with an arrow) at the following intersections to direct visitors to Cold Spring's downtown area:
    - Route 9D northbound and southbound at Main Street
    - Route 9D southbound at Fair Street directing traffic to remain on Route 9D
    - Route 9 southbound at Fishkill Road/County Route 10 directing traffic to remain on Route 9
    - Route 9 northbound at Route 403 directing traffic to remain on Route 9

      Note: Cold Spring destination signs are already installed at the ends of the TSP-Route 301 off ramps and on northbound and southbound Route 9 on the approach to its intersection with Route 301.
- Add recreational/cultural guide signage (brown) at the following locations:
    - Route 9D northbound and southbound at Main Street to West Point Foundry Preserve, shopping, dining and Hudson River Pavilion.
    - Route 9 northbound and southbound at Route 301 to West Point Foundry Preserve, shopping, dining, Hudson River Pavilion, Cold Spring Historic District, Boscobel and Manitoga National Historic Landmark.
    - Route 301 westbound at Route 9 to West Point Foundry Preserve, shopping, dining, Hudson River Pavilion, Cold Spring Historic District, Boscobel and Manitoga National Historic Landmark.
    - Route 301/Main Street westbound at Route 9D to West Point Foundry Preserve, shopping, dining, Hudson River Pavilion, Cold Spring Historic District, Boscobel and Manitoga National Historic Landmark.

      Note: this provides recreational/cultural guide signage suggestions. The list can be used as is or modified to capture recreational and cultural attractions that are important to the Village and County.
- Add to the blue service signs installed on the northbound and southbound lanes of the TSP for Exit 31B – Cold Spring:
    - There are a variety of destinations, including those above and any added to the above, that the Village and County can consider coordinating with the NYS Department of Transportation for addition to the blue service signs for attractions currently installed on the TSP.

Installation of any signage along any roadway will require permits from the agency with jurisdiction over that roadway. Signs are standardized and must be designed and built to specific requirements set forth by the jurisdictional agency.

Medium-Term Transportation Recommendation (3 to 5 Years)

- Add parking meters along the corridor to ensure parking turn over in the busiest parts of the corridor. Refer to the Economic Analysis of Parking Regulations in Appendix 2 for detailed information on the benefits and costs of implementing and installing parking meters. Implementation should be coordinated to identify the hours parking meters should be in effect (i.e., weekends only, evenings only, etc.).

Long-Term Transportation Recommendation (5 or More Years)

- Develop a Parking Benefits District (PDB) to maintain parking turnover and associated investment(s) in the area. The Economic Analysis of Parking Regulations in Appendix 2 herein provides detailed information on the benefits and costs associated with the implementation as well as case studies of managed parking and PBDs. This information can be used as a guide in developing a PBD in Cold Spring.

Community and Economic Development Recommendations

Proposed community and economic development enhancements are described below. Many of the recommendations would require coordination with local elected officials and the business community.

- Improve the availability of the public restrooms and information booth at the western end of Main Street. Currently, these public amenities have inconsistent hours of operation and are sporadically closed.
- Produce marketing materials for Cold Spring businesses that include information about hours of operation. Many of the antique stores and gift shops have variable hours from day to day. Information about hours of operation would be useful for many Cold Spring visitors that come to the Village specifically for these types of businesses. Utilize social media as a low-cost yet effective method for distributing these marketing materials.
- Encourage and seek out clothing retailers to move into downtown Cold Spring. Clothing stores were the most requested type of business indentified by the consumer survey. The leakage/surplus analysis also indicates that there is unmet demand for clothing stores in the 5, 10, and 15-minute trade areas.

CORRIDOR 2

NYS ROUTE 52 & US ROUTE 6

HAMLET OF CARMEL (TOWN OF CARMEL)


Sunset Ridge
Collier Dr W
Circle Dr
Collier Dr
Ridge Rd
Fawwet Ave
Vink Dr
Co Rd 60
N
Carmel-Kent Cliffs Rd
Glenelda Ave
County Center
Brewster Rd
Church St
US Rte 6
Lake Glenelda
Glenelda Ct
4WD Rd
Seminary Hill Rd
Old Rte 6
Willow Rd
Legend
Roads
Study Corridor
Property Boundaries
0
0.25
0.5
Miles

Corridor Description

The entirety of the study corridor is within the Hamlet of Carmel in the Town of Carmel. The northern boundary of the corridor is the intersection of U.S. Route 6 (Gleneida Avenue) and Vink Drive. The corridor extends along Route 6 to the intersection of Route 6 and Willow Road. The corridor also includes a short section of Brewster Road extending from the intersection of Brewster Road and Route 6 to the intersection of Church Street and Brewster Road.

Demographic Snapshot

The charts below depict demographic information about households and the population within a 5-minute drive (5-minute trade area) to the study corridor. In 2000, the population in the 5-minute trade area was 6,646. Over the next 17 years the population increased by 1,283, reaching a total population of 7,929 in 2017. This population growth represents an 19% increase in population in the 5-minute trade area from 2000 to 2017. Over that same period, the population of Putnam County as a whole increased at a slower rate of 6%.

According to ESRI Business Analyst, the median household income of the 5-minute trade area ($92,886) is lower than the median household income of Putnam County ($101,430). Within the 5-minute trade area there is a significant difference between the median household income and the average household income; average household income is $23,934 higher than median household income. This indicates that there is wide range of household incomes. There are likely a handful of outlier households with relatively higher incomes that are skewing the average upwards. Median household disposable income in both the 5-minute trade area and Putnam County is approximately 70% of total median household income. In comparison, median household disposable income for New York State as a whole is 78% of total median household income.

POPULATION
7,929

MEDIAN AGE
43

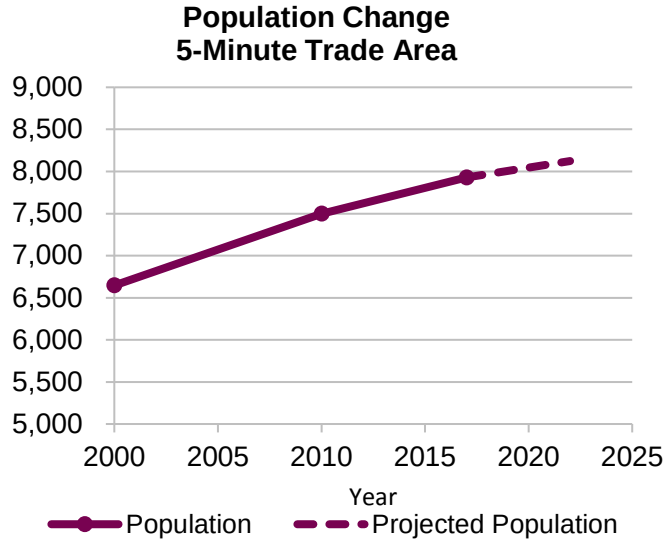
NUMBER OF HOUSEHOLDS
2,784

AVERAGE HOUSEHOLD INCOME
$116,820

MEDIAN HOUSEHOLD INCOME
$92,886

MEDIAN DISPOSABLE INCOME
$64,920

HOUSEHOLDS IN POVERTY
6%

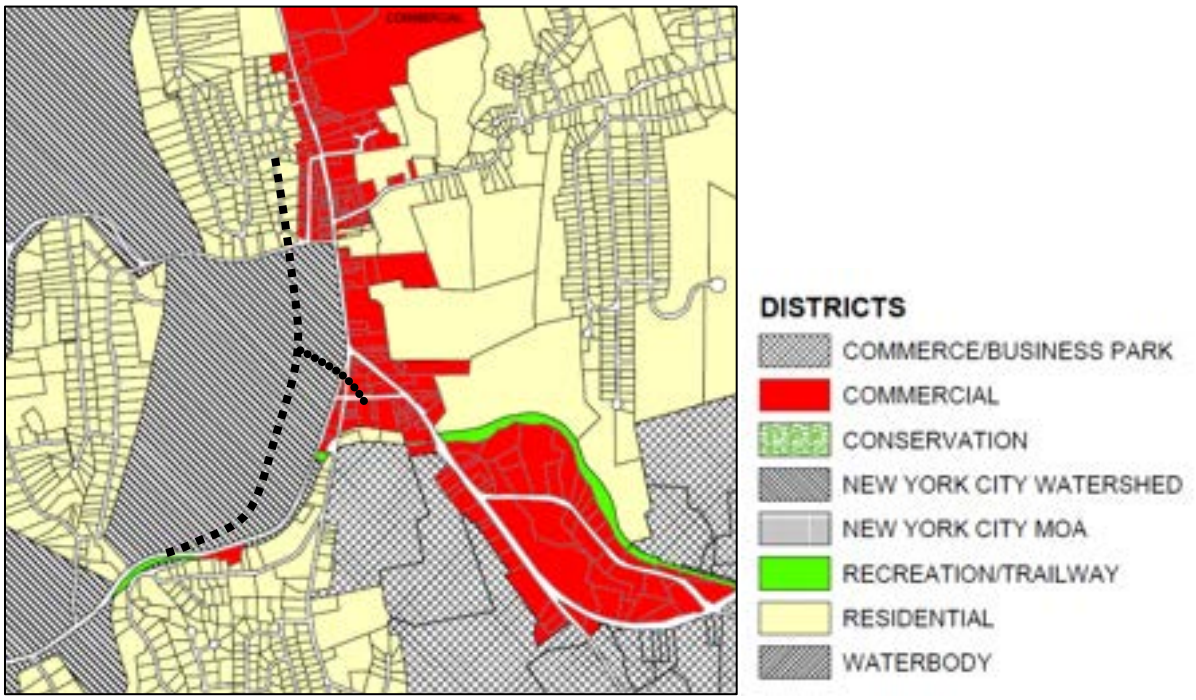


Source: ESRI Busineess Analyst 2017

ZONING AND LAND USE

The majority of the study corridor is within the Commercial zone. The Commercial zone allows for general retail and office development. Clustered residential development is a conditional use in the Commercial zone. A small section of the southern end of the study corridor is in the Residential zone where single-family dwellings are a permitted use.

Town of Carmel Zoning Map



Town of Carmel Commercial Zone (C)

Principal Permitted Uses
• Retail sales and service establishments excluding self-storage warehouse • General business and professional offices • Banks and other financial institutions • Fully enclosed eating and drinking establishments • Commercial entertainment establishments • Municipal and other government buildings • Existing apartments in mixed-use structures • Multifamily dwellings on waterfront • Wholesale storage and distributive establishments, including lumberyards • Auto sales and showroom establishments, but not including auto body repair shops exclusively as principal uses

Town of Carmel Commercial Zone (C)

Conditional Uses

- Farm stand or market
- Public or private recreational facilities
- Private schools
- Membership clubs
- Places of religious worship
- Private stables
- Camps
- Residential cluster development
- Professional offices
- Public utility installations
- Bed-and-breakfasts
- Multifamily dwelling for the elderly
- Recreation center

Town of Carmel Residential Zone (R)

Principal Permitted Uses

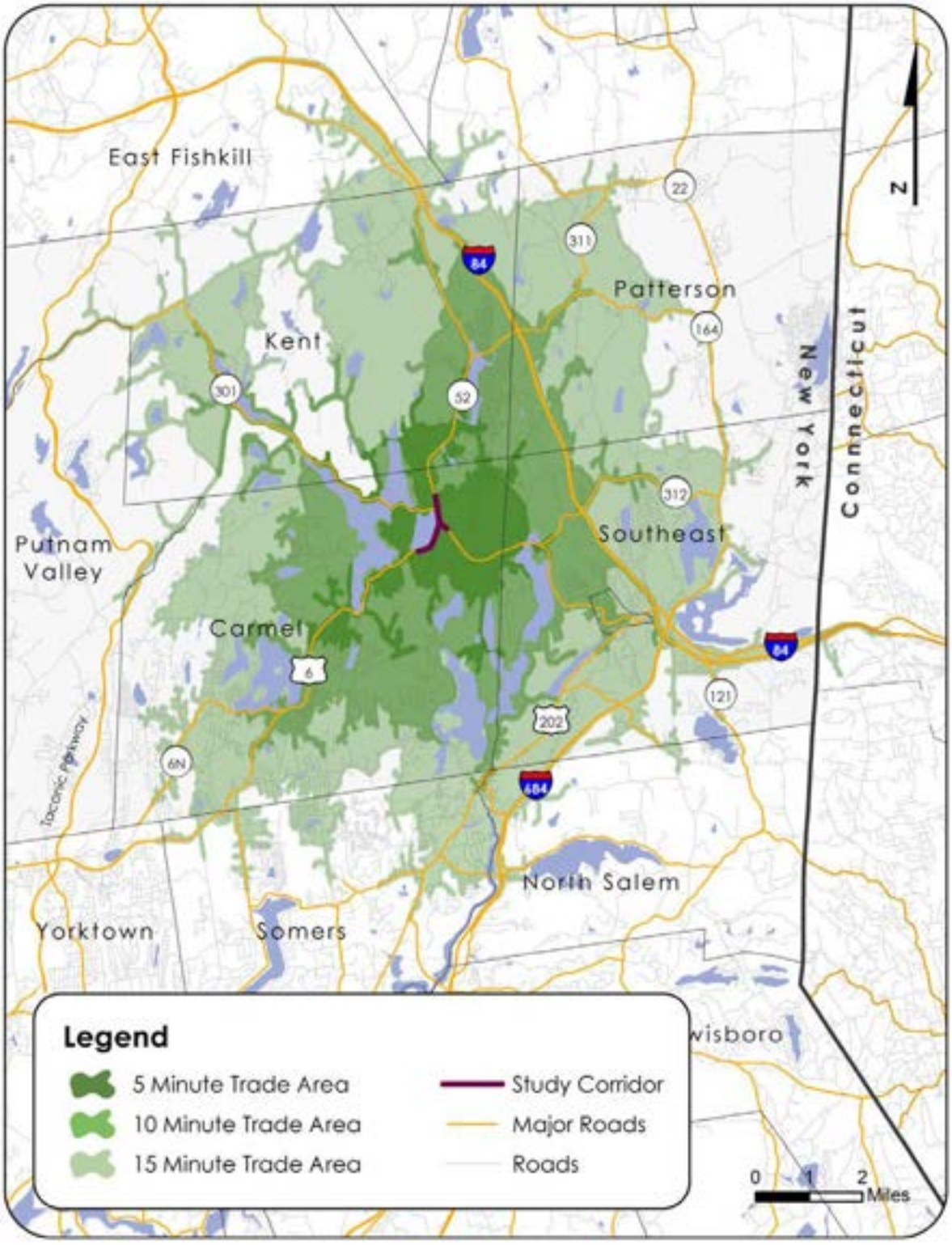
- Single family dwellings
- Farms, truck gardens, nurseries and other agriculture activities
- Parks, playgrounds and other recreation facilities operated by the Town of Carmel
- Hospitals existing at the time of adoption of this chapter
- Nursery schools and day nurseries

Table 2-A – Bulk Requirements

	Commercial Zone (C)	Residential Zone (R)
Minimum Lot size	40,000 sq ft (0.9 ac)	120,000 sq ft (2.75 ac)
Minimum Floor Area	5,000 sq ft	None
Maximum Floor to Area Ratio (FAR)	None	None
Maximum Building Coverage	30% 40% for office buildings	15%
Minimum Front Setback for Principal Building	40 ft	40 ft
Minimum Side Setback for Principal Building	25 ft	25 ft
Minimum Rear Setback for Principal Building	30 ft	40 ft
Maximum Building Height	35 ft 60 ft for office buildings	35 ft

TRADE AREAS

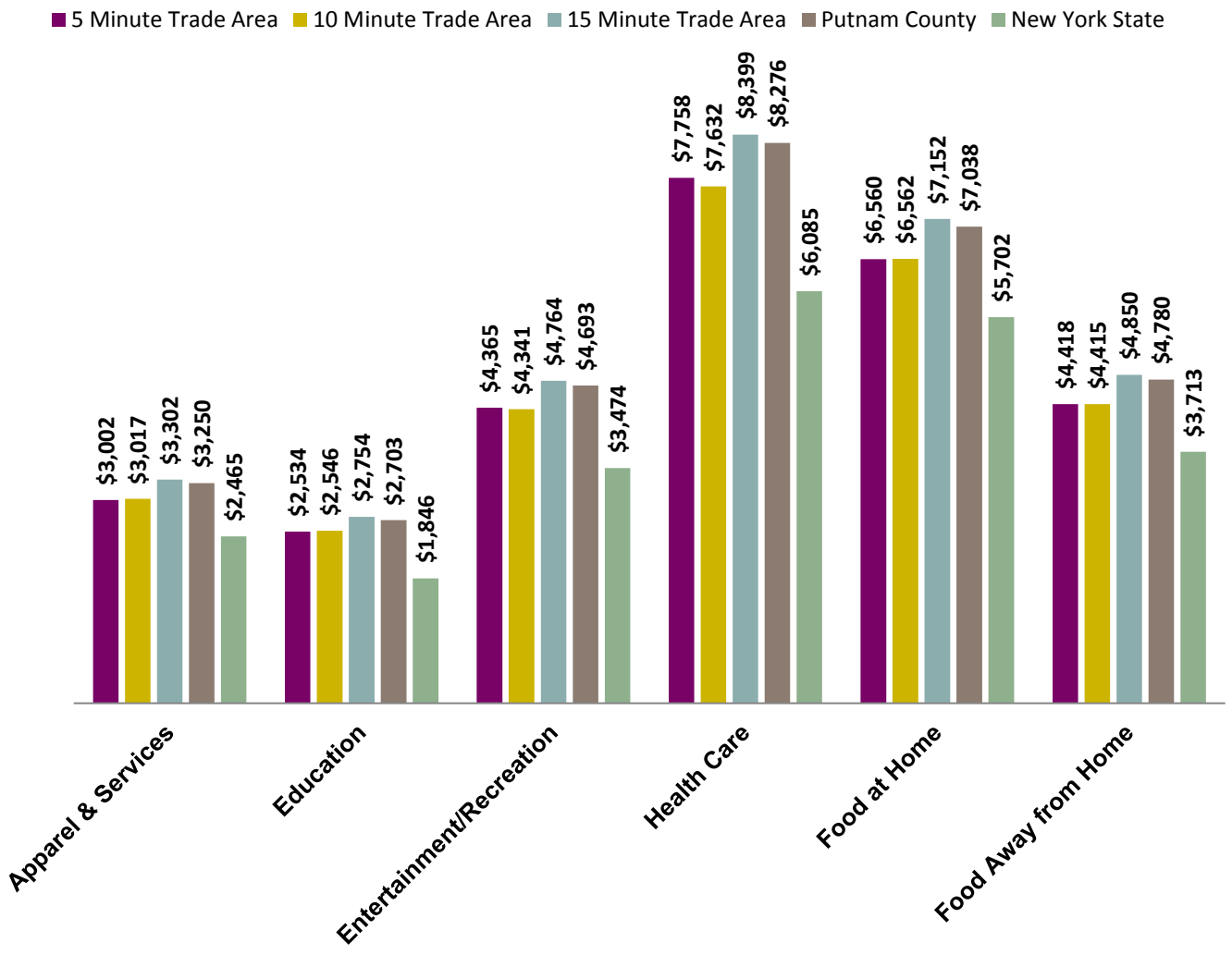
NYS Route 52 and U.S. Route 6 – Hamlet of Carmel (Town of Carmel)



Household Spending

The chart below depicts an estimate of average annual household spending by category for households in the 5, 10, and 15-minute trade areas, Putnam County, and New York State. The spending habits of households within the 5-minute trade area are similar to the spending habits of Putnam County as a whole. Households in the 5-minute trade area spend slightly less than households in Putnam County in every category.

Table 2-B – Average Annual Household Spending



Source: ESRI Business analyst, 2017

Tapestry Segmentation

Tapestry Segmentation is a tool developed by ESRI, a Geographic Information Science (GIS) company. Tapestry segmentation organizes households in the United States into groups (segments) that share similar demographics, socioeconomic indicators, and lifestyle choices. Tapestry segmentation provides a macro-level understanding of the type of households present in a given area. Below are descriptions of the top three most common tapestry segments represented by households within the 10-minute trade area.

Top 3-Tapestry Segments in the 10-Minute Trade Area/Percent of Households

Pleasantville

Prosperous domesticity best describes the settled citizens of Pleasantville. Situated principally in older housing in suburban areas in the Northeast (especially in NY and NJ) and secondarily in the West (especially in CA), these slightly older couples move less than any other market. Many couples have already transitioned to empty nesters; many are still home to adult children. Families own older, single-family homes and maintain their standard of living with dual incomes. These consumers have higher incomes and home values and much higher net worth (Index 400). Older homes require upkeep; home improvement and remodeling projects are a priority -preferably done by contractors. Residents spend their spare time participating in a variety of sports or watching movies. They shop online and in a variety of stores, from upscale to discount, and use the internet largely for financial purposes.

Savvy Suburbanites

Savvy Suburbanites residents are well educated, well read, and well capitalized. Families include empty nesters and empty nester wannabes, who still have adult children at home. Located in older neighborhoods outside the urban core, their suburban lifestyle includes home remodeling and gardening plus the active pursuit of sports and exercise. They enjoy good food and wine, plus the amenities of the city's cultural events.

Golden Years

Independent, active seniors nearing the end of their careers or already in retirement best describes Golden Years residents. This market is primarily singles living alone or empty nesters. Those still active in the labor force are employed in professional occupations; however, these consumers are actively pursuing a variety of leisure interests—travel, sports, dining out, museums, and concerts. They are involved, focused on physical fitness, and enjoying their lives. This market is smaller, but growing, and financially secure.

Consumer Survey

A survey of shoppers in the study corridor was conducted in an effort to achieve a better understanding of consumer spending habits and the factors that most impact spending decisions. In-person surveying was conducted by Pattern staff on a Tuesday in July from 12pm to 2pm and from 5pm to 7pm. In-person surveying was also conducted on a Saturday in July from 12pm to 2 pm. With help from the local chambers of commerce, flyers with a link to an online version of the survey were distributed to local businesses throughout the study corridor. Between the in-person surveys and the online version of the survey, a total of 65 surveys were collected from the study corridor. Below are the key findings from this survey.

Why are people coming to the Hamlet of Carmel?

Work was the most common activity reported as the reason for coming to the Hamlet of Carmel. 72% of survey respondents reported coming to the Hamlet of Carmel for work 5 or more times per week. This is likely attributable to the presence of the Putnam County workforce. Other popular reasons to come to the Hamlet of Carmel were retail shopping and eating out. 63% of survey respondents reported that they come to the Hamlet of Carmel for retail shopping at least once a week, and 62% of survey respondents reported that they come to the Hamlet to eat out at least once a week.

When are people shopping in Hamlet of Carmel?

The majority of survey respondents reported shopping in the Hamlet of Carmel on weekdays more often than weekends. The most common times to shop in the Hamlet of Carmel were 11am to 2pm and after 5pm. When asked whether businesses in the Hamlet are open when they want to shop, 44% of survey respondents agreed and 38% were neutral.

How are people getting to the Hamlet of Carmel?

The vast majority (97%) of survey respondents reported that they use a personal vehicle as the primary method of getting to the Hamlet of Carmel. Two survey respondents reported that walking was the primary mode of transportation that they used to get to the Hamlet. There were no survey respondents that selected bicycle, cab service, or bus service as their primary mode of transportation to the Hamlet.

What type of businesses do consumers want?

In an effort to understand what is missing from the Hamlet of Carmel, survey respondents were asked to choose up to five types of businesses and amenities that they would most like to see developed in the Hamlet of Carmel. By far the most common response was clothing stores. Sixty percent (60%) of survey respondents reported that they want more clothing stores in the Hamlet of Carmel. The second most common answer was a hotel/conference center (40% of survey respondents).The third most common answer was fine dining (39% of survey respondents).

Local competition

In an effort to identify other commercial areas the Hamlet of Carmel is competing with, survey respondents were asked how often they shop at other nearby locations other than the Hamlet of Carmel.

- 45% of survey respondents reported that they shop in the Village of Brewster at least once a week.
- 40% of survey respondents reported that they shop in the City of Danbury at least once a week.
- The most commonly reported reason for choosing to shop at another location instead of the Hamlet of Carmel was a better selection of stores at the other location.

Other Comments

At the end of the survey there was an open ended question asking respondents for any other additional comments. Three survey respondents stated that they would like to shop locally more often, but currently there is not enough selection. Several of the comments stated an interest in more retail shops in the Hamlet. Two survey respondents specifically stated that they would like more clothing stores to move into the Hamlet. One of the respondents suggested that a coffee shop and a drug store would both be popular among Putnam County employees working at the nearby county building. Two of the survey respondents called for better access to and integration with the bike path.

Other Survey Findings

- 76% do most of their shopping at shopping center developments.
- 65% always *try* to shop locally.
- 36% eat out for lunch at least 2-4 times a week.
- 59% eat out for lunch a least once per week.
- 70% eat out for dinner at least once a week.

RETAIL GAP ANALYSIS

Leakage / Surplus

Table 2-C depicts a leakage/surplus factor for trade areas delineated by a 5, 10 and 15 minute drive from the study corridor. The leakage/surplus factor is a representation of the balance between supply and demand among various industries. In this chart the industries are broken out by North American Industry Classification (NAICS) code. The leakage/surplus factor is measured on a scale from 100 to -100. A value of 100 represents an area where there is household demand but there is no supply so all of the potential retail sales are leaking out of the area. A value of -100 represents an area where there is a surplus of supply but there is no household demand. The closer the value is to zero, the more balance there is between supply and demand.

Table 2-C is color coded on a gradient of green to red with the darkest green representing a value of 100, and the darkest red representing a value of -100. The greatest industry potential revealed by the leakage/surplus factor is the Clothing and Accessories industry with a leakage/surplus factor of 68 in the 5-minute trade area. The surplus/leakage factor for this industry is even larger in the 10 and 15-minute trade areas. This indicates that there is significant demand for clothing and accessories that is not being met by local retailers. The Health and Personal Care industry and Food and Beverage industry have the lowest leakage/surplus ratio in the 5-minute trade area at -37.8 and -37.7 respectively. This indicates that there is a moderate surplus of these types of industries within the 5-minute trade area.

Table 2-C – Leakage / Surplus Factor

Industry	5 Minute Trade Area	10 minute Trade Area	15 Minute Trade Area
Motor Vehicle and Parts Dealers (NAICS 441)	16.5	21	30.2
Furniture/Home Furnishing Stores (NAICS 442)	-21.4	13.1	22.3
Electronics & Appliance Stores (NAICS 443)	48.3	47.8	37.7
Bldg/Garden Equip/Supply Stores (NAICS 444)	-4	-12.5	5.7
Food and Beverage Stores (NAICS 445)	-37.7	-12.4	-1.6
Health and Personal Care Stores (NAICS 446)	-37.8	-9.9	8.2
Gasoline Stations (NAICS 447)	-23.7	-2	-10.9
Clothing/Accessories Stores (NAICS 448)	68	80	75.9
Sports/Hobby/Book/Music Stores (NAICS 451)	10.7	-1.7	12.6
General Merchandise Stores (NAICS 452)	46.9	15.3	46.1
Miscellaneous Store Retailers (NAICS 453)	-26.1	-10	8
Food Services & Drinking Places (NAICS 722)	4.1	17.2	28.5
Total Retail (including Food/Drink Sales)	**-6.8**	**7.5**	**18.6**

Source: ESRI Business analyst, 2017

Table 2-D depicts an estimation of industry leakage and surplus expressed in actual dollar amounts for the 10-minute trade area. Dollar values in the leakage column represent the estimated amount of money leaking out of the 10-minute trade area. Dollar values in the surplus column represent additional sales in the 10-minute trade area that are being generated by households outside of the trade area. These values are calculated by taking the difference between total sales in the trade area (estimated from reported business earnings) and potential sales in the trade area (estimated from household spending trends). When actual sales are lower than potential sales, there is a leakage (households are spending outside of the trade area). When actual sales are higher than potential sales, there is a surplus (households from outside of the trade area are spending in the trade area).

ESRI estimates that the industry with the most leakage is the Clothing and Accessories industry. An estimated $38.3 million in clothing and accessories spending from households within the 10-minute trade area is being spent at clothing and accessory stores outside of the 10-minute trade area. Overall there is an estimated $76 million in total retail sales leaking from the 10-minute trade area. This means the average household in the 10-minute trade area is spending approximately $7,400 in total retail outside of the 10-minute trade area.

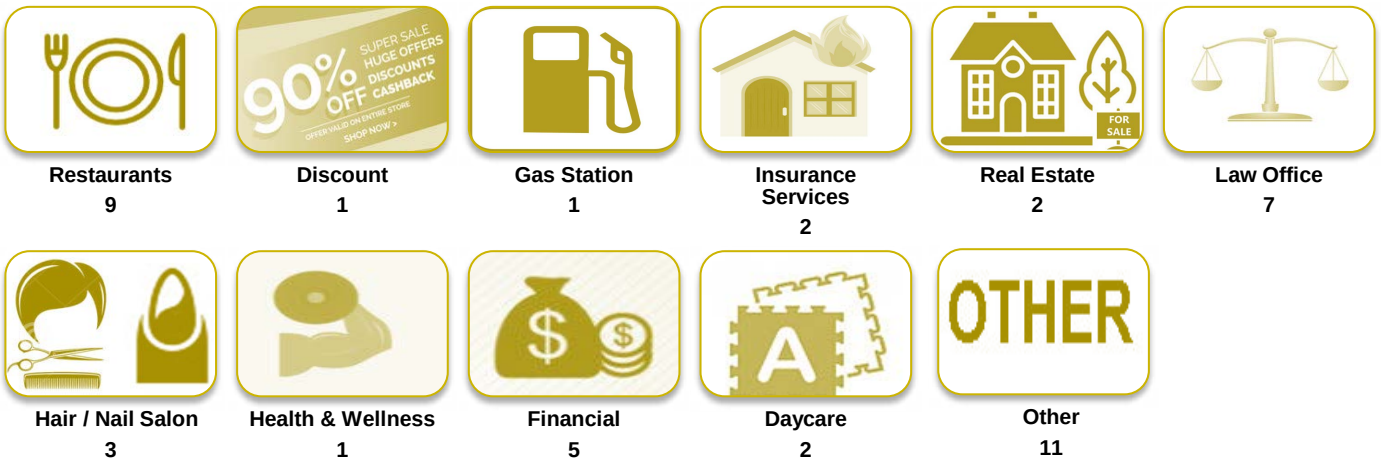
Table 2-D – 10 Minute Trade Area Industry Leakage/Surplus Factor

Industry	Leakage (Millions)	Surplus (Millions)	Leakage Surplus Factor
Clothing/Accessories Stores (NAICS 448)	$ 38.3		80
Motor Vehicle and Parts Dealers (NAICS 441)	$ 33.7		21
Food Services & Drinking Places (NAICS 722)	$ 16.2		17.2
General Merchandise Stores (NAICS 452)	$ 15.6		15.3
Electronics & Appliance Stores (NAICS 443)	$ 12.4		47.8
Nonstore Retailers (NAICS 454)	$ 4.4		16.1
Furniture/Home Furnishing Stores (NAICS 442)	$ 4.2		13.1
Sports/Hobby/Book/Music Stores (NAICS 451)		$ 0.5	-1.7
Gasoline Stations (NAICS 447)		$ 2.0	-2
Miscellaneous Store Retailers (NAICS 453)		$ 4.2	-10
Health and Personal Care Stores (NAICS 446)		$ 9.0	-9.9
Bldg/Garden Equip/Supply Stores (NAICS 444)		$ 9.2	-12.5
Food and Beverage Stores (NAICS 445)		$ 24.1	-12.4
Total Retail (including Food/Drink Sales)	**$ 76.0**		**7.5**

Source: ESRI Business analyst, 2017

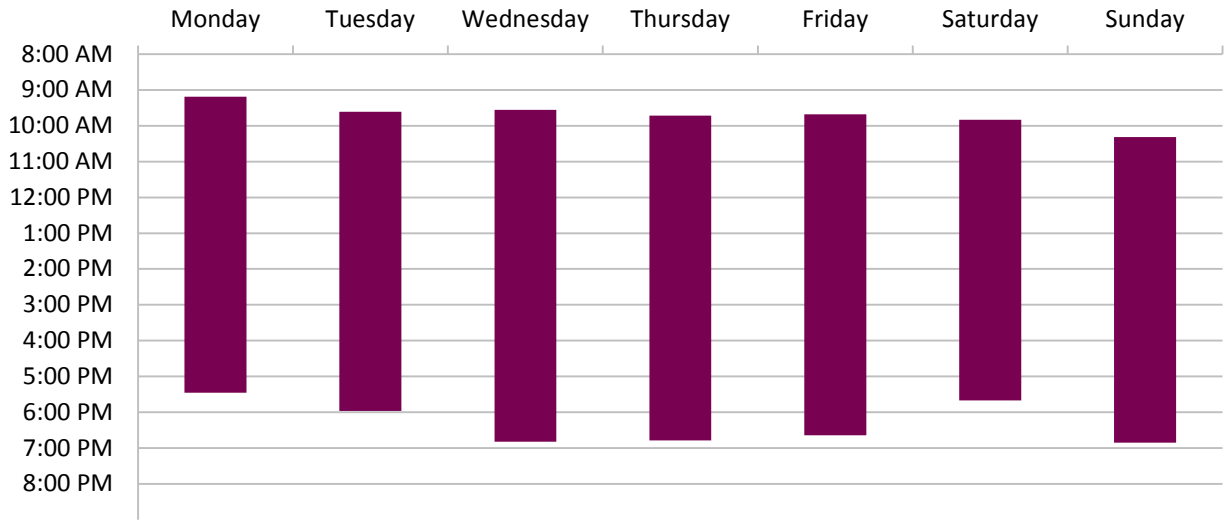
Existing Businesses

Below is a list of the number of existing businesses in the corridor by business type. This list was developed by Pattern staff during field visits to the corridor. Approximately 60% of businesses in this corridor are service-based businesses and approximately 40% of the businesses are retail businesses.



Store Hours

Hours of operation for businesses in the study corridor were collected during a field visit and supplemented with information available online. The chart below depicts average hours of operation for business in the study corridor where information about hours of operation were available. Over half of businesses closed on Sundays. The next most common day of the week for businesses to close is Monday. Many of the businesses that are closed on Monday are restaurants, a common practice in the restaurant industry.



Business Owner Forum

A business owner forum was convened to solicit input from the local business owner community. The forum was held in the Hamlet of Carmel with business owners and representatives from the Putnam County Chamber of Commerce and the Mahopac-Carmel Chamber of commerce.

The participants at the business forum identified several attributes of the community that positively impact business. The Hamlet of Carmel is the County Seat for Putnam County and there are several county buildings adjacent to the study corridor. Forum participants discussed how the presence of the county workforce positively affects their business. One business owner stated that the presence of the county workforce was the primary reason they decided to locate their business in the Hamlet of Carmel. There was a sense that the Hamlet of Carmel is home to a strong middle class with enough disposable income to support local business. The overall outlook about the future of the community was optimistic. Forum participants discussed how a handful of popular new businesses are attracting people from greater distances to the Hamlet.

There are also a number of obstacles to business present in the Hamlet of Carmel that were identified during the business owner forum. Participants discussed the perceived poor quality of the infrastructure in the area and its detrimental effect on business. Specifically, forum participants cited potholes, poor storm water management, and crumbling sidewalks as significant infrastructure concerns. Lastly, the business owners discussed how the presence of the NYC watershed makes new development extremely difficult due to regulations associated with protecting the watershed.

Several ideas and suggestions about traffic circulation and signage were discussed at the business owner forum. Forum participants reported that traffic often accumulates at the intersection of Route 6 and Seminary Hill Road near the southern end of the study corridor. The traffic accumulation occurs when vehicles traveling south on Route 6 are attempting to take a left turn onto Seminary Hill Road and have to wait for a break in oncoming traffic. A similar traffic concern was pointed out at the intersection of Route 6 and Fair Street. One participant suggested that a left turn arrow should be installed at the intersection to alleviate the traffic that accumulates behind southbound cars attempting to take a left onto Fair Street. Lastly, one of the forum participants pointed out that many of the street signs in the Hamlet appear to be too big for the downtown setting. They thought that the size of some of the street signs was more appropriate for a highway or interstate and that perhaps they had been installed by mistake.

NYS Route 52 and U.S. Route 6 – Hamlet of Carmel (Town of Carmel)

Existing Conditions and Data Collection

Corridor Characteristics

U.S. Route 6 in the Hamlet of Carmel is two-lane, east-west roadway that carries approximately 16,860 vehicles per day. The roadway is classified by the NYSDOT as a Principal Arterial Other and is owned by NYSDOT. The speed limits range from 35 to 40 miles per hour. On-street parking is provided near Seminary Hill Road.

NYS Route 52 is a two-lane, north-south roadway that intersects U.S. Route 6 near Seminary Hill Road. The roadway is classified as a Minor Arterial and is owned by NYSDOT. The speed limit is 30 miles per hour. On-street parking is provided.

Sidewalks are located on the east side of NYS Route 52 between U.S. Route 6/Brewster Road and NYS Route 301. Sidewalks are provided on both sides of the street between NYS Route 301 and the Old Baptist Cemetery north of Fair Street. Access to the Putnam Trailway is provided near the Seminary Hill/ Gleneida Court intersection; however, there are no facilities or wayfinding signage connecting the Trailway with the Hamlet business district. The corridor is serviced by the Putnam Area Rapid Transit (PART) Lines 2 and 5.

There is a roadway improvement project in place for Fair Street east of NYS Route 52 which would include improving the vertical and horizontal geometry to meet current standards, providing an additional westbound left-turn lane at NYS Route 52, and repairing sidewalks. A summary of the corridor's transportation characteristics are presented in Table 2-E.

Table 2-E – Corridor Characteristic Summary
U.S Route 6 / NYS Route 52 – Hamlet of Carmel

Average Daily Traffic	Number of Lanes	Speed Limit (MPH)
16,861[1]	2	30-45
On-Street Parking (Y/N)	**Pedestrian Facilities (Y/N)**	**Bike Facilities (Y/N)**
Y	Y	Y-Putnam Trailway
	Access to Waterways (Y/N)	**Transit Facilities (Y/N)**
	Y-Lake Gleneida	Y- PART Bus Lines 2 and 5

Notes:
1. Automatic Tube Recorder collected May 2017

Parking Utilization

Parking utilization counts were collected during typical weekdays (Tuesday, Wednesday, or Thursday) and weekend days in June 2017 and July 2017 at three locations on the study corridor:

- Putnam Trailway Parking at Willow Road
- U.S. Route 6 near Seminary Hill Road
- NYS 52 between Brewster Road and Route 301

While there was sufficient capacity/underutilization of the parking spaces at each of the study locations, it should be noted anecdotally on Sundays the parking is closer to capacity to service the religious centers along the corridor. Table 2-F presents the parking utilization by peak period and time of day.

Table 2-F – Parking Utilization - *Hamlet of Carmel*

Time	Putnam Co. Trailway Parking Willow Rd/ Rt 6 and along Willow Rd		Pull Out On-street Parking Rt 6 at Seminary Hill Road		NYS Rt 52 between Brewster Rd to Rt 301	
	Capacity	Parking Utilization	Capacity	Parking Utilization	Capacity	Parking Utilization
Weekday – Midday Peak Period						
12:00 PM	31	29%	11	0%	74	31%
12:30 PM		29%		0%		46%
1:00 PM		32%		0%		49%
1:30 PM		29%		0%		28%
Weekday – PM Peak Period						
4:00 PM	31	23%	11	0%	74	3%
4:30 PM		35%		0%		7%
5:00 PM		52%		0%		0%
5:30 PM		48%		0%		1%
Weekend – Midday Peak Period						
11:00 AM	31	16%	11	0%	74	28%
11:30 AM		16%		0%		34%
12:00 PM		13%		0%		30%
12:30 PM		35%		0%		32%
1:00 PM		39%		9%		31%
1:30 PM		35%		0%		18%
2:00 PM		29%		0%		5%
2:30 PM		29%		0%		1%

Notes: 1. Highlighted cells considered at capacity (parking at or above 85 percent)
2. Data collected on a two weekdays (6/1/2017 and 7/21/2017) and two weekend days (6/3/2017 and 7/23/2017)

Crash Data

Crash data over a three year period (March 1, 2014 through February 28, 2017) was obtained from NYSDOT. Table 2-G provides a summary on the number and type of crashes on U.S. Route 6 between Willow Road and Fowler Avenue. Over a three year period, there were 110 crashes along this corridor, with the greatest number (44) being rear end crashes. Rear end crashes typically occur at congested locations and signalized intersections.

Table 2-G – Crash Summary - U.S. Route 6 between Willow Road and Fowler Avenue

	2014	2015	2016	2017	Total	*ACC/MVM*[1]
Fatalities	0	0	0	0	**0**	
Injured	16	23	11	0	**50**	
# of Crashes	32	39	34	5	**110**	**5.4**
Over-Taking	2	3	2	0	**7**	
Rear End	9	17	17	1	**44**	
Right Angle	3	0	3	1	**7**	
Left Turn (with other car)	0	1	0	0	**1**	
Left Turn (against other car)	1	1	0	0	**2**	
Right Turn (with other car)	0	0	0	1	**1**	
Right Turn (against other car)	0	0	0	0	**0**	
Side Swipe	3	1	2	0	**6**	
Ped/Bike	1	0	0	0	**1**	
Head On	0	0	0	0	**0**	
Fixed Object	1	2	2	1	**6**	
Animal	0	3	0	0	**3**	
Other	7	5	7	1	**20**	
Unknown	5	6	1	0	**12**	

Notes: Crash Data for March 1, 2014 through February 28, 2017.
1. Accidents per millions vehicle miles traveled = (accidents * 1,000,000)/(365*number of years*AADT*length of corridor)

Source: New York State Department of Transportation (NYSDOT)

NYSDOT provides average accident rates for state highways for different facilities. The 2015/2016 average accident rate for a two-lane, undivided highway is 3.5 accidents/million vehicle miles (ACC/MVM). The study corridor's 5.4 ACC/MVM exceeds the State's average of similar facilities.

Identification of Future Needs

Based on the existing conditions data collection, field visits, and discussions with the County, the following future transportation needs are necessary to enhance the corridor are to be addressed:

- Congestion at the NYS Route 52/Fair Street and U.S. Route 6/NYS Route 52/Brewster Road/Seminary Hill Road intersections.
- On-street parking on NYS Route 52 southbound near Fair Street which contributes to congestion.
- Lack of pedestrian facilities for passengers accessing parked vehicles on the west side of NYS Route 52 between NYS Route 301 and U.S. Route 6/Brewster Road.
- No wayfinding signage and facilities to connect the Putnam Trailway access point at Seminary Hill Road / Gleneida Court to the Hamlet business district.
- No pedestrian facilities on the west side of NYS Route 52 between U.S. Route 6/Brewster Road and NYS Route 301.
- Lack of pedestrian crosswalks on NYS Route 52 between NYS Route 52 between U.S. Route 6/Brewster Road and NYS Route 301.
- Address rear end collisions in the corridor.

TRANSPORTATION RECOMMENDATIONS

Proposed transportation enhancements are described below. Additional Transportation enhancements are presented in Figure 1. Should the State, County or local municipality, depending on jurisdiction, decide to pursue any of the below recommendations, they would be required to follow additional steps including coordination and obtaining required permits. For example, the project sponsor will be required to coordinate with the New York State Department of Transportation (NYSDOT) for any work to be performed in the NYSDOT Right-of-Way (ROW) to obtain the required permits from NYSDOT as part of the Highway Work Process (HWP). In addition, the County will coordinate as necessary with any other local or county transportation agency or departments.

Short-Term Transportation Recommendations (1 to 3 Years)

- In addition to the improvements planned for Fair Street near NYS Route 52, the on-street parking on the west side of NYS Route 52 north of Fair Street should be removed. This will improve southbound traffic operations and improve visibility for vehicles entering and exiting the driveways on this stretch of roadway.
- Add wayfinding signage for municipal parking lots near NYS Route 52 and Fair Street to accommodate the removal of on-street parking north of Fair Street.
- Add wayfinding signage to the Causeway at the NYS Route 52/ NYS Route 301 intersection.
- Add crosswalks to the NYS Route 52/NYS Route 301 intersection on the northbound and westbound approaches.

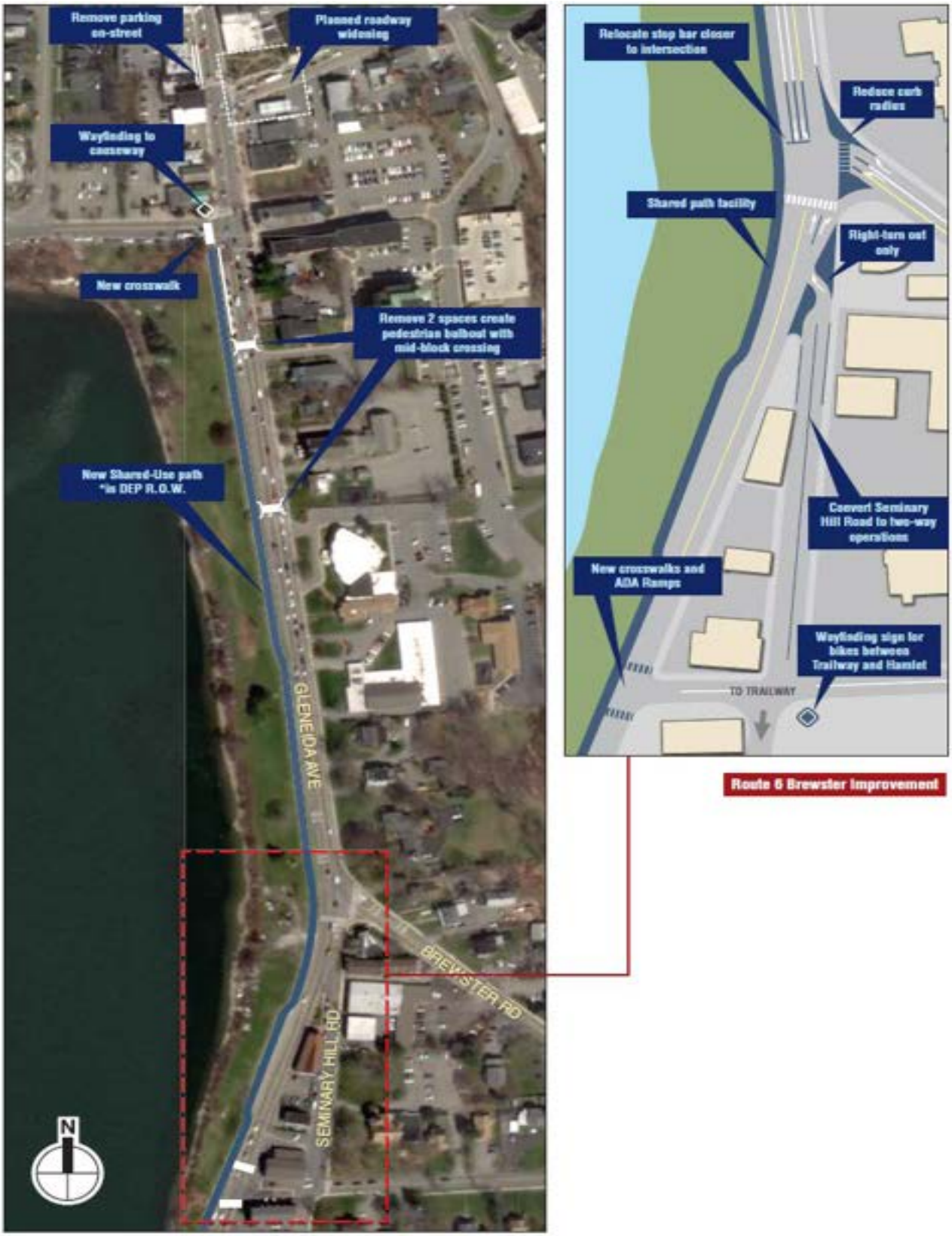
Medium-Term Transportation Recommendations (3 to 5 Years)

- Convert Seminary Hill Road to only allow northbound-right-turn out thus removing the uncontrolled southbound left-turn that contributes to congestion in the area. Southbound left-turning vehicles will be able to make a left-turn at the signalized Brewster Road or signalized Church Street intersections.
- Convert Seminary Hill Road from one-way northbound to two-way between U.S. Route 6 and Church Street to provide access to land uses on this roadway from Church Street. This would be consistent with Seminary Hill Road operations south of Church Street.
- Install way-finding signage for connections between the Putnam Trailway and the Hamlet business district.
- Extend the curb on the northwest corner of NYS Route 52 and U.S. Route 6/Brewster Road. This would shorten the pedestrian crossing distance as well as reduce vehicle turning speeds.

Long-Term Transportation Recommendations (5 or More Years)

- Provide a shared-use path for pedestrians and bicyclists on the west side of NYS Route 52 between NYS Route 301 and Church Street. This would require a high level of coordination with New York State Department of Environmental Protection (DEP) since the proposed facility would be located on DEP owned property and is therefore listed as a long-term recommendation.
- Install crosswalks at U.S. Route 6 and Church Street to provide access to the proposed shared-use path facility.
- Provide mid-block crossings on NYS Route 52 between NYS Route 31 and U.S. Route 6/Brewster to facilitate the existing pedestrian crossing between the parking on the west side of NYS Route 52 with the religious centers and land uses on the east side of NYS Route 52 and compliment the proposed shared-use path.

Figure 1 - Conceptual Improvements - *Route 6/52-Hamlet of Carmel*



COMMUNITY AND ECONOMIC DEVELOPMENT RECOMMENDATIONS

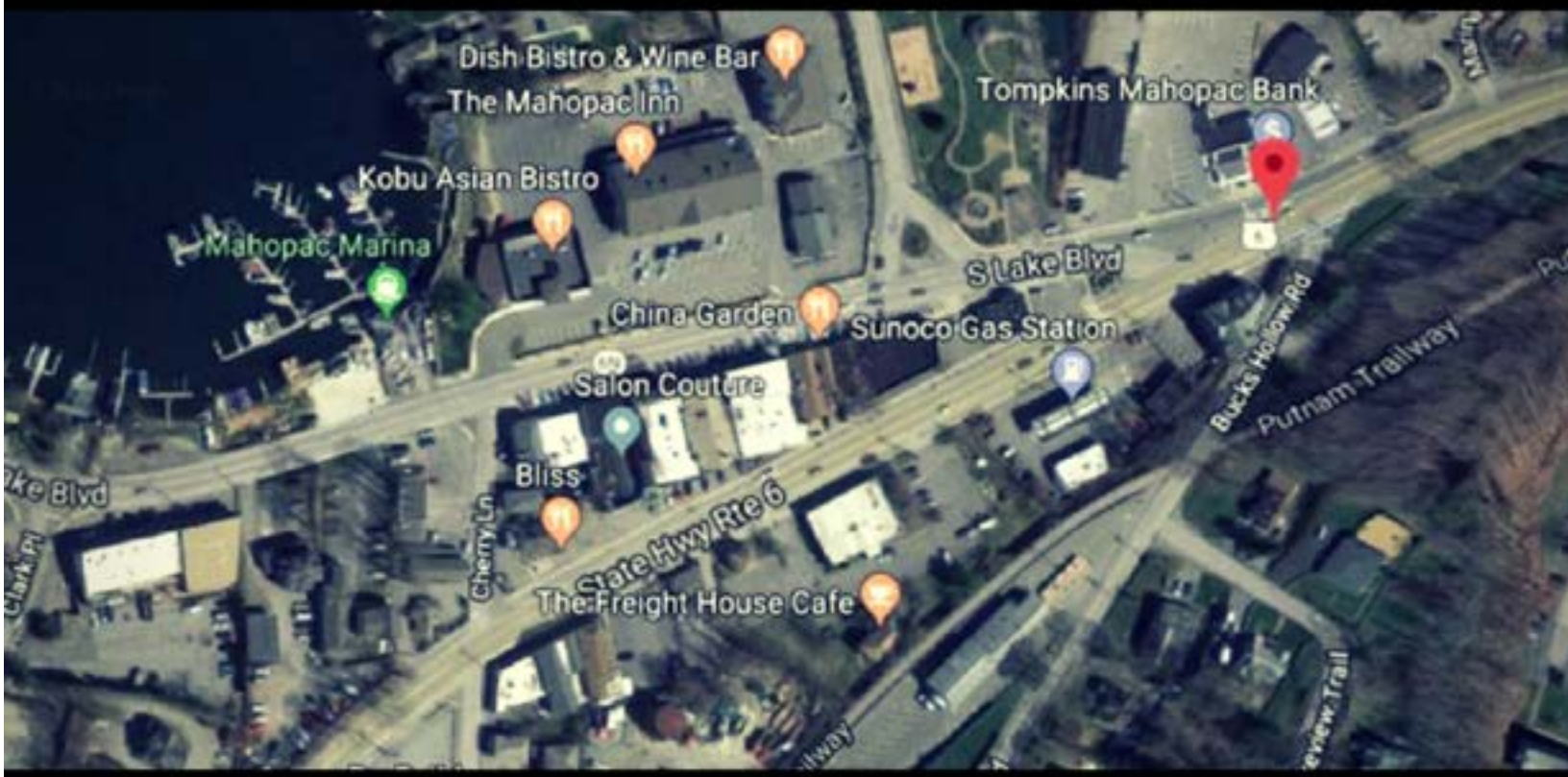
Proposed community and economic development enhancements are described below. Many of the recommendations would require coordination with local elected officials and the business community.

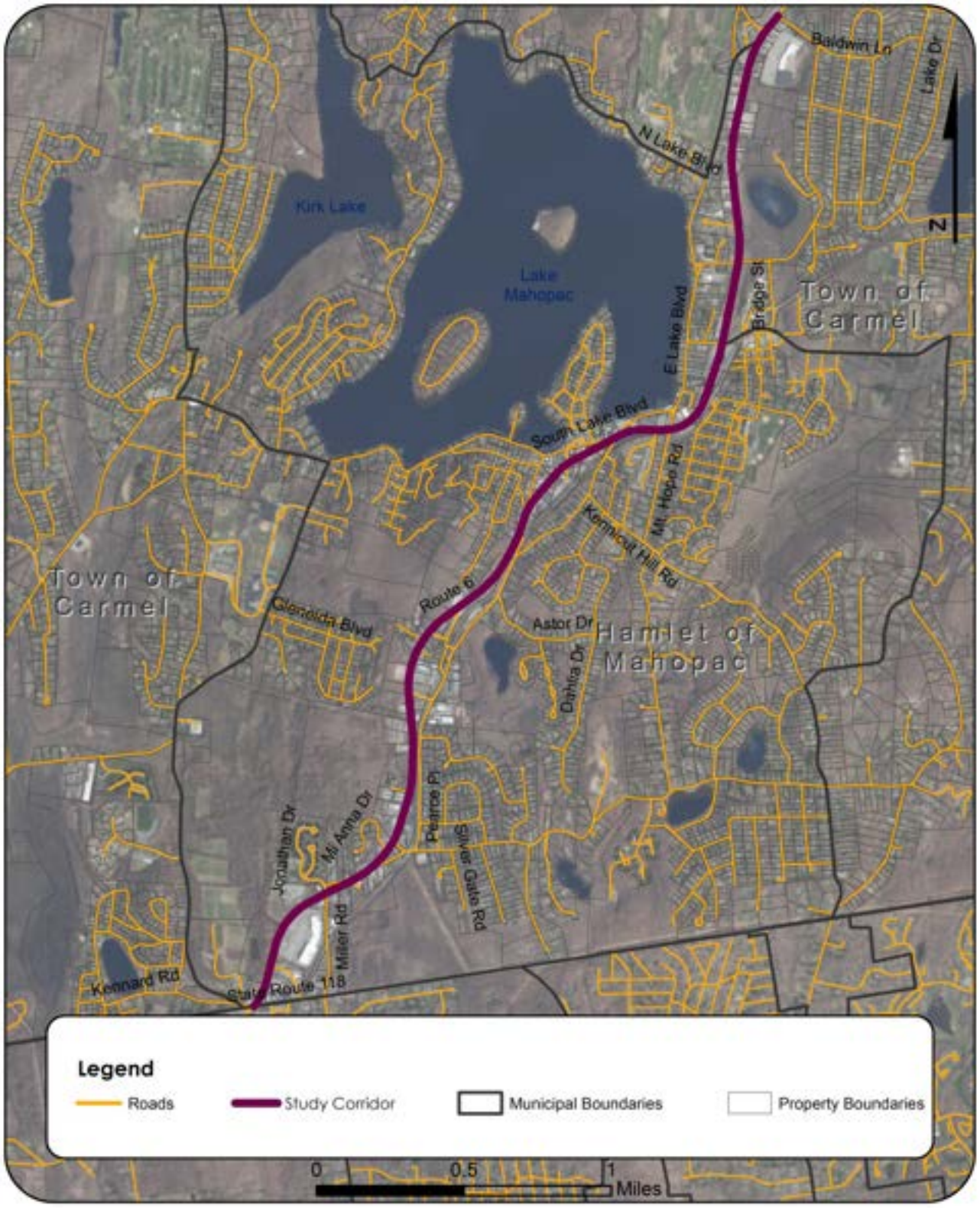
- Seek out and encourage clothing store retailers to move into commercial space on Route 52. Clothing stores were the most requested type of business indentified by the consumer survey. The leakage/surplus analysis also indicates that there is unmet demand for clothing stores in the 5, 10, and 15-minute trade areas.
- Seek out and encourage more small retailers to move into existing commercial space on Route 52. Currently, the majority of corridor space in the Hamlet is occupied by professional offices and service-based industries. More small retailers would balance the mix of businesses and encourage pedestrians to walk around and improve the window shopping appeal and downtown feel of the Hamlet
- Consider amending the zoning code to allow for new mixed-use development with downstairs commercial space and upstairs residential. Currently, the Commercial District permits only existing mixed use development. This zoning change could be accomplished through the use of an overlay district so as not to permit new mixed use development in all areas in the Town of Carmel zoned as commercial.

CORRIDOR 3

ROUTE 6

HAMLET OF MAHOPAC




Baldwin Ln
Lake Dr
N Lake Blvd
Kirk Lake
Lake Mahopac
E Lake Blvd
Bridge St
Town of Carmel
South Lake Blvd
Mt. Hope Rd
Kennicut Hill Rd
Route 6
Glenida Blvd
Astor Dr
Dahlia Dr
Hamlet of Mahopac
Town of Carmel
Jonathan Dr
Mi Anna Dr
Pearce Pl
Silver Gate Rd
Miller Rd
Kennard Rd
State Route 118
N
Legend
Roads
Study Corridor
Municipal Boundaries
Property Boundaries
0
0.5
1
Miles

CORRIDOR OVERVIEW

Corridor Description

The study corridor is located on Route 6 in the Town of Carmel. Most of the study corridor is within the Hamlet of Mahopac. The southern bound of the corridor is the intersection of U.S. Route 6 and Tomahawk Street. The northern bound of the corridor is the intersection of Route 6 and Baldwin Lane.

Demographic Snapshot

The charts below depict demographic information about households and the population within a 5-minute drive (5-minute trade area) to the study corridor. From 2000 to 2010 the population in the 5-minute trade area increased by 2% from 14,265 to 14,491, increasing by an average of 22 additional people each year. Over the next 7 years, the rate of population growth increased. From 2010 to 2017 the population in the 5-minute trade area increased by 5% from 14,491 to 15,165, increasing by an average of 96 people each year.

According to ESRI Business Analyst, the median household income of the 5-minute trade area ($107,324) is higher than the median household income of Putnam County ($101,430). Within the 5-minute trade area there is a significant difference between the median household income and the average household income; average household income is $28,201 higher than median household income. This indicates that there is wide range of household incomes. There are likely a handful of outlier households with relatively higher incomes that are skewing the average upwards. Median household disposable income in both the 5-minute trade area and Putnam County is approximately 70% of total median household income. In comparison, median household disposable income for New York State as a whole is 78% of total median household income.

POPULATION
15,165

MEDIAN AGE
43

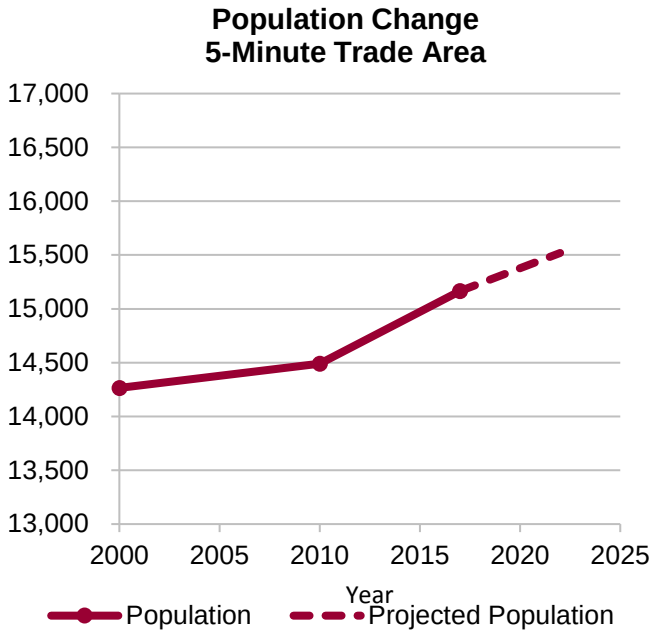
NUMBER OF HOUSEHOLDS
5,176

AVERAGE HOUSEHOLD INCOME
$135,525

MEDIAN HOUSEHOLD INCOME
$107,324

MEDIAN DISPOSABLE INCOME
$76,137

HOUSEHOLDS IN POVERTY
4%

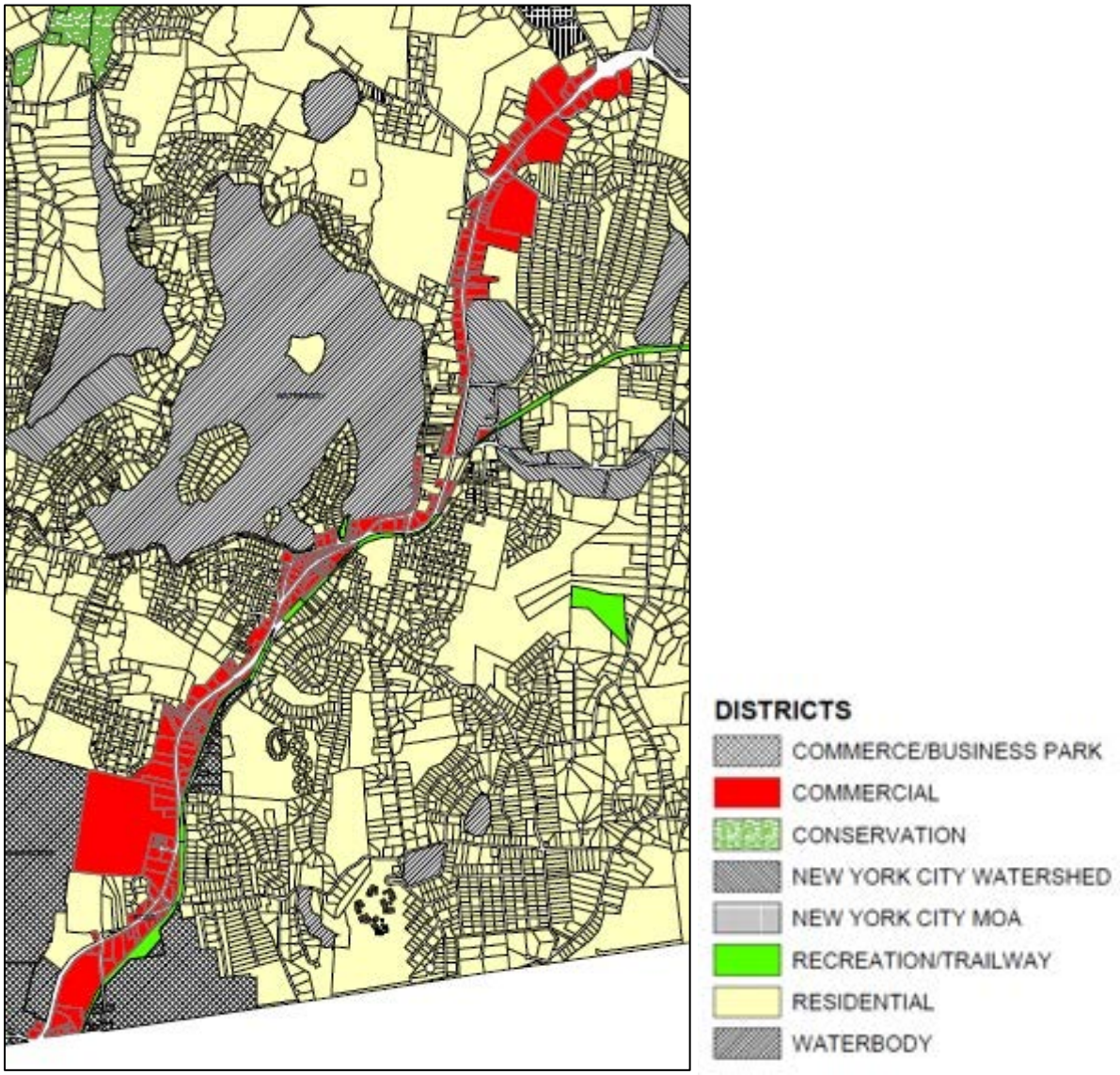


Source: ESRI Business Analyst 2017

ZONING

The majority of the study corridor is within the Commercial zone. The Commercial zone allows for general retail and office development. Clustered residential development is a conditional use in the Commercial zone. Some short sections of the study corridor are in the Residential zone where single-family dwellings are a permitted use.

Town of Carmel Zoning Map



Commercial Zone (C)

Prinicpal Permitted Uses	Conditional Uses
•Retail sales and service establishments excluding self-storage warehouse •General business and professional offices •Banks and other financial institutions •Fully enclosed eating and drinking establishments •Commercial entertainment establishments •Municipal and other government buildings •Existing apartments in mixed-use structures •Multifamily dwellings on waterfront •Wholesale storage and distributive establishments, including lumberyards •Auto sales and showroom establishments, but not including auto body repair shops exclusively as principal uses	•Farm stand or Market •Public or private recreational facilities •Private schools •Membership clubs •Place of religious worship •Private stables •Camps •Residential cluster development •Professional offices •Public utility installations •Bed-and-breakfasts •Multifamily dwellings for the elderly •Recreation center

Residential Zone (R)

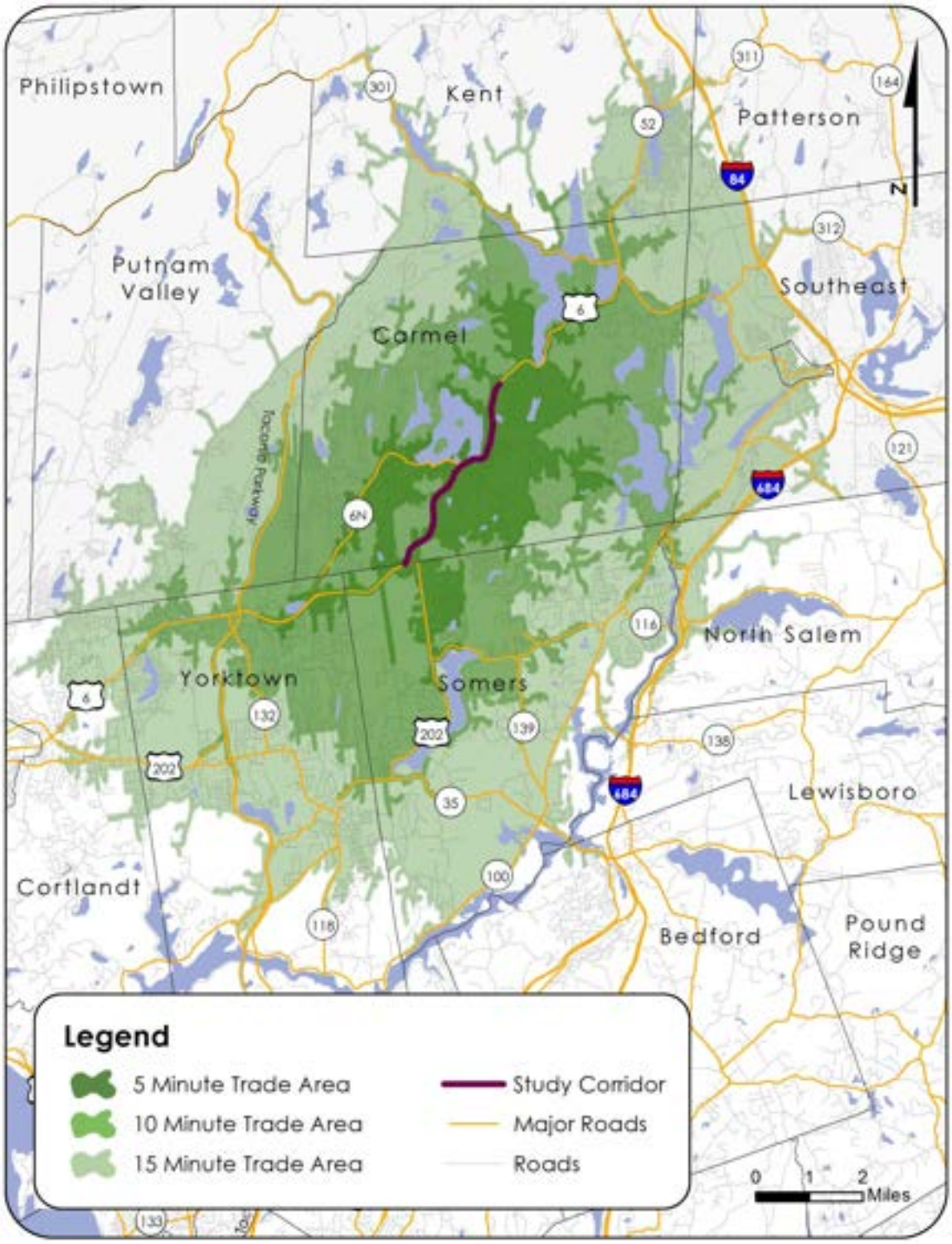
Principal Permitted Uses
• Single-Family dwellings • Farms, truck gardens, nurseries and other agriculture activities • Parks, playgrounds and other recreation facilities operated by the Town of Carmel • Municipal offices, libraries, fire and police stations, schools and other similar buildings • Hospitals existing at the time of adoption of this chapter • Nursery schools and day nurseries

Table 3-A – Bulk Requirements

	Commercial Zone (C)	Residential Zone (R)
Minimum Lot size	40,000 sq ft (0.9 ac)	120,000 sq ft (2.75 ac)
Minimum Floor Area	5,000 sq ft	None
Maximum Floor to Area Ratio (FAR)	None	None
Maximum Building Coverage	30% 40% for office buildings	15%
Minimum Front Setback for Principal Building	40 ft	40 ft
Minimum Side Setback for Principal Building	25 ft	25 ft
Minimum Rear Setback for Principal Building	30 ft	40 ft
Maximum Building Height	35 ft 60 ft for office buildings	35 ft

TRADE AREAS

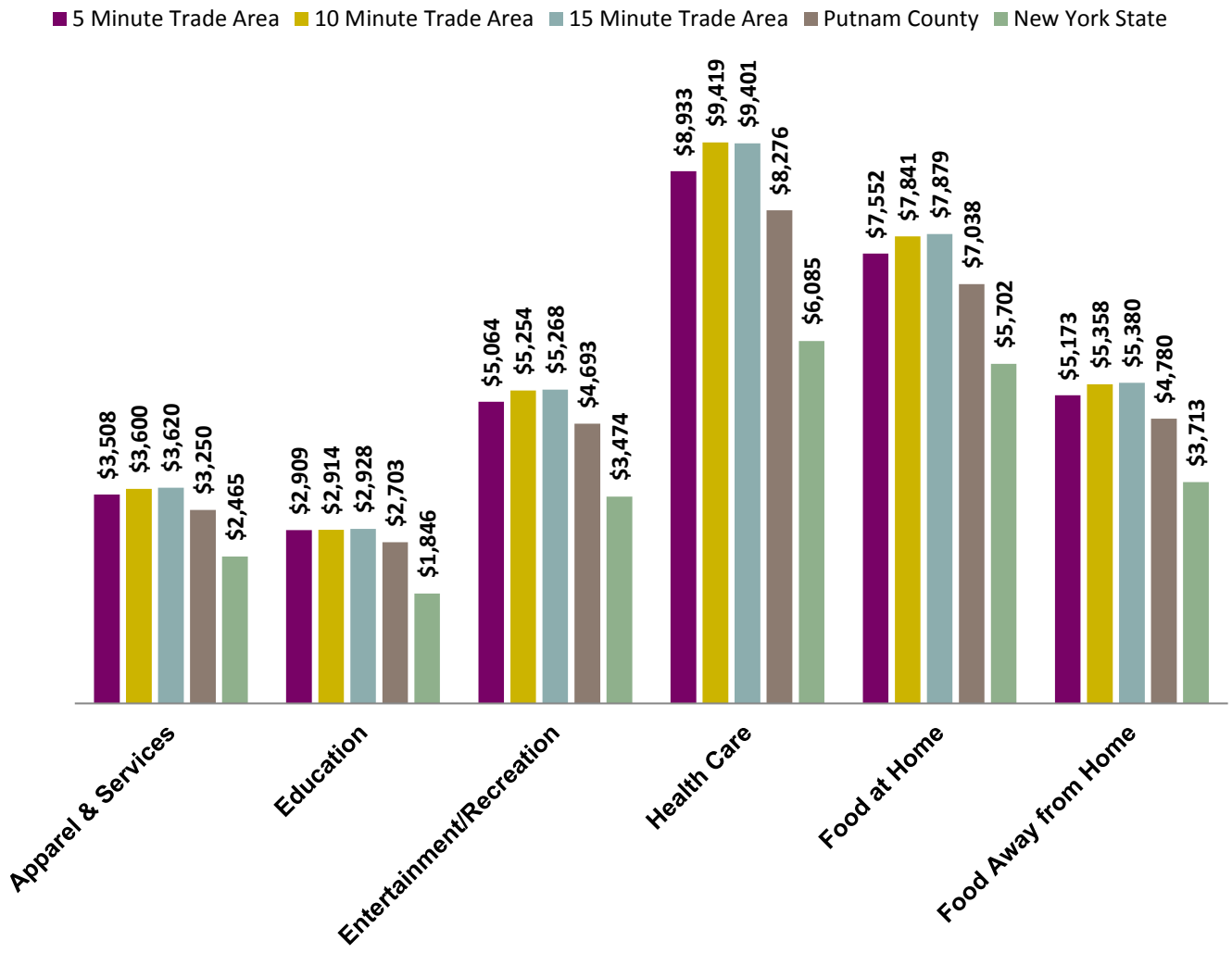
U.S. Route 6 – Hamlet of Mahopac (Town of Carmel)



Household Spending

Table 3-B depicts an estimate of average annual household spending by category for households in the 5, 10, and 15-minute trade areas, Putnam County, and New York State. In all three of the trade areas average household spending was greater than average household spending in Putnam County. Interestingly, the largest difference in spending relative to the County was in the Health Care category. This may be partially explained by the fact that average household income is greater in each of trade areas than in Putnam County as a whole.

Table 3-B – Average Household Spending



Source: ESRI Business analyst, 2017

Tapestry Segmentation

Tapestry Segmentation is a tool developed by ESRI, a Geographic Information Science (GIS) company. Tapestry segmentation organizes households in the United States into groups (segments) that share similar demographics, socioeconomic indicators, and lifestyle choices. Tapestry segmentation provides a macro-level understanding of the type of households present in a given area. Below are descriptions of the top three most common tapestry segments represented by households within the 10-minute trade area.

Top 3-Tapestry Segments in the 10-Minute Trade Area/Percent of Households

Savvy Suburbanites

Savvy Suburbanites residents are well educated, well read, and well capitalized. Families include empty nesters and empty nester wannabes, who still have adult children at home. Located in older neighborhoods outside the urban core, their suburban lifestyle includes home remodeling and gardening plus the active pursuit of sports and exercise. They enjoy good food and wine, plus the amenities of the city's cultural events.

Pleasantville

Prosperous domesticity best describes the settled citizens of Pleasantville. Situated principally in older housing in suburban areas in the Northeast (especially in NY and NJ) and secondarily in the West (especially in CA), these slightly older couples move less than any other market. Many couples have already transitioned to empty nesters; many are still home to adult children. Families own older, single-family homes and maintain their standard of living with dual incomes. These consumers have higher incomes and home values and much higher net worth (Index 400). Older homes require upkeep; home improvement and remodeling projects are a priority—preferably done by contractors. Residents spend their spare time participating in a variety of sports or watching movies. They shop online and in a variety of stores, from upscale to discount, and use the Internet largely for financial purposes.

The Elders

With a median age of 71.8 years, this is Tapestry Segmentation's oldest market. The Elders residents favor communities designed for senior or assisted living, primarily in warmer climates with seasonal populations. Most of these householders are homeowners, although their housing varies from mobile homes to single-family residences to high-rise apartments. These seniors are informed, independent, and involved.

Consumer Survey

A survey of shoppers in the study corridor was conducted in an effort to achieve a better understanding of consumer spending habits and the factors that most impact spending decisions. In-person surveying was conducted by Pattern staff on a Wednesday in July from 12pm to 2pm and from 5pm to 7pm. In-person surveying was also conducted on a Saturday in August from 12pm to 2 pm. With help from the local chambers of commerce, flyers with a link to an online version of the survey were distributed to local businesses throughout the study corridor. Between the in-person surveys and the online version of the survey, a total of 58 surveys were collected from the study corridor. Below are the key findings from this survey.

Why are people coming to the Hamlet of Mahopac?

Most commonly reported reason for being in the Hamlet of Mahopac was passing through on the way somewhere else. 73% of respondents reported driving through the Hamlet on their way somewhere else at least once a week; 46% of respondents reported driving through the Hamlet on their way somewhere else 5 or more times a week. The next most common reason reported for coming to Mahopac was for eating out; 55% of respondents reported that they come to the Hamlet of Mahopac at least once a week to eat out. Work was the least common reason listed for coming to Mahopac; 61% of survey respondents reported never coming to Mahopac for work.

When are people shopping in Hamlet of Mahopac?

On weekdays, survey respondents reported a strong preference for shopping in the Hamlet of Mahopac after 5pm. For each weekday, at least 50% of survey respondents reported that they typically shop in Mahopac after 5pm. There was a slight preference among survey respondents to shop in Mahopac during the weekend instead of a weekday. There was no significant preference for time of day to shop during the weekend.

What type of businesses do consumers want?

In an effort to understand what types of business are missing from the Hamlet of Mahopac, survey respondents were asked to choose up to five types of businesses and amenities that they would most like to see developed in the Hamlet. The most common response was clothing stores. 47% of survey respondents reported that they want more clothing stores in the Hamlet of Mahopac. The second most common answer was a hotel/conference center (42% of survey respondents).The third, fourth, and fifth most common answers were: public waterfront facilities (40%), coffee shop / café (27%), and fine dining (26%).

Local competition

In an effort to identify other commercial areas the Hamlet of Mahopac is competing with, survey respondents were asked how often they shop at other nearby locations other than the Hamlet of Mahopac.

- 52% of respondents reported that they shop in the Hamlet of Mahopac at least once a week.
- 35% of survey respondents reported that they shop in the City of Danbury at least once a week.
- The most commonly reported reason for choosing to shop at another location instead of Mahopac was a better selection of stores at the other location.
- When survey respondents choose to shop in Danbury instead of Mahopac, 73% reported doing so because there is better selection in Danbury.
- Many survey respondents reported frequently shopping in the City of White Plains and other locations in Westchester County.
- The most common reason given for choosing to shop in these Westchester County locations instead of Mahopac was better selection.

How are people getting to the Hamlet of Mahopac?

The vast majority (97%) of survey respondents reported that they use a personal vehicle as the primary method of getting to the Hamlet of Mahopac. However, only 21% of survey respondents agree that there is plenty of convenient parking. Two survey respondents reported that walking was the primary mode of transportation that they used to get to the Hamlet. There were no survey respondents that selected bicycle, cab service, or bus service as their primary mode of transportation to the Hamlet.

Other Comments

At the end of the survey there was an open ended question asking respondents for any other additional comments. Four of the survey respondents wrote about a desire for the Hamlet to have a more “downtown” feel. Related to this, four survey respondents expressed a desire for better pedestrian facilities such as sidewalks and improved crosswalks.

RETAIL GAP ANALYSIS

Leakage / Supply

Table 3-C depicts a leakage/surplus factor for trade areas delineated by a 5, 10 and 15 minute drive from the study corridor. The leakage/surplus factor is a representation of the balance between supply and demand among various industries. In this chart the industries are broken out by North American Industry Classification (NAICS) code. The leakage/surplus factor is measured on a scale from 100 to -100. A value of 100 represents an area where there is household demand but there is no supply so all of the potential retail sales are leaking out of the area. A value of -100 represents an area where there is a surplus of supply but there is no household demand. The closer the value is to zero, the more balance there is between supply and demand.

Table 3-C is color coded on a gradient of green to red with the darkest green representing a value of 100, and the darkest red representing a value of -100. The table reveals that sales in every industry are leaking in the 10-minute trade area and the 15-minute trade area. No single industry has a significantly higher Leakage / Surplus factor value; however, the electronics and appliances Industry shows consistent leakage across every trade area. Within the 5-minute trade area there is a slight surplus in some industries.

Table 3-C – Leakage / Surplus Factor

Industry	5 Minute Trade Area	10 minute Trade Area	15 Minute Trade Area
Motor Vehicle and Parts Dealers (NAICS 441)	34.4	65	16.7
Furniture/Home Furnishing Stores (NAICS 442)	-4.8	26	37.6
Electronics & Appliance Stores (NAICS 443)	38.5	53.8	48.9
Bldg/Garden Equip/Supply Stores (NAICS 444)	26.3	39.1	15.8
Food and Beverage Stores (NAICS 445)	4.4	25.4	22.8
Health and Personal Care Stores (NAICS 446)	-19.7	18.6	9.6
Gasoline Stations (NAICS 447)	13.9	30.9	11.4
Clothing/Accessories Stores (NAICS 448)	-8.6	15.7	40.4
Sports/Hobby/Book/Music Stores (NAICS 451)	-24.6	2.7	1.7
General Merchandise Stores (NAICS 452)	-16.1	23.3	9.6
Miscellaneous Store Retailers (NAICS 453)	-21.4	20.5	23.5
Food Services & Drinking Places (NAICS 722)	1.4	36.5	32.4
Total Retail (including Food/Drink Sales)	**3.5**	**33**	**21**

Source: ESRI Business analyst, 2017

Table 3-D depicts an estimation of industry leakage and surplus expressed in actual dollar amounts for the 10-minute trade area. Dollar values in the leakage column represent the estimated amount of money leaking out of the 10-minute trade area. Dollar values in the surplus column represent additional sales in the 10-minute trade area that are being generated by households outside of the trade area. These values are calculated by taking the difference between total sales in the trade area (estimated from reported business earnings) and potential sales in the trade area (estimated from household spending trends). When actual sales are lower than potential sales, there is a leakage (households are spending outside of the trade area). When actual sales are higher than potential sales, there is a surplus (households from outside of the trade area are spending in the trade area).

ESRI estimates that that the industry with the most leakage is the motor vehicle and parts dealer industry. An estimated $173.9 million in motor vehicle and parts dealer spending from households within the 10-minute trade area is being spent outside of the 10-minute trade area. Overall there is an estimated $606 million in total retail sales leaking from the 10-minute trade area. This means the average household in the 10-minute trade area is spending approximately $29,900 in total retail outside of the 10-minute trade area.

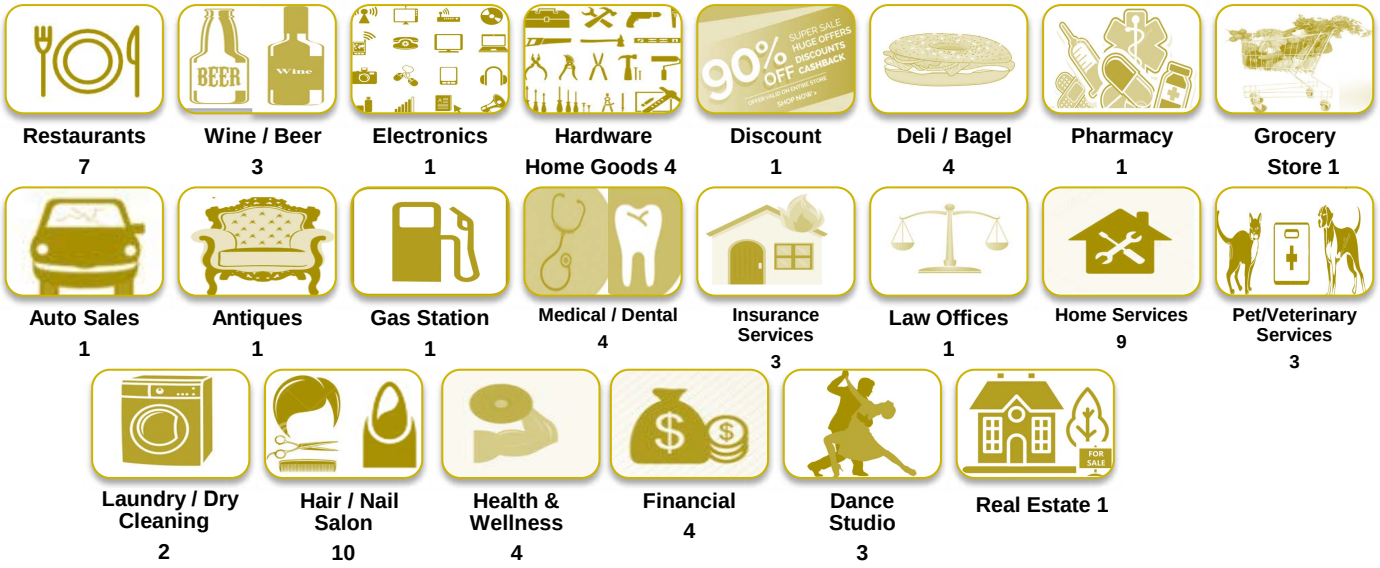
Table 3-D – 10-Minute Trade Area Industry Leakage and Surplus

Industry	Leakage (Millions)	Surplus (Millions)	Leakage/ Surplus Factor
Motor Vehicle and Parts Dealers (NAICS 441)	$ 173.9	--	65
Food and Beverage Stores (NAICS 445)	$ 76.3	--	25.4
Food Services & Drinking Places (NAICS 722)	$ 65.7	--	36.5
Gasoline Stations (NAICS 447)	$ 49.3	--	30.9
General Merchandise Stores (NAICS 452)	$ 49.2	--	23.3
Bldg/Garden Equip/Supply Stores (NAICS 444)	$ 41.4	--	39.1
Nonstore Retailers (NAICS 454)	$ 32.9	--	88
Electronics & Appliance Stores (NAICS 443)	$ 29.8	--	53.8
Health and Personal Care Stores (NAICS 446)	$ 28.7	--	18.6
Clothing/Accessories Stores (NAICS 448)	$ 25.7	--	15.7
Furniture/Home Furnishing Stores (NAICS 442)	$ 17.1	--	26
Miscellaneous Store Retailers (NAICS 453)	$ 14.3	--	20.5
Sports/Hobby/Book/Music Stores (NAICS 451)	$ 1.7	--	2.7
Total Retail (including Food/Drink Sales)	**$ 606.0**	**--**	**33**

Source: ESRI Business analyst, 2017

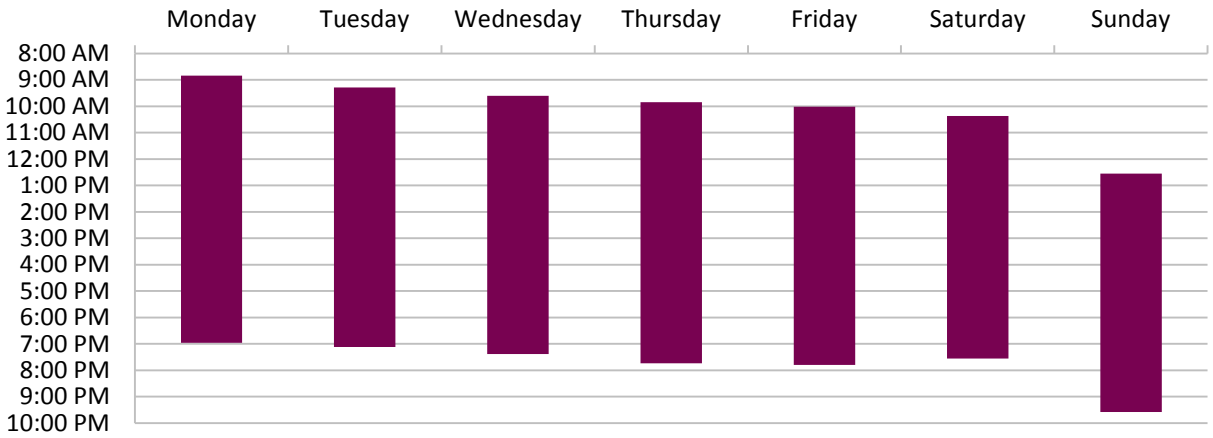
Existing Businesses

Below is a list of the number of existing businesses in the corridor by business type. This list was developed by Pattern staff during field visits to the corridor. Approximately 70% of businesses in this corridor are service-based businesses and approximately 30% of the businesses are retail businesses.



Store Hours

Hours of operation for businesses in the study corridor were collected during a field visit and supplemented with information available online. The chart below depicts average hours of operation for business in the study corridor where information about hours of operation were available. Almost half of businesses are closed on Sundays. Many of the businesses that remain open on Sunday are restaurants. Many of the restaurants provide take out and are open late. This explains why the average closing time on Sundays is significantly later than the other days of the week.



Business Owner Forum

A forum of businesses was convened to solicit input from the local business owner community. The forum was held in the Hamlet of Mahopac with business owners and representatives from the Putnam County Chamber of Commerce and the Mahopac Carmel Chamber of commerce.

The participants at the business forum identified several attributes of the community that positively affect business. Lake Mahopac was identified as an important asset for the Hamlet of Mahopac. Some restaurants in the area attract customers with dining areas that have a view of the lake. The lake is also a popular location for power boats and jet skis. The “downtown” feel of South Lake Boulevard was another asset indentified at the business owner forum. While there is room for improvement, this area is walkable and contains mixed-use development with downstairs businesses and upstairs apartments.

There are also a number of obstacles to business present in the Hamlet of Mahopac that were identified during the business owner forum. One of the issues brought up by business owners was parking around South Lake Boulevard and the nearby section of Route 6. Some of the street parking in this area is difficult to get in and out of safely. Forum participants also reported that there has been discussion in the community about the development of a hotel or other overnight lodging options. Currently there are no hotels in the area, leaving visitors with no place to stay after a night of fun. The development of a hotel is hindered by the limited sewer and water infrastructure in the area.

U.S. Route 6 – Hamlet of Mahopac (Town of Carmel)

Existing Conditions and Data Collection

Corridor Characteristics

U.S. Route 6 in the Hamlet of Mahopac is a two-lane, north-south roadway that carries approximately 16,860 vehicles per day. The roadway is classified by the NYSDOT as a Principal Arterial Other and is owned by NYSDOT. The speed limits range from 35 to 40 miles per hour. On-street parking is provided.

Sidewalks are located between Clark Place and Mt. Hope Road and the Putnam Trailway runs parallel to U.S. Route 6 on its east side.

The corridor is serviced by the Putnam Area Rapid Transit (PART) Line 2 and the Westchester County BeeLine Route 77. The BeeLine Park-n-Ride stop is located on U.S. Route 6 between Kings Row and Mt. Hope Road. A summary of the corridor's transportation characteristics are presented in Table 3-E.

Table 3-E – *Corridor* Characteristic Summary
U.S. Route 6 in the Hamlet of Mahopac

Average Daily Traffic **16,861**[1]	**Number of Lanes** 2	**Speed Limit (MPH)** 35-40
On-Street Parking (Y/N) Y	**Pedestrian Facilities (Y/N)** Y	**Bike Facilities (Y/N)** Y – Putnam Trailway
	Access to Waterways (Y/N) Y-Lake Mahopac Marina	**Transit Facilities (Y/N)** Y- PART Bus Line 2 B-Line Route 77

Notes:
1. Automatic Tube Recorder collected May 2017

Parking Utilization

Parking utilization counts were collected during typical weekdays (Tuesday, Wednesday, or Thursday) and weekend days in June 2017 and July 2017 at three locations on the study corridor:

- U.S. Route 6 between Clark Place and East Lake Boulevard
- South Lake Boulevard from Cherry Lane to U.S. Route 6
- Putnam Trailway parking lot between Kings Row and Mt. Hope Road

While there was sufficient capacity/underutilization of the parking spaces on U.S. Route 6 between Clark Place and East Lake Boulevard as well as at the Putnam Trailway parking lot, the parking on South Lake Boulevard next to the retail operated at or close to capacity (assumed at 85 percent [2]). While not striped, vehicles have defaulted to angle parking along this segment. Table 3-F presents the parking utilization by peak period and time of day.

Table 3-F – Parking Utilization - *Hamlet of Mahopac*

Time	U.S. Route 6 between Clark Pl. and E. Lake Blvd		S. Lake Blvd from Cherry Ln to U.S. Route 6		Trailway Parking Lot On Rt. 6 between Kings Row and Mt Hope Rd	
	Capacity	Parking Utilization	Capacity	Parking Utilization	Capacity	Parking Utilization
Weekday – Midday Peak Period						
12:00 PM	80	28%	40	63%	11	18%
12:30 PM		25%		73%		9%
1:00 PM		26%		65%		0%
1:30 PM		29%		60%		0%
Weekday – PM Peak Period						
4:00 PM	80	20%	40	60%	11	0%
4:30 PM		25%		75%		0%
5:00 PM		20%		70%		0%
5:30 PM		24%		70%		0%
Weekend – Midday Peak Period						
11:00 AM	80	28%	40	85%	11	0%
11:30 AM		25%		78%		0%
12:00 PM		28%		78%		0%
12:30 PM		39%		63%		0%
1:00 PM		31%		80%		9%
1:30 PM		31%		80%		9%
2:00 PM		24%		75%		9%
2:30 PM		24%		83%		18%

Notes: 1. Highlighted cells considered at capacity (parking at or above 85 percent)
2. Data collected on a two weekdays (6/1/2017 and 7/21/2017) and two weekend days (6/3/2017 and 7/23/2017)

[2] Litman, Todd. Parking Management Best Practices. APA, 2006.

Crash Data

Crash data over a three year period (March 1, 2014 through February 28, 2017) was obtained from NYSDOT. Table 3-G provides a summary on the number and type of crashes on U.S. Route 6 between Tomahawk Street and Baldwin Lane. While there were no clear crash trends, of the 396 crashes 142 were rear end crashes.

Table 3-G – Crash Summary - *U.S. Route 6 between Tomahawk Street and Baldwin Lane*

	2014	2015	2016	2017	Total	*ACC/MVM*[1]
Fatalities	0	1	0	0	**1**	
Injured	48	66	58	14	**186**	
# of Crashes	109	127	138	22	**396**	**5.2**
Over-Taking	5	7	11	0	**23**	
Rear End	33	46	56	7	**142**	
Right Angle	16	21	17	6	**60**	
Left Turn (with other car)	1	3	2	0	**6**	
Left Turn (against other car)	6	11	13	2	**32**	
Right Turn (with other car)	0	0	2	0	**2**	
Right Turn (against other car)	2	3	1	0	**6**	
Side Swipe	1	2	0	1	**4**	
Ped/Bike	3	2	1	0	**6**	
Head On	1	0	2	1	**4**	
Fixed Object	4	6	3	0	**13**	
Animal	4	1	2	0	**7**	
Other	14	14	14	3	**45**	
Unknown	19	11	14	2	**46**	

Notes: Crash Data for March 1, 2014 through February 28, 2017.
1. Accidents per millions vehicle miles traveled = (accidents * 1,000,000)/(365*number of years*AADT*length of corridor)

Source: New York State Department of Transportation (NYSDOT)

NYSDOT provides average accident rates for state highways for different facilities. The 2015/2016 average accident rate for a two-lane, undivided highway is 3.5 accidents/million vehicle miles (ACC/MVM). The study corridor's 5.2 ACC/MVM exceeds the State's average of similar facilities.

Identification of Future Needs

Based on the existing conditions data collection, field visits, and discussions with the County, the following future transportation needs to enhance the corridor were identified:

- Address parking capacity constraints along South Lake Boulevard.
- Minimize long pedestrian crossing distances at intersections.
- Improve connections across U.S. Route 6 between the lake front and the Putnam Trailway which are limited.
- Develop improvements at the intersection of U.S. Route 6 and South Lake Boulevard to address this congestion point. In addition, address limited pedestrian accommodations at this intersection that are caused by high turning speeds and long crosswalks.
- Enhance the Putnam Trailway crossings at Bucks Hollow Road and Mt. Hope Road due to the poor visibility between drivers and pedestrians/bicyclists.
- Address the Kings Row connection to U.S. Route 6 which results in additional congestion along the corridor, especially given the proximity to the signalized intersection at Mt. Hope Road.
- Address rear end collisions in the corridor.

In addition, the proposed Union Place development, located west of U.S. Route 6 between Baldwin Place and Boomer Road, would generate approximately 1,000 to 2,000 vehicle trips. A traffic study was conducted in 2010 and identified recommendations to improve traffic conditions at the U.S. Route 6/Union Valley and U.S. Route 6 /NYS 118 intersections within the study corridor. The recommendations at Union Place included widening the northbound, southbound, and westbound approaches to provide additional turn lanes. Based on recent field observations, the Union Place intersection has been improved to incorporate these recommendations. The improvements identified at NYS 118 involved a roadway realignment to improve the east-west alignment and widening of U.S. Route 6 to provide additional turn lanes. If the Union Place project were to move forward, the roadway realignment and widening would need to be constructed.

The Town is also currently undertaking a parking study to identify additional areas where parking could be provided, including Swan Cove. Once the parking study is complete, findings should be reviewed and added to the recommendations provided later in this report.

U.S. Route 6 – Hamlet of Mahopac (Town of Carmel)

Description of Corridor

The Route 6 Mahopac Corridor is located along U.S. Route 6 between Baldwin Lane to the north and East Baldwin Place Road to the south. The corridor also extends along South Lake Boulevard south of Lake Mahopac from its intersection with U.S. Route 6 to the east and Clark Place to the west (see Mahopac Corridor Figure). The Hamlet of Mahopac is part of the Town of Carmel and is located within the New York City Watershed. Therefore, any modifications to the water and/or sewer infrastructure would be under the jurisdiction of the New York City Department of Environmental Protection (NYCDEP) and would require coordination with the agency.

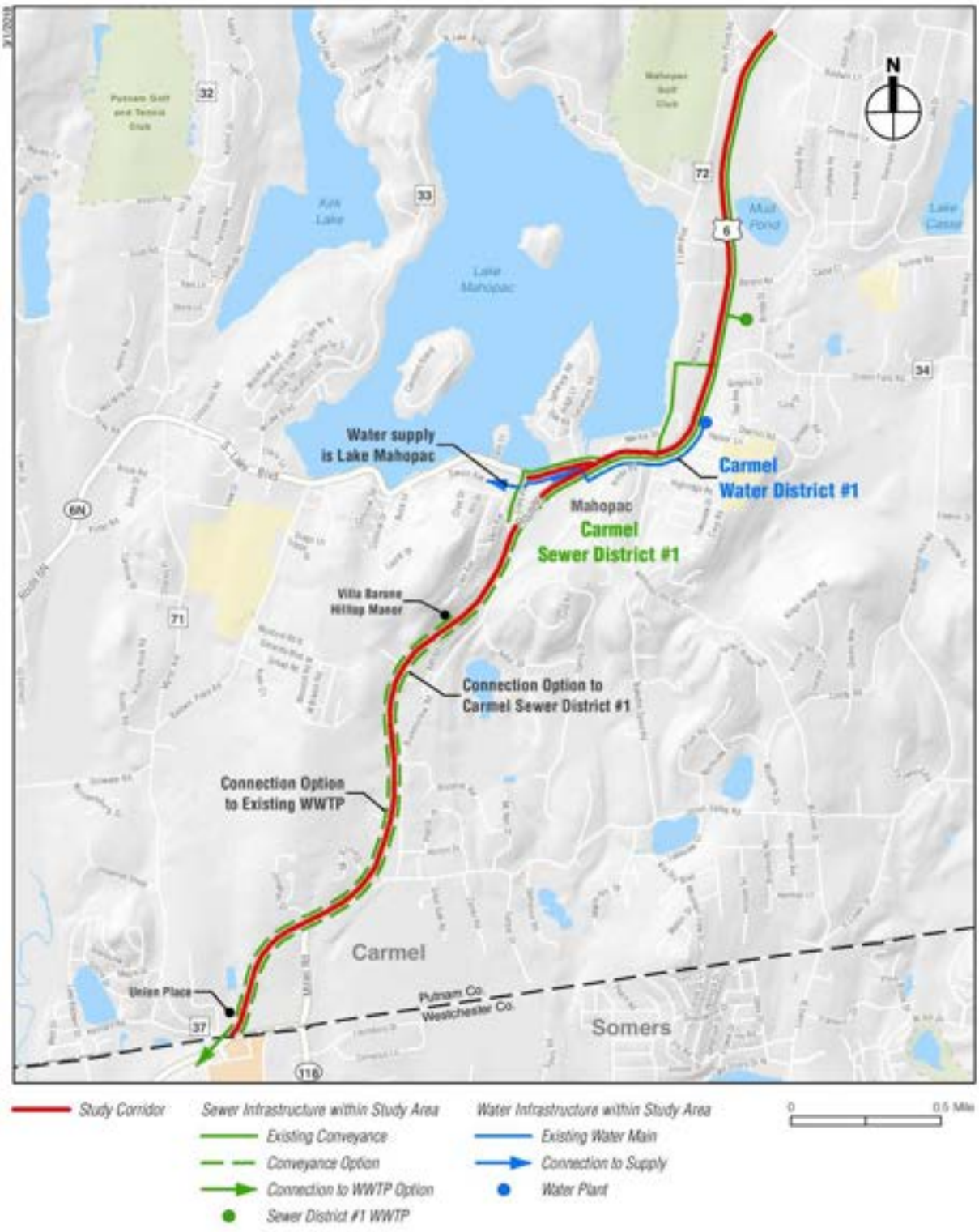
Existing Infrastructure Conditions

Sewer

The northern part of the Mahopac Corridor (between Baldwin Lane to the north and Bucks Hollow Road to the south) is located within Carmel Sewer District No. 1. The Carmel Sewer District No. 1 Waste Water Treatment Plant is located at the intersection of U.S. Route 6 and Croton Falls Road (see Mahopac Corridor Figure) and is owned and operated by NYCDEP. The remainder of the corridor is not served by a Wastewater Conveyance System (WWCS). All development on the corridor located beyond the sewer district boundary use private septic systems to treat wastewater. Some of these septic systems are dated and may be nearing or beyond their useful life.

Water

A portion of the U.S. Route 6 Mahopac Corridor is serviced by the Carmel Water District No. 1, which uses Lake Mahopac as its water source. The district serves the downtown center of the Hamlet between the intersection of the Putnam Trailway and Heather Drive to the north, and the intersection of U.S. Route 6 and Cherry Lane to the south. The water district continues east on South Lake Boulevard towards Clark Place (see Mahopac Corridor Figure). The remainder of the corridor is located outside of the water district and relies on private wells for its water supply.



Mahopac Corridor
Sewer and Water Infrastructure

PUTNAM COUNTY CORRIDOR STUDY

Economic Development Potential, Benefits, and Needs

All development in this corridor outside of the Carmel Water and Sewer Districts are dependent upon the project sponsor's ability to site both septic and wells on their parcels. For some projects, this results in the loss of what can be considered a significant portion of the developable land making it less economically feasible to advance these projects. There are approved and contemplated projects in this corridor that are currently on hold, in part, because of the lack of sewer services. Existing development in the corridor continues to age increasing the likelihood of septic system failure. This is a significant concern for the Town due to the corridors close proximity to Lake Mahopac which is a drinking water supply for a portion of the Town.

Freeing the development of under-developed and undeveloped parcels in the corridor with the introduction of new sewer infrastructure, can be expected to drive economic growth and vitality in the area. An increase in the development potential and elimination of restrictions to growth would be expected to bolster the economic competitiveness of the area, drive an increase in property values, create new job opportunities, both in construction and operation, and generate additional tax revenues. Extending the more developed Town of Somers end of the U.S. Route 6 Corridor into Carmel, fortifies the viability of the existing and proposed development and would be expected to invite new and larger development options to the Putnam County side of the corridor and beyond.

Sewer

Development potential within the U.S. Route 6 Mahopac Corridor is currently limited by the lack of infrastructure within its southern end particularly the lack of a municipal sewer service. Without a municipal WWCS and WWTP with existing or expandable capacity, owners of vacant parcels and those who wish to expand their existing businesses/facilities are restricted by the capacity of their current or proposed on-site septic systems.

A number of existing developments and proposed projects could benefit from sewer infrastructure improvements along the corridor including:

Villa Barone – a restaurant and events space located on U.S. Route 6 at the intersection of U.S. Route 6 and Battista Drive. Villa Barone currently hosts a wide variety of events but does not have hotel accommodations which would allow guests to stay the night. Overnight guests must seek accommodations outside of Putnam County. This is an economic loss to Villa Barone, the Hamlet, Town and County. Villa Barone is currently considering adding a 70-room hotel with lounge, restaurant, and meeting rooms to its facility, but the lack of sewer infrastructure in the area prevents further development at the site due to space and topographic constraints that preclude the installation of a septic system to process its wastewater.

Union Place – a mixed use development proposed on U.S. Route 6 at the southern end of the study corridor (see Mahopac Corridor Figure). Union Place initially contemplated an onsite Wastewater Treatment Plant to accommodate wastewater flows generated at the project site. However, securing approvals for such a facility is not guaranteed.

Water

The portions of the corridor not served by the Carmel Water District No.1 are served by individual, on-site wells. In this part of Mahopac an expansion of the water district would not be warranted at this time as the water supply is not currently seen as a limiting factor to future economic development. It should be noted that as part of the Union Place project, a new water district would be created with 12 new on-site wells. The Draft Environmental Impact Statement for the Union Place project noted that these wells could potentially be available as a future water source for the Town.

Options for Infrastructure Improvements

The U.S. Route 6 Mahopac Corridor is currently occupied by commercial buildings from Croton Falls Road to Kennard Road, with potential for additional development on the western side of U.S. Route 6 between Union Vale Road to the south and Clark Place to the north. Since the entire corridor is located within the NYC Watershed any infrastructure upgrades in the area would require approval from NYCDEP.

Sewer

As described above, the northern section of the corridor is served by Carmel Sewer District No. 1. The southern part of the corridor from Mary Avenue to the intersection with East Baldwin Place Road is not served by a public sewer system. A study was conducted to determine an order of magnitude estimated average daily wastewater flow within the corridor. A rough estimate of 250,000 gallons per day of wastewater flow was expected to be generated.[3] Options for providing sewer to the area include expanding Carmel Sewer District No. 1 south or connecting the southern portion of the corridor to an existing WWTP located to the south.

Expansion of the Carmel Sewer District No. 1

The Carmel Sewer District No. 1 WWTP may have sufficient capacity to accommodate flows from the southern end district to the Town and County line. Further studies would need to be undertaken to assess the flows, determine the capacity of the existing WWTP, and determine if the plant would need to be expanded. In addition, the feasibility of a WWCS expansion in this area would also need to be evaluated as part of any study.

Connection to a WWTP outside of the Town of Carmel

The feasibility of connecting to a WWCS and WWTP in an adjacent municipality could be investigated. This would require an inter-municipal agreement along with an engineering feasibility study to determine options for conveyance and treatment.

Water

As noted previously, water is not considered a limiting factor for development in this corridor. If the need to provide municipal water to existing and future developments is determined to be a benefit in the future, expansion of the Carmel Water District No. 1 could be considered. An engineering study would be used to establish the feasibility and requirements of expanding the existing water district.

[3] 2016 Consolidated Funding Application made for the Mahopac Sewer System

TRANSPORTATION RECOMMENDATIONS

Proposed transportation enhancements are described below. Additional Transportation enhancements are presented in Figure 2. Should the State, County or local municipality, depending on jurisdiction, decide to pursue any of the below recommendations, they would be required to follow additional steps including coordination and obtaining required permits. For example, the project sponsor will be required to coordinate with the New York State Department of Transportation (NYSDOT) for any work to be performed in the NYSDOT Right-of-Way (ROW) to obtain the required permits from NYSDOT as part of the Highway Work Process (HWP). In addition, the County will coordinate as necessary with any other local or county transportation agency or departments.

Short-Term Transportation Recommendations (1 to 3 Years)

- Coordinate with NYSDOT to re-stripe parking on South Lake Boulevard to formalize and maximize the angle parking or convert to parallel parking.
- Explore shared-parking opportunities with the shopping center on South Lake Boulevard.
- Add wayfinding between the lake front and the Putnam Trailway.

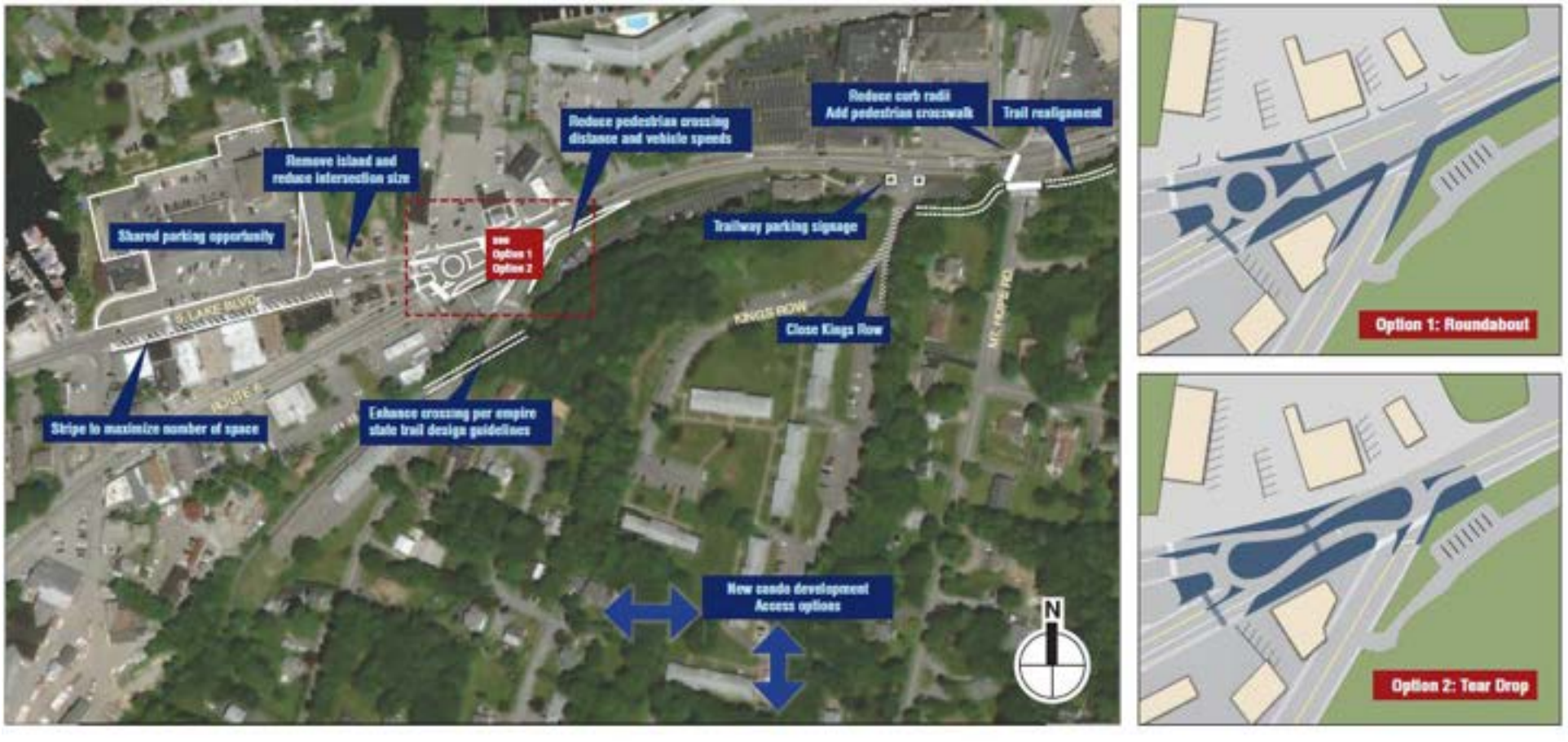
Medium-Term Transportation Recommendations (3 to 5 Years)

- Add Putnam Trailway parking signage on U.S. Route 6 in accordance with the Empire State Trail Design Guidelines.
- Re-align the Putnam Trailway crossing at Mt. Hope Road to be closer to the U.S. Route 6 intersection thus improving vehicle and pedestrian/bicycle visibility.
- Enhance the Putnam Trailway crossing on Buck Hollow Road per treatments presented in the Empire State Trail Design Guidelines.
- Remove the raised circle and construct pedestrian bulb-outs to reduce pedestrian crossings distances on Sycamore Road to enhance the connection between the retail on South Lake Boulevard and the Mahopac Chamber Park.
- Add crosswalks and reduce curb radii at the U.S. Route 6 / Mt. Hope Road intersection.
- Add parking meters along the corridor to ensure parking turn over in the busiest parts of the corridor. Refer to the Economic Analysis of Parking Regulations in Appendix 2 for detailed information on the benefits and costs of implementing and installing parking meters.

Long-Term Transportation Recommendations (5 or More Years)

- Construct roundabout at the U.S. Route 6 / South Lake Boulevard intersection. Two conceptual options were developed to slow vehicles, reduce crossing distances, and provide additional pedestrian crossing opportunities between the Putnam Trialway and the lake front.
- Close Kings Row access at U.S. Route 6. This would require constructing a new access point to the condominium development at Mt. Hope Road (to the east), Lakeview Trail (to the west), and/or Olympus Drive (to the south).

Figure 2 - Route 6 Conceptual Improvements - *Hamlet of Mahopac*



COMMUNITY AND ECONOMIC DEVELOPMENT RECOMMENDATIONS

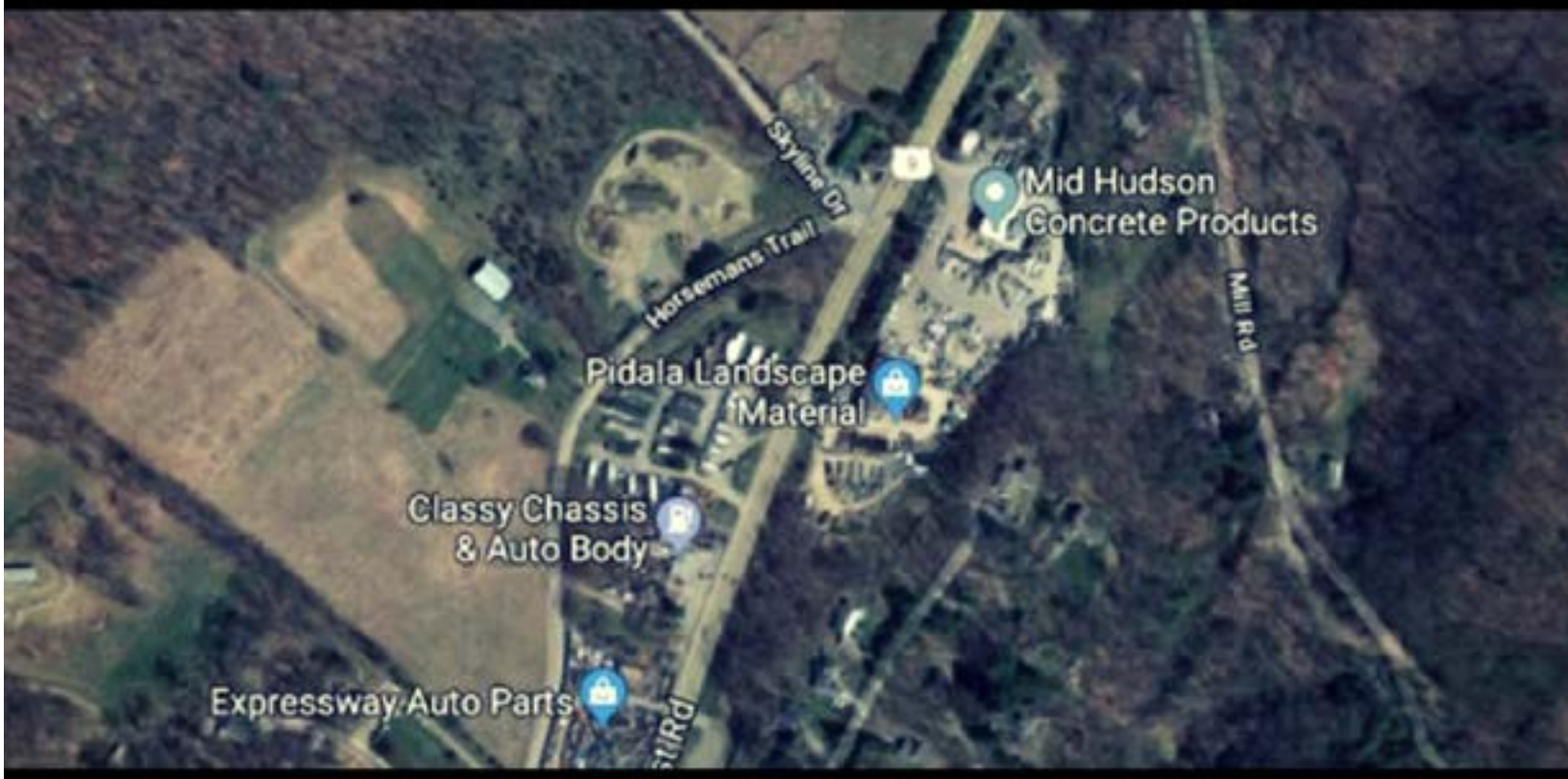
Proposed community and economic development enhancements are described below. Many of the recommendations would require coordination with local elected officials and the business community.

- Secure NYS Main Street funding for façade and streetscape improvements along the heart of the corridor.
- Seek out and encourage cafes/coffee shops to move into commercial space on Route 6 near South Lake Boulevard. These types of business cater to both commuters and pedestrians. 73% of survey respondents reported driving through Mahopac on their way to somewhere else at least once a week.
- Seek out and encourage clothing store retailers to move into commercial space on South Lake Boulevard and Route 6. Clothing stores were the most requested type of business indentified by the consumer survey. The leakage/surplus analysis also indicates that there is unmet demand for clothing stores in the 10, and 15-minute trade areas.
- Consider amending the zoning code to allow for new mixed-use development with downstairs commercial space and upstairs residential. Currently, the Commercial District permits only existing mixed use development. This zoning change could be accomplished through the use of an overlay district so as not to permit new mixed use development in all areas in the Town of Carmel zoned Commercial.

CORRIDOR 4

U.S ROUTE 9

TOWN OF PHILIPSTOWN




Joann Pl
Old Postal Rd
Fishkill Rd
Hiram Rd
Park Blvd
Hy
E Mountain Rd S
N
Foreman Rd
Roessel Rd
Route 9
Fralichel Rd
Oak Ridge Dr
Clove Brook Dr
Town of Philipstown
Short St
Corey Ln
Forchia Rd
Jaycox Rd
Deer Run Rd
Cross Creek Rd
Legend
Roads
Study Corridor
Property Boundaries
0
0.25
0.5
Miles

CORRIDOR OVERVIEW

Corridor Description

This corridor is located on Route 9 (Albany Post Road) in the Town of Philipstown. The northern boundary of the corridor is the intersection of Route 9 and Route 10 (Fishkill Road). The corridor continues south on Route 9 until reaching the southern boundary at the intersection of Route 9 and Briars Road.

Demographic Snapshot

The charts below depict demographic information about households and the population within a 5-minute drive (5-minute trade area) to the study corridor. Since 2000, population of the 5-minute trade area has grown slowly. From 2000 to 2017 the population increased by 7% from 1,410 in 2000 to 1,515 in 2017. This population growth represents an average increase of about 6 people per year, essentially no growth.

According to ESRI business analyst, the median household income in the 5-minute trade area ($103,452) is higher than the median household income of Putnam County ($101,430). The poverty rate in the 5-minute trade area is lower than the County rate. In the 5-minute trade area, just 3% of households are below the poverty line. In comparison, 5% of households in Putnam County as a whole are below the poverty line, and 15% of households in New York State are below the poverty line.

POPULATION
1,515

MEDIAN AGE
46

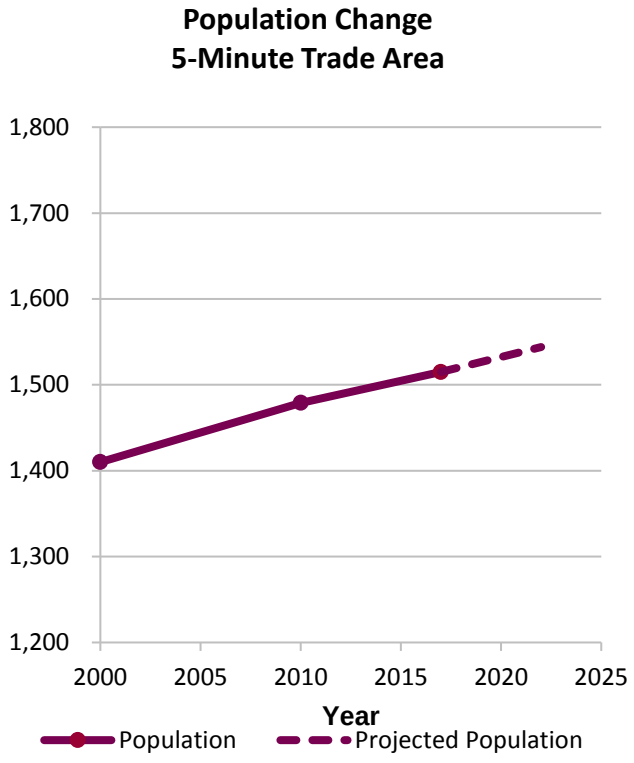
NUMBER OF HOUSEHOLDS
588

AVERAGE HOUSEHOLD INCOME
$137,106

MEDIAN HOUSEHOLD INCOME
$103,452

MEDIAN DISPOSABLE INCOME
$72,846

HOUSEHOLDS IN POVERTY
3%

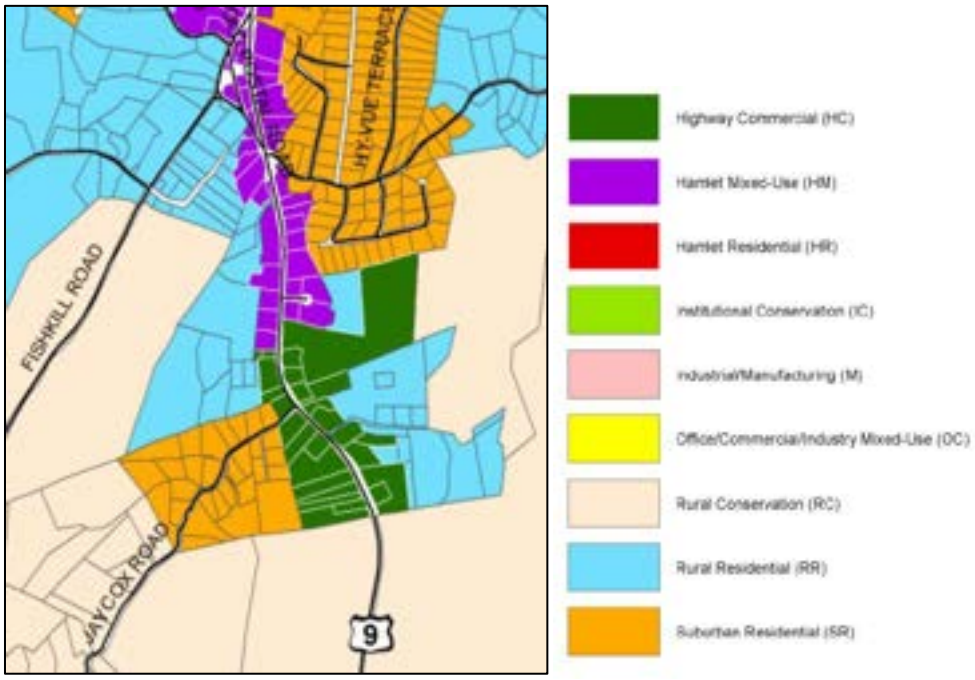


Source: ESRI Business Analyst 2017

ZONING

Most of the study corridor falls within the Hamlet Mixed Use District (HM). This district permits several types of residential development, retail, and offices. The southern end of the corridor is in the Highway Commercial District (HC). This district permits single-family residential dwellings as well as residential apartments on the upper floor of mixed use buildings. The HC District also permits retail and office development. The maximum building footprint in the HC District (40,000 sq ft) is larger than the maximum building footprint in the HM District (10,000 sq ft).

Town of Philipstown Zoning Map



Hamlet Mixed-Use (HM)

Prinicpal Permitted Uses	Special Permit Uses
•Single- Family dwellings •Two-family dwellings •Multi-family dwellings •Upper apartments in a mixed-use building •Agriculture •Bed and breakfasts •Craft workshops •Lodging facilities •Offices •Restaurants •Retail businesses •Service businesses •Healthcare facilities •Municipal facilites •Places of worship	•Accessory apartments •Home occupation •Light industry •Public utility facilities •Indoor recreational facilities •Residential care facilities •Veterinary hospitals •Insitutional uses •Membership clubs

Highway Commercial (HC)

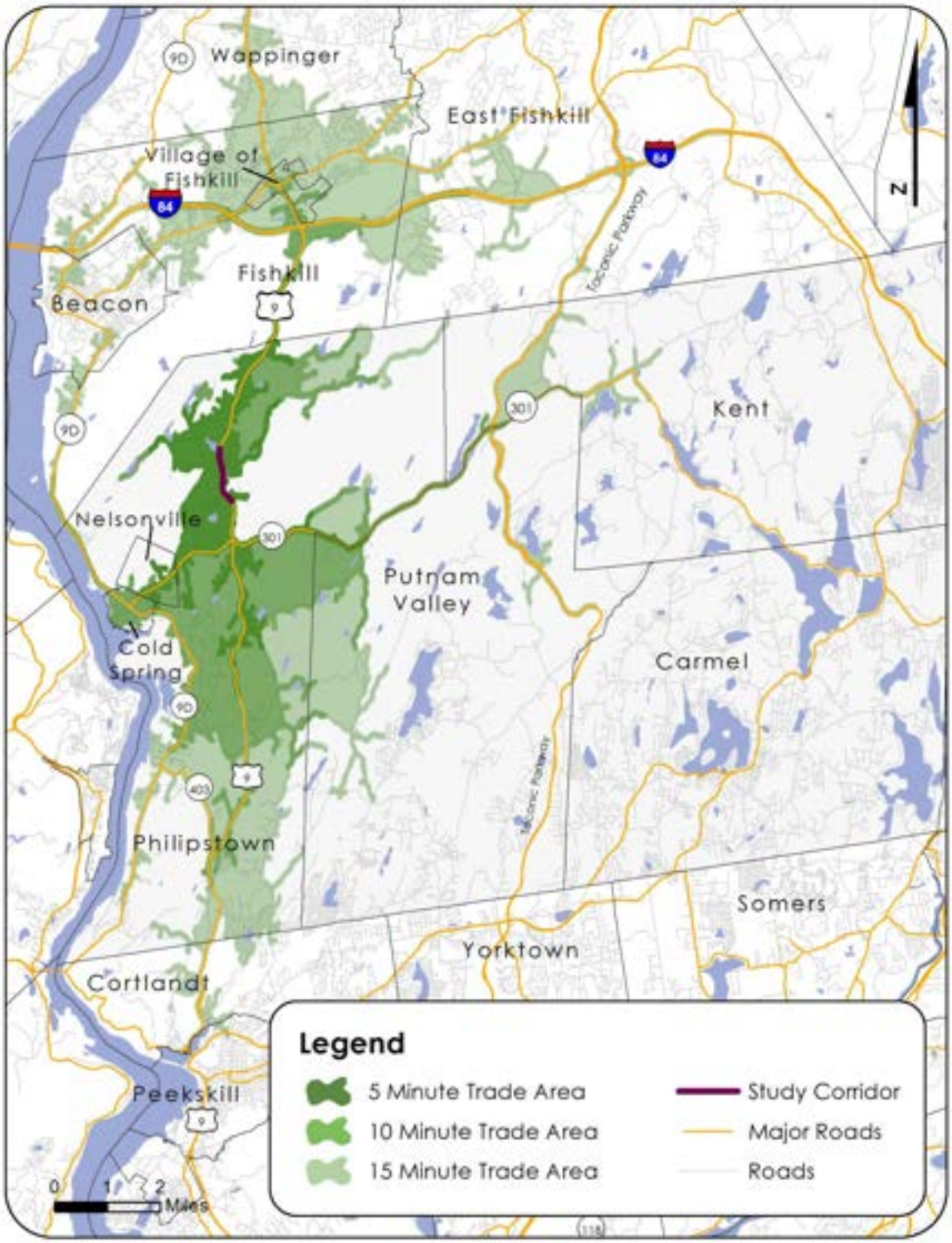
Prinicpal Permitted Uses	Special Permit Uses
•Single-family dwellings •Upper apartments in a mixed-use building •Agriculture •Bed and breakfasts •Craft workshops •Lodging facilities •Offices •Indoor recreational facilities •Restaurants •Retail businesses •Service businesses •Veterinary hospitals •Warehouse/wholesale •Places of worship •Healthcare facilities •Membership clubs •Municipal facilities	•Two-family dwellings •Multi-family dwellings •Accessory apartments •Home occupation •Kennels •Light industry •Public utility faciliites •Outdoor recreational facilities

Table 4-A – Bulk Requirements

	Hamlet Mixed Use (HM)	Highway Commercial (HC)
Minimum Lot size	Depends on availability of sewer service	40,000 sq ft
Maximum Floor to Area Ratio (FAR)	None	None
Maximum Building Footprint	10,000 sq ft	40,000 sq ft
Minimum Front Setback for Principal Building	30 ft	35 ft
Minimum Side Setback for Principal Building	10 ft	15 ft
Minimum Rear Setback for Principal Building	15 ft	35 ft
Maximum Building Height	40 ft	40 ft

TRADE AREAS

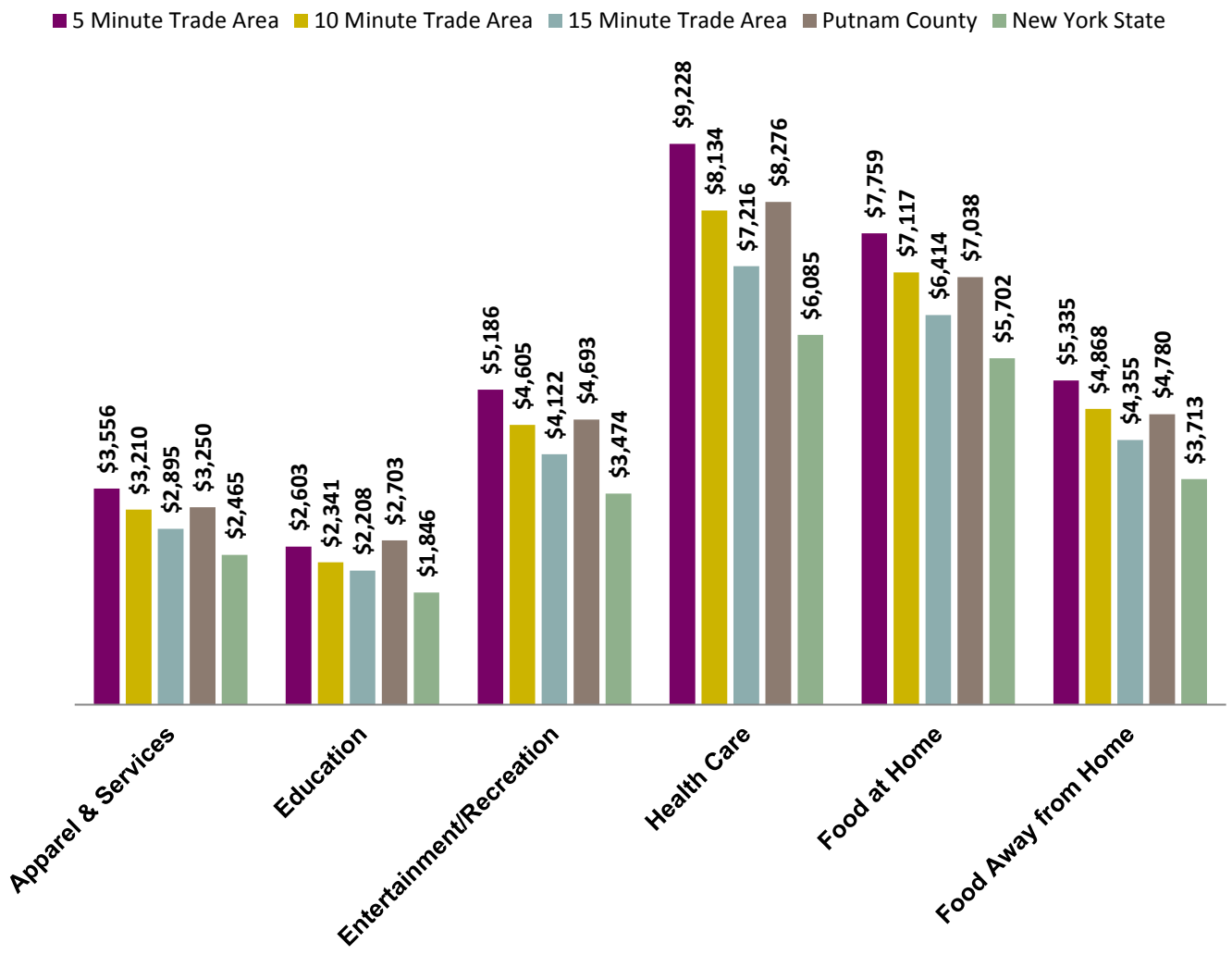
U.S. Route 9 – Town of Philipstown



Household Spending

Table 4-B depicts an estimate of average annual household spending by category for households in the 5, 10, and 15-minute trade areas, Putnam County, and New York State. Average annual household spending is highest in the 5-minute trade area. Household spending decreases as the trade area is expanded.

Table 4-B – Average Household Spending



Source: ESRI Business Analyst 2017

Tapestry Segmentation

Tapestry Segmentation is a tool developed by ESRI, a Geographic Information Science (GIS) company. Tapestry segmentation organizes households in the United States into groups (segments) that share similar demographics, socioeconomic indicators, and lifestyle choices. Tapestry segmentation provides a macro-level understanding of the type of households present in a given area. Below are descriptions of the top three most common tapestry segments represented by households within the 10-minute trade area.

Top 3-Tapestry Segments in the10-Minute Trade Area/Percent of Households

Golden Years

Independent, active seniors nearing the end of their careers or already in retirement best describes Golden Years residents. This market is primarily singles living alone or empty nesters. Those still active in the labor force are employed in professional occupations; however, these consumers are actively pursuing a variety of leisure interests—travel, sports, dining out, museums, and concerts. They are involved, focused on physical fitness, and enjoying their lives. This market is smaller, but growing, and financially secure.

ExuExurbanites

Exurbanites residents are now approaching retirement but showing few signs of slowing down. They are active in their communities, generous in their donations, and seasoned travelers. They take advantage of their proximity to large metropolitan centers to support the arts, but prefer a more expansive home style in less crowded neighborhoods. They have cultivated a lifestyle that is both affluent and urbane.

Enterprising Professionals

Enterprising Professionals residents are well educated and climbing the ladder in STEM (science, technology, engineering, and mathematics) occupations. They change jobs often and therefore choose to live in condos, town homes, or apartments; many still rent their homes. The market is fast-growing, located in lower density neighborhoods of large metro areas. Enterprising Professionals residents are diverse, with Asians making up over one-fifth of the population. This young market makes over one and a half times more income than the US median, supplementing their income with high-risk investments. At home, they enjoy the Internet and TV on high-speed connections with premier channels and services.

RETAIL GAP ANALYSIS

Leakage / Surplus

Table 4-C depicts a leakage/surplus factor for trade areas delineated by a 5, 10 and 15 minute drive from the study corridor. The leakage/surplus factor is a representation of the balance between supply and demand among various industries. In this chart the industries are broken out by North American Industry Classification (NAICS) code. The leakage/surplus factor is measured on a scale from 100 to -100. A value of 100 represents an area where there is household demand but there is no supply so all of the potential retail sales are leaking out of the area. A value of -100 represents an area where there is supply but there is no local household demand. The closer the value is to zero, the more balance there is between local supply and demand.

Table 4-C is color coded on a gradient of green to red with the darkest green representing a value of 100, and the darkest red representing a value of -100. The table shows that in the 5-minute trade area there is essentially complete leakage in the industry categories of Furniture/Home Furnishing Stores, Electronics & Appliance Stores, Health and Personal Care Stores, General Merchandise Stores. In the 10-minunte trade area the leakage/surplus factor for these industry categories are smaller, but still indicate a significant amount of leakage out of the area.

Table 4-C – Leakage / Supply Factor

Industry	5 Minute Trade Area	10 Minute Trade Area	15 Minute Trade Area
Motor Vehicle and Parts Dealers (NAICS 441)	46.8	54	31.1
Furniture/Home Furnishing Stores (NAICS 442)	28	17.7	33.7
Electronics & Appliance Stores (NAICS 443)	65.7	68.8	47.7
Bldg/Garden Equip/Supply Stores (NAICS 444)	24.7	-3.8	2.6
Food and Beverage Stores (NAICS 445)	-2.7	0.5	-0.5
Health and Personal Care Stores (NAICS 446)	14.7	-5.8	12.3
Gasoline Stations (NAICS 447)	-35.8	-11.1	-6.7
Clothing/Accessories Stores (NAICS 448)	80.6	82.7	73.2
Sports/Hobby/Book/Music Stores (NAICS 451)	35.3	4.4	10.5
General Merchandise Stores (NAICS 452)	95.1	19.7	42
Miscellaneous Store Retailers (NAICS 453)	1	4.5	9.6
Food Services & Drinking Places (NAICS 722)	39.3	25.8	30
Total Retail (including Food/Drink Sales)	**22.4**	**17.5**	**20.1**

Source: ESRI Business Analyst 2017

Table 4-D depicts an estimation of industry leakage and surplus expressed in actual dollar amounts for the 10-minute trade area. Dollar values in the leakage column represent the estimated amount of money leaking out of the 10-minute trade area. Dollar values in the surplus column represent additional sales in the 10-minute trade area that are being generated by households outside of the trade area. These values are calculated by taking the difference between total sales in the trade area (estimated from reported business earnings) and potential sales in the trade area (estimated from household spending trends). When actual sales are lower than potential sales, there is a leakage (households are spending outside of the trade area). When actual sales are higher than potential sales, there is a surplus (households from outside of the trade area are spending in the trade area).

ESRI estimates that the industry category with the most leakage is Motor Vehicle and Parts Dealers. An estimated $22 million in Motor Vehicle and Parts Dealer spending from households within the 10-minute trade area is being spent outside of the 10-minute trade area. Overall there is an estimated $6.5 million in total retail sales leaking from the 10-minute trade area. This means the average household in the 10-minute trade area is spending approximately $2,249 in total retail outside of the 10-minute trade area.

Table 4-D – 10-Minute Trade Area Industry Leakage and Surplus

Industry	Leakage (Millions)	Surplus (Millions)	Leakage Surplus Factor
Motor Vehicle and Parts Dealers (NAICS 441)	$ 22.4		65.3
Gasoline Stations (NAICS 447)	$ 10.1		57.9
General Merchandise Stores (NAICS 452)	$ 9.5		38.6
Clothing/Accessories Stores (NAICS 448)	$ 8.0		48.7
Electronics & Appliance Stores (NAICS 443)	$ 4.5		68.9
Furniture/Home Furnishing Stores (NAICS 442)	$ 3.9		57.9
Sports/Hobby/Book/Music Stores (NAICS 451)	$ 3.3		63.8
Health and Personal Care Stores (NAICS 446)		$ 1.3	-5
Miscellaneous Store Retailers (NAICS 453)		$ 2.5	-18.5
Bldg/Garden Equip/Supply Stores (NAICS 444)		$ 3.9	-18.1
Nonstore Retailers (NAICS 454)		$ 8.4	-48.9
Food Services & Drinking Places (NAICS 722)		$ 14.7	-31.5
Food and Beverage Stores (NAICS 445)		$ 24.4	-32.9
Total Retail (including Food/Drink Sales)	**$ 6.5**		**2.1**

Source: ESRI Business Analyst 2017

Existing Businesses

Below is a list of the number of existing businesses in the corridor by business type. This list was developed by Pattern staff during field visits to the corridor. Approximately two thirds of businesses in this corridor are service-based businesses; the remaining one third of businesses are retail businesses.

Restaurants
2

Wine / Beer
1

Hardware / Home Goods
1

Deli / Bagel
1

Auto Sales
1

Gas Station
1

Auto Services
1

Insurance
1

Home Services
2

Laundry / Dry Cleaning
2

Hair / Nail Salon
3

Health & Wellness
2

Dance Studio
1

Other
7

U.S. Route 9 (Town of Philipstown)

Existing Conditions and Data Collection

Corridor Characteristics

U.S. Route 9 in the Town of Philipstown is a two-lane, north-south roadway that carries approximately 15,370 vehicles per day. The roadway is classified by the NYSDOT as a Principal Arterial Other and is owned by NYSDOT. The speed limit is 35 miles per hour. On-street parking is not provided and there are no sidewalk or bicycle facilities. A summary of the corridor's transportation characteristics are presented in Table 4-E.

Table 4-E – Corridor Characteristic Summary -
U.S. Route 9 in the Town of Philipstown

Average Daily Traffic	Number of Lanes	Speed Limit (MPH)
15,370[1]	2	35
On-Street Parking (Y/N)	**Pedestrian Facilities (Y/N)**	**Bike Facilities (Y/N)**
N	N	N
	Access to Waterways (Y/N)	**Transit Facilities (Y/N)**
	N	N

Notes: 1. Based on 2015 data from NYSDOT Traffic Data Viewer

Crash Data

Crash data over a three year period (March 1, 2014 through February 28, 2017) was obtained from NYSDOT. Table 4-F provides a summary on the number and type of crashes on U.S. Route 9 between Fishkill Road and Briars Road. Over a three year period, there were 30 crashes along this corridor, with the greatest number (nine) being rear end crashes. Rear end crashes typically occur at congested locations and signalized intersections.

Table 4-F – Crash Summary - U.S. Route 9 between Fishkill Road and Briars Road

	2014	2015	2016	2017	Total	*ACC/MVM*[1]
Fatalities	0	0	0	0	**0**	
Injured	0	0	3	0	**3**	
# of Crashes	8	10	12	0	**30**	**1.8**
Over-Taking	0	2	0	0	**2**	
Rear End	2	1	6	0	**9**	
Right Angle	1	1	1	0	**3**	
Left Turn (with other car)	0	1	0	0	**1**	
Left Turn (against other car)	0	2	2	0	**4**	
Right Turn (with other car)	1	0	0	0	**1**	
Right Turn (against other car)	0	0	0	0	**0**	
Side Swipe	0	0	2	0	**2**	
Ped/Bike	0	0	0	0	**0**	
Head On	0	0	0	0	**0**	
Fixed Object	1	2	0	0	**3**	
Animal	1	0	0	0	**1**	
Other	1	1	1	0	**3**	
Unknown	1	0	0	0	**1**	

Notes: Crash Data for March 1, 2014 through February 28, 2017.
1. Accidents per millions vehicle miles traveled = (accidents * 1,000,000)/(365*number of years*AADT*length of corridor)
*Source:*New York State Department of Transportation (NYSDOT)

NYSDOT provides average accident rates for state highways for different facilities. The 2015/2016 average accident rate for a two-lane, undivided highway is 3.5 accidents/million vehicle miles (ACC/MVM). The study corridor's 1.8 ACC/MVM is below the State's average of similar facilities.

Identification of Future Needs

Based on the existing conditions data collection, field visits, and discussions with the County, the following future transportation needs to enhance the corridor are to be addressed:

- Lack of pedestrian connections between the ball fields on Fishkill Road and the shopping center at the U.S. Route 9/Fishkill Road intersection.
- Improvements to support development of the U.S. Route 9/Fishkill Road/Fox Road/Old Postal Road triangle.
- Lack of transit connections to Metro-North in Cold Spring, NY.

TRANSPORTATION RECOMMENDATIONS

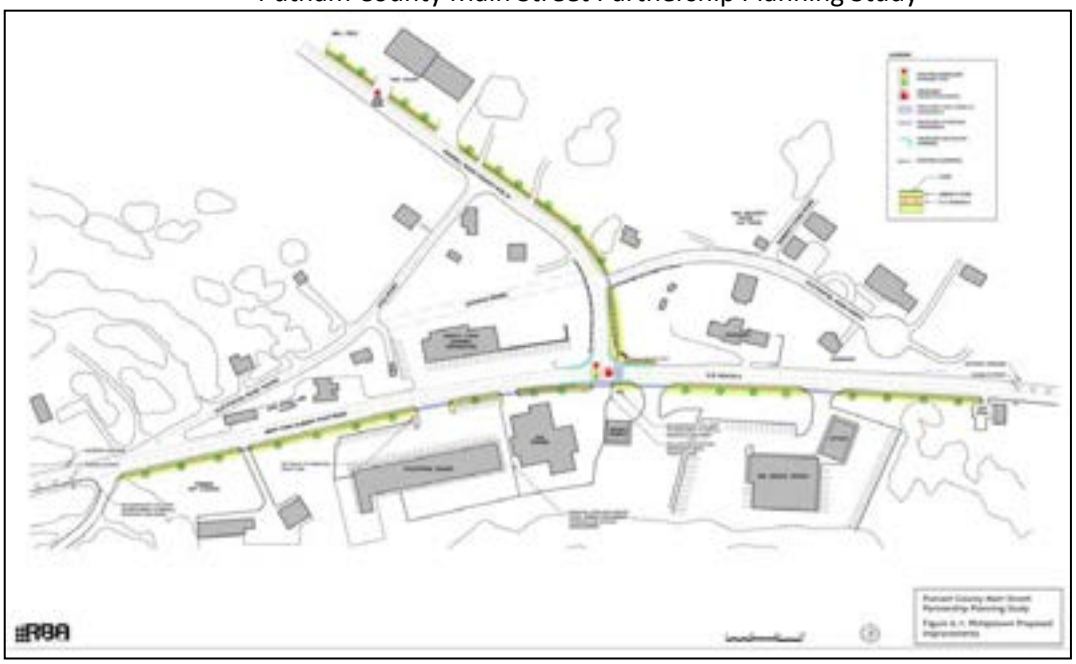
Proposed transportation enhancements are described below. Should the State, County or local municipality, depending on jurisdiction, decide to pursue any of the below recommendations, they would be required to follow additional steps including coordination and obtaining required permits. For example, the project sponsor will be required to coordinate with the New York State Department of Transportation (NYSDOT) for any work to be performed in the NYSDOT Right-of-Way (ROW) to obtain the required permits from NYSDOT as part of the Highway Work Process (HWP). In addition, the County will coordinate as necessary with any other local or county transportation agency or departments.

Short-Term Transportation Recommendations (1 to 3 Years)

As part of the *Putnam County Main Street Partnership Planning Study (RBA - Spring 2009),* the following recommendations were identified which should still be considered for implementation (see figure below) from the study below):

- Install sidewalks on the north side of Fishkill Road between the ball field and U.S. Route 9.
- Install sidewalks and, where applicable, ADA compliant pedestrian ramps on the east side of U.S. Route 9 from Old Postal Road along the shopping center property.
- Add high visibility crosswalks and pedestrian countdown timers on the southbound and shopping center driveway approaches at the U.S. Route 9/Fishkill Road intersection.

Putnam County Main Street Partnership Planning Study



Source: Putnam County Main Street Partnership Planning Study (Spring 2009)

Medium-Term Transportation Recommendations (3 to 5 Years)

The following recommendations would benefit and support development within the U.S. Route 9/Fishkill Road/Fox Road/Old Postal Road triangle:

- Install high visibility crosswalks and pedestrian countdown timers on all approaches at the U.S. Route 9/Fishkill Road intersection (identified in the *Putnam County Main Street Partnership Planning Study)*.
- Install a sidewalk on the west side of U.S. Route 9 between Old Postal Road and Fishkill Road intersection (identified in the *Putnam County Main Street Partnership Planning Study)*.
- Install a sidewalk on the south side of Fishkill Road between Fox Road and U.S. Route 9.
- Install sidewalks along Fox Road/Old Postal Road.
- Provide parking off of Fox Road/Old Postal Road for potential new development.
- Re-align the Old Postal Road approach at U.S. Route 9 to intersect at more of a right-angle.

Long-Term Transportation Recommendation (5 or More Years)

- If development in the form of shops, restaurants, etc. continues in the corridor, there could be the potential to add a park-n-ride lot for commuters to leave vehicles in the "triangle" and take a bus to the Cold Spring Metro-North station. This would require a regularly scheduled shuttle to convey commuters between the station and lot. A lot here could also be utilized by those commuters looking to car pool.

Community and Economic Development Recommendations

Proposed community and economic development enhancements are described below. Many of the recommendations would require coordination with local elected officials and the business community.

- Seek out and encourage the development of small retail stores that promote window shopping and a more "downtown" feel of a hamlet. Examples include boutiques, gift shops, or cafes.

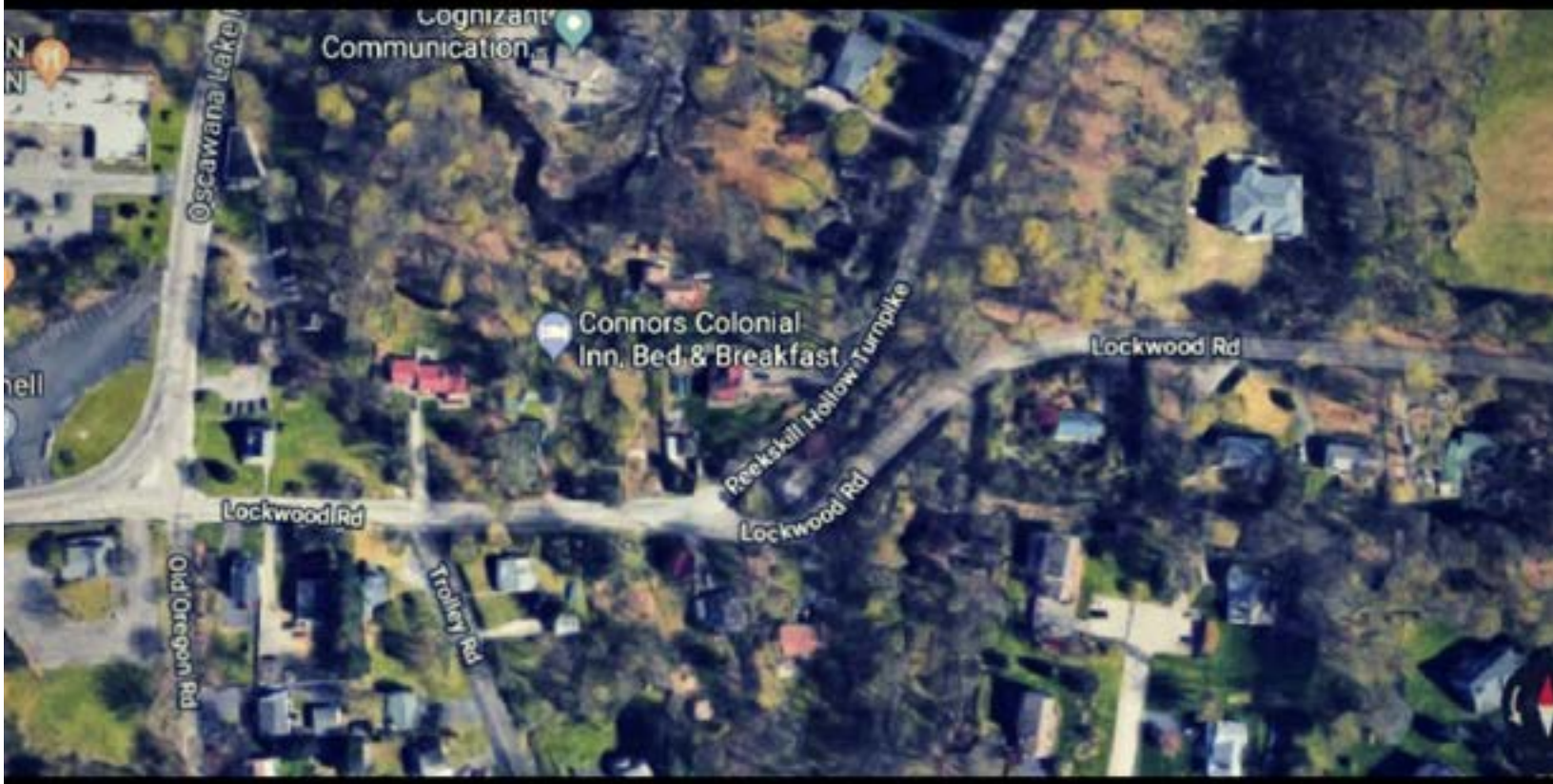
- Seek out and encourage the development of restaurants. The leakage/surplus analysis reveals that there is unmet demand for restaurants in the 5-minute trade area. Furthermore, the population of the 5-minute trade area has a high median household income and spends more on food away from home relative to other trade areas.

- Install gateway signage to cultivate a sense of place. Gateway signage will convey to motorists that they have transitioned from a nondescript highway into a pedestrian-friendly "place."

CORRIDOR 5

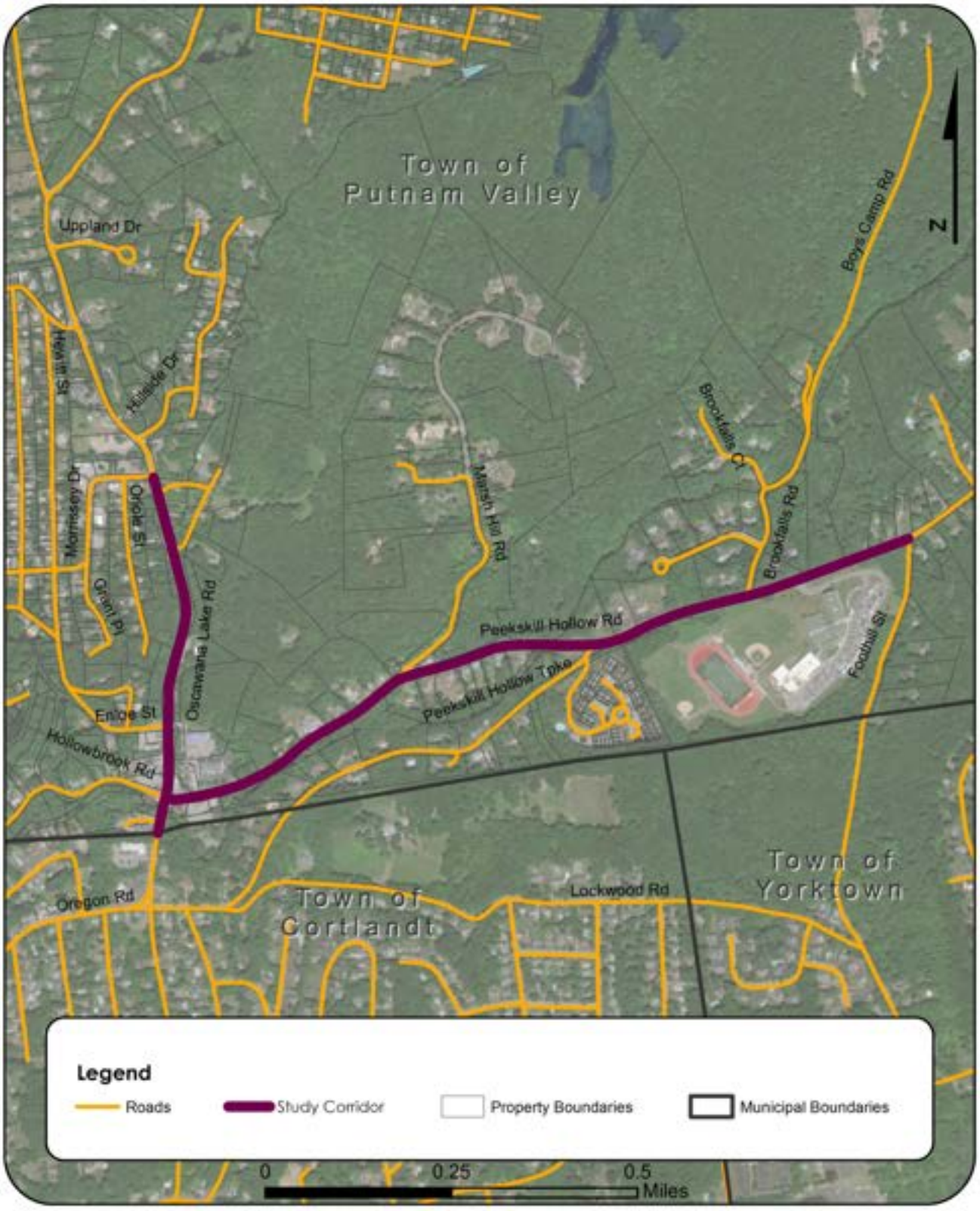
OSCAWANA LAKE RD. & PEEKSKILL HOLLOW RD.

TOWN OF PUTNAM VALLEY



OSCAWANA LAKE ROAD AND PEEKSKILL HOLLOW ROAD

Town of Putnam Valley



CORRIDOR OVERVIEW

Corridor Description

This corridor is located along Oscawana Lake Road and Peekskill Hollow Road in the Town of Putnam Valley. The northern boundary of the corridor is the intersection of Oscawana Lake Road and Morrissey Drive. The corridor continues south on Oscawana Lake Road until the intersection with Lockwood Road. The Corridor also extends along Peekskill Hollow Road from the intersection of Oscawana Lake Road and Peekskill Hollow Road until the intersection with Foothill Street next to Putnam Valley High School.

Demographic Snapshot

The charts below depict demographic information about households and the population within a 5-minute drive (5-minute trade area) to the study corridor. Over the 10 year period from 2000 to 2010, the 5-minute trade area saw robust population growth, increasing by 14%. In 2000, the population in the 5-minute trade area was 7,106, in the next 10 years the population increased by just over 1,000 people, reaching a population of 8,109 in 2010. Over the next 7 years, population growth slowed. From 2010 to 2017 the population increased from 8,109 to 8,409, a 4% increase.

According to ESRI Business Analyst, the median household income of the 5-minute trade area ($92,115) is lower than the median household income of Putnam County ($101,430). The poverty rate in the 5-minute trade area is higher than the county rate. In the 5-minute trade area, 8% of households are below the poverty line. In comparison, 5% of households in Putnam County as a whole are below the poverty line, and 15% of households in New York State are below the poverty line.

POPULATION
8,409

MEDIAN AGE
43

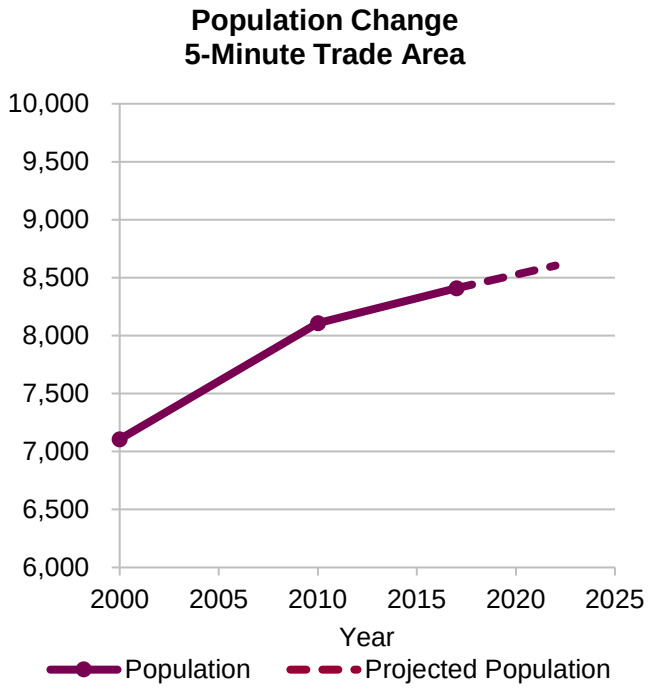
NUMBER OF HOUSEHOLDS
2,867

AVERAGE HOUSEHOLD INCOME
$113,756

MEDIAN HOUSEHOLD INCOME
$92,115

MEDIAN DISPOSABLE INCOME
$64,228

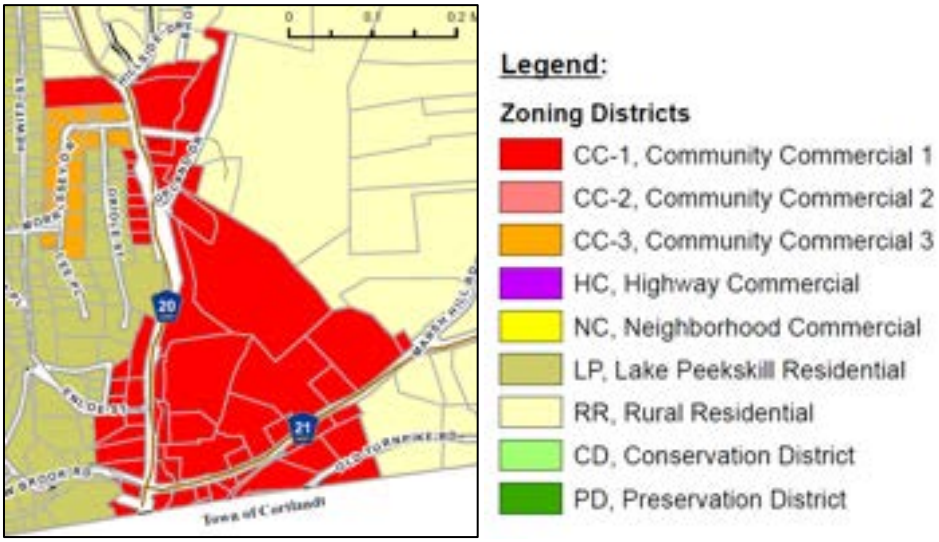
HOUSEHOLDS IN POVERTY
8%



Source: ESRI Business Analyst 2017

ZONING

Town of Putnam Valley Zoning Map



Community Commercial 1 (CC-1)

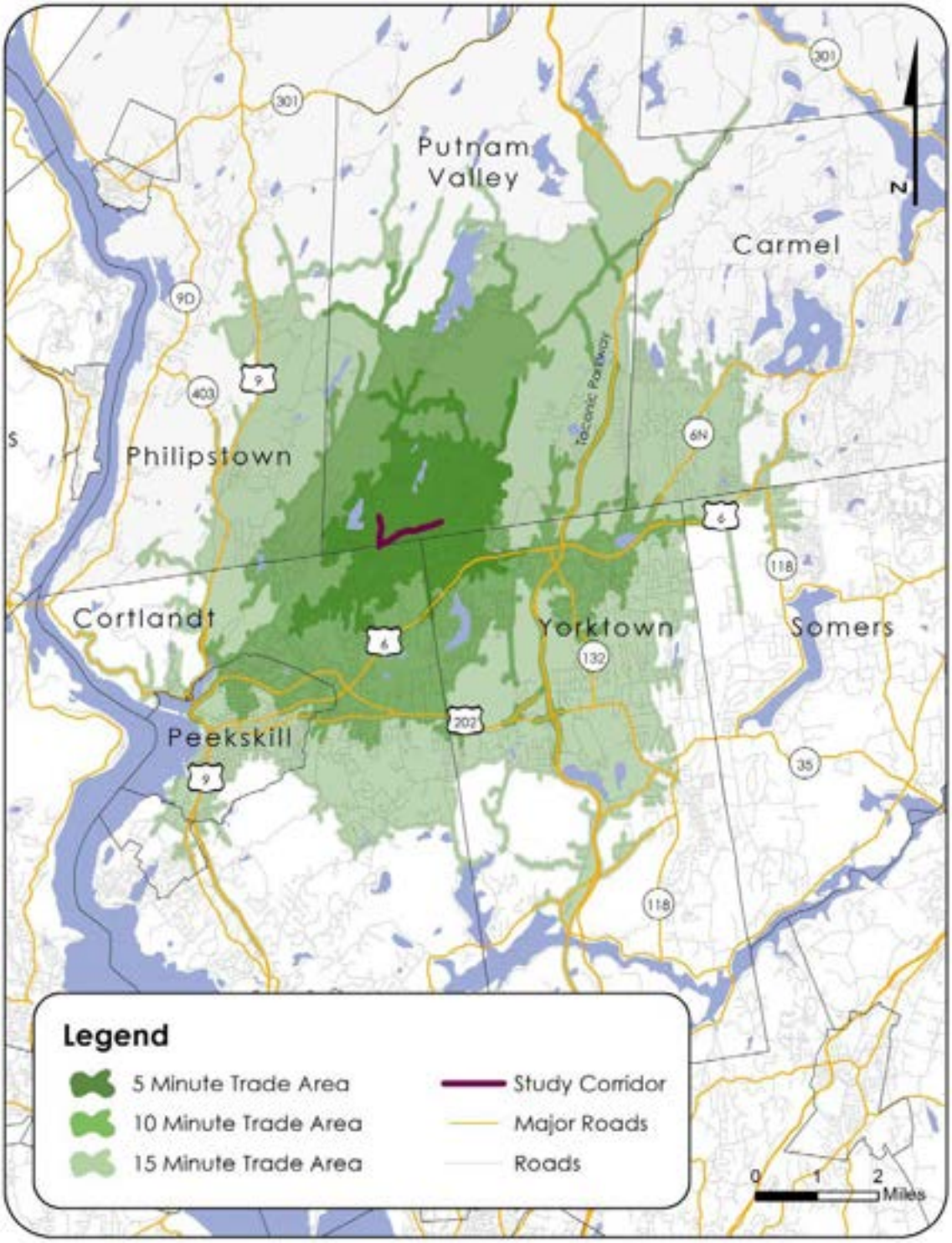
Principal Permitted Uses	Special Permit Uses
•Residential above commercial •Libraries •Museums •Municipal buildings •Post offices •Regional utility facilities •Offices •Antique stores •Apparel and accessories •Dance/artistic studios/galleries •Bakeries (retail) •Catering •Cocktail bars •Data processing •Deliver/messenger services •Consumer repair services •Convenience stores •Financial services •Funeral services •Liquor sales •Nurseries (retail) •Photography •Printing services •Restaurants •Health clubs	•Day care •Schools •Local utility facilities •Dry cleaning services •Exterminating services •Kennel •Laundromat •Massage therapy •Photography •Fast food restaurant •Shopping center/ mini-mall •Arcades •Indoor recreational facility •Contractor yard •Construction material sales •Veterinary hospitals •Assembly of component parts •Automotive rentals, sales or repairs •Taxi services

Table 5-A – Bulk Requirements

	Community Commercial 1 District (CC-1)
Minimum Lot size	8,000 sq ft
Maximum Floor to Area Ratio (FAR)	None
Maximum Building Coverage	None
Minimum Front Setback for Principal Building	25 ft
Minimum Side Setback for Principal Building	20 ft
Minimum Rear Setback for Principal Building	25 ft
Maximum Building Height	35 ft

TRADE AREAS

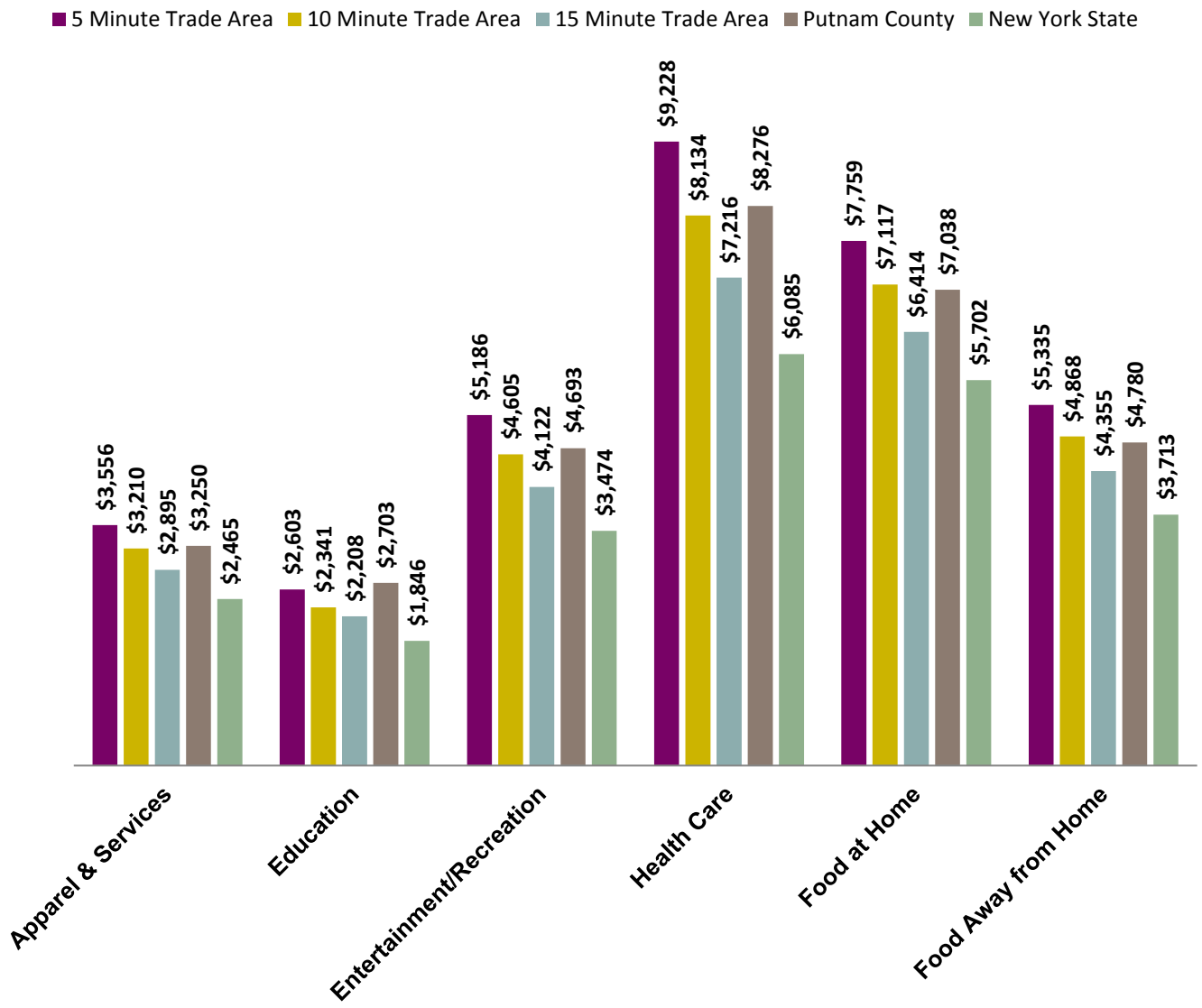
Oscawana Lake Rd and Peekskill Hollow Rd - Town of Putnam Valley



Household Spending

Table 5-B depicts an estimate of average annual household spending by category for households in the 5, 10, and 15-minute trade areas, Putnam County, and New York State.

Table 5-B-Average Annual Household Spending



Source: ESRI Business Analyst 2017

Tapestry Segmentation

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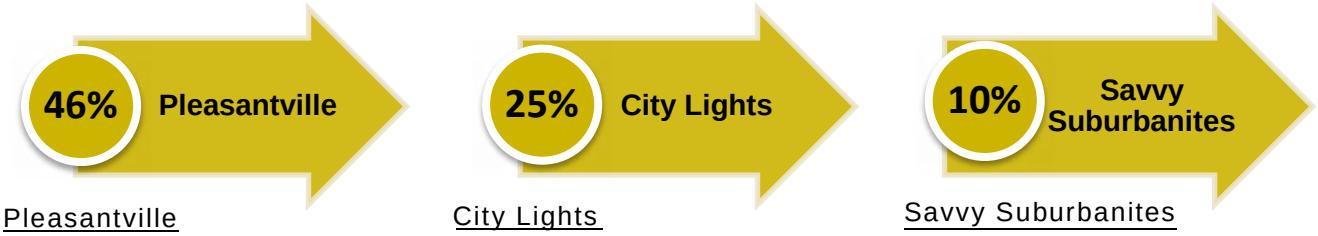
Top 3-Tapestry Segments in the 10-Minute Trade Area/Percent of Households



Pleasantville

Prosperous domesticity best describes the settled citizens of Pleasantville. Situated principally in older housing in suburban areas in the Northeast (especially in New York and New Jersey) and secondarily in the West (especially in California), these slightly older couples move less than any other market. Many couples have already transitioned to empty nesters; many are still home to adult children. Families own older, single-family homes and maintain their standard of living with dual incomes. These consumers have higher incomes and home values and much higher net worth (Index 400). Older homes require upkeep; home improvement and remodeling projects are a priority—preferably done by contractors. Residents spend their spare time participating in a variety of sports or watching movies. They shop online and in a variety of stores, from upscale to discount, and use the Internet largely for financial purposes.

City Lights

City Lights, a densely populated urban market, is the epitome of equality. The wide-ranging demographic characteristics of residents mirror their passion for social welfare and equal opportunity. Household types range from single person to married-couple families, with and without children. A blend of owners and renters, single-family homes and town homes, midrise and high-rise apartments, these neighborhoods are both racially and ethnically diverse. Many residents have completed some college or a degree, and they earn a good income in professional and service occupations. Willing to commute to their jobs, they work hard and budget well to support their urban lifestyles, laying the foundation for stable financial futures.

Savvy Suburbanites

Savvy Suburbanites residents are well educated, well read, and well capitalized. Families include empty nesters and empty nester wannabes, who still have adult children at home. Located in older neighborhoods outside the urban core, their suburban lifestyle includes home remodeling and gardening plus the active pursuit of sports and exercise. They enjoy good food and wine, plus the amenities of the city's cultural events.

RETAIL GAP ANALYSIS

Leakage / Surplus

Table 5-C depicts a leakage/surplus factor for trade areas delineated by a 5, 10 and 15 minute drive from the study corridor. The leakage/surplus factor is a representation of the balance between supply and demand among various industries. In this chart the industries are broken out by North American Industry Classification (NAICS) code. The leakage/surplus factor is measured on a scale from 100 to -100. A value of 100 represents an area where there is household demand but there is no supply so all of the potential retail sales are leaking out of the area. A value of -100 represents an area where there is a surplus of supply but there is no household demand. The closer the value is to zero, the more balance there is between supply and demand.

Table 5-C is color coded on a gradient of green to red with the darkest green representing a value of 100, and the darkest red representing a value of -100. The table shows that the 5-minute trade area has significant leakage in the industry categories of Clothing and Accessory Stores, Miscellaneous Store Retailers, Furniture/Home Furnishing Stores, Electronics & Appliance Stores, and Health and Personal Care Stores. In the 10 and 15-minute trade areas, leakage/surplus factors are generally closer to zero, indicating a better balance of local supply and demand in these trade areas relative to the 5-minute trade area.

Table 5-C – Leakage / Surplus Factor

Industry	5 Minute Trade Area	10 minute Trade Area	15 Minute Trade Area
Motor Vehicle and Parts Dealers (NAICS 441)	16.5	21	30.2
Furniture/Home Furnishing Stores (NAICS 442)	-21.4	13.1	22.3
Electronics & Appliance Stores (NAICS 443)	48.3	47.8	37.7
Bldg/Garden Equip/Supply Stores (NAICS 444)	-4	-12.5	5.7
Food and Beverage Stores (NAICS 445)	-37.7	-12.4	-1.6
Health and Personal Care Stores (NAICS 446)	-37.8	-9.9	8.2
Gasoline Stations (NAICS 447)	-23.7	-2	-10.9
Clothing/Accessories Stores (NAICS 448)	68	80	75.9
Sports/Hobby/Book/Music Stores (NAICS 451)	10.7	-1.7	12.6
General Merchandise Stores (NAICS 452)	46.9	15.3	46.1
Miscellaneous Store Retailers (NAICS 453)	-26.1	-10	8
Food Services & Drinking Places (NAICS 722)	4.1	17.2	28.5
Total Retail (including Food/Drink Sales)	-6.8	7.5	18.6

Source: ESRI Business Analyst 2017

Table 5-D depicts an estimation of industry leakage and surplus expressed in actual dollar amounts for the 10-minute trade area. Dollar values in the leakage column represent the estimated amount of money leaking out of the 10-minute trade area. Dollar values in the surplus column represent additional sales in the 10-minute trade area that are being generated by households outside of the trade area. These values are calculated by taking the difference between total sales in the trade area (estimated from reported business earnings) and potential sales in the trade area (estimated from household spending trends). When actual sales are lower than potential sales, there is a leakage (households are spending outside of the trade area). When actual sales are higher than potential sales, there is a surplus (households from outside of the trade area are spending in the trade area).

ESRI estimates that $24.6 million in spending at Health and Personal Care Stores from households in the 10-minute trade area is being spent outside of the 10-minute trade area. There is leakage in 7 other industry categories as well; however, overall there is an estimated surplus of $132.7 million in total retail spending in the 10-minute trade area. The majority of this surplus is from the General Merchandise Stores category with an estimated surplus of $99.2 million. Most of the total retail surplus is likely generated by sales inside of the 10-minute trade area but outside of Putnam County, in the Towns of Cortlandt and Yorktown in Westchester County.

Table 5-D – 10-Minute Trade Area Industry Leakage and Surplus

Industry	Leakage (Millions)	Surplus (Millions)	Leakage Surplus Factor
Health and Personal Care Stores (NAICS 446)	$ 24.6		28.3
Nonstore Retailers (NAICS 454)	$ 16.2		60.1
Food Services & Drinking Places (NAICS 722)	$ 13.1		9.5
Furniture/Home Furnishing Stores (NAICS 442)	$ 10.2		26.1
Miscellaneous Store Retailers (NAICS 453)	$ 8.6		20.4
Gasoline Stations (NAICS 447)	$ 7.3		6.1
Electronics & Appliance Stores (NAICS 443)	$ 0.9		1.8
Clothing/Accessories Stores (NAICS 448)	$ 8.5		-6.7
Motor Vehicle and Parts Dealers (NAICS 441)		$ 12.6	-4.6
Bldg/Garden Equip/Supply Stores (NAICS 444)		$ 24.5	-22.2
Sports/Hobby/Book/Music Stores (NAICS 451)		$ 25.0	-38.6
Food and Beverage Stores (NAICS 445)		$ 43.8	-15.8
General Merchandise Stores (NAICS 452)		$ 99.2	-38.2
Total Retail (including Food/Drink Sales)		**$ 132.7**	**-8.2**

Source: ESRI Business Analyst 2017

Existing Businesses

Below is a list of the number of existing businesses in the corridor by business type. This list was developed by Pattern staff during field visits to the corridor. Approximately 80% of businesses in this corridor are service-based businesses and approximately 20% of the businesses are retail businesses.

Oscawana Lake Rd and Peekskill Hollow Rd - Town of Putnam Valley

Existing Conditions and Data Collection

Corridor Characteristics

Oscawana Lake Road is a two-lane, north-south roadway that carries approximately 7,910 vehicles per day. The roadway is classified by the NYSDOT as a Major Collector and is owned by the County. Peekskill Hollow Road is a two-lane, east-west roadway that carries approximately 4,370 vehicles per day. The roadway is classified by the NYSDOT as a Minor Arterial and is owned by the County. The speed limit in the study area is 30 miles per hour. On-street parking and sidewalks are not provided. A summary of the corridor's transportation characteristics are presented in Table 5-E.

Table 5-E – Corridor Characteristic Summary -
Oscawana Lake Road and Peekskill Hollow Road, Town of Putnam Valley

OSCAWANA LAKE ROAD

Average Daily Traffic	Number of Lanes	Speed Limit (MPH)
7,910[1]	2	30
On-Street Parking (Y/N)	**Pedestrian Facilities (Y/N)**	**Bike Facilities (Y/N)**
N	N	N
	Access to Waterways (Y/N)	**Transit Facilities (Y/N)**
	N	N

PEEKSKILL HOLLOW ROAD

Average Daily Traffic	Number of Lanes	Speed Limit (MPH)
4,370[2]	2	30
On-Street Parking (Y/N)	**Pedestrian Facilities (Y/N)**	**Bike Facilities (Y/N)**
N	N	N
	Access to Waterways (Y/N)	**Transit Facilities (Y/N)**
	N	N

Notes:

1. Automatic Tube Recorder collected May 2017
2. Based on 2009 data from NYSDOT Traffic Data Viewer

Crash Data

Crash data over a three year period (March 1, 2014 through February 28, 2017) was obtained from NYSDOT. Tables 5-F and 5-G provide a summary of the number and type of crashes on Oscawana Lake Road between Morrissey Drive and Lockwood Road and on Peekskill Hollow Road between Oscawana Lake Road and Putnam Valley High School. On Oscawana Lake Road over a three year period, there were 28 crashes along this corridor, with the majority being rear end, right angle crashes, and categorized as "other". Rear end crashes typically occur at congested locations and signalized intersections while right angle crashes occur where there is poor sight distance between vehicles. On Peekskill Hollow Road there were 21 crashes over a three year period with the greatest number of crashes (six) categorized as "other" and occurring with fixed objects. Fixed object crashes typically occur when there is not a sufficient clear zone between the travel lane and objects on the shoulder of the road.

Table 5-F –Crash Summary - Oscawana Lake Rd between Morrissey Drive & Lockwood Rd

	2014	2015	2016	2017	Total	*ACC/MVM[1]*
Fatalities	0	0	0	0	**0**	
Injured	1	1	0	0	**2**	
# of Crashes	9	9	9	1	**28**	**5.4**
Over-Taking	0	0	0	0	**0**	
Rear End	1	4	2	0	**7**	
Right Angle	3	1	2	1	**7**	
Left Turn (with other car)	0	0	1	0	**1**	
Left Turn (against other car)	1	0	1	0	**2**	
Right Turn (with other car)	1	0	0	0	**1**	
Right Turn (against other car)	0	0	0	0	**0**	
Side Swipe	0	0	1	0	**1**	
Ped/Bike	0	0	0	0	**0**	
Head On	0	0	0	0	**0**	
Fixed Object	1	1	0	0	**2**	
Animal	0	0	0	0	**0**	
Other	2	3	2	0	**7**	
Unknown	0	0	0	0	**0**	

Notes: Crash Data for March 1, 2014 through February 28, 2017.
1. Accidents per millions vehicle miles traveled = (accidents * 1,000,000)/(365*number of years*AADT*length of corridor)

Source: New York State Department of Transportation (NYSDOT)

Table 5-G – Crash Summary - Peekskill Hollow Road between Oscawana Lake Road and Putnam Valley High School

	2014	2015	2016	2017	Total	*ACC/MVM*[1]
Fatalities	0	0	0	0	**0**	
Injured	1	1	1	1	**4**	
# of Crashes	3	6	9	3	**21**	**4.8**
Over-Taking	0	0	0	0	**0**	
Rear End	0	0	2	0	**2**	
Right Angle	0	0	0	0	**0**	
Left Turn (with other car)	0	0	0	0	**0**	
Left Turn (against other car)	0	1	0	0	**1**	
Right Turn (with other car)	0	0	0	0	**0**	
Right Turn (against other car)	0	0	0	0	**0**	
Side Swipe	0	3	0	0	**3**	
Ped/Bike	0	0	0	1	**1**	
Head On	0	0	1	0	**1**	
Fixed Object	0	0	3	1	**4**	
Animal	2	0	1	0	**3**	
Other	1	2	2	1	**6**	
Unknown	0	0	0	0	**0**	

Notes: Crash Data for March 1, 2014 through February 28, 2017.
1. Accidents per millions vehicle miles traveled = (accidents * 1,000,000)/(365*number of years*AADT*length of corridor)

Source: New York State Department of Transportation (NYSDOT)

NYSDOT provides average accident rates for state highways for different facilities. The 2015/2016 average accident rate for a two-lane, undivided highway is 3.5 accidents/million vehicle miles (ACC/MVM). Oscawana Lake Road (5.4ACC/MVM) and Peekskill Hollow Road (4.8 ACC/MVM) both exceed the State's average of similar facilities.

Identification of Future Needs

Based on the existing conditions data collection, field visits, and discussions with the County, the following future transportation needs to enhance the corridor are to be addressed:

- Inadequate pedestrian facilities; pedestrians were observed to walk in the roadway shoulders.
- Some off-street parking spaces impede pedestrian flows.
- On-street parking is not provided.
- Address collisions in the corridor.

Oscawana Lake Rd and Peekskill Hollow Rd - Town of Putnam Valley

Description of Corridor

The corridor along Oscawana Lake Road (Route 20) between Morrissey Drive and Oregon Road East, and Peekskill Hollow Road between its intersection with Oscawana Lake Road and Putnam Valley High School is located within the Town of Putnam Valley (see Putnam Valley Corridor Figure). The corridor supports a mix of residential, commercial, medical and community uses. The southern half of the corridor following Oscawana Lake Road south of Enloe Street is occupied by a small retail center including the Post Office, restaurants, several retail shops, professional business buildings, and a couple of residences. The section along Oscawana Lake Road between Enloe Street and Rush Drive is currently not developed but for the Putnam Valley Library. Development potential on the eastern side of Oscawana Lake Road is limited by Oscawana Brook and steep slopes while vacant lots are located to the west of the street. The Peekskill Hollow Road portion of the corridor heading away from its intersection with Oscawana Lake Road is occupied by the Putnam Valley Medical Center, a bank, a few small retail outlets and then sparse single family homes. The Putnam Valley High School/ Middle School complex is located at the eastern end of the corridor.

Development in the corridor could be considered somewhat limited by the lack of municipal water and in a couple confined areas, by the lack of sewer as well. The Town of Putnam Valley Comprehensive Plan (2007) states that three percent of residences and business are served by a public water supply system and that five percent are served by a municipal wastewater system. The Comprehensive Plan goes on to state that “The lack of public water and a community-wide public wastewater collection and treatment system presents constraints to development. New development is therefore restricted to areas where soil conditions are suitable for effective treatment of wastewater and lot sizes are large enough to meet Department of Health requirements.” Additional limitations to development in this area include environmental constraints such as steep slopes, wetlands and streams.

PUTNAM COUNTY CORRIDOR STUDY

Putnam Valley Corridor
Sewer and Water Infrastructure

Existing Infrastructure Conditions

Sewer

Putnam Valley Sewer District No. 2 serves most of the properties along Peekskill Hollow Road from Peekskill Hollow Turnpike to Oscawana Lake Road, and along Oscawana Lake Road between Enloe Street and Oregon Road East. The sewer district follows Enloe Street and continues onto Finch Lane, (see Putnam Valley Corridor Figure). According to the Town of Putnam Comprehensive Plan (2007), the collection system ends at a pumping station at Oregon Corners and discharges into the Westchester County Peekskill Hollow Creek interceptor sewer. The Town is able to discharge 50,000 gallons per day from the pump station. It is unknown how much wastewater is being discharged as the pump station lacks a flow meter. The sewer lines are served by the Peekskill Wastewater Treatment Plant located on Hallenbeck Road in Peekskill which has a capacity of 10 million gallons of wastewater per day[4]. Properties outside of this district rely upon onsite septic systems to process wastewater.

Water

The Putnam Valley Corridor is currently not served by a public water supply system; all parcels are served by on-site water supply wells.

Economic Development Potential, Benefits, and Needs

The corridor is underdeveloped with vacant parcels on the west side of Oscawana Lake Road, a number of empty storefronts as well as office and retail space for rent or sale and, as such, could benefit from new and infill commercial development. The vacant parcels on the north end of the corridor beyond the extent of the WWCS are challenged by the need to site both a septic system and water supply well on the parcel. For some owners, this results in the loss of what can be considered a significant portion of the developable land making it less economically feasible to advance a project on one of these parcels. Extension of the WWCS and provision of municipal water in the corridor would be expected to increase development options as well as the mix of uses, drawing more business to the area. The result would be an increase in property values and job opportunities, both construction and operational, as well as the generation of additional tax revenues. Expanding the corridor fortifies the viability of the existing and proposed development and would be expected to invite new and more varied development options to the corridor.

Options for infrastructure

Sewer

As noted, a portion of the corridor along Oscawana Lake Road and Peekskill Hollow Road lies within Sewer District #2 and is serviced by a WWCS which discharges to a reported, unmetered pump station. An option to increase development potential in the Putnam Valley Corridor would be to extend the existing wastewater collection system up Oscawana Lake Road from its current terminus north of Enloe Street all the way up to Morrisey Drive. To facilitate an extension of he district, a flow meter could be added to the pump station by the sewer district to accurately assess available additional flow capacity under the current agreement. Once

[4] http://www.westchestergov.com/Budget2000/SpecialDistricts/peekskill.htm last accessed 2/21/18

information on flow is known, the existing uses to which flow has been allocated can be evaluated to determine if there is capacity under the current agreement that remains unused and to estimate what additional capacity might be needed to extend the WWCS north. If a shortfall is found, then the corridor could benefit from the allocation of additional flow from WWTP so as to increase development potential within the commercial corridor. Doing so would provide several undeveloped parcels on the west side of Oscawana Lake Road the ability to connect to the WWCS. This would require an engineering feasibility study to be completed and coordination with Westchester County over the possibility of modifying the existing out of district user permit. Coordination with the owners of parcels that could be added to the district would also be required. Increasing the number of parcels in the sewer district will help broaden the base of potential uses in the corridor, provide property owners with more development options and expand the viability of the corridor as a whole.

Water

To increase the economic development potential in the corridor, the Town of Putnam Valley identified that a public water extension from the Town of Cortlandt Consolidated Water District (CCWD) in Westchester County through the Oregon Corners business district to provide a flow of approximately 150,000 gallons per day could be considered to service the central business district (2016 CFA for Oregon Corners). An additional area proposed to add public water service is a loop from Oscawana Lake Road along the Lake Peekskill business district, from Enloe Street to Hewitt Street to Morrissey Drive and back to Oscawana Lake Road (see Putnam Valley Corridor Figure). The CCWD is provided water by the Northern Westchester Joint Water Works (NWJWW) which operates two treatment plants, one on East Main Street/U.S. Route 6 just east of the Bear Mountain Parkway in Cortlandt which processes water from the New York City Catskill Aqueduct and a second on NYS Route 35 in Somers which processes water from the Amawalk Reservoir. If a connection is sought, coordination with the Town of Cortlandt along with an agreement with NWJWW will be required to establish an allocated volume for the connection. Coordination with the potential users of the water would also be required as they will pay for the new service. This public water service extension could be an incentive for building on the vacant properties and expanding uses on the underdeveloped land to the north and east of the intersection of Oscawana Lake Road and Peekskill Hollow Road.

TRANSPORTATION RECOMMENDATIONS

Proposed transportation enhancements are described below. As part of the *Putnam County Main Street Partnership Planning Study (Spring 2009),* improvements to address the transportation needs in the corridor were identified (see figure below*).* The improvement recommendations address the current needs of the study area and should still be considered. A description of the proposed recommendations is provided below. Should the State, County or local municipality, depending on jurisdiction, decide to pursue any of the below recommendations, they would be required to follow additional steps including coordination and obtaining required permits.

Putnam County Main Street Partnership Planning Study

Source: Putnam County Main Street Partnership Planning Study (Spring 2009)

Short-Term Transportation Recommendations (1 to 3 Years)

- Provide marked crosswalks at the following locations:
    - Oscawana Lake Road/Peekskill Hollow Road northbound and westbound approaches.
    - Peekskill Hollow Road/Tomkins Mahopac Bank Driveway on all approaches.

Medium-Term Transportation Recommendations (3 to 5 Years)

- Install sidewalks on both Oscawana Lake Road and Peekskill Hollow Road.
- Upgrade Oscawana Lake Road/Peekskill Hollow Road signal to include pedestrian countdown timers.
- Remove off-street parking at the northeast corner of Oscawana Lake Road/Peekskill Hollow Road.
- Provide on-street parking along both Oscawana Lake Road and Peekskill Hollow Road.

Long-Term Transportation Recommendation (5 or More Years)

- Widen the Oscawana Lake Road Bridge to provide turning lanes at the Oscawana Lake Road/ Peekskill Hollow Road intersection.

COMMUNITY AND ECONOMIC DEVELOPMENT RECOMMENDATIONS

Proposed community and economic development enhancements are described below. Both of the recommendations would require coordination with local elected officials and the business community.

- If pedestrian and traffic improvements are implemented, install gateway signage that indicates to motorists that they are entering a distinct place. Also implement other place making strategies found in the 2009 Main Street study such as a pocket park and decorative streetscape improvements.
- Seek out and encourage clothing store retailers. The leakage/surplus analysis indicates that there is significant unmet local demand for clothing stores in the 5-minute trade area. Clothing stores could move into the existing shopping plaza. If pedestrian and parking improvements are implemented along Oscawana Lake Road that support new pedestrian-orientated development, clothing stores could move into store fronts on Oscawana Lake Road.

CORRIDOR 6

NYS ROUTE 52

TOWN OF KENT
AND
TOWN OF CARMEL


Horsepound Rd
Baker Hill Rd
Route 311
Terry Hill Rd
Lakeshore Dr E
Salem Rd
Interstate 84
Lake Carmel
Gipsy Trl Rd
Route 52
Nichols St
Horsepound Rd
Dykeman Rd
West Branch Reservoir
Town of Kent
Town of Patterson
Town of Southeast
Hamlet of Carmel
N
Legend
Roads
Study Corridor
Municipal Boundaries
Property Boundaries
0
0.5
1
Miles

CORRIDOR OVERVIEW

Corridor Description

This corridor is located along NYS Route 52 in the Towns of Kent and Carmel. The northern boundary of the corridor is the intersection of Route 52 (Sandbeck Avenue) and Horsepound Road. From this intersection the corridor continues south along Route 52, traveling close to the western shore of Lake Carmel. The corridor passes out of the Town of Kent and into the Hamlet of Carmel in the Town of Carmel. After entering the Hamlet of Carmel, the corridor continues for another quarter mile before ending at its southern boundary, the ShopRite Plaza.

Demographic Snapshot

The charts below depict demographic information about households and the population within a 5-minute drive (5-minute trade area) to the study corridor. From 2000 to 2010 the population in the 5-minute trade area grew slowly. The population increased just 1% from 10,988 in 2000 to 11,134 in 2010, increasing by an average of 14 people per year. Over the next 7 years, the rate of population growth remained the same. From 2010 to 2017 the population in the 5-minute trade area increased by 1% from 11,134 in 2010 to 11,273 in 2017, increasing by an average of 19 people each year.

According to ESRI Business Analyst, the median household income of the 5-minute trade area ($89,771) is lower than the median household income of Putnam County ($101,430). The poverty rate in the 5-minute trade area is the same as the poverty rate in Putnam County (5%). Median household disposable income in both the 5-minute trade area and Putnam County is approximately 70% of total median household income. In comparison, median household disposable income for New York State as a whole is 78% of total median household income

POPULATION
11,273

MEDIAN AGE
43

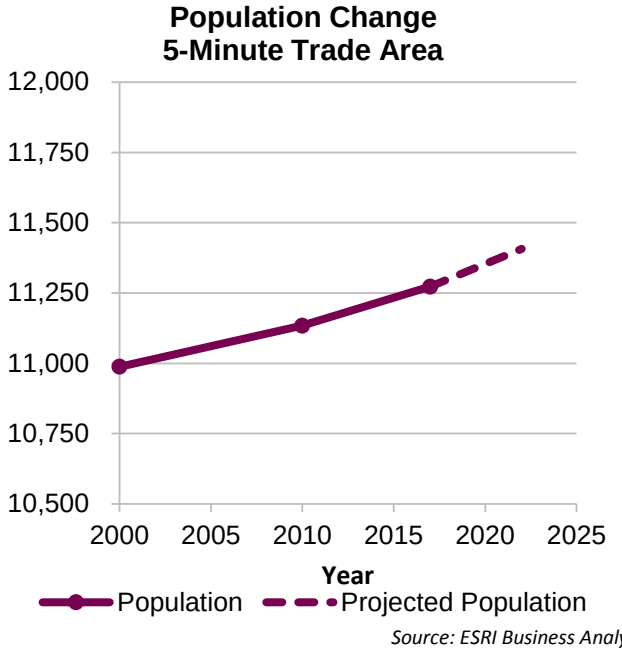
NUMBER OF HOUSEHOLDS
4,053

AVERAGE HOUSEHOLD INCOME
$107,049

MEDIAN HOUSEHOLD INCOME
$89,771

MEDIAN DISPOSABLE INCOME
$63,123

HOUSEHOLDS IN POVERTY
5%

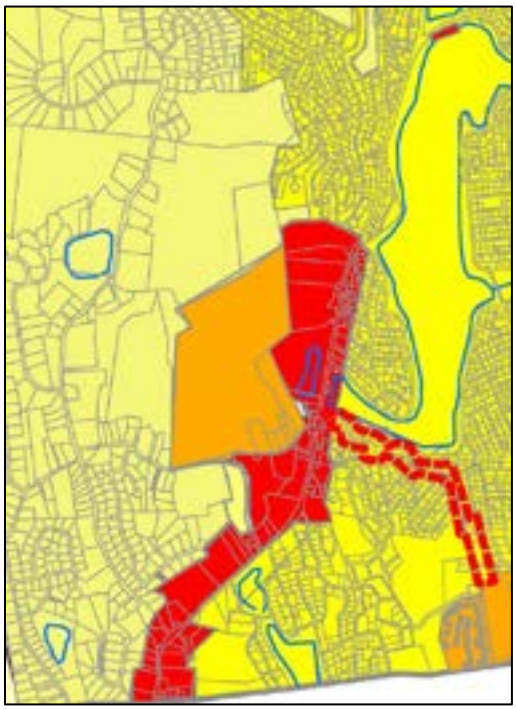


Source: ESRI Business Analyst 2017

ZONING

Most of the study corridor is within in the Commercial District (C) in the Town of Kent. The Northern end of the corridor is in the Single Family Residential District (R-10). The R-10 district is intended primarily for single family residential development at a higher density than other residential districts in the Town of Kent. The short section of the corridor that is in the town of Carmel is in the Commercial zone.

Town of Kent Zoning Map



Town of Carmel Zoning Map

Town of Kent Residential District (R-10)

Principal Permitted Uses	Special Permit Uses
•Single family dwellings •Parks and playgrounds •Firehouses and police stations •Elementary and High schools •Places of religious worship •Public utility structures	•Private membership clubs •Outdoor commercial recreation areas

Town of Kent Commercial District (C)

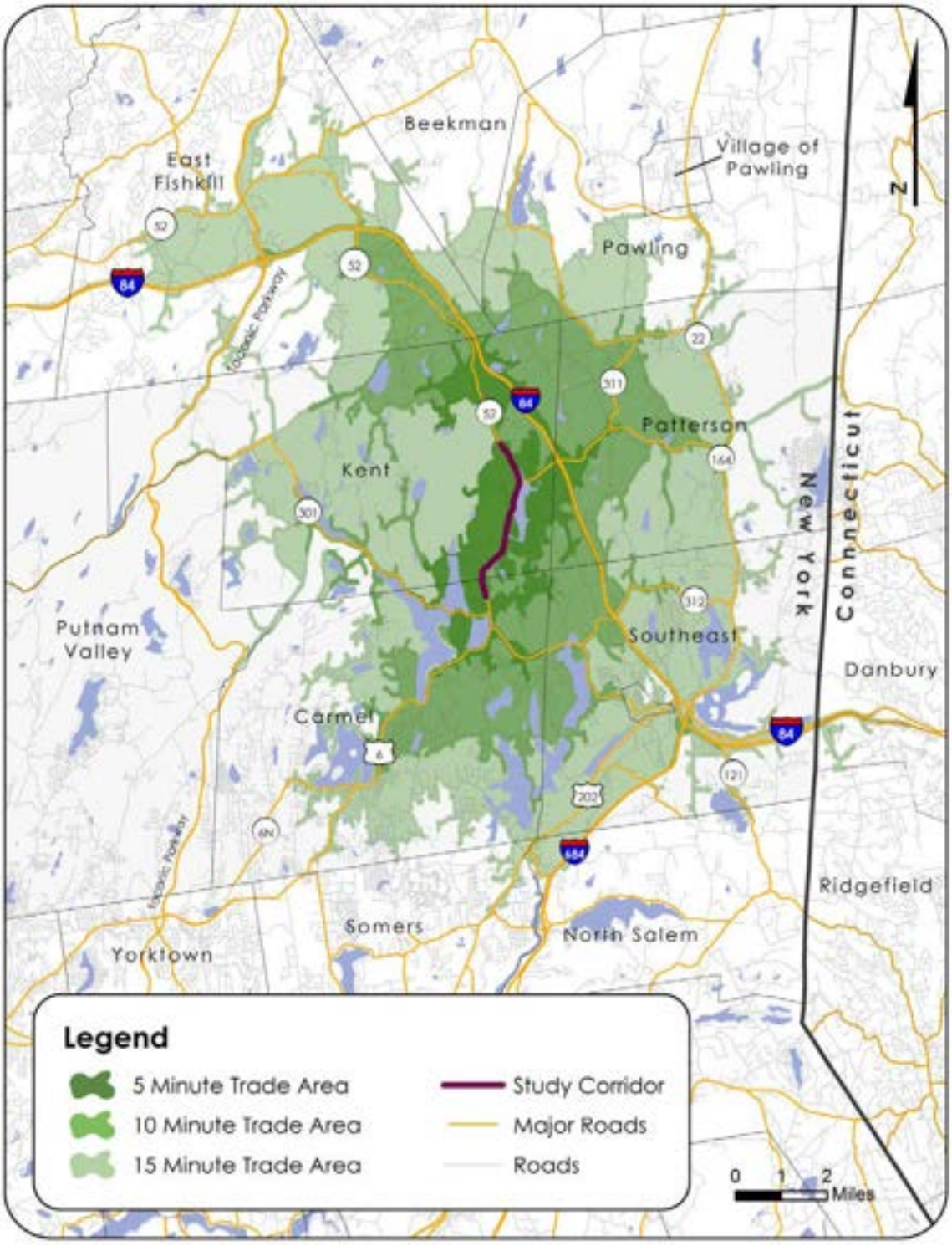
Principal Permitted Uses	Special Permitted Uses
• Animal hospitals • Bakeries, retail, no drive-through • Business and professional offices • Business and vocational schools • Nursing homes • Convenience stores, no gasoline • Delicatessen, no drive-though • Funeral homes • Health and fitness clubs • Hotels and otels • Indoor theaters • Laundromats • Membership clubs • Museums and art galleries • Libraries and community centers • Plant nurseries • Places of religious worship • Public parks • Public utility structures • Restaurants, no drive-through • Retail businesses • Shopping centers • Grocery stores • Day care centers	• Professional offices • Bakery retail • Commercial recreation facility • Convenience store, no gasoline • Contractor business office • Car wash • Communication facilities • Motor vehicle repair shops • Motor vehicle sales • Wholesale establishments or warehouses • Residential use above retails • Drive-through for restaurants or retail • Taverns or bars, no drive-through

Table 6-A – Bulk Requirements

	Town of Kent Residential Zone (R-10)	Town of Kent Commercial Zone (C)	Town of Carmel Commercial Zone (C)
Minimum Lot size	10,000 sq ft	15,000 sq ft	40,000 sq ft (0.9 ac)
Minimum Floor Area	None	None	5,000 sq ft
Maximum Floor to Area Ratio (FAR)	None	None	None
Maximum Building Coverage	35%	50%	30% 40% for office buildings
Minimum Front Setback for Principal Building	15 ft	30 ft	40 ft
Minimum Side Setback for Principal Building	8 ft	10 ft	25 ft
Minimum Rear Setback for Principal Building	20 ft	30 ft	30 ft
Maximum Building Height	2 ½ Stories / 30 ft	2 ½ Stories / 30 ft	35 ft 60 ft for office buildings

TRADE AREAS

NYS Route 52 – Town of Kent and Town of Carmel

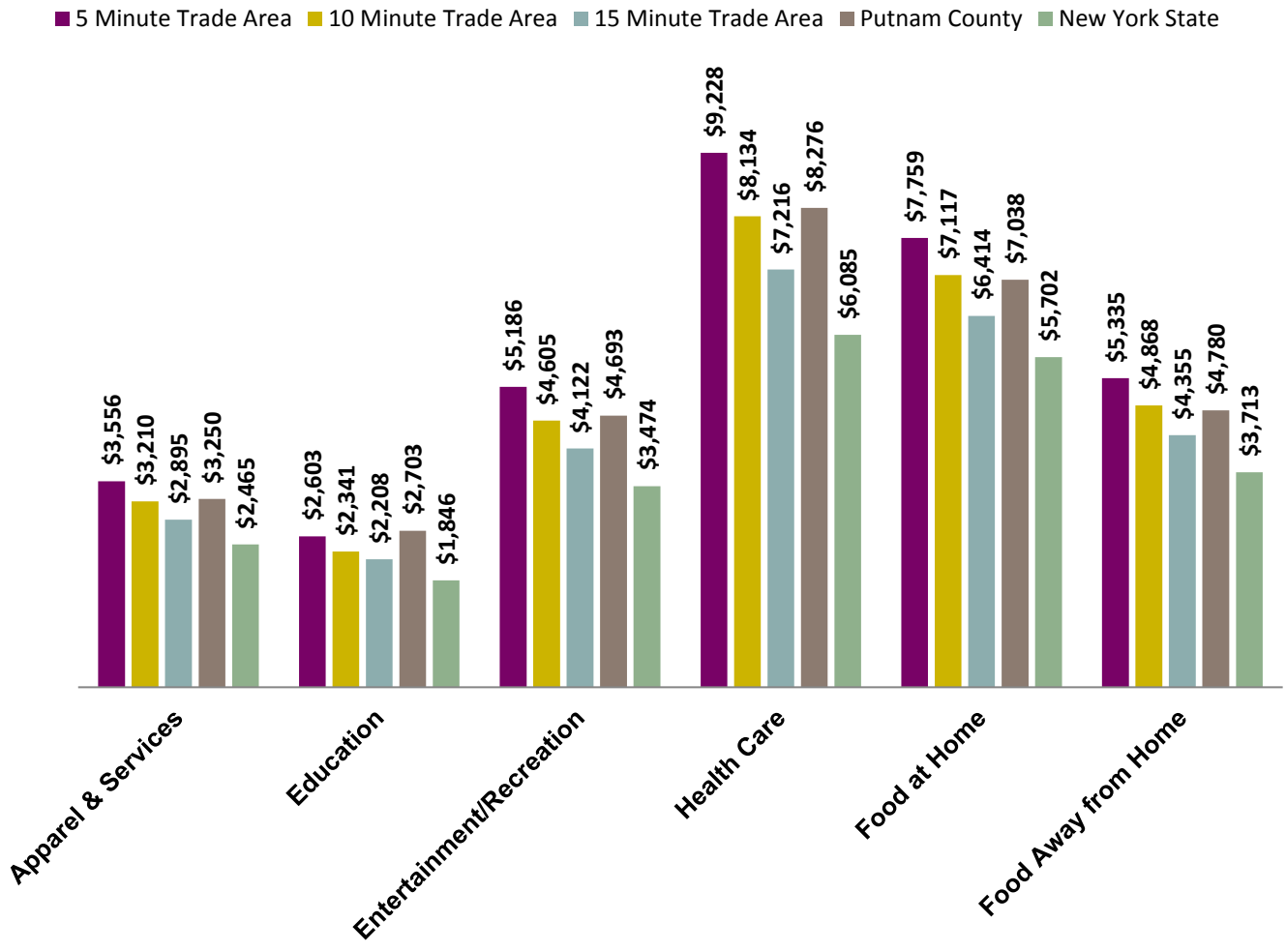


CONSUMER PROFILE

Household Spending

The chart below depicts an estimate of average annual household spending by category for households in the 5, 10, and 15-minute trade areas, Putnam County, and New York State. Average annual household spending increases when the 5-minute trade area is expanded to a 10-minute trade area, and increases again when the 10-minute trade are is expanded to a 15-minute trade area. Average annual household spending is the highest in every category in the 15-minute trade area; however, it is lower than average annual household spending in Putnam County as a whole. The highest spending category in every trade area is Health Care.

Table 6-B – Average Annual Household Spending

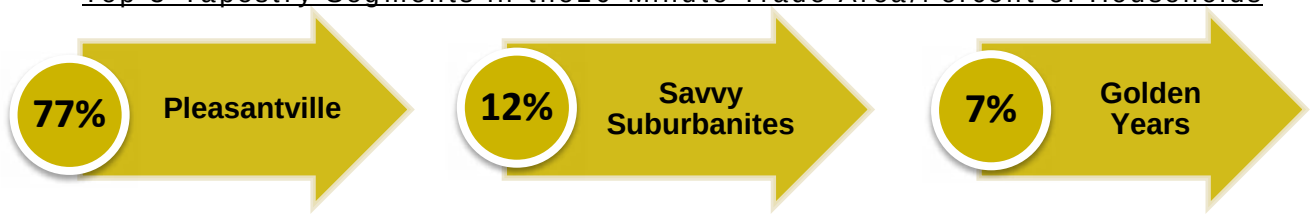


Source: ESRI Business Analyst 2017

Tapestry Segmentation

Tapestry Segmentation is a tool developed by ESRI, a Geographic Information Science (GIS) company. Tapestry segmentation organizes households in the United States into groups (segments) that share similar demographics, socioeconomic indicators, and lifestyle choices. Tapestry segmentation provides a macro-level understanding of the type of households present in a given area. Below are descriptions of the top three most common tapestry segments represented by households within the 10-minute trade area.

Top 3-Tapestry Segments in the10-Minute Trade Area/Percent of Households



Pleasantville

Prosperous domesticity best describes the settled citizens of Pleasantville. Situated principally in older housing in suburban areas in the Northeast (especially in NY and NJ) and secondarily in the West (especially in CA), these slightly older couples move less than any other market. Many couples have already transitioned to empty nesters; many are still home to adult children. Families own older, single-family homes and maintain their standard of living with dual incomes. These consumers have higher incomes and home values and much higher net worth (Index 400). Older homes require upkeep; home improvement and remodeling projects are a priority—preferably done by contractors. Residents spend their spare time participating in a variety of sports or watching movies. They shop online and in a variety of stores, from upscale to discount, and use the Internet largely for financial purposes.

Savvy Suburbanites

Savvy Suburbanites residents are well educated, well read, and well capitalized. Families include empty nesters and empty nester wannabes, who still have adult children at home. Located in older neighborhoods outside the urban core, their suburban lifestyle includes home remodeling and gardening plus the active pursuit of sports and exercise. They enjoy good food and wine, plus the amenities of the city's cultural events.

Golden Years

Independent, active seniors nearing the end of their careers or already in retirement best describes Golden Years residents. This market is primarily singles living alone or empty nesters. Those still active in the labor force are employed in professional occupations; however, these consumers are actively pursuing a variety of leisure interests—travel, sports, dining out, museums, and concerts. They are involved, focused on physical fitness, and enjoying their lives. This market is smaller, but growing, and financially secure.

Leakage / Supply

Table 6-C depicts a leakage/surplus factor for trade areas delineated by a 5, 10 and 15 minute drive from the study corridor. The leakage/surplus factor is a representation of the balance between supply and demand among various industries. In this chart the industries are broken out by North American Industry Classification (NAICS) code. The leakage/surplus factor is measured on a scale from 100 to -100. A value of 100 represents an area where there is household demand but there is no supply so all of the potential retail sales are leaking out of the area. A value of -100 represents an area where there is a surplus of supply but there is no household demand. The closer the value is to zero, the more balance there is between supply and demand.

Table 6-C is color coded on a gradient of green to red with the darkest green representing a value of 100, and the darkest red representing a value of -100. The table indicates that in the 5-minute trade area there is significant unmet demand for the industry categories of General Merchandise Stores, Clothing/Accessories Stores, and Electronics & Appliance Stores. Interestingly, there is a significant change in the leakage/surplus factor for General Merchandise Stores between the 5-minute trade area and the 10-minute trade area. In the 5-minute trade area the leakage/surplus factor for General Merchandise Stores is 95.1, meaning that almost all sales for this industry are leaking out of the trade area. In the 10-minute trade area the leakage/supply factor for General Merchandise Stores is 19.7, much closer to zero. This means there is significantly more balance between local supply and demand in the 10-minute trade area relative to the 5-minute trade area. This dramatic difference indicates that the 10-minute trade area encompasses a significant number of General Merchandise Stores that are not within the 5-minute trade area.

Table 6-C – Leakage / Surplus Factor

Industry	5 Minute Trade Area	10 Minute Trade Area	15 Minute Trade Area
Motor Vehicle and Parts Dealers (NAICS 441)	46.8	54	31.1
Furniture/Home Furnishing Stores (NAICS 442)	28	17.7	33.7
Electronics & Appliance Stores (NAICS 443)	65.7	68.8	47.7
Bldg/Garden Equip/Supply Stores (NAICS 444)	24.7	-3.8	2.6
Food and Beverage Stores (NAICS 445)	-2.7	0.5	-0.5
Health and Personal Care Stores (NAICS 446)	14.7	-5.8	12.3
Gasoline Stations (NAICS 447)	-35.8	-11.1	-6.7
Clothing/Accessories Stores (NAICS 448)	80.6	82.7	73.2
Sports/Hobby/Book/Music Stores (NAICS 451)	35.3	4.4	10.5
General Merchandise Stores (NAICS 452)	95.1	19.7	42
Miscellaneous Store Retailers (NAICS 453)	1	4.5	9.6
Food Services & Drinking Places (NAICS 722)	39.3	25.8	30
Total Retail (including Food/Drink Sales)	**22.4**	**17.5**	**20.1**

Source: ESRI Business Analyst 2017

Table 6-D depicts an estimation of industry leakage and surplus expressed in actual dollar amounts for the 10-minute trade area. Dollar values in the leakage column represent the estimated amount of money leaking out of the 10-minute trade area. Dollar values in the surplus column represent additional sales in the 10-minute trade area that are being generated by households outside of the trade area. These values are calculated by taking the difference between total sales in the trade area (estimated from reported business earnings) and potential sales in the trade area (estimated from household spending trends). When actual sales are lower than potential sales, there is a leakage (households are spending outside of the trade area). When actual sales are higher than potential sales, there is a surplus (households from outside of the trade area are spending in the trade area).

ESRI estimates that the industry category with the most leakage is Motor Vehicle and Parts Dealers. An estimated $63 million in Motor Vehicle and Parts Dealer spending from households within the 10-minute trade area is being spent outside of the 10-minute trade area. Overall there is an estimated $152 million in total retail sales leaking from the 10-minute trade area. This means the average household in the 10-minute trade area is spending approximately $10,200 in total retail outside of the 10-minute trade area.

Table 6-D – 10-Minute Trade Area Industry Leakage and Surplus

Industry	Leakage (Millions)	Surplus (Millions)	Leakage Surplus Factor
Motor Vehicle and Parts Dealers (NAICS 441)	$ 63.9		54
Clothing/Accessories Stores (NAICS 448)	$ 36.4		82.7
Food Services & Drinking Places (NAICS 722)	$ 21.1		25.8
General Merchandise Stores (NAICS 452)	$ 18.0		19.7
Electronics & Appliance Stores (NAICS 443)	$ 14.6		68.8
Nonstore Retailers (NAICS 454)	$ 7.4		32.7
Furniture/Home Furnishing Stores (NAICS 442)	$ 5.1		17.7
Miscellaneous Store Retailers (NAICS 453)	$ 1.5		4.5
Sports/Hobby/Book/Music Stores (NAICS 451)	$ 1.2		4.4
Food and Beverage Stores (NAICS 445)	$ 0.9		0.5
Bldg/Garden Equip/Supply Stores (NAICS 444)		$ 2.4	-3.8
Health and Personal Care Stores (NAICS 446)		$ 4.7	-5.8
Gasoline Stations (NAICS 447)		$ 11.0	-11.1
Total Retail (including Food/Drink Sales)	**$ 152.1**		**17.5**

Source: ESRI Business Analyst 2017

Existing Businesses

Below is a list of the number of existing businesses in the corridor by business type. This list was developed by Pattern staff during field visits to the corridor. The mix of retail businesses and service-based businesses is balanced in this corridor. Approximately half of the businesses are service-based and the other half are retail businesses.

Restaurants
8

Wine / Beer
2

Electronics
1

Deli / Bagel
2

Pharmacy
3

Grocery Store
1

Gas Station
4

Auto Services
4

Medical / Dental
2

Home Services
1

Pet Services
2

Hair / Nail Salon
3

Health / Fitness
3

Banks / Financial
4

Other
17

NYS Route 52 – Town of Kent and Town of Carmel

Existing Conditions and Data Collection

Corridor Characteristics

NYS Route 52 is a two-lane, north-south roadway that carries approximately 11,615 vehicles per day. The roadway is classified by the NYSDOT as Minor Arterial and is owned by NYSDOT. The speed limits range from 30 to 40 miles per hour. On-street parking is not provided.

There are currently no sidewalks north of the ShopRite Plaza, however, pedestrians were observed walking along the NYS Route 52 shoulder. The corridor is serviced by the Putnam Area Rapid Transit (PART) Line 5. A summary of the corridor's transportation characteristics are presented in Table 6-E.

Table 6-E – Corridor Characteristic Summary -
NYS Route 52 in the Towns of Carmel and Kent

Average Daily Traffic	Number of Lanes	Speed Limit (MPH)
11,615[1]	2	30-40
On-Street Parking (Y/N)	**Pedestrian Facilities (Y/N)**	**Bike Facilities (Y/N)**
N	N	N
	Access to Waterways (Y/N)	**Transit Facilities (Y/N)**
	Y-Lake Carmel	Y PART Bus Line 5

Notes:

1. Based on 2014 data from NYSDOT Traffic Data Viewer

Crash Data

Crash data over a three year period (March 1, 2014 through February 28, 2017) was obtained from NYSDOT. Table 6-F provides a summary on the number and type of crashes on NYS Route 52 between Raymond Drive and NYS Route 311. Over a three year period, there were 143 crashes along this corridor, with the greatest number (56) being rear end crashes. Rear end crashes typically occur at congested locations and signalized intersections.

Table 6-F – Crash Summary - *NYS Route 52 between Raymond Drive and Route 311*

	2014	2015	2016	2017	Total	*ACC/MVM[1]*
Fatalities	0	0	0	0	**0**	
Injured	15	21	26	1	**63**	
# of Crashes	44	44	50	5	**143**	**4.3**
Over-Taking	1	4	2	0	**7**	
Rear End	22	15	18	1	**56**	
Right Angle	4	3	8	0	**15**	
Left Turn (with other car)	0	1	1	0	**2**	
Left Turn (against other car)	5	4	1	0	**10**	
Right Turn (with other car)	0	0	0	0	**0**	
Right Turn (against other car)	0	0	1	0	**1**	
Side Swipe	0	1	0	0	**1**	
Ped/Bike	0	0	2	0	**2**	
Head On	0	1	0	0	**1**	
Fixed Object	1	4	7	0	**12**	
Animal	5	1	4	1	**11**	
Other	5	7	6	3	**21**	
Unknown	1	3	0	0	**4**	

Notes: Crash Data for March 1, 2014 through February 28, 2017.
1. Accidents per millions vehicle miles traveled = (accidents * 1,000,000)/(365*number of years*AADT*length of corridor)

Source: New York State Department of Transportation (NYSDOT)

NYSDOT provides average accident rates for state highways for different facilities. The 2015 / 2016 average accident rate for a two-lane, undivided highway is 3.5 accidents/million vehicle miles (ACC/MVM). The study corridor's 4.3 ACC/MVM exceeds the State's average of similar facilities.

Identification of Future Needs

Based on the existing conditions data collection, field visits, and discussions with the County, there is a need to provide pedestrian facilities to accommodate the pedestrians that currently walk along the shoulder of NYS Route 52 north of the ShopRite Plaza. Measures to address collisions in this corridor should be considered.

In addition, the proposed Patterson Crossing Retail Center development, located on NYS Route 311 near I-84, would generate approximately 200 to 300 vehicle trips along the NYS Route 52 corridor. A traffic study was conducted in 2006 and identified recommendations to improve traffic conditions at US NYS Route 52 / Barrett Hill Road (adding a northbound left-turn lane) and at NYS Route 52 / NYS Route 311 (widening the westbound approach to provide additional right-turn storage). These improvements should still be considered to address traffic congestion along the corridor.

NYS Route 52 – Town of Kent and Town of Carmel

Description of Corridor

The NYS Route 52 Corridor between Carmel and Kent runs from the southern boundary of Raymond Hill Cemetery in Carmel north to the intersection of NYS Route 52 and NYS Route 311 in Kent (see Carmel and Kent Corridor Figure). The corridor supports a variety of commercial, residential, community and industrial uses. The northern portion of the corridor runs along, or is in close proximity to, Lake Carmel, a phosphorous limited water body listed as impaired by NYSDEC Bureau of Water Resources Management.

Existing Infrastructure Conditions

Sewer

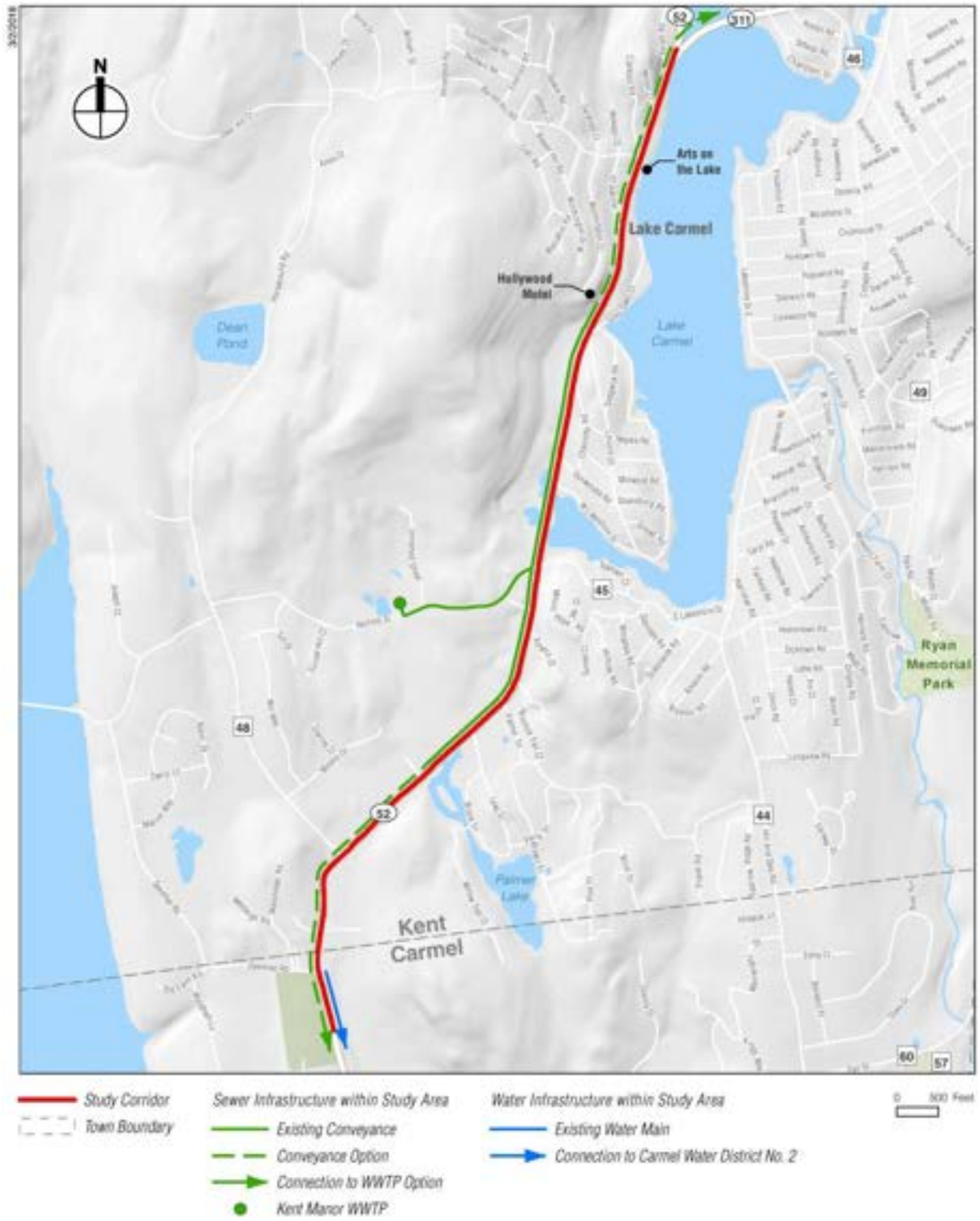
The portion of this corridor between Hollywood Motel (intersection of NYS Route 52 and Grey Oaks Court) to the north and the Anthony's Jewelers (located at the northern end of Palmer Lake) to the south is served by a WWCS. This WWCS is connected to the Kent Manor WWTP on Nichols Street (see U.S. Route 6 Southeast Corridor Figure). The Kent Manor WWTP has a 102,200 gallon per day capacity[5] and was originally built to service the Kent Manor residential development and a portion of the NYS Route 52 commercial corridor. As of March 2018, the Kent Manor residential development is not fully constructed. Service from the WWTP has been provided to a portion of the NYS Route 52 corridor noted previously and the portions of the residential development that were completed. While capacity is allocated to a number of users in the corridor, the plant does not operate at full capacity as not all approved uses are connected.

The southern-most portion of the corridor located in the Town of Carmel lies within the Carmel Sewer District No. 2 which extends, on its north end, to near the Carmel/Kent Town line (see U.S. Route 6 Southeast Corridor Figure).

Water

The NYS Route 52 Corridor in Kent is not served by a municipal water district. Development in the area is connected to private, on-site wells. The short section of this corridor located in the Town of Carmel falls within the Carmel Water District No. 2 which extends on its north end to near the Carmel/Kent Town line (see U.S. Route 6 Southeast Corridor Figure).

[5] http://www.milnescompanies.com/1027/kent-manor-wastewater-treatment-plant/ , last accessed 2/22/18.



PUTNAM COUNTY CORRIDOR STUDY

Route 52 - Carmel & Kent
Sewer & Water Infrastructure

Economic Development Potential, Benefits, and Needs

NYS Route 52 is currently underdeveloped with multiple vacant storefronts, especially on the north end, and several vacant/undeveloped parcels throughout. This corridor could benefit from the addition of new and infill commercial development throughout its entire length. Uses within this corridor outside of those currently served by the existing WWCSs and WWTPs are dependent upon the project sponsor's ability to site both septic and wells on their parcels. For some projects, this results in the loss of what can be considered a significant portion of the developable land making it less economically feasible to advance these projects.

Existing development in the corridor continues to age, increasing the likelihood of septic system failure. This is especially true for the dense, older, residential lake communities located along the north-western and east-central portions of the corridor where once seasonal homes on small lots and substandard and/or failing septic systems have been converted to year round residences. Aging septic systems not only impact the lake water quality negatively, it is phosphorous limited per the state, but existing septic systems in the area that are located up-gradient of existing private water supply wells can be a source of subsurface contamination for individual drinking water supplies. These conditions are a significant concern for the Town due to the corridors close proximity to Lake Carmel, New York State for its impacts to the Lake, New York City for impacts to the broader NYC East of Hudson Watershed and the Department of Health for private well-head protection. All of these issues deflate property values and suppress development along and in the areas surrounding the study corridor.

In addition to the potential for new and infill development within this corridor, there are projects to the north which would also benefit from new sewer infrastructure including:

Patterson Crossing – an approved roughly 380,000 square foot commercial development project located roughly a mile north of the corridor on the south west side of the intersection between NYS Route 311 and I-84. The project proposes one to two on-site septic systems to treat wastewater generated by the project.[6]

Other Approved Projects and Vacant Buildings - Additionally, land along NYS Route 311 to the north of the NYS Route 52 study corridor, is zoned commercial with two approved but not constructed 30,000 square foot buildings and two abandoned buildings sited along this section of the road. A shuttered restaurant, the old Lakeview Restaurant & Bar, on the north shore of Lake Carmel could also be tied into any new sewer services provided to this area.

There are also vacant parcels along the corridor on which development could be incentivized thereby improving the economic conditions. Siting a new WWTP and WWCS within close proximity to the corridor could create both construction and operational jobs at the WWTP and at new businesses, increase property values, result in greater tax rateables and allowing for the full economic potential of the corridor to be realized.

[6] Patterson Crossing DEIS, 2006 and FEIS, 2008

Options for infrastructure

The Kent/Carmel NYS Route 52 Corridor is currently characterized by a mix of commercial, industrial and residential uses with the potential for additional infill and new development throughout the entire corridor. Since the corridor is located within the NYC East of Hudson Watershed any sewer or water infrastructure improvements contemplated in the area would require approval from NYCDEP.

Sewer

Options to provide a municipal wastewater service to the areas currently unsupported by this type of infrastructure include connection to the Kent Manor WWTP and/or development of a new WWTP in Kent at the north end of the corridor.

Expansion/Reallocation of the Kent Manor WWTP Capacity

As previously noted, the WWTP built in support of the Kent Manor residential development, while allocated, has excess capacity. An option to increase sewer service in this area would be to investigate the potential to either expand the existing Kent Manor WWTP and associated WWCS, thereby increasing its capacity or enter into an agreement with those users currently allocated flow at the existing WWTP to shift that allocation thereby increasing the portion of the corridor to which sewer service is provided. In either case, with excess capacity from the Kent Manor WWTP, the WWCS could be extended along NYS Route 52 south from the end of the existing system to as far south as the Town of Kent and Carmel border and/or north from Towers Road to Barrett Hill Road as long as capacity is available and allocated to existing and new uses along NYS Route 52. These extensions, with the associated capacity, could encourage additional commercial development and redevelopment within the corridor. The extension of municipal sewer beyond the study corridor up to the intersection of NYS Route 311 and I-84 could also be investigated by way of an engineering feasibility study.

Development of a New WWTP

A second option would be to consider constructing a new WWTP and related WWCS in Kent on NYS Route 311 at or near the Patterson Crossing project site. A 500,000 gallon per day WWTP has been contemplated.[7] Due to the restrictions enforced by the NYCDEP in this area on new surface discharges, a new WWTP surface discharge in the East of Hudson Watershed would need a variance from the NYCDEP. If acceptable to the City, an engineering feasibility study would be completed to determine location, flows, connections and the like. If acceptable to the City and feasible based on the results of the engineering study, an agreement with the Patterson Crossing project sponsor would be required. A WWTP at this location may service uses as far south as where Route 311 crosses Lake Carmel or possibly beyond.

Installation of a municipal WWCS/WWTP would have the added benefit of assisting with limiting further septic related impacts to Lake Carmel and private wells benefiting economic development, increasing property values, providing jobs and making the corridor more business friendly.

[7] 2016 Consolidated Funding Application made for the Lake Carmel Sewer System

Water

As described above in "existing conditions", there currently are no municipal water lines along this corridor. Further studies would be needed to investigate the possibility of connecting to the Carmel Water District No. 2 which serves NYS Route 52 in Carmel and which could potentially be extended into Kent. Extension of this system would need to be coordinated between the Town of Carmel and the Town of Kent before any investigations/studies would advance. Provision of water throughout the corridor could benefit development especially where existing wells are impacted by failing septic systems.

TRANSPORTATION RECOMMENDATIONS

Proposed transportation enhancements are described below. Should the State, County or local municipality, depending on jurisdiction, decide to pursue any of the below recommendations, they would be required to follow additional steps including coordination and obtaining required permits. For example, the project sponsor will be required to coordinate with the New York State Department of Transportation (NYSDOT) for any work to be performed in the NYSDOT Right-of-Way (ROW) to obtain the required permits from NYSDOT as part of the Highway Work Process (HWP). In addition, the County will coordinate as necessary with any other local or county transportation agency or departments.

Short-Term Transportation Recommendation (1 to 3 Years)

- Extend the sidewalk that currently terminates at the ShopRite Plaza north to Clapboard Ridge to service residents of the Hillcrest development that currently walk along the NYS Route 52 shoulder to access the plaza and points further south.

Long-Term Transportation Recommendations (5 or More Years)

- Continue sidewalk extension further north from Clapboard Ridge to NYS Route 311 to service residents in areas further north that currently walk along the NYS Route 52 shoulder to access the plaza and points further south.
- Add crosswalks at the existing signalized intersection of Nichols Street / NYS Route 52.

COMMUNITY AND ECONOMIC DEVELOPMENT RECOMMENDATIONS

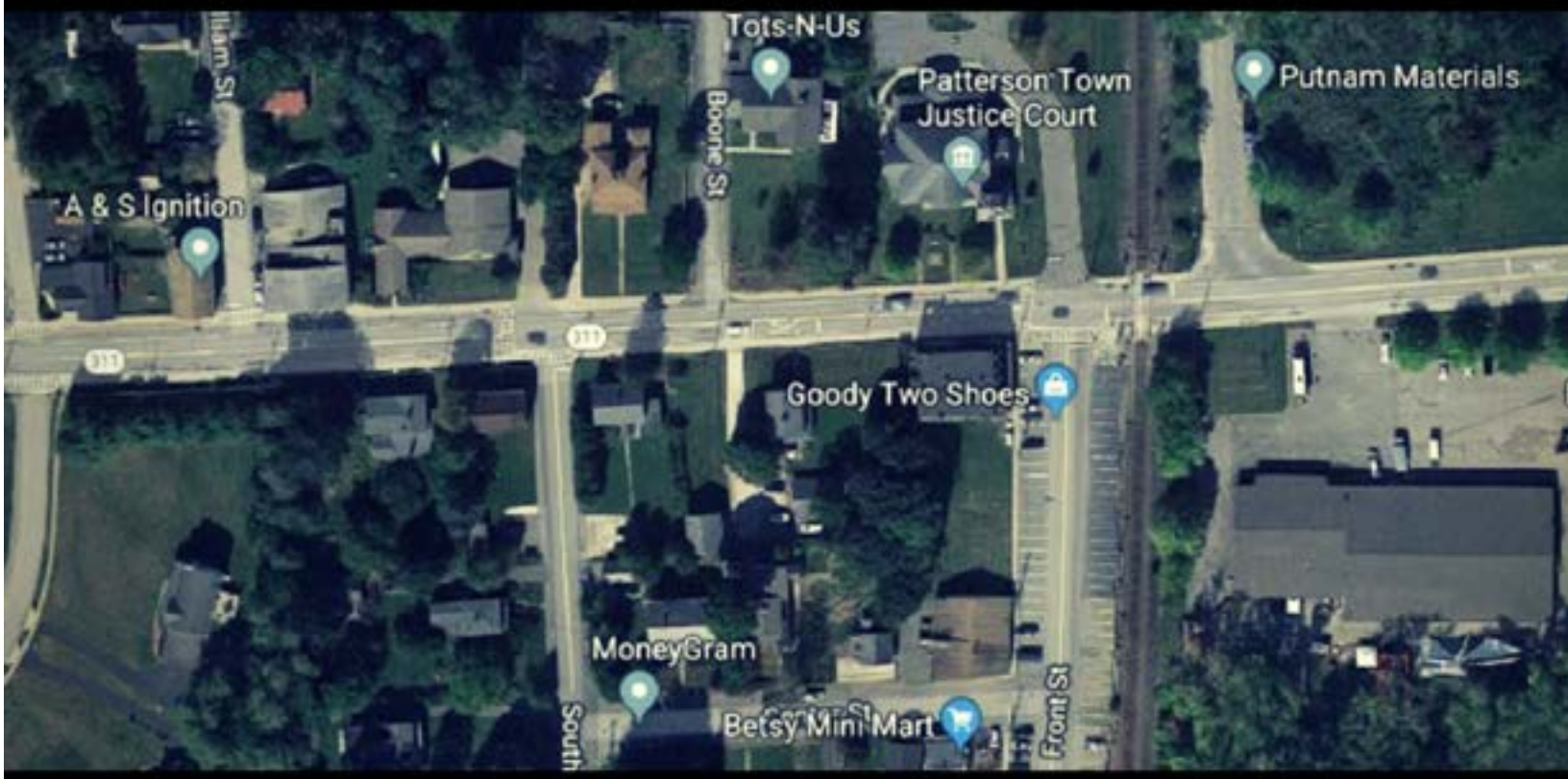
Proposed community and economic development enhancements are described below. Both of the recommendations would require coordination with local elected officials and the business community.

- If local sewer service capacity is expanded, this corridor could be a good location for the development of "big-box" retailers that are scarce in Putnam County. The retail gap analysis and surveying in the neighboring Hamlet of Carmel reveal that this type of development is in demand. However, this type of development is not appropriate for downtown hamlet settings such as the nearby Hamlets of Carmel and Mahopac. Potential big-box retailers in this corridor would be well situated near I-84.
- Seek out and encourage clothing store retailers to move into commercial space in the Carmel Shoprite Plaza. The retail gap analysis indicates that there is unmet demand for clothing stores in the 5, 10, and 15-minute trade areas.

CORRIDOR 7

NYS ROUTE 311 & FRONT ST.

TOWN OF PATTERSON



NYS ROUTE 311 AND FRONT STREET

Town of Patterson

CORRIDOR OVERVIEW

Corridor Description

This corridor is located along NYS Route 311 and Front Street in the Town of Patterson. The western boundary of the corridor is the intersection of Route 311 and Maple Avenue. From this intersection, the corridor continues east along Route 311 until the intersection with Burdick Road. The corridor also extends along Front Street starting from the intersection of Front Street and Route 311 and continuing south until the intersection of Front Street and Townsend Street.

Demographic Snapshot

The charts below depict demographic information about households and the population within a 5-minute drive (5-minute trade area) to the study corridor. Over the 10 year period from 2000 to 2010, the population in the 5 minute trade area grew by 10%. In 2000, the population in the 5-minute trade area was 1,216; by 2010, the population had increased to 1,378 adding an average of approximately 11 people per year. Over the next 7 years population growth slowed, increasing by an average of about 6 people per year and reaching a population of 1,378 in 2017.

According to ESRI business Analyst, the median household income of the 5-minute trade area ($96,820) is lower than the median household income of Putnam County ($101,430). The poverty rate in the 5-minute trade area matches the poverty rate of Putnam County. In the 5-minute trade area, 5% of households are below the poverty line. In comparison, 5% of households in Putnam County are below the poverty line, and 15% of households in New York State are below the poverty line.

POPULATION
1,378

MEDIAN AGE
39

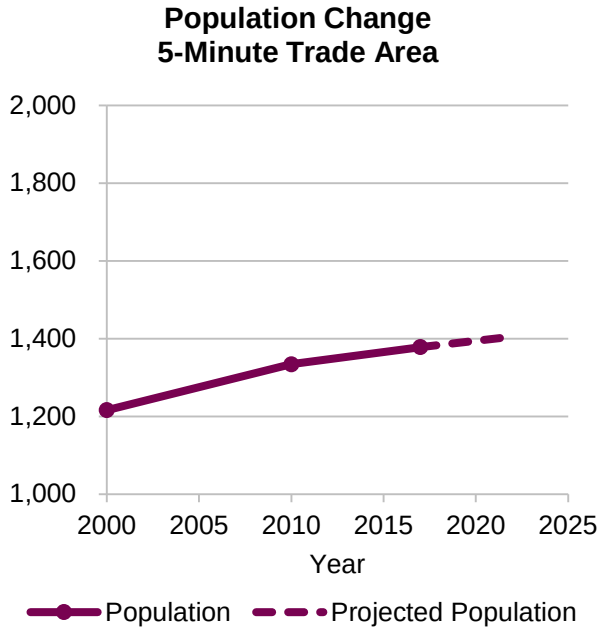
NUMBER OF HOUSEHOLDS
493

AVERAGE HOUSEHOLD INCOME
$113,339

MEDIAN HOUSEHOLD INCOME
$96,820

MEDIAN DISPOSABLE INCOME
$66,842

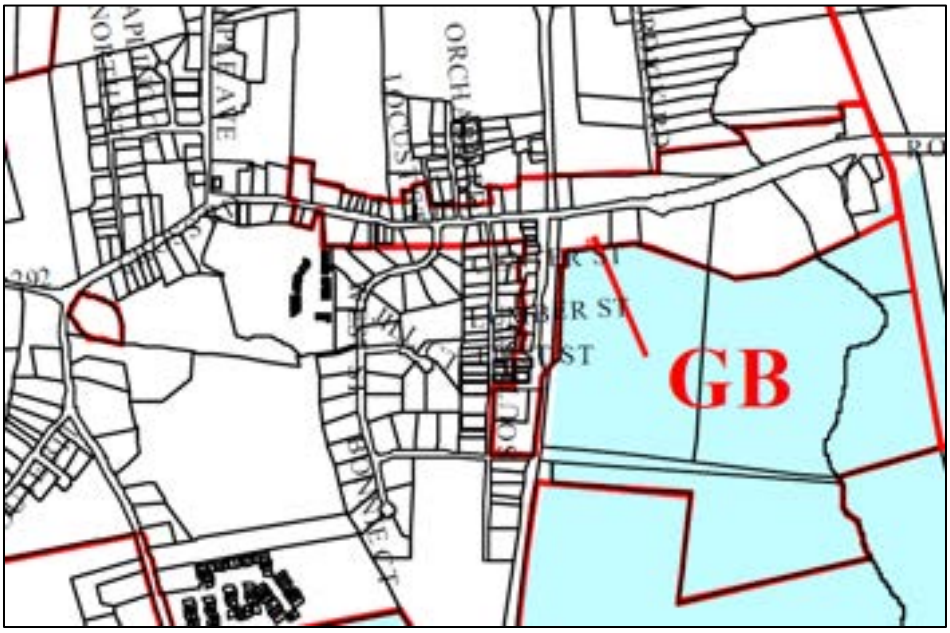
HOUSEHOLDS IN POVERTY
5%



Source: ESRI Business analyst, 2017

ZONING

Town of Patterson Zoning Map



General Business District (GB)

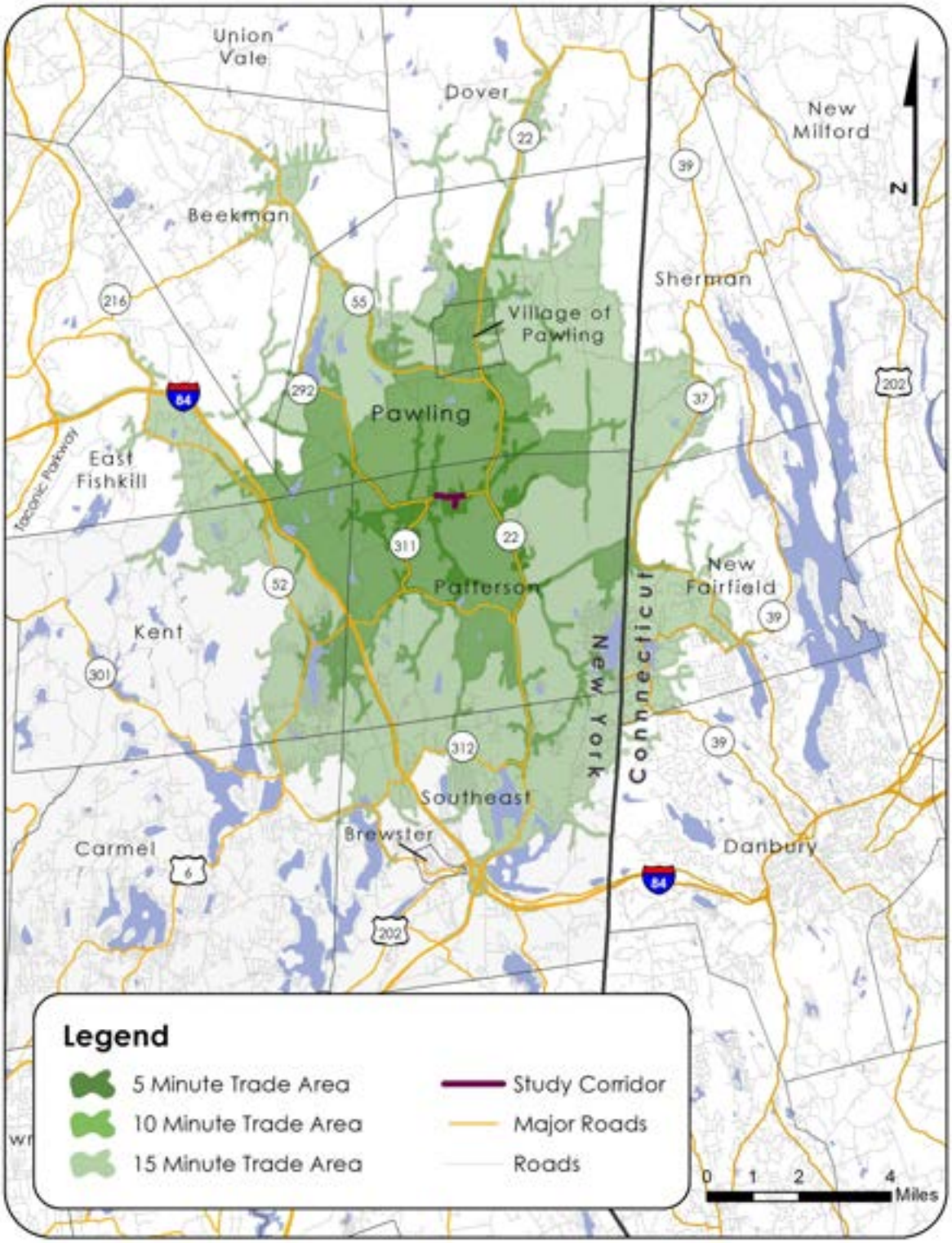
Prinicpal Permitted Uses
•Business Offices •Greenhouses and nurseries •Restaurant •Telephone exchange •Undertaker establishment •Indoor theaters •Music or dancing schools •Nursery or day-care centers •Medical and dental offices •Banks •Public libraries or libraries run by not-for-profit organizations and open to the general public

Table 7-A – Bulk Requirements

	General Business District
Minimum Lot size	30,000 sq ft
Maximum Floor to Area Ratio (FAR)	-
Maximum Building Coverage	65%
Minimum Front Setback for Principal Building	15 ft
Minimum Side Setback for Principal Building	15 ft
Minimum Rear Setback for Principal Building	25 ft
Maximum Building Height	38 ft

TRADE AREAS

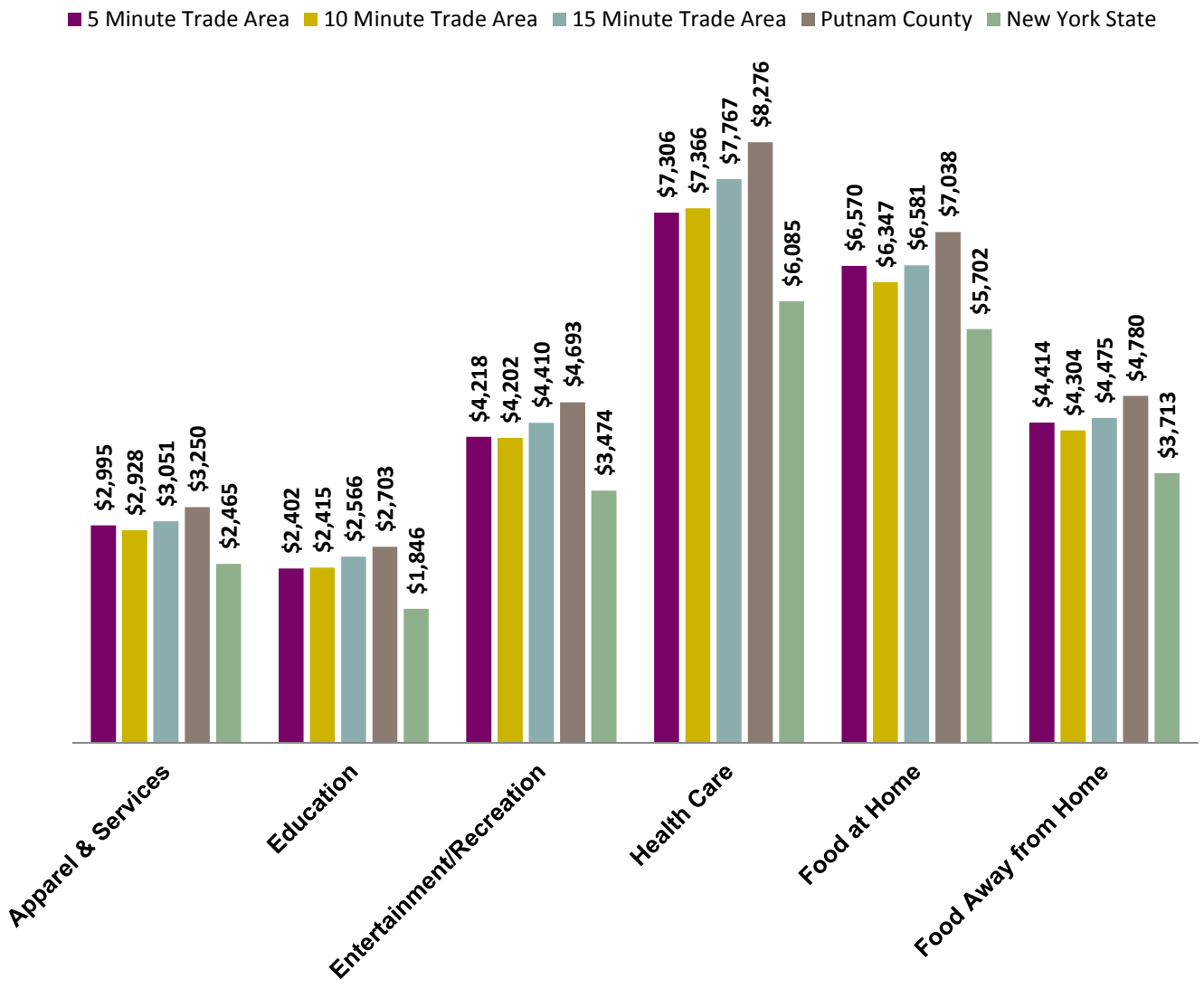
NYS Route 311 and Front Street - Town of Patterson



Household Spending

Table 7-B depicts an estimate of average annual household spending by category for households in the 5, 10, and 15-minute trade areas, Putnam County, and New York State. Average annual household spending in all three trade areas is smaller than average annual household spending of Putnam County as a whole.

Table 7-B – Average Annual Household Spending

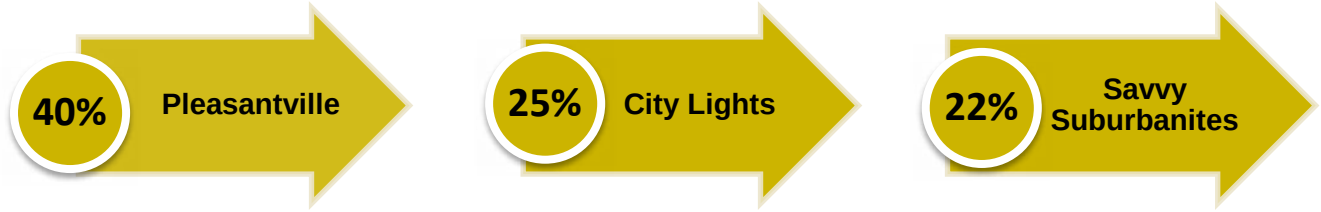


Source: ESRI Business analyst, 2017

Tapestry Segmentation

Tapestry Segmentation is a tool developed by ESRI, a Geographic Information Science (GIS) company. Tapestry segmentation organizes households in the United States into groups (segments) that share similar demographics, socioeconomic indicators, and lifestyle choices. Tapestry segmentation provides a macro-level understanding of the type of households present in a given area. Below are descriptions of the top three most common tapestry segments represented by households within the 10-minute trade area.

Top 3-Tapestry Segments in the 10-Minute Trade Area/Percent of Households



Pleasantville

Prosperous domesticity best describes the settled citizens of Pleasantville. Situated principally in older housing in suburban are as in the Northeast (especially in New York and New Jersey) and secondarily in the West (especially in California), these slightly older couples move less than any other market. Many couples have already transitioned to empty nesters; many are still home to adult children. Families own older, single-family homes and maintain their standard of living with dual incomes. These consumers have higher incomes and home values and much higher net worth (Index 400). Older homes require upkeep; home improvement and remodeling projects are a priority—preferably done by contractors. Residents spend their spare time participating in a variety of sports or watching movies. They shop online and in a variety of stores, from upscale to discount, and use the Internet largely for financial purposes.

City Lights

City Lights, a densely populated urban market, is the epitome of equality. The wide-ranging demographic characteristics of residents mirror their passion for social welfare and equal opportunity. Household types range from single person to married-couple families, with and without children. A blend of owners and renters, single-family homes and town homes, midrise and high-rise apartments, these neighborhoods are both racially and ethnically diverse. Many residents have completed some college or a degree, and they earn a good income in professional and service occupations. Willing to commute to their jobs, they work hard and budget well to support their urban lifestyles, laying the foundation for stable financial futures.

Savvy Suburbanites

Savvy Suburbanites residents are well educated, well read, and well capitalized. Families include empty nesters and empty nester wannabes, who still have adult children at home. Located in older neighborhoods outside the urban core, their suburban lifestyle includes home remodeling and gardening plus the active pursuit of sports and exercise. They enjoy good food and wine, plus the amenities of the city's cultural events.

Supply / Leakage

Table 7-C depicts a leakage/surplus factor for trade areas delineated by a 5, 10 and 15 minute drive from the study corridor. The leakage/surplus factor is a representation of the balance between supply and demand among various industries. In this chart the industries are broken out by North American Industry Classification (NAICS) code. The leakage/surplus factor is measured on a scale from 100 to -100. A value of 100 represents an area where there is household demand but there is no supply so all of the potential retail sales are leaking out of the area. A value of -100 represents an area where there is a surplus of supply but there is no household demand. The closer the value is to zero, the more balance there is between supply and demand.

Table 7-C is color coded on a gradient of green to red with the darkest green representing a value of 100, and the darkest red representing a value of -100. The table reveals significant leakage in every trade area. In particular, the industry category of Clothing/Accessories Stores has a high leakage/surplus factor in the 5, 10, and 15 minute trade areas. This indicates that there is demand for these types of stores that is not being met inside the trade areas. There is a similarly large leakage/surplus factor for the General Merchandising Stores industry category.

Table 7-C – Leakage / Supply Factor

Industry	5 Minute Trade Area	10 Minute Trade Area	15 Minute Trade Area
Motor Vehicle and Parts Dealers (NAICS 441)	4.4	43.3	44.7
Furniture/Home Furnishing Stores (NAICS 442)	76.2	37.9	29.3
Electronics & Appliance Stores (NAICS 443)	52.4	59	43.3
Bldg/Garden Equip/Supply Stores (NAICS 444)	-9.4	1	-1.2
Food and Beverage Stores (NAICS 445)	-38.3	-7.9	2.1
Health and Personal Care Stores (NAICS 446)	21.2	27.3	29.5
Gasoline Stations (NAICS 447)	56.2	-0.9	-13.9
Clothing/Accessories Stores (NAICS 448)	54.9	82.8	84.4
Sports/Hobby/Book/Music Stores (NAICS 451)	69.3	15.1	6.6
General Merchandise Stores (NAICS 452)	59	73.2	62.3
Miscellaneous Store Retailers (NAICS 453)	14.7	15.9	21.2
Food Services & Drinking Places (NAICS 722)	32.8	32.4	34.5
Total Retail (including Food/Drink Sales)	**10.6**	**26.1**	**24.9**

Source: ESRI Business analyst, 2017

Table 7-D depicts an estimation of industry leakage and surplus expressed in actual dollar amounts for the 10-minute trade area. Dollar values in the leakage column represent the estimated amount of money leaking out of the 10-minute trade area. Dollar values in the surplus column represent additional sales in the 10-minute trade area that are being generated by households outside of the trade area. These values are calculated by taking the difference between total sales in the trade area (estimated from reported business earnings) and potential sales in the trade area (estimated from household spending trends). When actual sales are lower than potential sales, there is a leakage (households are spending outside of the trade area). When actual sales are higher than potential sales, there is a surplus (households from outside of the trade area are spending in the trade area).

The top three industry categories with the most sales leaking out of the 10-minute trade area are Motor Vehicle and Parts Dealers, General Merchandise Stores, and Clothing/Accessories Stores. ESRI estimates that $21.2 million in General Merchandise spending from households in the 10-minute trade area is being spent outside of the 10-minute trade area. Overall, there is an estimated net $96.5 million in total retail leaking from the 10-minute trade area. This comes out to an average of around $20,000 per household being spent outside of the 10-minute trade area.

Table 7-D – 10 Minute Trade Area Industry Leakage and Surplus

Industry	Leakage (Millions)	Surplus (Millions)	Leakage Surplus Factor
Motor Vehicle and Parts Dealers (NAICS 441)	$ 25.2		43.3
General Merchandise Stores (NAICS 452)	$ 21.2		73.2
Clothing/Accessories Stores (NAICS 448)	$ 16.7		82.8
Food Services & Drinking Places (NAICS 722)	$ 11.6		32.4
Health and Personal Care Stores (NAICS 446)	$ 7.5		27.3
Nonstore Retailers (NAICS 454)	$ 6.5		94
Electronics & Appliance Stores (NAICS 443)	$ 6.1		59
Furniture/Home Furnishing Stores (NAICS 442)	$ 4.3		37.9
Miscellaneous Store Retailers (NAICS 453)	$ 2.19		15.9
Sports/Hobby/Book/Music Stores (NAICS 451)	$ 1.6		15.1
Bldg/Garden Equip/Supply Stores (NAICS 444)	$ 0.3		1
Gasoline Stations (NAICS 447)		-$ 0.4	-0.9
Food and Beverage Stores (NAICS 445)		-$ 6.2	-7.9
Total Retail (including Food/Drink Sales)	**$ 96.5**		**26.1**

Source: ESRI Business analyst, 2017

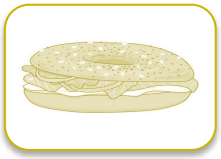
Existing Businesses

Below is a list of the number of existing businesses in the corridor by business type. This list was developed by Pattern staff during field visits to the corridor. The mix of retail businesses and service-based businesses is balanced in this corridor. Approximately half of the businesses are service-based and the other half are retail businesses.

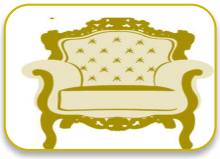
Restaurants
1

Electronics
1

Discount
1



Deli / Bagel
2



Antiques
1

Auto Services
1

Medical / Dental
2

Insurance
1

Hair / Nail Salon
1

Health / Fitness
1

Daycare
1

Other
7

NYS Route 311 and Front Street - Town of Patterson

Existing Conditions and Data Collection

Corridor Characteristics

NYS Route 311 is two-lane, east-west roadway that carries approximately 8,480 vehicles per day. The roadway is classified by the NYSDOT as a Minor Arterial and is owned by NYSDOT. The speed limit is 40 miles per hour. On-street parking is provided on the north side of the roadway between Locust Street and South Street. Sidewalks are provided on both sides of the street.

Front Street is a two-lane, north-south roadway. On-street parking is provided on both sides of the street; however, parking adjacent to the businesses on the west side of the street is restricted to one hour parking between 9 AM and 6 PM while the parking on the east side of the street is reserved for Metro-North permit parking. Sidewalks are provided on the west side of the street, adjacent to the businesses, between NYS Route 311 and Lumber Street and along the east side of the street between the Metro-North station and the Metro-North parking lot.

The study area is serviced by the Patterson Metro-North Station and the Putnam Area Rapid Transit (PART) Line 3. A summary of the transportation characteristics are presented in Table 7-E.

Table 7-E – Corridor Characteristic Summary -
NYS Route 311/Front Street in the Town of Patterson

Average Daily Traffic	Number of Lanes	Speed Limit (MPH)
8,480[1]	2	40-NYS Route 311
On-Street Parking (Y/N)	**Pedestrian Facilities (Y/N)**	**Bike Facilities (Y/N)**
Y	Y	N
	Access to Waterways (Y/N)	**Transit Facilities (Y/N)**
	N	Y Metro-North PART Bus Line 3

Notes:
1. Based on 2014 data from NYSDOT Traffic Data Viewer. Data only available for NYS Route 311

Parking Utilization

Parking utilization counts were collected during typical weekdays (Tuesday, Wednesday, or Thursday) and weekend days in June 2017 and July 2017 at the following locations:

- NYS Route 311 between Locust Street and South Street
- Front Street between NYS Route 311 and 1st Street

The surveyed parking spaces were underutilized, with the peak parking (50 percent utilized) occurring during the weekday midday period. The peak in parking is likely due to the Metro-North parking spaces utilized for commuters in combination with the peak of the retail hours along Front Street.

Table 7-F presents the parking utilization by peak period and time of day.

Table 7-F – Parking Utilization - *Town of Patterson*

Time	NYS Rt 311 from Locust Street to South Street		Front Street from NYS Rt 311 to 1st St	
	Capacity	Parking Utilization	Capacity	Parking Utilization
Weekday – Midday Peak Period				
12:00 PM	13	15%	138	49%
12:30 PM		23%		50%
1:00 PM		23%		44%
1:30 PM		15%		44%
Weekday – PM Peak Period				
4:00 PM	13	31%	138	44%
4:30 PM		31%		49%
5:00 PM		38%		47%
5:30 PM		23%		41%
Weekend – Midday Peak Period				
11:00 AM	13	15%	138	30%
11:30 AM		15%		36%
12:00 PM		31%		33%
12:30 PM		31%		26%
1:00 PM		23%		26%
1:30 PM		23%		22%
2:00 PM		23%		23%
2:30 PM		15%		24%

Notes: 1. Highlighted cells considered at capacity (parking at or above 85 percent)
2. Data collected on a two weekdays (6/1/2017 and 7/21/2017) and two weekend days (6/3/2017 and 7/23/2017)

Crash Data

Crash data over a three year period (March 1, 2014 through February 28, 2017) was obtained from NYSDOT. Tables 7-G and 7-H provides a summary on the number and type of crashes on NYS Route 311 between Burdick Road and Maple Avenue and on Front Street between NYS Route 311 and Marble Road. On NYS Route 311 over a three year period, there were 23 crashes along this corridor, with the greatest number (seven) being rear end crashes. Rear end crashes typically occur at congested locations and signalized intersections. On Front Street there were only three crashes over a three year period.

Table 7-G – Crash Summary - *NYS Route 311 between Burdick Road and Maple Avenue*

	2014	2015	2016	2017	Total	*ACC/MVM[1]*
Fatalities	0	0	0	0	**0**	
Injured	7	1	0	0	**8**	
# of Crashes	11	5	7	0	**23**	**4.1**
Over-Taking	1	0	1	0	**2**	
Rear End	4	1	2	0	**7**	
Right Angle	1	0	2	0	**3**	
Left Turn (with other car)	0	2	0	0	**2**	
Left Turn (against other car)	1	1	0	0	**2**	
Right Turn (with other car)	0	1	0	0	**1**	
Right Turn (against other car)	1	0	0	0	**1**	
Side Swipe	0	0	0	0	**0**	
Ped/Bike	2	0	0	0	**2**	
Head On	0	0	0	0	**0**	
Fixed Object	0	0	1	0	**1**	
Animal	0	0	0	0	**0**	
Other	1	0	1	0	**2**	
Unknown	0	0	0	0	**0**	

Notes: Crash Data for March 1, 2014 through February 28, 2017.
1. Accidents per millions vehicle miles traveled = (accidents * 1,000,000)/(365*number of years*AADT*length of corridor)

Source: New York State Department of Transportation (NYSDOT)

Table 7-H – Crash Summary - *Front Street between NYS Route 311 and Marble Road*

	2014	2015	2016	2017	Total	*ACC/MVM*[1]
Fatalities	0	0	0	0	**0**	
Injured	0	0	0	0	**0**	
# of Crashes	2	1	0	0	**3**	**NA**
Over-Taking	0	0	0	0	**0**	
Rear End	0	0	0	0	**0**	
Right Angle	2	0	0	0	**2**	
Left Turn (with other car)	0	0	0	0	**0**	
Left Turn (against other car)	0	0	0	0	**0**	
Right Turn (with other car)	0	0	0	0	**0**	
Right Turn (against other car)	0	0	0	0	**0**	
Side Swipe	0	0	0	0	**0**	
Ped/Bike	0	0	0	0	**0**	
Head On	0	0	0	0	**0**	
Fixed Object	0	0	0	0	**0**	
Animal	0	0	0	0	**0**	
Other	0	1	0	0	**1**	
Unknown	0	0	0	0	**0**	

Notes: Crash Data for March 1, 2014 through February 28, 2017.
1. Accidents per millions vehicle miles traveled = (accidents * 1,000,000)/(365*number of years*AADT*length of corridor)

Source: New York State Department of Transportation (NYSDOT)

NYSDOT provides average accident rates for state highways for different facilities. The 2015 / 2016 average accident rate for a two-lane, undivided highway is 3.5 accidents / million vehicle miles (ACC/MVM). NYS Route 311's 4.1 ACC/MVM exceeds the State's average of similar facilities. AADT was not available for Front Street therefore an ACC/MVM was not calculated.

Identification of Future Needs

Based on the existing conditions data collection, field visits, and discussions with the County, the focus of this study area was on developing the infrastructure to support a Transit Oriented Development (TOD). Typically, a successful TOD includes:

- Main transit station support by other transit options (walking, bicycling, bus, auto).
- Medium/high density development within a half mile of the transit station.
- Residential dwelling units within walking distance.
- Networks that accommodate pedestrians and bicyclists.
- Address collisions along the NYS Route 311 corridor.

For more information on TOD, refer to Appendix 3: Transit Oriented Development (TOD) Information Guide and Zoning Recommendations which provides a definition of TOD and details related to TOD benefits, considerations for implementation of a TOD and information on structuring a TOD ordinance or overlay along with examples of TOD plans and ordinances implemented in municipalities in New York State.

The Thunder Ridge Ski Area is approximately one mile from the NYS Route 311/Front Street intersection, however, during field observations, there were no wayfinding signs for Thunder Ridge Ski Area. Located at the Thunder Ridge Ski Area are Liberty Paintball, a currently vacant restaurant and a saddlery.

NYS Route 311 and Front Street - Town of Patterson

Description of Corridor

The NYS Route 311/Front Street Corridor in the Town of Patterson runs between Maple Avenue to the west and Burdick Road to the east along NYS Route 311 and along Front Street from Townsend Street on the south to NYS Route 311 on the north passed the Patterson Train Station (see Patterson Corridor Figure). The Town of Patterson is located within the New York City East of Hudson Watershed. As a result, any modifications to the water and/or sewer infrastructure would be under the jurisdiction of the New York City Department of Environmental Protection (NYCDEP) and would require coordination with the agency.

Existing Infrastructure Conditions

Sewer

The Hamlet of Patterson WWTP, located east of the study corridor provides wastewater treatment infrastructure to the residential developments and the Matthew Paterson Elementary School south and west of the corridor. The Front Street Sewer District, which is connected to the existing WWTP, includes a sewer main (WWCS) that collects wastewater along Front Street and along NYS Route 311 between Front Street and its intersection with the Patterson Commons Shopping Center Drive. Parcels to the west of Front Street on NYS Route 311 are served by on-site septic systems.

Water

The Dorset Hollow Supply Well, located west of the corridor, supplies water to the residential developments along West Street, Bonnie Court, Jill Court and South Street (see Patterson Corridor Figure). Parcels outside of the district, including the entirety of the corridor, are served by individual, on-site water supply wells. Most wells in the Hamlet of Patterson are exhibiting elevated levels of sodium and chloride principally a result of road salt and water softener use.

PUTNAM COUNTY CORRIDOR STUDY

Patterson Corridor
Sewer and Water Infrastructure

Economic Development Potential, Benefits, and Needs

All development in this corridor outside of the Sewer District is dependent upon the project sponsor's ability to site both septic and wells on their parcels. For some property owners, this results in the loss of what can be considered a significant portion of the developable land making it less economically feasible to advance any proposed project. Along Front Street, the required well head/septic system separation distance of 200' cannot be achieved on multiple vacant parcels even with the WWCS in Front Street because the parcels are relatively small and the residences abutting the rear yards of these parcels all rely on septic. This restriction currently impedes on new development where the WWCS is not installed; vacant parcels on Front Street and elsewhere in the corridor cannot be developed without a municipal water supply connection meaning the corridor remains underdeveloped.

The installation of water and the extension of the WWCS in the corridor would allow for development of vacant and underdeveloped parcels thereby driving economic growth and vitality in the area and permitting a more mixed economic base. An increase in the development potential and elimination of restrictions to growth would be expected to bolster the economic competitiveness of the area, drive an increase in property values, create new job opportunities, both in construction and operation, and generate additional tax revenues.

Options for Infrastructure

Sewer

As noted previously, the existing WWCS does not extend west of the NYS Route 311 and Front Street intersection. The Town of Patterson could potentially extend its sanitary main along NYS Route 311 towards North Street to encourage infill development along this side of the corridor. However, a feasibility study would be required to determine if enough capacity exists at the WWTP to accommodate the additional flows from a potential WWCS extension.

Water

As noted above, water supply by way of private, on-site wells is problematic along Front Street and the water from wells throughout the corridor currently exhibit elevated levels of sodium and chloride. To address the well head/septic system separation issue, the option to install a new water main loop connected to the Dorset Hollow Water District covering the eastern end of West Street, Mable Quarry Road, Front Street, NYS Route 311 and returning to West Street (see Patterson Corridor Figure) could be assessed. A study is being prepared to assess the feasibility of expanding the supply system to cover Front Street.

A second option to address water supply issues in the Hamlet could be the extension of the water main along NYS Route 311 from its intersection with West Street westward to its intersection with Route 292. By providing water to either or both of these segments of the corridor, issues related to water and septic separation would be eliminated, thereby opening individual parcels and the entire corridor to additional development and redevelopment.

TRANSPORTATION RECOMMENDATIONS

Proposed transportation enhancements are described below. Additional Transportation enhancements are presented in Figure 3. Should the State, County or local municipality, depending on jurisdiction, decide to pursue any of the below recommendations, they would be required to follow additional steps including coordination and obtaining required permits. For example, the project sponsor will be required to coordinate with the New York State Department of Transportation (NYSDOT) for any work to be performed in the NYSDOT Right-of-Way (ROW) to obtain the required permits from NYSDOT as part of the Highway Work Process (HWP). In addition, the County will coordinate as necessary with any other local or county transportation agency or departments.

Short-Term Transportation Recommendations (1 to 3 Years)

- Install pavement markings at the NYS Route 311/Front Street intersection to prevent vehicles blocking the intersection when queued at the railroad tracks during a train crossing.
- Add crosswalks to facilitate pedestrian connections between the residential and retail uses on the west side of Front Street with the Metro-North station on the east side of Front Street.
- Install wayfinding signage for Thunder Ridge Ski Area.
- Determine the viability and community support for/interest in implementing a TOD at the train station and in the surrounding area using the information provided in Appendix 3 and specifically that provided in the Considerations for Implementation section of the document.

Medium-Term Transportation Recommendations (3 to 5 Years)

- Install a sidewalk on the east side of Front Street between the Metro-North station and NYS Route 311.
- Continue the sidewalk on the west side of Front Street from Lumber Street south to the Metro-North parking lot.
- Install sidewalks along Center Street and Lumber Street.
- If a TOD is to be advanced, develop a plan (e.g. revisions to Comprehensive Plan or a new TOD Plan), draft a zoning ordinance, complete SEQR on the draft zoning, and adopt a final TOD zoning ordinance as set forth in Appendix 3 herein. This appendix provides information on structuring a TOD ordinance or overlay along with examples of plans and ordinances for consideration in developing these documents. Note: early coordination with the transit agencies and potential developers is important to developing a successful TOD.

Long-Term Transportation Recommendations (5 or More Years)

- Replace the proposed mid-block crosswalk with a raised crosswalk to maintain low vehicle speeds.
- If a TOD is to be put in place, begin and complete implementation.

Figure 3 - Conceptual Improvements - Route 311 and Front Street, Town of Patterson

COMMUNITY AND ECONOMIC DEVELOPMENT RECOMMENDATIONS

Proposed community and economic development enhancements are described below. Both of the recommendations would require coordination with local elected officials and the business community.

- Seek out and encourage retailers to move in to commercial space around the Metro-North station that cater to commuters. Examples of these types of businesses are coffee shops, cafes, and convenience stores. The retail gap analysis indicates that there is unmet demand for these types of businesses.

- Consider permitting mixed-use development along Route 311 or Front Street near the Metro-North Station. This could be accomplished through the creation of a mixed-use overlay district. Such a zoning change could foster Transit Oriented Development with ground floor retail to serve commuters and residents, and residential; units upstairs.

CORRIDOR 8

NYS ROUTE 22

TOWN OF SOUTHEAST


Route 312
Rock Ledge Dr
Rocco Dr
Overlook Ln
Town of Southeast
Route 22
Bog Brook Reservoir
Clock Tower Commons Dr
Brewster Woods Dr
Maltown Rd
N
Legend
Roads
Study Corridor
Property Boundaries
0
0.25
0.5
Miles

CORRIDOR OVERVIEW

Corridor Description

This corridor is located entirely within the Town of Southeast. The northern boundary of the corridor is just north of the intersection of NYS Route 22 and NYS Route 312. The corridor continues south along Route 22 until the southern boundary of the corridor which is the intersection of Route 22 and Milltown Road. This area is known as Sears Corners.

Demographic Snapshot

The charts below depict demographic information about households and the population within a 5-minute drive (5-minute trade area) to the study corridor. Over the past 17 years, population growth in the 5-minute trade area has been largely stagnant. From 2000 to 2017, the population increased by 2% from 2,585 in 2000 to 2,632 in 2017. This growth rate represents an average of increase of a little less than 3 people per year.

According to ESRI Business Analyst, the median household income of the 5-minute trade area ($104,145) is slightly higher than the median household income of Putnam County ($101,430). Median household disposable income in both the 5-minute trade area and Putnam County is approximately 70% of total median household income. In comparison, median household disposable income for New York State as a whole is 78% of total median household income.

POPULATION
2,632

MEDIAN AGE
44

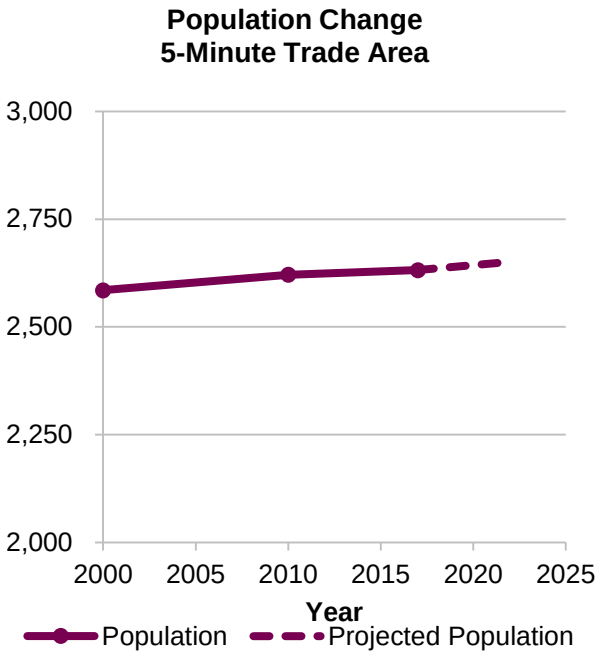
NUMBER OF HOUSEHOLDS
864

AVERAGE HOUSEHOLD INCOME
$128,484

MEDIAN HOUSEHOLD INCOME
$104,145

MEDIAN DISPOSABLE INCOME
$73,989

HOUSEHOLDS IN POVERTY
6%

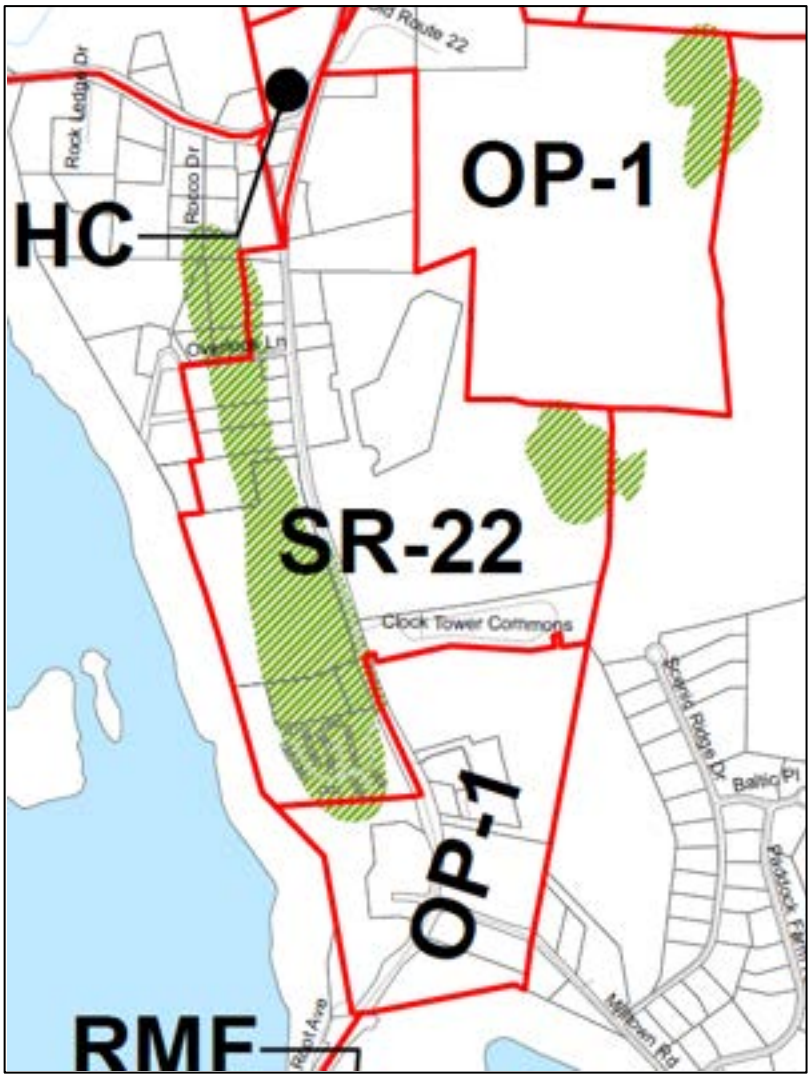


Source: ESRI Business analyst, 2017

ZONING

Most of the study corridor is located within the Special Route 22 Area District (SR - 22). The SR - 22 Zoning District, which incorporates some elements of form based code, requires all new c onstruction to be designed to be consistent with the SR - 22 Design Guidelines and Route 22 Area Master Plan and Aerial View, which was codified into Town Law (Date). Other than floor area ratio (FAR), there are no lot and bulk regulations for the SR - 22 Zoning District. Instead, the Planning Board and the Town Board, through the Conditional Use Permit and Special Permit review process, respectively, consider the proposed development in the context of the Master Plan and design guidelines. There are no permitted principal uses in the SR - 22 Zoning District. The legislative intent of the SR - 22 Zoning District was to promote development that would improve community character through better site design and to protect the Town's natural resources. The southern end of the corridor is in the Office Park District (OP-1). The OP-1 district allows for general business and offices as principal permitted uses. A short section at the northern end of the study corridor is in the Highway Commercial District (HC). This district has smaller minimum lot sizes and setbacks, allowing for the development of a wide range of businesses and offices at a higher density.

Town of Southeast Zoning Map



Special Route 22 Area District (SR-22)

Principal Permitted Uses	Special Permit Uses	Conditional Uses
•None	•Large retail •Recreation •Senior housing	•Bed - and - breakfasts •Office •Retail •Personal services •Professional services •Restaurants •Phone towers •Outside storage

Office Park OP-1 District (OP-1)

Principal Permitted Uses	Special Permit Uses	Conditional Uses
•Craft workshop •General business •Office personal services •Professional services	•Hotel / motel •Conference facility •Kennels •Public utilities •Wood mill	•Light manufacturing •Nursery •Recreation •Restaurant •Warehouse •Phone towers

Highway Commercial (HC)

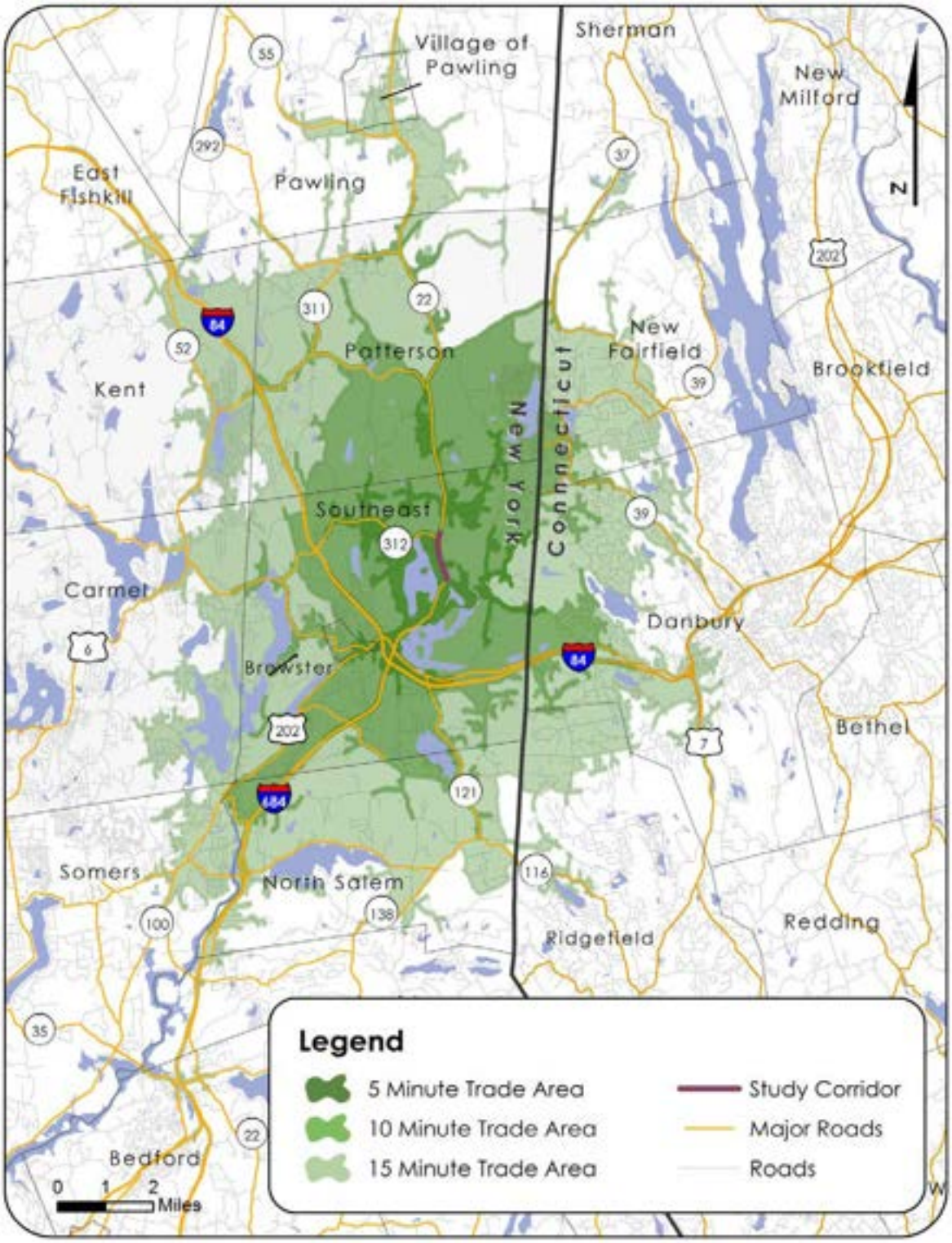
Principal Permitted Uses	Special Permit Uses	Conditional Uses
•Bed - and - breakfast •Equestrian center •General business •Nursery •Office •Personal service •Professional services •Restaurant •Restaurant, fast/casual •Recreation •Theater/performing arts	•Adult uses •Nightclub •Pawnshops •Pool or billiard halls •Tattoo parlors •Car wash •Hotel / motel •Conference facility •Kennels •Large retail •Vehicle service stations •Public utilities •Senior housing	•Retail •Phone towers

Table 8-A – Bulk Requirements

	Office Park OP-1 District (OP-1)	Highway Commercial (HC)
Minimum Lot size	120,000 sq ft	40,000 ft
Maximum Floor to Area Ratio (FAR)	0.25	0.3
Maximum Building Coverage	25%	15%
Minimum Front Setback for Principal Building	100 ft	50 ft
Minimum Side Setback for Principal Building	50 ft	35 ft
Minimum Rear Setback for Principal Building	50	35 ft
Maximum Building Height	3 stories / 45 ft	2 stories / 35 ft (4 stories / 50 ft for hotels)

TRADE AREAS

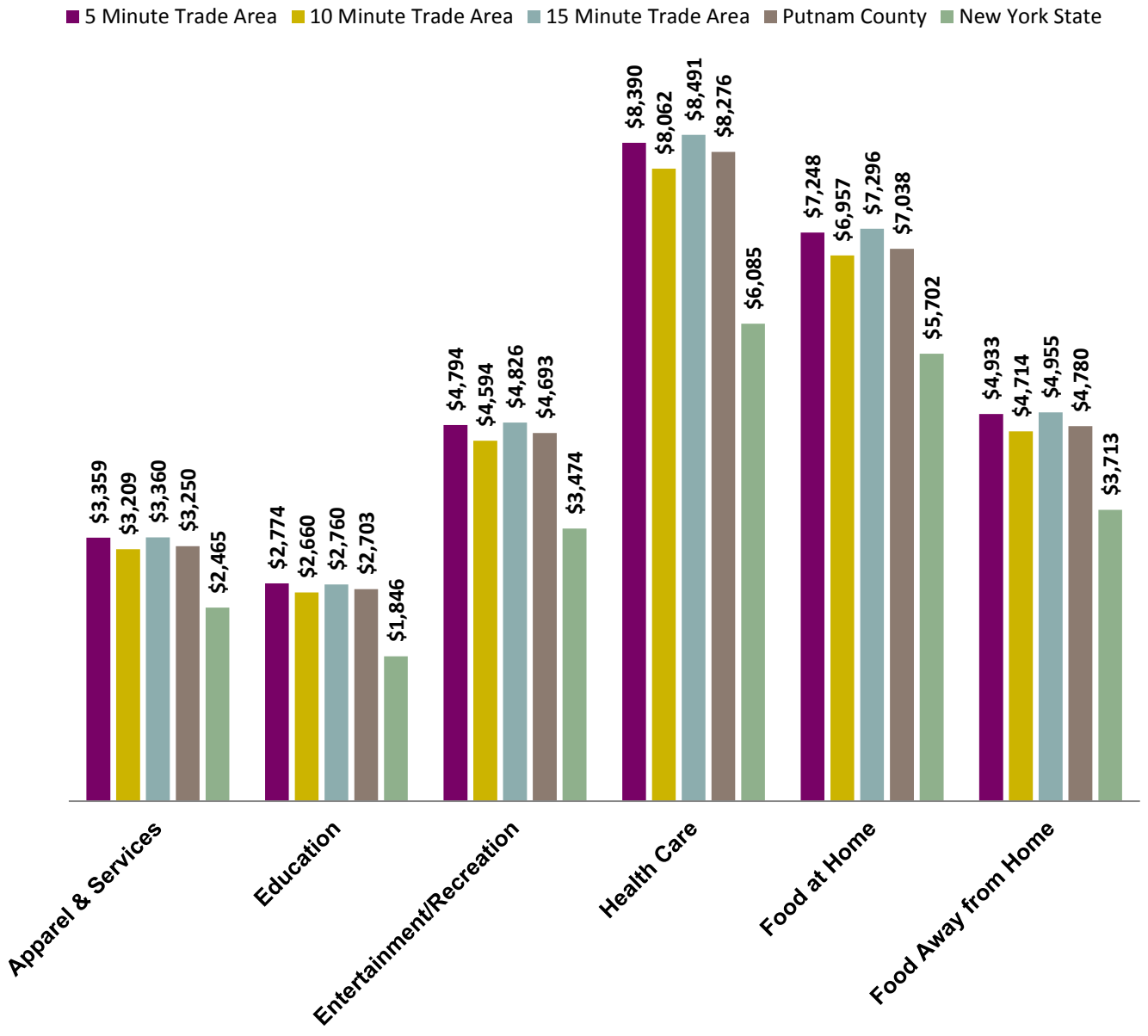
NYS Route 22 - Town of Southeast



Household Spending

Table 8-B depicts an estimate of average annual household spending by category for households in the 5, 10, and 15-minute trade areas, Putnam County, and New York State.

Table 8-B – Average Annual Household Spending



Source: ESRI Business analyst, 2017

Tapestry Segmentation

Tapestry Segmentation is a tool developed by ESRI, a Geographic Information Science (GIS) company. Tapestry segmentation organizes households in the United States into groups (segments) that share similar demographics, socioeconomic indicators, and lifestyle choices. Tapestry segmentation provides a macro-level understanding of the type of households present in a given area. Below are descriptions of the top three most common tapestry segments represented by households within the 10-minute trade area.

Top 3-Tapestry Segments in the10-Minute Trade Area/Percent of Households

Pleasantville

Prosperous domesticity best describes the settled citizens of Pleasantville. Situated principally in older housing in suburban areas in the Northeast (especially in New York and New Jersey) and secondarily in the West (especially in California), these slightly older couples move less than any other market. Many couples have already transitioned to empty nesters; many are still home to adult children. Families own older, single-family homes and maintain their standard of living with dual incomes. These consumers have higher incomes and home values and much higher net worth (Index 400). Older homes require upkeep; home improvement and remodeling projects are a priority—preferably done by contractors. Residents spend their spare time participating in a variety of sports or watching movies. They shop online and in a variety of stores, from upscale to discount, and use the Internet largely for financial purposes.

Savvy Suburbanites

Savvy Suburbanites residents are well educated, well read, and well capitalized. Families include empty nesters and empty nester wannabes, who still have adult children at home. Located in older neighborhoods outside the urban core, their suburban lifestyle includes home remodeling and gardening plus the active pursuit of sports and exercise. They enjoy good food and wine, plus the amenities of the city's cultural events.

International Marketplace

Located primarily in cities in "gateway" states on both U.S. coasts, International Marketplace neighborhoods are developing urban markets with a rich blend of cultures and household types. The population is young, with a median age of only 32.2 years. Approximately 70 percent of the households are families; 44 percent are married couples with children and single parents. The average family size is 3.7. International Marketplace is the second most diverse of the Tapestry segments. More than half of the total population is Hispanic; 11.6 percent is Asian, and 7 percent is of two or more races. A high proportion of immigrants, including recent arrivals, live in these neighborhoods.

RETAIL GAP ANALYSIS

Leakage / Supply

Table 8-C depicts a leakage/surplus factor for trade areas delineated by a 5, 10 and 15 minute drive from the study corridor. The leakage/surplus factor is a representation of the balance between supply and demand among various industries. In this chart the industries are broken out by North American Industry Classification (NAICS) code. The leakage/surplus factor is measured on a scale from 100 to -100. A value of 100 represents an area where there is household demand but there is no supply so all of the potential retail sales are leaking out of the area. A value of -100 represents an area where there is a surplus of supply but there is no household demand. The closer the value is to zero, the more balance there is between supply and demand.

Table 8-C is color coded on a gradient of green to red with the darkest green representing a value of 100, and the darkest red representing a value of -100. The table shows that there is an overall surplus business in the 5-minute trade area with the exception of General Merchandise Stores, Clothing and Accessory Stores, and Furniture/Home Furnishing Stores. In the 10 and 15-minute trade leakage/surplus factors are generally closer to zero, indicating a better balance of local supply and demand in these trade areas relative to the 5-minute trade area.

Table 8-C – Leakage / Supply Factor

Industry	5 Minute Trade Area	10 Minute Trade Area	15 Minute Trade Area
Motor Vehicle and Parts Dealers (NAICS 441)	-54.3	12.2	15.2
Furniture/Home Furnishing Stores (NAICS 442)	35.8	51.6	-3.5
Electronics & Appliance Stores (NAICS 443)	-37.2	18.1	5.7
Bldg/Garden Equip/Supply Stores (NAICS 444)	-39.4	-17.1	2.8
Food and Beverage Stores (NAICS 445)	-67.6	-18.4	-9.6
Health and Personal Care Stores (NAICS 446)	-12.2	31.2	-6.8
Gasoline Stations (NAICS 447)	-65.1	-20.9	-13.1
Clothing/Accessories Stores (NAICS 448)	51.5	44.6	-36.7
Sports/Hobby/Book/Music Stores (NAICS 451)	-52.4	-9.5	-31.2
General Merchandise Stores (NAICS 452)	79.9	33.5	-3.1
Miscellaneous Store Retailers (NAICS 453)	-18.9	10.7	-15.1
Food Services & Drinking Places (NAICS 722)	-25	22.1	4.6
Total Retail (including Food/Drink Sales)	**-42.7**	**6**	**-6.2**

Source: ESRI Business analyst, 2017

Table 8-D depicts an estimation of industry leakage and surplus expressed in actual dollar amounts for the 10-minute trade area. Dollar values in the leakage column represent the estimated amount of money leaking out of the 10-minute trade area. Dollar values in the surplus column represent additional sales in the 10-minute trade area that are being generated by households outside of the trade area. These values are calculated by taking the difference between total sales in the trade area (estimated from reported business earnings) and potential sales in the trade area (estimated from household spending trends). When sales are lower than potential sales, there is a leakage (households are spending outside of the trade area). When sales are higher than potential sales, there is a surplus (households from outside of the trade area are spending in the trade area).

ESRI estimates that the industry category with the most leakage is General Merchandise Stores. An estimated $27.8 million in General Merchandise spending from households within the 10-minute trade area is being spent outside of the 10-minute trade area. Overall there is an estimated $55.9 million in total retail sales leaking from the 10-minute trade area. This means the average household in the 10-minute trade area is spending approximately $6,088 in total retail outside of the 10-minute trade area.

Table 8-D – 10-Minute Trade Area Industry Leakage and Surplus

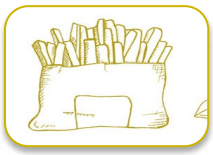
Industry	Leakage (Millions)	Surplus (Millions)	Leakage Surplus Factor
General Merchandise Stores (NAICS 452)	$ 27.8		33.5
Clothing/Accessories Stores (NAICS 448)	$ 23.6		44.6
Motor Vehicle and Parts Dealers (NAICS 441)	$ 19.4		12.2
Food Services & Drinking Places (NAICS 722)	$ 18.0		22.1
Health and Personal Care Stores (NAICS 446)	$ 16.9		31.2
Furniture/Home Furnishing Stores (NAICS 442)	$ 11.5		51.6
Electronics & Appliance Stores (NAICS 443)	$ 5.3		18.1
Miscellaneous Store Retailers (NAICS 453)	$ 3.3		10.7
Nonstore Retailers (NAICS 454)	$ 2.5		10.3
Sports/Hobby/Book/Music Stores (NAICS 451)		$ 2.9	-9.5
Bldg/Garden Equip/Supply Stores (NAICS 444)		$ 12.1	-17.1
Gasoline Stations (NAICS 447)		$ 22.0	-20.9
Food and Beverage Stores (NAICS 445)		$ 35.3	-18.4
Total Retail (including Food/Drink Sales)	**$ 55.9**		**6**

Source: ESRI Business analyst, 2017

Existing Businesses

Below is a list of the number of existing businesses in the corridor by business type. This list was developed by Pattern Staff during field visits to the corridor. Approximately 70% of businesses in this corridor are service-based businesses and approximately 30% of the businesses are retail businesses.

Restaurants
9



Fast Food
2

Wine / Beer
2

Medical / Dental
7

Electronics
2

Law Offices
2

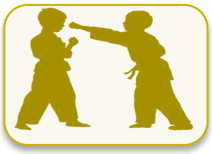
Home Services
7

Hair / Nail Salon
5

Health Fitness & Wellness
5

Financial Services
10

Dance Studio
1

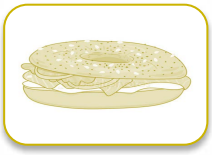


Karate Studio
1

Daycare
1

Hardware / Home Goods
1

Discount
3



Deli / Bagel
2

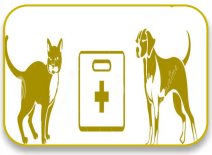
Gas Station
4

Other
21

Auto Services
3

Pharmacy
1

Grocery Store
1



Pet / Veterinary Services
4

Laundry / Dry Cleaning
3

Insurance Services
1

NYS Route 22 - Town of Southeast

Existing Conditions and Data Collection

Corridor Characteristics

NYS Route 22 in the Town of Southeast is a two-lane, north-south roadway that carries approximately 25,295 vehicles per day. The roadway is classified by the NYSDOT as a Principal Arterial Other and is owned by NYSDOT. The speed limit is 35 miles per hour. On-street parking is not provided and there are no sidewalk or bicycle facilities. A summary of the corridor's transportation characteristics are presented in Table 8-E.

Table 8-E - Corridor Characteristic Summary – *NYS Route 22 in the Town of Southeast*

Average Daily Traffic 25,295[1]	**Number of anes** 2	**Speed Limit (MPH)** 35
On-Street Parking (Y/N) N	**Pedestrian Facilities (Y/N)** N	**Bike Facilities (Y/N)** N
	Access to Waterways (Y/N) N	**Transit Facilities (Y/N)** N

Notes:
1. Automatic Tube Recorder collected May 2017

Crash Data

Crash data over a three year period (March 1, 2014 through February 28, 2017) was obtained from NYSDOT. Table 8-F provides a summary on the number and type of crashes on NYS Route 22 between Milltown Road and Dykeman Road. Over a three year period, there were 174 crashes along this corridor, with the greatest number (73) being rear end crashes. Rear end crashes typically occur at congested locations and signalized intersections.

Table 8-F – Crash Summary - *NYS Route 22 between Milltown Road and Dykman Road*

	2014	2015	2016	2017	Total	*ACC/MVM*[1]
Fatalities	0	0	0	0	**0**	
Injured	12	10	26	3	**51**	
# of Crashes	46	61	57	10	**174**	**6.2**
Over-Taking	4	7	4	0	**15**	
Rear End	20	28	21	4	**73**	
Right Angle	5	5	7	2	**19**	
Left Turn (with other car)	1	1	3	0	**5**	
Left Turn (against other car)	4	4	1	0	**9**	
Right Turn (with other car)	0	4	0	0	**4**	
Right Turn (against other car)	0	1	2	0	**3**	
Side Swipe	1	1	1	2	**5**	
Ped/Bike	0	1	0	0	**1**	
Head On	0	0	1	0	**1**	
Fixed Object	2	1	3	0	**6**	
Animal	2	3	0	0	**5**	
Other	7	4	13	2	**26**	
Unknown	0	1	1	0	**2**	

Notes: Crash Data for March 1, 2014 through February 28, 2017.
1. Accidents per millions vehicle miles traveled = (accidents * 1,000,000)/(365*number of years*AADT*length of corridor)

Source: New York State Department of Transportation (NYSDOT)

NYSDOT provides average accident rates for state highways for different facilities. The 2015/2016 average accident rate for a two-lane, undivided highway is 3.5 accidents/million vehicle miles (ACC/MVM). The study corridor's 6.2 ACC/MVM exceeds the State's average of similar facilities.

Identification of Future Needs

The NYS Route 22 corridor experiences high level of traffic that is beyond the capacity of a two–lane roadway. In addition, the congestion is further compounded by multiple driveways along the corridor resulting in turning vehicles blocking through lane traffic at multiple locations. Measures to address collisions in this corridor should be considered.

NYS Route 22 - Town of Southeast

Description of Corridor

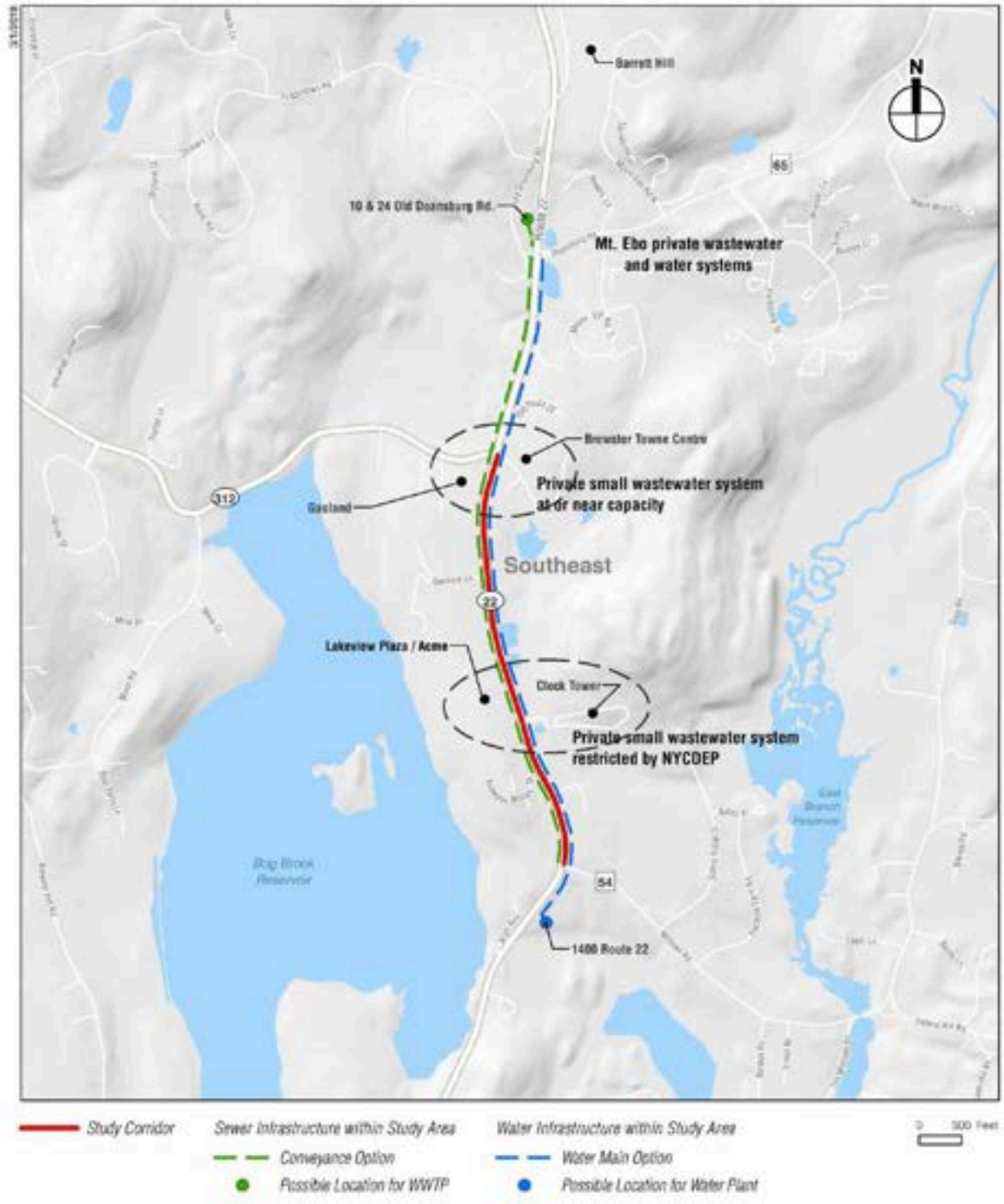
The NYS Route 22 corridor in the Town of Southeast runs from Milton Road on the south to Doansburg Road on the north (see Route 22 Southeast Corridor Figure). The corridor supports a wide variety of uses including, commercial, industrial, medical and residential. Development in the corridor is limited by the lack of available infrastructure as well as environmental constraints such as steep slopes, significant wetlands and streams as well as NYC drinking supply. The vast majority of the Town of Southeast, including this corridor, is located within the New York City East of Hudson Watershed. Therefore, any modifications to the water and/or sewer infrastructure would be under the jurisdiction of the New York City Department of Environmental Protection (NYCDEP) and would require coordination with the agency.

Existing Infrastructure Conditions

Currently, neither municipal sewer nor water is provided in the NYS Route 22 corridor in the Town of Southeast. Each development has its own water supply well(s) and on-site wastewater disposal system (septic) with the exception of a few uses that are connected to private wastewater systems and/or private water systems.

Sewer
Brewster Town Center and the Gasland development (on either side of NYS Route 22 at its intersection with NYS Route 312) share a small, private wastewater system which is at or near capacity. The Clock Tower and Lakeview Plaza/Acme developments (located on either side of NYS Route 22 at its intersection with Clock Tower Commons Drive) share a small wastewater treatment system restricted in size and flow by NYCDEP. North of the corridor, a private WWTP and WWCS were developed at Mt. Ebo which services multiple uses in the surrounding area. This wastewater treatment plant was recently expanded but it is expected that all additional capacity has been or will be allocated to existing and proposed uses including Barrett Hill, a residential development just north of Mt. Ebo.

Water
As noted, this corridor is not served by a municipal water system. The Mt. Ebo development operates a private water system that supplies development in the surrounding area. Other parcels are predominantly served by private on-site wells.



PUTNAM COUNTY CORRIDOR STUDY

Route 22 Corridor - Southeast
Sewer and Water Infrastructure

Economic Development Potential, Benefits, and Needs

For the most part, development in this corridor is dependent upon the project sponsor's ability to site both septic and water supply wells on their parcel(s) or to enter into an agreement(s) with property owners whose developments have additional sewer and/or water capacity and are able and willing to provide connection to one or both. For some projects, the need to site both septic and a water supply well with the requisite separation distance between, results in the loss of what can be considered a significant portion of the developable land, thereby making it less economically feasible to advance either new or redevelopment projects along the corridor. Redevelopment of existing uses is also constrained by these same issues. Additionally, existing development in the corridor continues to age, increasing the likelihood of septic system failure; at least one has been noted. This is also a significant concern for the Town of Southeast due to potential contamination of existing water supply wells and the City of New York due to the corridor's close proximity to the New York City East Branch Reservoir drinking water supply.

Freeing the development of under-developed and undeveloped parcels in the corridor with the introduction of new sewer infrastructure, can be expected to drive economic growth and vitality in the area. An increase in the development potential and elimination of restrictions to growth would be expected to bolster the economic competitiveness of the area, including an increase in property values and job opportunities, both construction and operational, as well as the generation of additional tax revenues. Introducing wastewater infrastructure to the corridor fortifies the viability of the existing and proposed development and would be expected to invite new development options.

Sewer

Development potential along those segments of the NYS Route 22 Southeast Corridor where connection to an existing WWCS is not available is currently limited by the lack a municipal sewer service. Without a municipal WWTP that has existing or expandable capacity and a WWCS to connect to a viable facility, owners of vacant parcels and those who wish to expand their existing businesses/facilities are restricted by the capacity of their current or proposed on-site septic systems. There are several parcels (vacant and previously developed) for sale as well as a number of vacant buildings that could benefit from connection to a WWTP.

Water

Several existing uses and vacant parcels have limited development capacity due to water supply related issues. Maintenance of the required separation distance between well-head and septic system fields have the potential to limit the location of new water supply wells, especially on those smaller parcels in the corridor. A municipal system could address shortfalls in water supply and may encourage more varied uses to the Route 22 corridor.

Options for infrastructure

Sewer

As described above, there is no existing municipal WWCS or WWTP within the corridor. Due to the location of NYS Route 22 in close proximity to the Bog Brook and East Branch Reservoirs, a WWCS running from the south up to the corridor is not expected to receive approval by NYCDEP. Possible options to allow for the provision of municipal sewer within this corridor include the development of a new WWTP and/or the Town's assuming responsibility of the existing private systems across the length of the corridor and beyond.

New Municipal WWTP

The installation of a new WWTP could be explored near the north end of the corridor. This WWTP could tie existing uses, some of which have problematic/failing septic systems, to proposed, and potential new development and redevelopment. Due to the location of the corridor in the NYC East of Hudson Watershed, NYCDEP approvals and a variance would be required for the installation of a new WWCS with a new surface discharge in the area. For a municipal water supply system to be established, a feasibility study(s) would be required to determine where the WWTP and WWCS could be located/connected. One potential location for a WWTP is in the area west of NYS Route 22 between NYS Route 22 and Old Doansburg Road. If a parcel(s) in this area is available for sale, an engineering study would need to be performed to determine the feasibility of siting a WWTP on the parcel(s). If feasible, and if this option were pursued, an agreement with the existing property owner(s) to purchase or otherwise secure access to a chosen parcel would be required.

Town of Southeast Assume Responsibility for Private Systems

If all parties are amenable to this approach, the existing private wastewater treatment systems along and to the north of the study corridor could be taken over and managed by the Town of Southeast. This would allow a WWCS to be installed in the corridor and connected to a wastewater treatment system with capacity. An engineering feasibility study would be required to determine if this would be a viable approach. That study could also assess the potential to expand any or all of the existing systems to add processing capacity to a combined system.

Water

Consideration can be given to the construction of a water main along the corridor with a possible supply from a new well and water treatment plant situated at or just to the south of the corridor. For example, there is a vacated building on a parcel at 1400 Route 22 just south of the intersection of NYS Route 22 and Milltown Road that might be able to support the infrastructure needed to implement such a supply system. Due to the location of the corridor, NYCDEP approvals would be required for the installation of a new water main and the location of the water plant; an engineering study would be needed to establish a location for and capacity of a new well field and treatment system. If permitted, determined feasible, and the decision was made to pursue, an agreement with the property owner(s) to purchase or otherwise secure access to and the use of a chosen parcel would be required.

TRANSPORTATION RECOMMENDATIONS

Proposed transportation enhancements are described below. Additional Transportation enhancements are presented in Figure 4. Should the State, County or local municipality, depending on jurisdiction, decide to pursue any of the below recommendations, they would be required to follow additional steps including coordination and obtaining required permits. For example, the project sponsor will be required to coordinate with the New York State Department of Transportation (NYSDOT) for any work to be performed in the NYSDOT Right-of-Way (ROW) to obtain the required permits from NYSDOT as part of the Highway Work Process (HWP). In addition, the County will coordinate as necessary with any other local or county transportation agency or departments.

Medium-Term Transportation Recommendations (3 to 5 Years)

- To reduce congestion caused by the multiple driveways along the corridor, it is recommended that the existing curb-cuts be consolidated and shared driveway access implemented. As shown in Figure 4, 17 curb cuts would be reduced to six curb cuts.
- The Red Rooster Drive-In and Bel Air Motor Lodge parking lots would need to be redesigned to better accommodate one driveway access point.
- A new signal with turn lanes would need to be installed to accommodate the traffic accessing the Bel Air Motor Lodge and Red Rooster Drive-In at one location.

Long-Term Transportation Recommendations (5 of More Years)

- The roadway should be widened from two to four lanes to accommodate the high traffic levels. It should be noted that NYSDOT does have a long range plan to widen NYS Route 22 from Interstate 684 to Doansburg Road. To widen US 22, NYSDOT would require a center median which local businesses opposed.

Figure 4 - Conceptual Improvements - *Route 22, Town of Southeast*

COMMUNITY AND ECONOMIC DEVELOPMENT RECOMMENDATIONS

Proposed community and economic development enhancements are described below. Both of the recommendations would require coordination with local elected officials and the business community.

- Seek out and encourage furniture and home goods retailers to move into existing commercial space along this corridor. The retail gap analysis indicates that there is unmet demand for these types of stores in the 5 and 10-minute trade areas.
- Seek out and encourage clothing retailers to move into existing commercial space along this corridor. The retail gap analysis indicates that there is unmet demand for these types of stores in the 5 and 10-minute trade areas.

CORRIDOR 9

MAIN STREET

VILLAGE OF BREWSTER


Town of Southeast
Interstate 84
Village Dr
N
Putnam Ave
N Main St
Center St
Prospect St
Carmel Ave
Village of Brewster
Peaceable Hill Rd
Stone Ridge Rd
Argonne Rd
Oak St
Oak St
Merritt St
Hoyt St
Elton Ave
Main St
Marvin Ave
Railroad Ave
Park St
Wikes St
Allview Ave
Route 22
Morningthorpe Ave
Nelson Blvd
Town of Southeast
Legend
Roads
Study Corridor
Municipal Boundaries
Property Boundaries
0
0.25
0.5
Miles

CORRIDOR OVERVIEW

Corridor Description

This corridor is on North Main Street, Main Street, and East Main Street in the Village of Brewster. The western boundary of the corridor is the intersection of North Main Street and Route 6 (Carmel Avenue). The corridor continues into downtown Brewster and North Main Street become Main Street near the Brewster Train station. The corridor follows Main Street until the intersection with 202/East Main Street. The corridor continues northeast on 202/East Main street until reaching the eastern boundary at the intersection of 202/East Main Street and the Interstate 84 overpass.

Demographic Snapshot

The charts below depict demographic information about households and the population within a 5-minute drive (5-minute trade area) to the study corridor. From 2000 to 2017, the population in the 5-minute trade area has grown steadily. Over this time period the population increased by 7% from 6,491 in 2000 to 6,940 in 2017. This population growth represents an average increase of about 26 people per year.

According to ESRI Business Analyst, the median household income of the 5-minute trade area ($80,945) is significantly lower than the median household income of Putnam County ($101,430). The median household income in the 5-minute trade area is almost $28,000 lower than average household income in the same area. This indicates that there is a wide range of household incomes in the 5-minute trade area. The poverty rate in the 5-minute trade area is higher than the county rate. In the 5-minute trade area, 7% of households are below the poverty line. In comparison, 5% of households in Putnam County as a whole are below the poverty line, and 15% of households in New York State are below the poverty line.

POPULATION
6,940

MEDIAN AGE
40

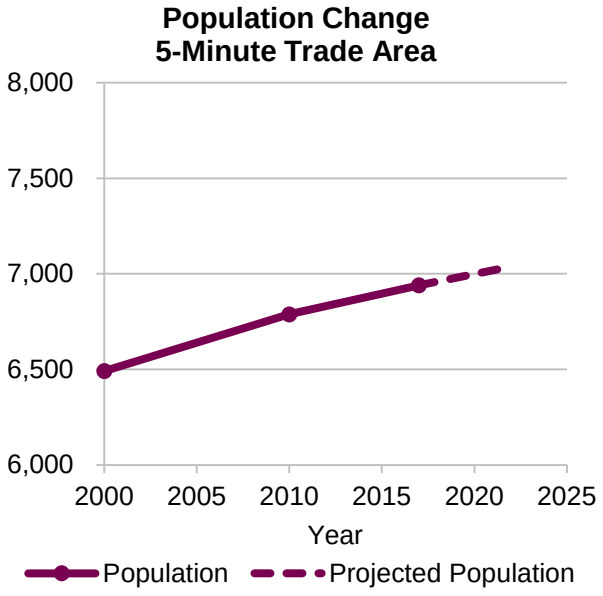
NUMBER OF HOUSEHOLDS
2,482

AVERAGE HOUSEHOLD INCOME
$108,879

MEDIAN HOUSEHOLD INCOME
$80,945

MEDIAN DISPOSABLE INCOME
$59,271

HOUSEHOLDS IN POVERTY
7%



Source: ESRI Business analyst, 2017

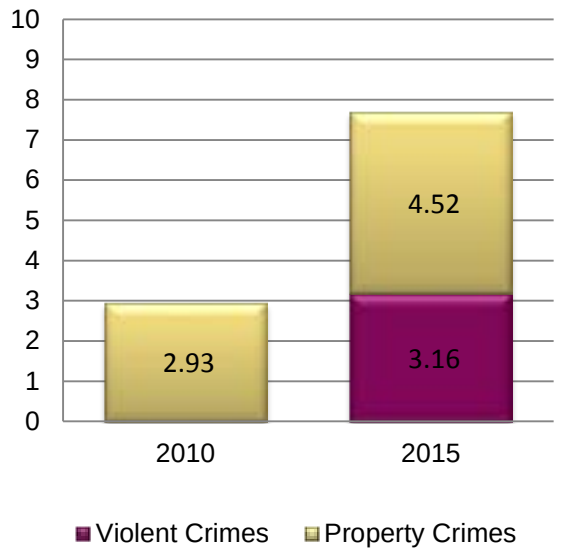
Crime and Perception of Safety

After consultation with Putnam County staff, it was determined that Brewster was the only community where crime and the perception of crime was significant enough to warrant an analysis in the context of this study. As a result, the information below outlines police services and crime trends in the Village of Brewster.

Residents of the Village of Brewster are served by the Village of Brewster Police Department, the Putnam County Sheriff's Department, and New York State Police. The Village of Brewster Police Department is located in the Study Corridor on Main Street in downtown Brewster. The Putnam County Sheriff's Department is located off of Route 6/Glenida Avenue in the Hamlet of Carmel.

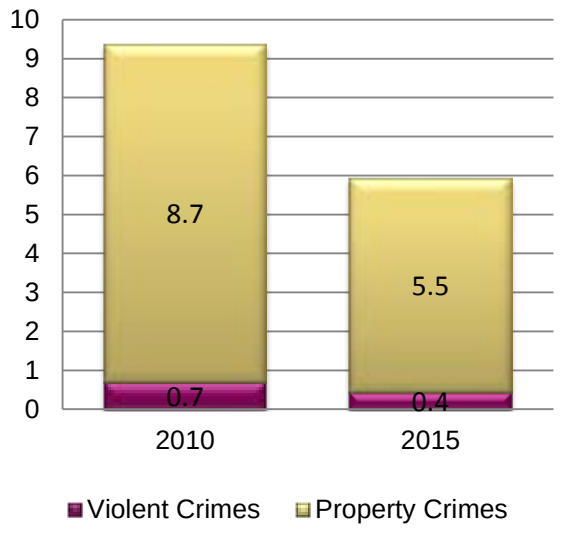
In 2015, the overall crime rate in the Village of Brewster was similar to the overall crime rate in Putnam County. In 2015 the Village of Brewster Police Department reported 4.52 property crimes per 1,000 residents and 3.16 violent crimes per 1,000 residents for a total of 7.68 crimes per 1,000 residents. In comparison, in 2015 the property crime rate in Putnam County was 5.5 per 1,000 residents and the violent crime rate was 0.4 crimes per 1,000 residents. This comes out to 5.9 crimes per 1,000 Putnam County residents in 2015. Similar to national trends, crime rates in Putnam County as a whole are falling. Brewster, on the other hand, has seen an uptick in crime since 2010.

Village of Brewster Police Dept.
Annual Crime Per 1,000 Residents



Source: FBI Uniform Crime Reporting, 2010, 2015

Putnam County Total
Annual Crime Per 1,000 Residents



Source: FBI Uniform Crime Reporting, 2010, 2015

ZONING

Zoning Map – Village of Brewster

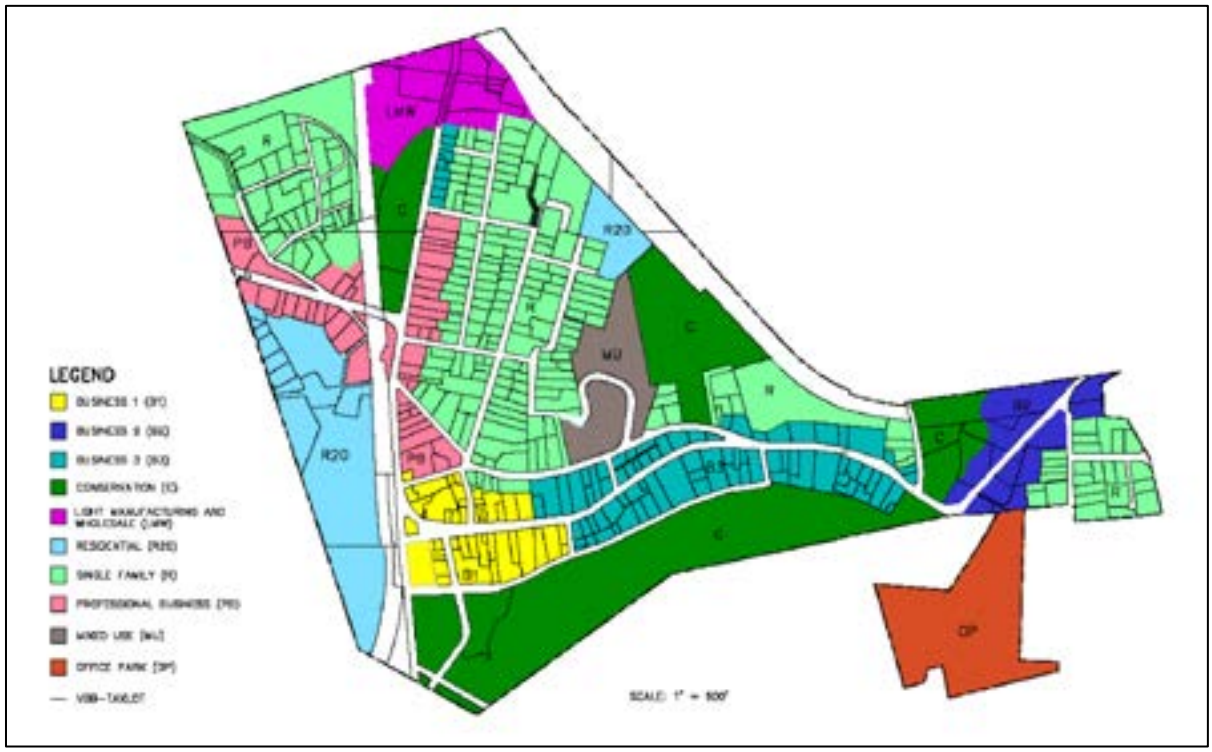


Table 9-A – Bulk Requirements

	Business 1 (B1)	Business 2 (B2)	Business 3 (B3)	Professional Business (PB)
Minimum Lot size	3,500 sq ft	10,000 sq ft	5,000 sq ft	7,500 sq ft
Maximum Floor to Area Ratio (FAR)	2.5	1.5	2	1
Maximum Lot Coverage	50%	50%	50%	40%
Minimum Front Setback for Principal Building	0 ft (10 ft if abutting residential use)	10 ft	10 ft	20 ft
Minimum Side Setback for Principal Building	0 ft (10 ft if abutting residential use)	10 ft	10 ft	15 ft
Minimum Rear Setback for Principal Building	0 ft (10 ft if abutting residential use)	30 ft	15 ft	15 ft
Maximum Building Height	5 stories / 60 ft	3 stories / 35 ft	3 stories / 35 ft	2 ½ stories / 35 ft

Business 1 (B1)

Prinicipal Permitted Uses	Special Exception Uses
•Retail stores •Restaurants or taverns •Personal services •Offices •Multi-family dwellings •Upper floor residential •Art galleries •Theaters	•Church/place of worship •Civic,community or cultural use •Library •Municipality-owned or operated building •Museum

Business 2 (B2)

Prinicipal Permitted Uses
•Retail stores •Restaurants or taverns •Personal services •Offices •Gas stations •Car dealerships •Auto repair •Movie theaters

Business 3 (B3)

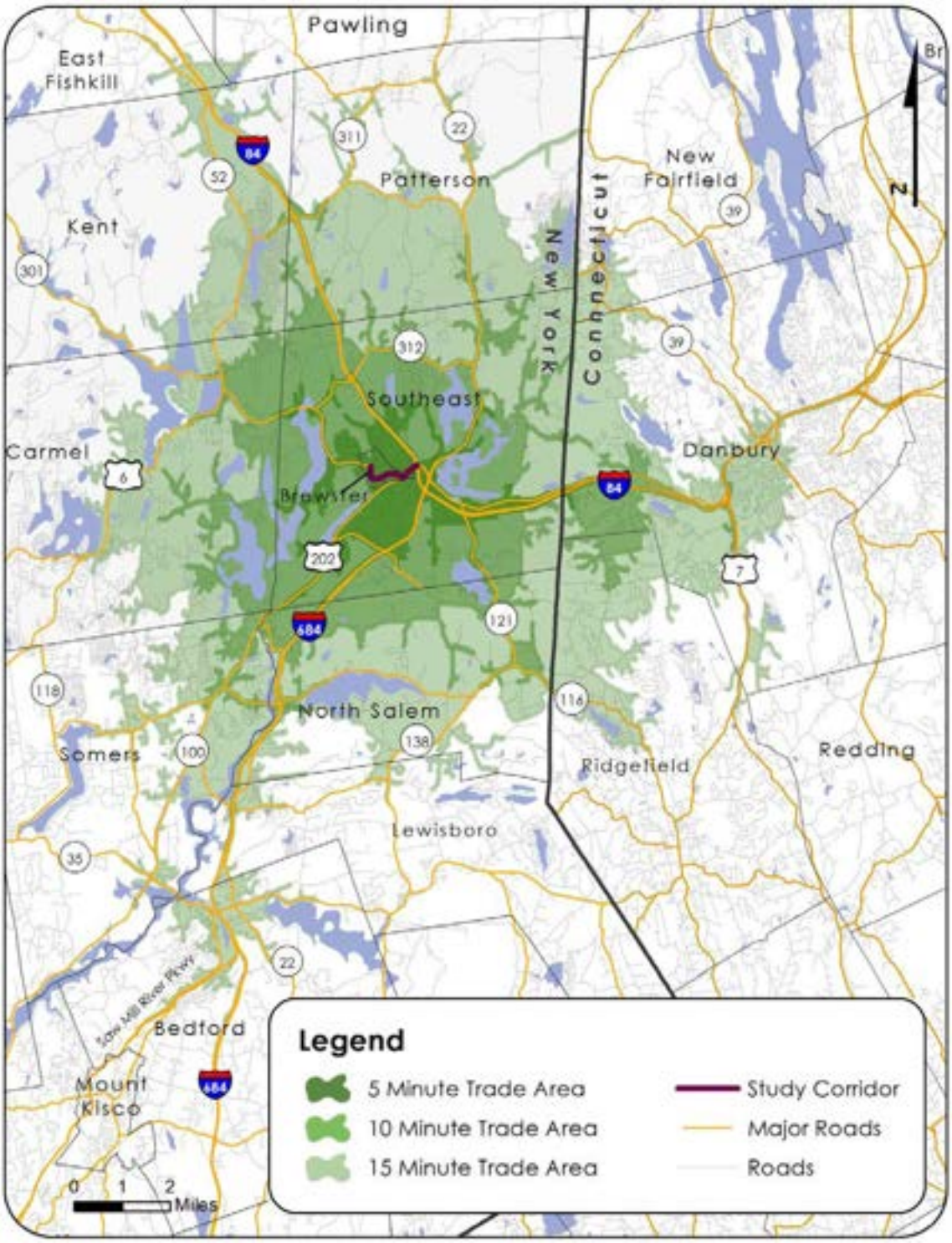
Prinicipal Permitted Uses	Special Exception Uses
•Retail stores •Restaurants or taverns •Personal services •Offices •Multi-family dwellings •Single-family dwellings •Townhomes •Upper floor residential •Art galleries •Theaters •Laundromats •Community facilities •Churches /places of worship •Day care •Libraries •Municipal buildings •Museums	•Bed and breakfasts •Drive though use •Research facilities •Adult-oriented businesses

Professional Business (PB)

Prinicipal Permitted Uses	Special Exception Uses
•Personal services •Offices •Single-family dwellings	•Alternative care housing •Assisted living facilities •Church/place of worship •Daycare centers •Municipal buildings •Schools •Funeral homes •Bed and breakfasts

TRADE AREAS

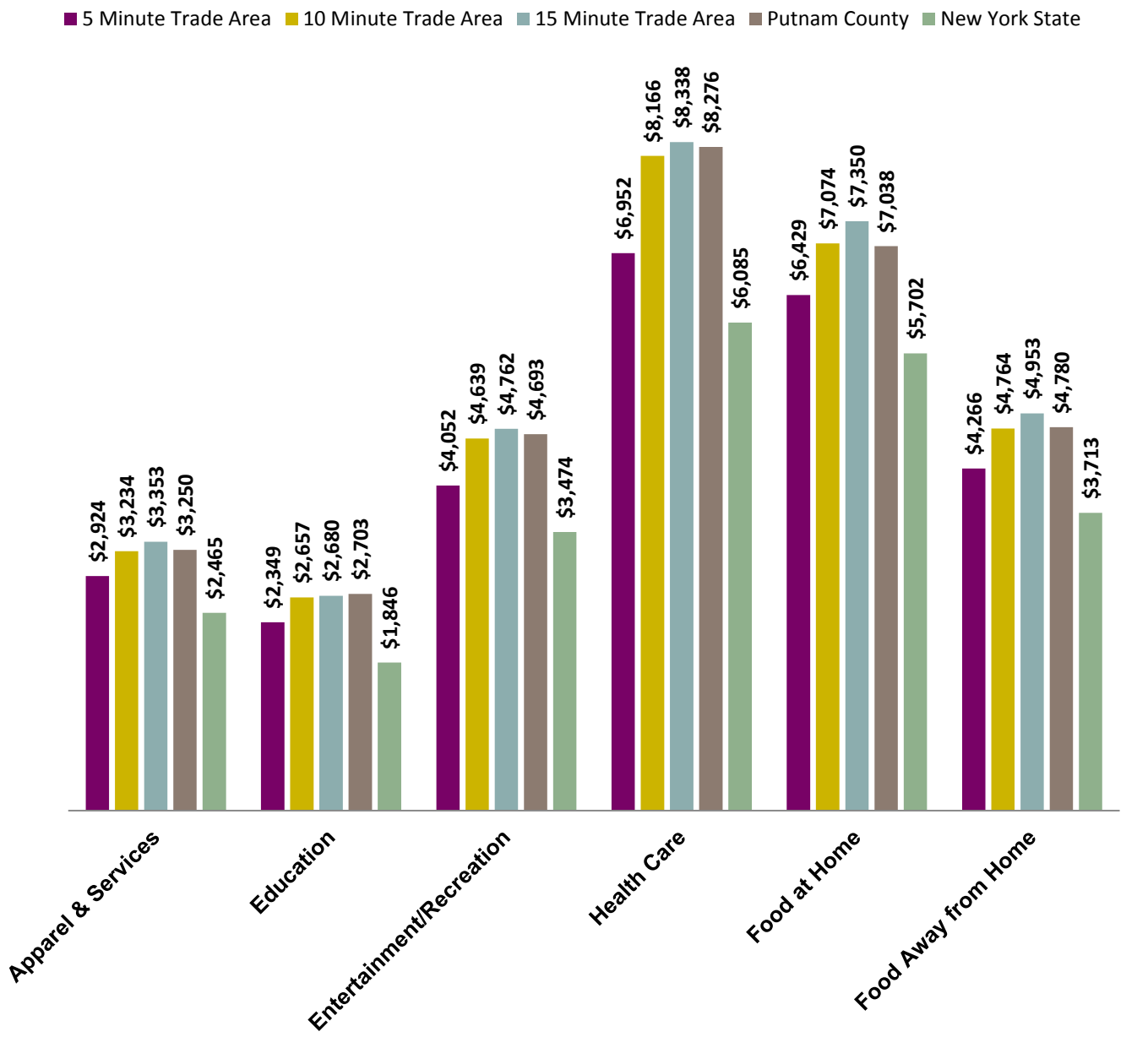
Main Street – Village of Brewster



Household Spending

The chart below depicts an estimate of average annual household spending by category for households in the 5, 10, and 15-minute trade areas, Putnam County, and New York State.

Table 9-B – Average Annual Household Spending

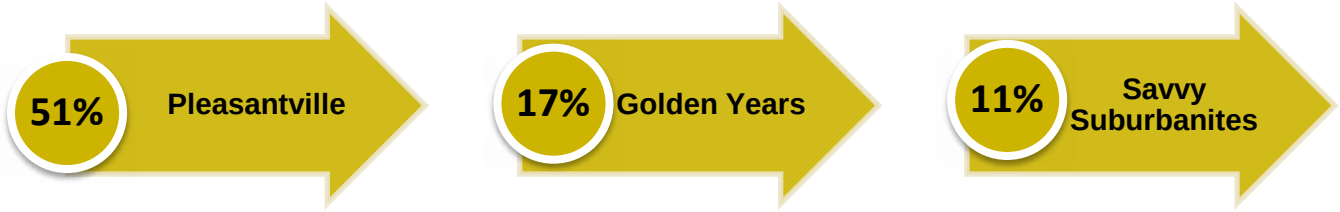


Source: ESRI Business analyst, 2017

Tapestry Segmentation

Tapestry Segmentation is a tool developed by ESRI, a Geographic Information Science (GIS) company. Tapestry segmentation organizes households in the United States into groups (segments) that share similar demographics, socioeconomic indicators, and lifestyle choices. Tapestry segmentation provides a macro-level understanding of the type of households present in a given area. Below are descriptions of the top three most common tapestry segments represented by households within the 10-minute trade area.

Top 3-Tapestry Segments in the10-Minute Trade Area/Percent of Households



Pleasantville

Prosperous domesticity best describes the settled citizens of Pleasantville. Situated principally in older housing in suburban areas in the Northeast (especially in NY and NJ) and secondarily in the West (especially in California), these slightly older couples move less than any other market. Many couples have already transitioned to empty nesters; many are still home to adult children. Families own older, single-family homes and maintain their standard of living with dual incomes. These consumers have higher incomes and home values and much higher net worth (Index 400). Older homes require upkeep; home improvement and remodeling projects are a priority—preferably done by contractors. Residents spend their spare time participating in a variety of sports or watching movies. They shop online and in a variety of stores, from upscale to discount, and use the Internet largely for financial purposes.

Golden Years

Independent, active seniors nearing the end of their careers or already in retirement best describes Golden Years residents. This market is primarily singles living alone or empty nesters. Those still active in the labor force are employed in professional occupations; however, these consumers are actively pursuing a variety of leisure interests—travel, sports, dining out, museums, and concerts. They are involved, focused on physical fitness, and enjoying their lives. This market is smaller, but growing, and financially secure.

Savvy Suburbanites

Savvy Suburbanites residents are well educated, well read, and well capitalized. Families include empty nesters and empty nester wannabes, who still have adult children at home. Located in older neighborhoods outside the urban core, their suburban lifestyle includes home remodeling and gardening plus the active pursuit of sports and exercise. They enjoy good food and wine, plus the amenities of the city's cultural events.

RETAIL GAP ANALYSIS

Leakage / Supply

Table 9-C depicts a leakage/surplus factor for trade areas delineated by a 5, 10 and 15 minute drive from the study corridor. The leakage/surplus factor is a representation of the balance between supply and demand among various industries. In this chart the industries are broken out by North American Industry Classification (NAICS) code. The leakage/surplus factor is measured on a scale from 100 to -100. A value of 100 represents an area where there is household demand but there is no supply so all of the potential retail sales are leaking out of the area. A value of -100 represents an area where there is a surplus of supply but there is no household demand. The closer the value is to zero, the more balance there is between supply and demand.

Table 9-C is color coded on a gradient of green to red with the darkest green representing a value of 100, and the darkest red representing a value of -100. The table reveals a significant leakage of Clothing/Accessories Stores sales and General Merchandise. Interestingly, when the 5-minute trade area is expanded to the 10-minute trade area, the leakage supply factor for Clothing/Accessories Stores becomes negative, meaning there is a slight over supply in the 10 minute trade area. This dramatic difference in leakage/supply factor indicates that there are several clothing stores in the 10-minute trade area that are not in the 5-minute trade area. This is likely due to the fact that the 10-minute trade area extends into part of the City of Danbury where there is a concentrated amount of retailers.

Table 9-C– Leakage / Surplus Factor

Industry	5 Minute Trade Area	10 Minute Trade Area	15 Minute Trade Area
Motor Vehicle and Parts Dealers (NAICS 441)	-30.5	-15	0.1
Furniture/Home Furnishing Stores (NAICS 442)	44.2	-3.8	-7.9
Electronics & Appliance Stores (NAICS 443)	-11.4	-0.8	5.6
Bldg/Garden Equip/Supply Stores (NAICS 444)	21.7	-28.1	-0.2
Food and Beverage Stores (NAICS 445)	-44.8	-46.6	-8.6
Health and Personal Care Stores (NAICS 446)	35.7	-21.8	-4.3
Gasoline Stations (NAICS 447)	2.5	-29.8	-12.1
Clothing/Accessories Stores (NAICS 448)	80.2	-13.3	-28.7
Sports/Hobby/Book/Music Stores (NAICS 451)	33.3	-34.4	-26.9
General Merchandise Stores (NAICS 452)	73.7	4.1	3.1
Miscellaneous Store Retailers (NAICS 453)	35.5	-28	-14.5
Nonstore Retailers (NAICS 454)	-5.4	-3.8	39
Food Services & Drinking Places (NAICS 722)	36.3	-6.3	2.8
Total Retail (including Food/Drink Sales)	**-4.4**	**-22.7**	**-6.1**

Source: ESRI Business analyst, 2017

Table 9-D depicts an estimation of industry leakage and surplus expressed in actual dollar amounts for the 10-minute trade area. Dollar values in the leakage column represent the estimated amount of money leaking out of the 10-minute trade area. Dollar values in the surplus column represent additional sales in the 10-minute trade area that are being generated by households outside of the trade area. These values are calculated by taking the difference between total sales in the trade area (estimated from reported business earnings) and potential sales in the trade area (estimated from household spending trends). When actual sales are lower than potential sales, there is a leakage (households are spending outside of the trade area). When actual sales are higher than potential sales, there is a surplus (households from outside of the trade area are spending in the trade area).

ESRI estimates that $4.3 million in General Merchandise spending from households in the 10-minute trade area is being spent outside of the 10-minute trade area. However, this is the only industry category where there is leakage. Overall there is an estimated $290.7 million surplus in 10-minute trade area. This means that there is an estimated $290.7 million in retail sales generated in the 10-minute trade area by households outside of the 10-minute trade area.

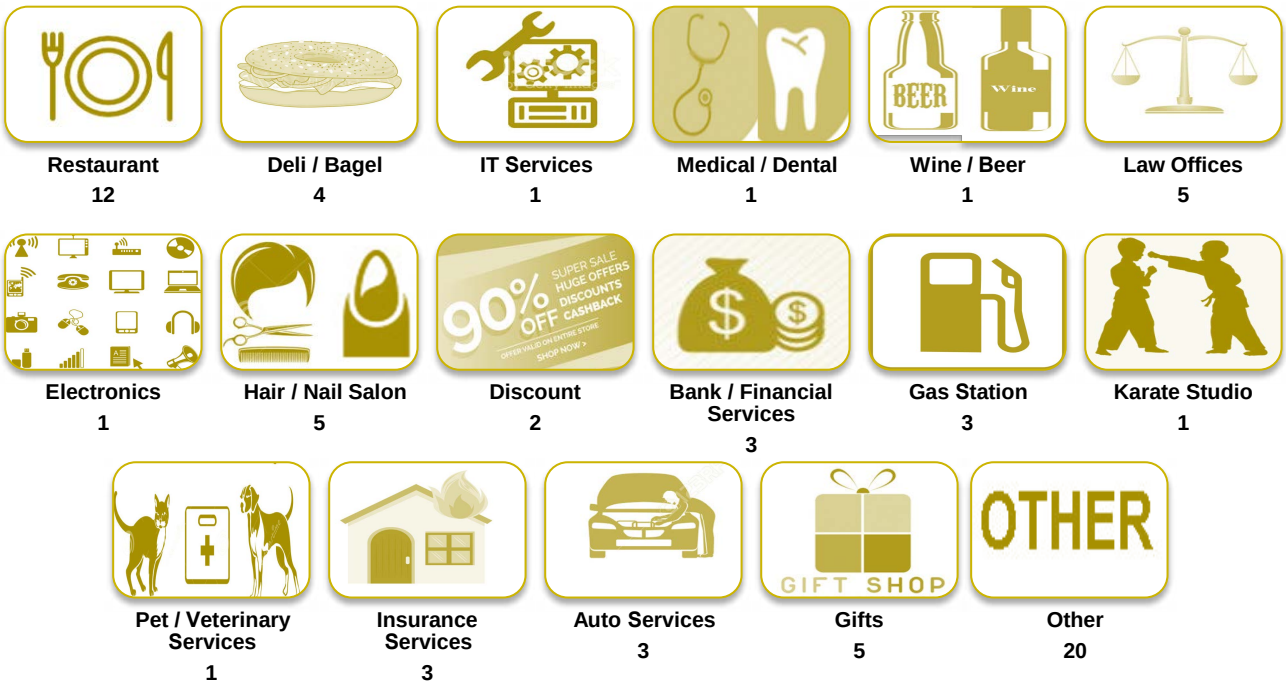
Table 9-D – 10 Minute Trade Area Industry Leakage and Surplus

Industry	Leakage (Millions)	Surplus (Millions)	Leakage Surplus Factor
General Merchandise Stores (NAICS 452)	$ 4.3		4.1
Electronics & Appliance Stores (NAICS 443)		$ 0.3	-0.8
Nonstore Retailers (NAICS 454)		$ 1.1	-3.8
Furniture/Home Furnishing Stores (NAICS 442)		$ 1.3	-3.8
Food Services & Drinking Places (NAICS 722)		$ 6.7	-6.3
Clothing/Accessories Stores (NAICS 448)		$ 11.9	-13.3
Miscellaneous Store Retailers (NAICS 453)		$ 13.2	-28
Sports/Hobby/Book/Music Stores (NAICS 451)		$ 14.2	-34.4
Health and Personal Care Stores (NAICS 446)		$ 20.2	-21.8
Bldg/Garden Equip/Supply Stores (NAICS 444)		$ 22.5	-28.1
Motor Vehicle and Parts Dealers (NAICS 441)		$ 31.1	-15
Gasoline Stations (NAICS 447)		$ 35.7	-29.8
Food and Beverage Stores (NAICS 445)		$ 136.8	-46.6
Total Retail (including Food/Drink Sales)		**$ 290.7**	**-22.7**

Source: ESRI Business analyst, 2017

Existing Businesses

Below is a list of the number of existing businesses in the corridor by business type. This list was developed by Pattern staff during field visits to the corridor. The mix of retail businesses and service-based businesses is balanced in this corridor. Approximately half of the businesses are service-based and the other half are retail businesses.



Restaurant 12

Deli / Bagel 4

IT Services 1

Medical / Dental 1

Wine / Beer 1

Law Offices 5

Electronics 1

Hair / Nail Salon 5

Discount 2

Bank / Financial Services 3

Gas Station 3

Karate Studio 1

Pet / Veterinary Services 1

Insurance Services 3

Auto Services 3

Gifts 5

Other 20

Main Street – Village of Brewster

Existing Conditions and Data Collection

Corridor Characteristics

Main Street in the Village of Brewster is a two-lane, east-west roadway that carries approximately 10,945 vehicles per day. The roadway is classified by the NYSDOT as a Principal Arterial Other and is owned by NYSDOT. The speed limit is 30 mph miles per hour. On-street parking is provided along the corridor west of Wilkes Street. A sidewalk is provided on the south side of the roadway between Railroad Avenue and U.S. Route 202 while a sidewalk is provided on the north side of the roadway between Railroad Avenue and Merritt Street.

The corridor is serviced by the Putnam Area Rapid Transit (PART) Line 1 and the Metro-North Brewster Station. A summary of the corridor's transportation characteristics is presented in Table 9-E

Table 9-E – Corridor Characteristic Summary - *Main Street in the Village of Brewster*

Average Daily Traffic	Number of Lanes	Speed Limit (MPH)
10,945[1]	2	30
On-Street Parking (Y/N)	**Pedestrian Facilities (Y/N)**	**Bike Facilities (Y/N)**
Y	Y	N
	Access to Waterways (Y/N)	**Transit Facilities (Y/N)**
	N	Y Metro-North PART Bus Line 1

Notes:
1. Automatic Tube Recorder collected May 2017

Crash Data

Crash data over a three year period (March 1, 2014 through February 28, 2017) was obtained from NYSDOT. Table 9-F provides a summary on the number and type of crashes on Main Street between Hillside Park and Sodom Road. Over a three year period, there were 46 crashes along this corridor, with the greatest number (13) being rear end crashes. Rear end crashes typically occur at congested locations and signalized intersections.

Table 9-F – Crash Summary - Main Street between Hillside Park and Sodom Road

	2014	2015	2016	2017	Total	*ACC/MVM*[1]
Fatalities	0	0	0	0	**0**	
Injured	0	9	14	0	**50**	
# of Crashes	14	13	19	0	**46**	**1.9**
Over-Taking	0	1	2	0	**3**	
Rear End	4	4	5	0	**13**	
Right Angle	0	1	1	0	**2**	
Left Turn (with other car)	0	1	2	0	**3**	
Left Turn (against other car)	3	1	4	0	**8**	
Right Turn (with other car)	1	0	0	0	**1**	
Right Turn (against other car)	0	0	0	0	**0**	
Side Swipe	0	0	0	0	**0**	
Ped/Bike	1	3	0	0	**4**	
Head On	0	0	0	0	**0**	
Fixed Object	3	0	3	0	**6**	
Animal	0	0	0	0	**0**	
Other	2	2	2	0	**6**	
Unknown	0	0	0	0	**0**	

Notes: Crash Data for March 1, 2014 through February 28, 2017.
1. Accidents per millions vehicle miles traveled = (accidents * 1,000,000)/(365*number of years*AADT*length of corridor)

Source: New York State Department of Transportation (NYSDOT)

NYSDOT provides average accident rates for state highways for different facilities. The 2015/2016 average accident rate for a two-lane, undivided highway is 3.5 accidents/million vehicle miles (ACC/MVM). The study corridor's 1.9 ACC/MVM is below the State's average of similar facilities

Identification of Future Needs

Based on the existing conditions data collection, field visits, and discussions with the County, the following future transportation needs to enhance the corridor were identified:

- Main Street west of Oak Street has been analyzed in recent studies; therefore the focus was on Main Street between Oak Street and U.S. Route 202.
- Oak Street being used as a Main Street bypass route.
- Lack of pedestrian facilities west of Oak Street.
- Intersection geometries accommodate high-speed movements.
- A "Main Street" feel connecting Main Street to business on U.S. Route 202.
- Pedestrian connections at the Main Street / Allview Avenue intersection to accommodate pedestrian movements between the Brewster Honda service departments (located on the south side of Main Street) and showroom (located on the north side of Main Street).

TRANSPORTATION RECOMMENDATIONS

Proposed transportation enhancements are described below. Additional Transportation enhancements are presented in Figure 5. Should the State, County or local municipality, depending on jurisdiction, decide to pursue any of the below recommendations, they would be required to follow additional steps including coordination and obtaining required permits. For example, the project sponsor will be required to coordinate with the New York State Department of Transportation (NYSDOT) for any work to be performed in the NYSDOT Right-of-Way (ROW) to obtain the required permits from NYSDOT as part of the Highway Work Process (HWP). In addition, the County will coordinate as necessary with any other local or county transportation agency or departments.

Short-Term Transportation Recommendations (1 to 3 Years)

- Realign Oak Street with striping to prevent turning movements occurring at high speed as well as improve sight distance for vehicles exiting Oak Street. As an alternative, Oak Street could be closed at U.S. Route 6 to prohibit traffic bypassing Main Street.
- Provide a mid-block crossing to encourage pedestrians to use the sidewalk that is provided on the south side of the roadway to reach a destination located on the north side of the roadway. This requires a mid-block feasibility study for NYSDOT.
- Realign Peaceable Hill Road with striping and relocate the stop bar closer to the intersection to slow down turning movements and improve sight distance for vehicles exiting onto Main Street.
- Reduce the northwest curb radii with striping at the Main Street/NYS Route 22 intersection to slow vehicle turning movements and reduce pedestrian crossing distances. Add crosswalks on the eastbound and southbound approaches.
- Provide pedestrian connections across Main Street at Allview Avenue. Based on recent discussions with NYSDOT, due to the configuration of the intersection and its close proximity to the existing railroad bridge overpass, there is insufficient room to site a stop light at this location. As a result, DOT will not support a signal at this intersection. Therefore a mid-block cross walk engineering feasibility study should be conducted to determine if an unsignalized mid-block crossing can be accommodated at this location to facilitate pedestrians crossing Main Street.

Medium-Term Transportation Recommendation (3 to 5 Years)

- Replace the short-term intersection striping recommendations with curbing.

Long-Term Transportation Recommendations (5 or More Years)

- Install a sidewalk along the north side of the roadway from the current terminus (between Wilkes Street and Merritt Street) to US Route 202. Detailed roadway surveys should be collected since installing a sidewalk on this segment could involve utility relocation, construction of retaining walls, and encroaching into right-of-way outside the roadbed.
- Convert the perpendicular spaces servicing the storefronts on the south side of Main Street across from Oak Street to parallel spaces and install a sidewalk adjacent to the store fronts. This would separate parking and pedestrian activities, better define the vehicle travel lanes and permitted parking spaces as well as eliminate the sidewalk gap that is present between Oak Street and Marvin Avenue. If undertaken, these improvements would also reduce obstruction of travel lanes by parked vehicles that

straddle the travel lane and parking spaces impacting both traffic and pedestrian flow along Main Street. Additionally, making these changes would likely result in a reduction in the available parking and will require encroachment into the right-of-way (and possibly into private property depending on the limit of the right-of-way) outside the roadbed.

- Add crosswalks for the new sidewalk at Oak Street and Peaceable Hill Road.

Figure 5 - Conceptual Improvements - *Main Street, Village of Brewster*

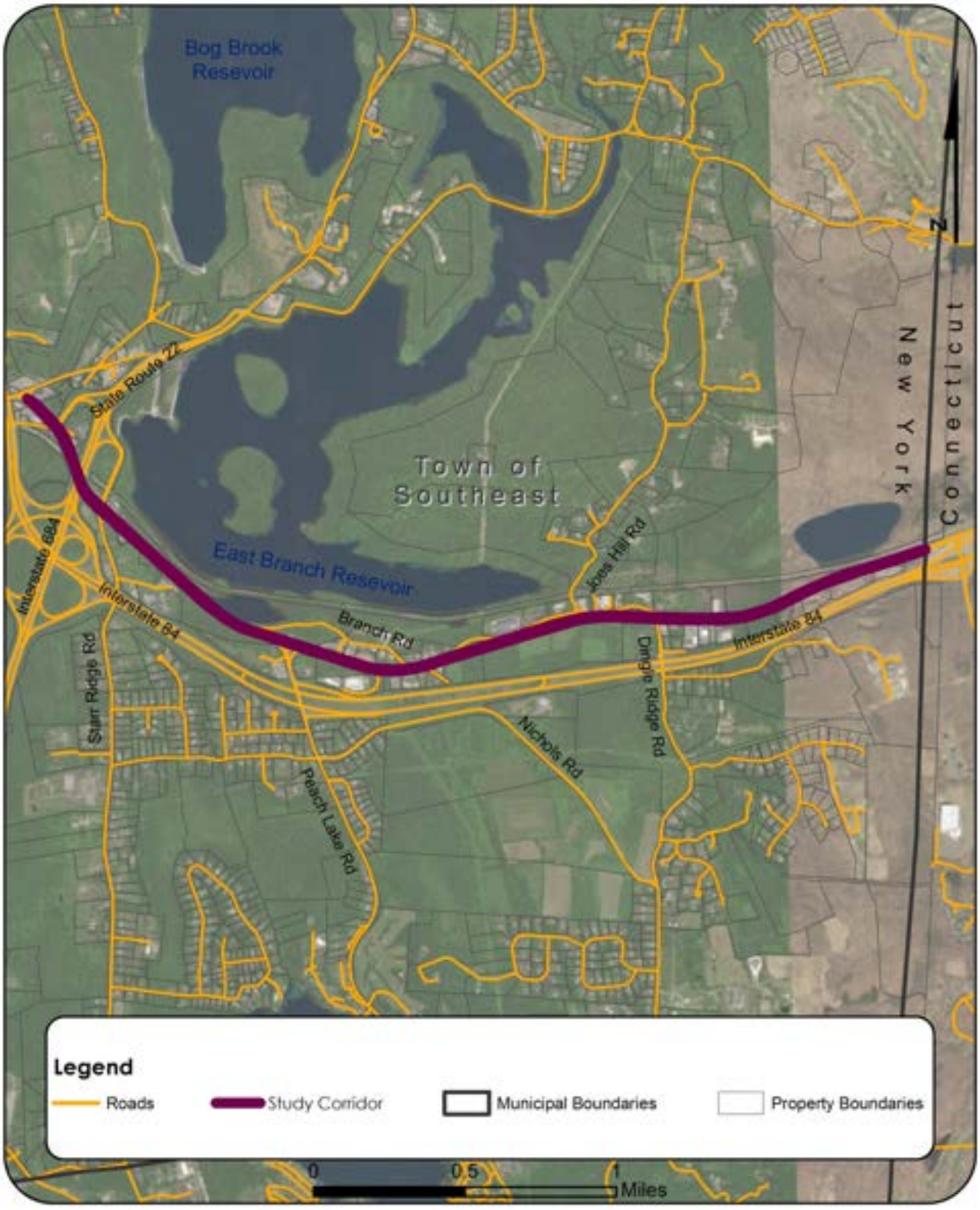
COMMUNITY AND ECONOMIC DEVELOPMENT RECOMMENDATIONS

Proposed community and economic development enhancements are described below. Some of the recommendations would require coordination with local elected officials and the business community.

- Seek out and encourage clothing store retailers to move into commercial space on Main Street. The leakage/surplus analysis indicates that there is significant unmet local demand for clothing stores in the 5-minute trade area.
- Install wayfinding signage for pedestrians, particularly around the train station.
- Encourage retailers that cater to commuters to move into the retail space near the train station. This will help draw pedestrians into the downtown area and encourage them to patronize other nearby businesses.

US ROUTE 6/202

TOWN OF SOUTHEAST


Bog Brook Resevoir
State Route 22
Town of Southeast
East Branch Resevoir
Joes Hill Rd
Interstate 684
Interstate 84
Branch Rd
Starr Ridge Rd
Dingle Ridge Rd
Nichols Rd
Peach Lake Rd
New York
Connecticut
N
Legend
Roads
Study Corridor
Municipal Boundaries
Property Boundaries
0
0.5
1
Miles

CORRIDOR OVERVIEW

Corridor Description

This study corridor is located in the Town of Southeast. The western boundary of the corridor is the intersection of U.S. Route 6/202 (Danbury Road) and Starr Ridge Road. The corridor runs from west to along route 6/202 until the western boundary which is the Connecticut State line.

Demographic Snapshot

The charts below depict demographic information about households and the population within a 5-minute drive (5-minute trade area) to the study corridor. From 2000 to 2010, the population in the 5-minute trade area increased by 7% from 1,667 to 1,792, increasing by an average of 12 people each year. Over the next 7 years, the rate of population growth slowed. From 2010 to 2017 the population in the 5-minute trade area increased by 3% from 1,792 to 1,840, increasing by an average of six people each year.

According to ESRI business Analyst, the median household income of the 5-minute trade area ($98,322) is lower than the median household income of Putnam County ($101,430). This corridor is sparsely populated relative to the other corridors in this study. There are only 678 households in the 5-minute trade area. Median household disposable income in both the 5-minute trade area and Putnam County is approximately 70% of total median household income. In comparison, median household disposable income for New York State as a whole is 78% of total median household income.

POPULATION
1,840

MEDIAN AGE
41

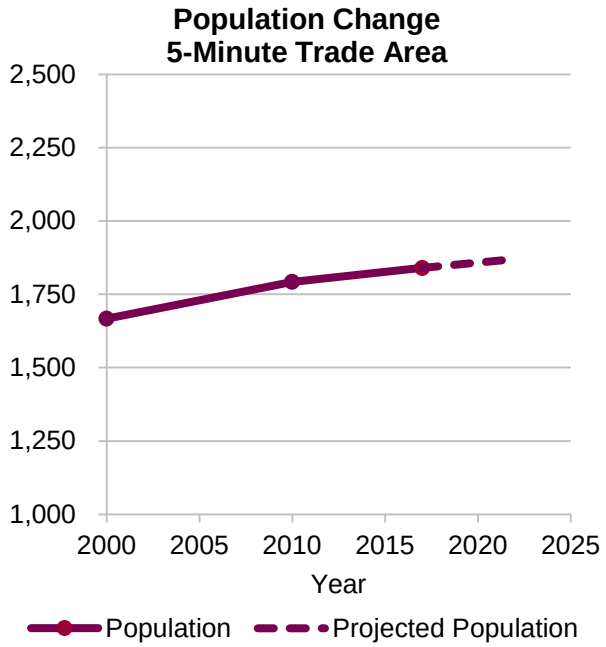
NUMBER OF HOUSEHOLDS
678

AVERAGE HOUSEHOLD INCOME
$116,984

MEDIAN HOUSEHOLD INCOME
$98,322

MEDIAN DISPOSABLE INCOME
$67,983

HOUSEHOLDS IN POVERTY
6%

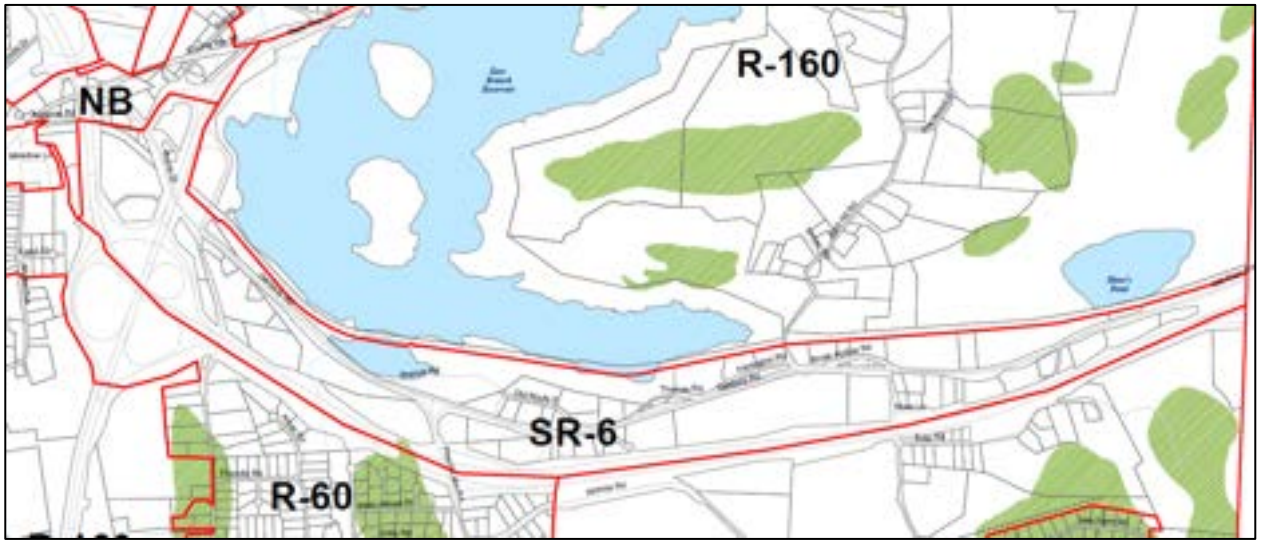


Source: ESRI Business analyst, 2017

ZONING

The entirety of the study corridor is located within the Special Route 6 Area District (SR-6). This zoning district was established in 2015 following the 2014 Comprehensive Plan Update (CPU). The new SR-6 Zoning District, through the Planning and Town Board Conditional Use Permit and Special Permit review process, respectively, increased the number and type of permitted uses, as well as relaxed the zoning dimensional requirements. The Planning and Town Boards have the ability to waive the dimensional requirements by up to 50 percent without the need to seek an area variance from the Zoning Board of Appeals (ZBA). To improve the community character of this gateway, the SR-6 District also includes design guidelines regarding building location, site layout, screening, parking, pedestrian amenities, and building design. All of this is particularly relevant to the Route 6 corridor where a number of existing businesses are pre-existing non-conforming with regards to use and zoning dimensional requirements.

Town of Southeast Zoning Map



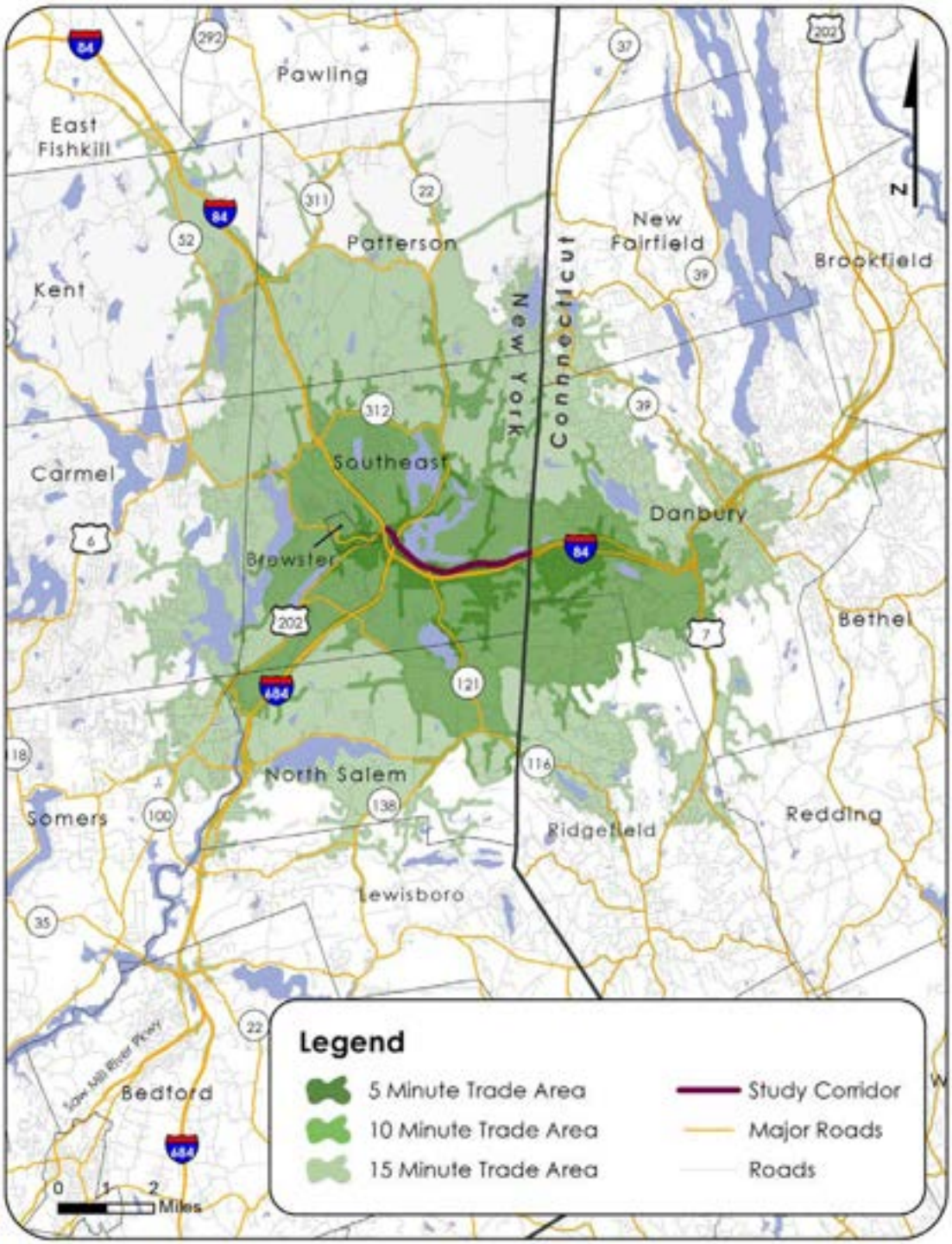
Special Route 6 Area District (SR-6)

Prinicpal Permitted Uses	Special Permit Uses	Conditional Uses
•There are no prinicipal permitted uses in the SR-6 district	•Hotel/motel/conference facility •Kennels and animal hospitals •Large retail establishments •Motor vehicle dealerships •Public utilities •Senior housing •Wood mill	•Bed-and-breakfast/country inn •General business •Nursery •Office •Personal services •Professional services •Recreation •Restaurant •Restaurant, fast casual •Retail •Theater/performing arts •Telecommunications towers and facilities

Table 10-A – Bulk Requirements

	Special Route 6 Area District (SR-6)
Minimum Lot size	30,000 sq ft
Minimum Floor Area	5,000 sq ft
Maximum Floor to Area Ratio (FAR)	0.4
Maximum Building Coverage	15%
Minimum Front Setback for Principal Building	35 ft
Minimum Side Setback for Principal Building	35 ft
Minimum Rear Setback for Principal Building	35 ft
Maximum Building Height	2 stories, 30 ft

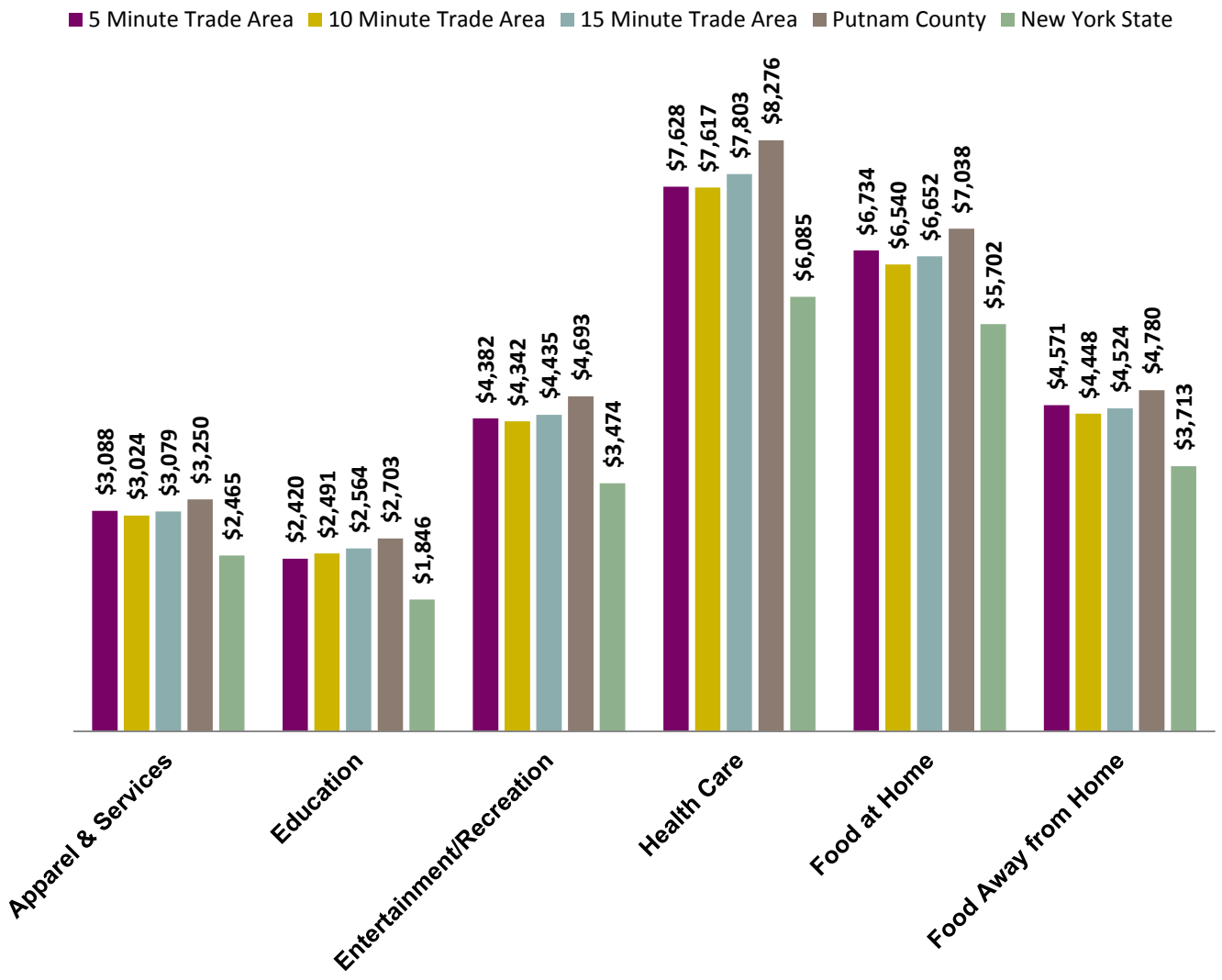
U.S. Route 6/202 – Town of Southeast



Average Annual Household Spending

The chart below depicts an estimate of average annual household spending by category for households in the 5, 10, and 15-minute trade areas, Putnam County, and New York State. All three trade areas are partially in Connecticut. The 15-minute trade area encompasses much of the city of Danbury, Connecticut. In all three of the trade areas average household spending was lower than average household spending in Putnam County but higher than average household spending in New York State. Households spent the most on health care in all three trade areas.

Table 10-B – Average Annual Household Spending



Source: ESRI Business analyst, 2017

Tapestry Segmentation

Tapestry Segmentation is a tool developed by ESRI, a Geographic Information Science (GIS) company. Tapestry segmentation organizes households in the United States into groups (segments) that share similar demographics, socioeconomic indicators, and lifestyle choices. Tapestry segmentation provides a macro-level understanding of the type of households present in a given area. Below are descriptions of the top three most common tapestry segments represented by households within the 10-minute trade area.

Top 3-Tapestry Segments in the 10-Minute Trade Area/Percent of Households

Pleasantville

Prosperous domesticity best describes the settled citizens of Pleasantville. Situated principally in older housing in suburban areas in the Northeast (especially in NY and NJ) and secondarily in the West (especially in CA), these slightly older couples move less than any other market. Many couples have already transitioned to empty nesters; many are still home to adult children. Families own older, single-family homes and maintain their standard of living with dual incomes. These consumers have higher incomes and home values and much higher net worth (Index 400). Older homes require upkeep; home improvement and remodeling projects are a priority—preferably done by contractors. Residents spend their spare time participating in a variety of sports or watching movies. They shop online and in a variety of stores, from upscale to discount, and use the Internet largely for financial purposes.

International Marketplace

Located primarily in cities in "gateway" states on both U.S. coasts, International Marketplace neighborhoods are developing urban markets with a rich blend of cultures and household types. The population is young, with a median age of only 32.2 years. Approximately 70 percent of the households are families; 44 percent are married couples with children and single parents. The average family size is 3.7. International Marketplace is the second most diverse of the Tapestry segments. More than half of the total population is Hispanic; 11.6 percent is Asian, and 7.0 percent is of two or more races. A high proportion of immigrants, including recent arrivals, live in these neighborhoods.

Golden Years

Independent, active seniors nearing the end of their careers or already in retirement best describes Golden Years residents. This market is primarily singles living alone or empty nesters. Those still active in the labor force are employed in professional occupations; however, these consumers are actively pursuing a variety of leisure interests—travel, sports, dining out, museums, and concerts. They are involved, focused on physical fitness, and enjoying their lives. This market is smaller, but growing, and financially secure.

RETAIL GAP ANALYSIS

Leakage / Supply

Table 10-C depicts a leakage/surplus factor for trade areas delineated by a 5, 10 and 15 minute drive from the study corridor. The leakage/surplus factor is a representation of the balance between supply and demand among various industries. In this chart the industries are broken out by North American Industry Classification (NAICS) code. The leakage/surplus factor is measured on a scale from 100 to -100. A value of 100 represents an area where there is household demand but there is no supply so all of the potential retail sales are leaking out of the area. A value of -100 represents an area where there is a surplus of supply but there is no household demand. The closer the value is to zero, the more balance there is between supply and demand.

Table 10-C is color coded on a gradient of green to red with the darkest green representing a value of 100, and the darkest red representing a value of -100. The table reveals that there is a surplus of supply for every industry in all three trade areas. In some instances the surplus/leakage factor is close to zero, indicating that there is only a slight surplus in those cases. However, within the 5-minute trade area there is a significant surplus in the industry categories of Motor Vehicle and Parts Dealers, Electronics and Appliance Stores, Food and Beverage Stores, Clothing /Accessory Stores, and Miscellaneous Store Retailers. In the 10-minute trade area there is a significant surplus in the industry categories of Clothing/Accessories and Sports/Hobby/Book/Music Stores. The surplus present in every industry category is likely explained by the presence of big box stores and high concentration of retailers in the Danbury area. Since the leakage/surplus factor is a measure of the balance between local supply and local demand, the increase in sales generated by people from outside of the trade area is expressed as surplus relative to demand generated by just the local population within the trade area.

Table 10-C – Leakage / Surplus Factor

Industry	5 Minute Trade Area	10 minute Trade Area	15 Minute Trade Area
Motor Vehicle and Parts Dealers (NAICS 441)	-53.9	-29	-8.4
Furniture/Home Furnishing Stores (NAICS 442)	-3.9	-36.2	-15.1
Electronics & Appliance Stores (NAICS 443)	-51.5	-26.5	-8.7
Bldg/Garden Equip/Supply Stores (NAICS 444)	-6.5	-11.3	-5.8
Food and Beverage Stores (NAICS 445)	-72.1	-36.5	-15.7
Health and Personal Care Stores (NAICS 446)	-35	-33.3	-12.2
Gasoline Stations (NAICS 447)	-45.9	-15.5	-16.5
Clothing/Accessories Stores (NAICS 448)	-54.8	-69.2	-33.9
Sports/Hobby/Book/Music Stores (NAICS 451)	-37	-63.1	-33
General Merchandise Stores (NAICS 452)	-4.7	-43.3	-0.6
Miscellaneous Store Retailer s (NAICS 453)	-51.8	-45.3	-20.3
Food Services & Drinking Places (NAICS 722)	-28.5	-30.2	-6.6
Total Retail (including Food/Drink Sales)	-49.7	-39.1	-13.2

Source: ESRI Business analyst, 2017

Table 10-D depicts an estimation of industry leakage and surplus expressed in actual dollar amounts for the 10-minute trade area. Dollar values in the leakage column represent the estimated amount of money leaking out of the 10-minute trade area. Dollar values in the surplus column represent additional sales in the 10-minute trade area that are being generated by households outside of the trade area. These values are calculated by taking the difference between total sales in the trade area (estimated from reported business earnings) and potential sales in the trade area (estimated from household spending trends). When actual sales are lower than potential sales, there is a leakage (households are spending outside of the trade area). When actual sales are higher than potential sales, there is a surplus (households from outside of the trade area are spending in the trade area).

ESRI estimates that that the industry category with the most surplus is Clothing/Accessories Stores. An estimated $202 million in Clothing/Accessories spending in the 10-minute trade area is being generated from households outside of the 10-minute trade area. There is no leakage in any industry category from the 10-minute trade area. In other words, local supply more than meets the local demand in every industry category. This may be explained by the relatively low amount of residential development, and accompanying low local demand, in the 5-minute trade area. Furthermore, portions of the 10 and 15-minute trade areas extend into the City of Danbury where there are a significant number of businesses that satisfy demand within those trade areas.

Table 10-D – 10 Minute Trade Area Industry Leakage and Surplus

Industry	Leakage (Millions)	Surplus (Millions)	Leakage Surplus Factor
Nonstore Retailers (NAICS 454)		$ 2.9	-10.2
Bldg/Garden Equip/Supply Stores (NAICS 444)		$ 8.9	-11.3
Electronics & Appliance Stores (NAICS 443)		$ 15.0	-26.5
Gasoline Stations (NAICS 447)		$ 18.0	-15.5
Furniture/Home Furnishing Stores (NAICS 442)		$ 23.9	-36.2
Miscellaneous Store Retailers (NAICS 453)		$ 34.1	-45.3
Health and Personal Care Stores (NAICS 446)		$ 39.8	-33.3
Food Services & Drinking Places (NAICS 722)		$ 52.0	-30.2
Sports/Hobby/Book/Music Stores (NAICS 451)		$ 61.8	-63.1
Motor Vehicle and Parts Dealers (NAICS 441)		$ 88.1	-29
General Merchandise Stores (NAICS 452)		$ 110.8	-43.3
Food and Beverage Stores (NAICS 445)		$ 113.2	-36.5
Clothing/Accessories Stores (NAICS 448)		$ 202.4	-69.2
Total Retail (including Food/Drink Sales)		**$ 771.0**	**-39.1**

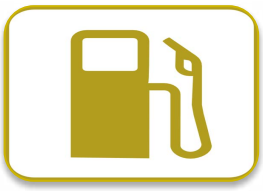
Source: ESRI Business analyst, 2017

Existing Businesses

Below is a list of the number of existing businesses in the corridor by business type. This list was developed by Pattern Staff during field visits to the corridor. Approximately 70% of businesses in this corridor are service-based businesses and approximately 30% of the businesses are retail businesses.

Restaurant
4

Wine / Beer
2



Gas Station
1

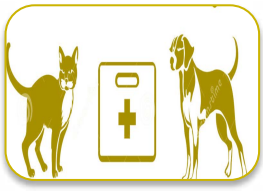
Medical / Dental
2

Auto Services
3

Insurance Services
1

Real Estate Services
1

Home Services
2



Pet / Veterinary Services
2

Other
4

U.S. Route 6/202 – Town of Southeast

Existing Conditions and Data Collection

Corridor Characteristics

U.S. Route 6 in the Town of Southeast is a four-lane, east-west roadway that carries approximately 14,930 vehicles per day. There is a raised median divider with limited access points. The roadway is classified by the NYSDOT as a Minor Arterial and is owned by NYSDOT. The speed limit is 55 miles per hour. There is no on-street parking and sidewalks are not provided. A summary of the corridor's transportation characteristics are presented in Table 10-E.

Table 10-E – Corridor Characteristic Summary - *U.S. Route 6 in the Town of Southeast*

Average Daily Traffic	Number of Lanes	Speed Limit (MPH)
14,930[1]	4	55
On-Street Parking (Y/N)	**Pedestrian Facilities (Y/N)**	**Bike Facilities (Y/N)**
N	N	N
	Access to Waterways (Y/N)	**Transit Facilities (Y/N)**
	N	N

Notes:
1. Automatic Tube Recorder collected May 2017

Crash Data

Crash data over a three year period (March 1, 2014 through February 28, 2017) was obtained from NYSDOT. Table 10-F provides a summary on the number and type of crashes on U.S. Route 6 between Starr Ridge Road and New York/Connecticut state line. Over a three year period, there were 117 crashes along this corridor, with the greatest number (33) being rear end crashes. Rear end crashes typically occur at congested locations and signalized intersections.

Table 10-F - Crash Summary -
U.S. Route 6 between Starr Ridge Road and New York/Connecticut State Line

	2014	2015	2016	2017	Total	*ACC/MVM[1]*
Fatalities	0	0	1	0	**1**	
Injured	13	15	17	2	**47**	
# of Crashes	34	35	40	8	**117**	**2.2**
Over-Taking	3	6	4	1	**14**	
Rear End	5	13	11	4	**33**	
Right Angle	5	4	6	0	**15**	
Left Turn (with other car)	0	1	1	0	**2**	
Left Turn (against other car)	8	2	2	0	**12**	
Right Turn (with other car)	0	0	0	0	**0**	
Right Turn (against other car)	1	0	0	0	**1**	
Side Swipe	2	0	0	1	**3**	
Ped/Bike	0	0	1	0	**1**	
Head On	0	0	1	0	**1**	
Fixed Object	2	1	2	2	**7**	
Animal	2	5	9	0	**16**	
Other	6	3	3	0	**12**	
Unknown	0	0	0	0	**0**	

Notes: Crash Data for March 1, 2014 through February 28, 2017.
1. Accidents per millions vehicle miles traveled = (accidents * 1,000,000)/(365*number of years*AADT*length of corridor)

Source: New York State Department of Transportation (NYSDOT)

NYSDOT provides average accident rates for state highways for different facilities. The 2015/2016 average accident rate for a four-lane, divided highway is 4.5 accidents/million vehicle miles (ACC/MVM). The study corridor's 2.2 ACC/MVM is below the State's average of similar facilities.

Identification of Future Needs

Based on the existing conditions data collection, field visits, and discussions with the County, the following future transportation needs to enhance the corridor were identified:

- Lack of pedestrian or bicycle facilities along the corridor.
- The Maybrook Trailway extension that is recommended is a planned trailway extension in Putnam County's bikeway network, and this description should be amended to state that "the County has secured all of the requisite funding to design and construct this trailway extension, and design work has been fully completed. Furthermore, the County plans to secure all necessary permits and approvals, and successfully contract with a qualified contractor that will begin work by the end of 2018.
- Confusing roadway network near the U.S. Route 6/I-684 interchange.

In addition, the approved Stateline Retail Center development, on the south side of U.S. Route 6 between Dingle Ridge Road and Nichols Road, would generate approximately 1,000 vehicle trips during peak hours. A traffic study was conducted in 2008 and identified recommendations to improve access to the project site which includes adding turn lanes and signalizing one of the project driveways.

U.S. Route 6/202 – Town of Southeast

Description of Corridor

The U.S. Route 6 Southeast Corridor located within the Town of Southeast extends from the New York State/Connecticut border to the I-84 overpass on East Main Street. The character of the area surrounding the corridor is largely commercial and industrial with residential, transportation and water supply uses also located here. Development in the corridor is limited by the lack of available infrastructure as well as environmental constraints such as steep slopes, wetlands, streams and reservoir stems. The vast majority of the Town of Southeast is in the NYC East of Hudson Watershed and under NYCDEP jurisdiction including the East Branch Reservoir located immediately to the north of the corridor (sees U.S. Route 6 Southeast Corridor Figure).

Existing Infrastructure Conditions

Sewer

The U.S. Route 6 Southeast Corridor is not currently served by a WWCS or a WWTP. All properties are currently served by individual on-site wastewater treatment systems.

Water

The U.S. Route 6 Southeast Corridor is not currently served by a public water supply system. All parcels are served by on-site wells.

Economic Development Potential, Benefits, and Needs

All development in this corridor is dependent upon the project sponsor's ability to site both septic and wells on their parcels. For some projects, this results in the loss of what can be considered a significant portion of the developable land making it less economically feasible to advance these projects. A number of projects have been proposed in this corridor but are currently on hold, in part, because of the lack of sewer services. Existing development in the corridor continues to age increasing the likelihood of septic system failure. This is a significant concern for the town, and City of New York, due to the corridors close proximity to the New York City East Branch Reservoir drinking water supply.

Freeing the development of undeveloped parcels (estimated at around 20) in the corridor with the introduction of new infrastructure, can be expected to drive economic growth and vitality in the area and beyond. An increase in the development potential and elimination of restrictions to growth would be expected to bolster the economic competitiveness of the area, drive an increase in property values, create new job opportunities, both in construction and operation, and generate additional tax revenues. Extending the more developed City of Danbury end of the U.S. Route 6 Corridor into Southeast, fortifies the viability of the existing and proposed development and would be expected to invite new and larger development options to the New York side of the corridor.

Route 6 Corridor - Southeast
Sewer and Water Infrastructure

Sewer

As previously noted, economic development potential within the U.S. Route 6 Southeast Corridor is currently limited by the lack of infrastructure throughout the entire corridor particularly the lack of a municipal sewer service. Without a municipal WWCS and WWTP with existing or expandable capacity, owners of vacant parcels and those who wish to expand their existing businesses/facilities are restricted by the capacity of their current or proposed on-site septic systems. In particular, properties on which development of medium to large sized projects and those where water/wastewater intensive uses exist or are proposed, remain either undeveloped or underdeveloped as a result of the lack of sewer infrastructure.

Contemplated, proposed, approved, and, to some extent, through indirect benefits, ongoing developments, in the corridor could take advantage of sewer infrastructure improvements along the corridor including:

Stateline Retail Center - an approved commercial development located between U.S. Route 6 and I-84. Stateline has proposed an on-site septic system to support the development. The proposed septic system would require the use of a significant amount of the site's buildable land to process wastewater.

Tremblay Commercial - a proposed 18,000 SF, three story commercial building on vacant 2.66 acre parcel.

Hotel - A new hotel with roughly 50 rooms at the intersection of NYS Route 121 and U.S. Route 6 was partially constructed but construction was abandoned several years ago.

Dunkin Donuts - The existing restaurant which is located at the intersection of the south bound I-684 ramps and U.S. Route 6 is moving to the intersection of Starr Ridge Road and U.S. Route 6.

Water

Existing development within the U.S. Route 6 Southeast Corridor is served by individual, on-site wells. No municipal water supply system exists within the corridor. In general, there is sufficient on-site water to supply existing and some of the proposed development within the corridor. With the constraints presented by individual on-site water supply wells, development of a municipal water supply in concert with the provisions of municipal sewer in the area would be expected to remove any limiting factors related to the supply of water and allow the area to be developed to its full potential. Benefits from the provision of municipal water to both contemplated and approved projects, as well as those that may be advanced on vacant parcels in the corridor, would be similar to those noted under the "sewer" section above.

Options for Infrastructure

The U.S. Route 6 Southeast Corridor is currently characterized by a mix of commercial, industrial and residential uses with the potential for additional infill and new development throughout the entire corridor. Since the corridor is located within the NYC East of Hudson Watershed any infrastructure improvements contemplated in the area would require approval from NYCDEP.

Sewer

As described above, no sewer infrastructure currently exists in the U.S. Route 6 Southeast Corridor. Due to the restrictions enforced by the NYCDEP in this area on new surface discharges and the estimated volume, a new WWTP is not expected to be a possibility. Options that may be considered for providing sewer to the area include connecting to the Peach Lake Wastewater Treatment Plant or the Danbury Wastewater Treatment Plant. Either of these options would be expected to provide additional development incentive along the corridor including connections to existing parcels with aging and/or problematic onsite wastewater disposal systems.

City of Danbury WWTP

This option was the subject of an initial engineering assessment in 2016.[8] In 2017, Putnam County was issued an award notice for a $1.1475 million Empire State Development grant through the Consolidated Funding Application (CFA) process to fund a project that will extend the Danbury WWCS and WWTP across the state border and through the U.S. Route 6 Southeast Corridor.[9] An engineering feasibility study has been commissioned to investigate the potential to convey and treat 300,000 gallons per day of effluent to the Danbury Sewer District. If the connection is determined feasible, an inter-state agreement would have to be prepared to allow for a connection to occur across state lines.

Peach Lake WWTP

An engineering feasibility study would be required to determine if a connection to the existing Peach Lake WWTP is practicable. Due to the topography between the U.S. Route 6 Southeast Corridor and the WWTP, construction of a force main and a lift station(s) would be necessary. If it is determined feasible to connect the U.S. Route 6 Southeast Corridor to the Peach Lake WWTP, the agreement for the Peach Lake WWTP between the Town of North Salem and the Town of Southeast would need to be revised to adjust the volumes currently allocated to each Town. Additionally, coordination with the NYCDEP will be required as the agency maintains control over the capacity and discharge from the Peach Lake WWTP.

Water

As noted previously, the Southeast Corridor does not have a public water supply and existing development is serviced by on-site private wells. At this time, there are no known plans to construct a municipal water supply system. All pending projects in the area are required to secure water by way of on-site wells. To provide municipal water to existing and future developments, potential options exist.

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[8] 2017 Consolidated Funding Application made for the Southeast Sewer and Water Systems

[9] https://patch.com/new-york/southeast/putnam-awarded-1-2-million-danbury-brewster-sewer-project, last accessed 2/26/18

New Municipal Water Supply System

An option to introduce municipally supplied water to the corridor is to create a new water supply and distribution system. This would require the purchase of land on which wells and related infrastructure would be sited. For a municipal water supply system is to be established, a feasibility study(s) would be required to determine where community wells, pump house(s), treatment system(s) and distribution pipes could be located. Potential well locations could include the properties east of I-84 between Argonne Road and U.S. Route 6, the properties north of U.S. Route 6 east of Croton Farms, and the properties south of U.S. Route 6 and south of Haines Pond (see U.S. Route 6 Southeast Corridor Figure). If this option were pursued, an agreement with the existing property owner(s) to purchase or otherwise secure access to and the use of a chosen parcel(s) would be required.

TRANSPORTATION RECOMMENDATIONS

Proposed transportation enhancements are described below. Additional Transportation enhancements are presented in Figure 6. Should the State, County or local municipality, depending on jurisdiction, decide to pursue any of the below recommendations, they would be required to follow additional steps including coordination and obtaining required permits. For example, the project sponsor will be required to coordinate with the New York State Department of Transportation (NYSDOT) for any work to be performed in the NYSDOT Right-of-Way (ROW) to obtain the required permits from NYSDOT as part of the Highway Work Process (HWP). In addition, the County will coordinate as necessary with any other local or county transportation agency or departments.

Short-Term Transportation Recommendation (1 to 3 Years)

- As the corridor continues to develop, access management should be analyzed. This includes identifying opportunities for shared driveways and if there is the potential to introduce signals on the corridor to facilitate full access development driveways.

Medium-Term Transportation Recommendation (3 to 5 Years)

- Continue the Maybrook Trailway extension further east to the New York/Connecticut border.

Long-Term Transportation Recommendations (5 or More Years)

- As development continues along the corridor, similar improvements to provide full access, such as signalizing intersection and adding turn lanes, identified in the Stateline study should be assessed. In addition, opportunities to utilize shared driveways could reduce the number of signalized driveways needed to provide full access to future developments along the corridor.
- As presented in Figure 6, reconfigure the roadway network near I-684 which includes:
    - Replacing the signalized U.S. Route 6/I-684 intersection with a roundabout.
    - Close the current Dunkin Donuts exit-only driveway. Exiting vehicles will use the shared driveway to access the roundabout.
    - Re-align Argonne Road to discourage vehicles from bypassing U.S. Route 6 traffic.
    - Re-align Sodom Road to remove high speed movements and reduce the number of intersections from three in the existing “triangle” configuration to one intersection.

Figure 6 - Conceptual Improvements – *Route 6 / 202*

Route 6 Conceptual Improvements
Town of Southeast

PUTNAM COUNTY CORRIDOR STUDY

COMMUNITY AND ECONOMIC DEVELOPMENT RECOMMENDATIONS

Proposed community and economic development enhancements are described below. Both of the recommendations would require coordination with local elected officials and the business community.

- As development continues along the north side of the corridor, opportunities to connect to the Maybrook Trailway extension should be explored.
- Explore the development of "big box" retail in this corridor. Much of demand for this kind of retail is currently being met by stores in Danbury, Connecticut. Funding to expand sewer service capacity in this corridor may improve the feasibility of developing big box retailers and prevent customer leakage out of Putnam County.

Appendix 1:

Putnam County Grant & Incentive Resource Guide

PUTNAM COUNTY GRANT & INCENTIVE RESOURCE GUIDE

There are numerous state and federal resources made available for community and economic development, housing and infrastructure in the form of grants, low interest financing and tax credits. There are a number of grant programs made available to municipalities, non-profit agencies and private developers, who in turn may provide resources to eligible households, individuals or business and property owners. The four comprehensive resources for federal, state and foundation resources include:

- ✓ **Federal Grants: www.grants.gov**
- ✓ **Catalog of Federal Domestic Assistance (CFDA): www.cfda.gov**
- ✓ **Grants Action News: www.nyassembly.gov/gan**
- ✓ **Foundations: www.foundationcenter.org**

Grants.gov

This is a federal grants website that allows eligible grant seekers to search and apply for current competitive grant opportunities from ALL federal agencies. Grant seekers can check on notices of funding availability (NOFAs) post

ed in the last 7 days; sign up to receive e-mail notification of grant opportunities; and apply for federal grants through a unified process by downloading the application and submitting online. The website guides grant seekers in obtaining a DUNS (Dun and Bradstreet) number and registering at Grants.gov to apply and to track applications. For full federal program descriptions, see the Catalog of Federal Domestic Assistance (CFDA) below.

Catalog of Federal Domestic Assistance

The CFDA, issued annually and updated continuously on the web, describes thousands of federal grants and non-financial assistance programs. Grant seekers can identify programs that might support their projects and can learn the program's objectives, requirements, application procedures and contacts. For current notices of funding availability, see Grants.gov.

New York State Grants Action News

This publication is distributed on a monthly basis and includes descriptions and links to currently available grant resources from New York State, the federal government and private foundations. The publication also provides training resources and other valuable information in regards to incentives and programs.

Foundation Center

The Foundation Center is the leading source of information on philanthropy, fundraising and grant programs. The Foundation Center offers the largest online, searchable database to assist in obtaining funding across the country. The website also provides training materials for grant writers and organizations seeking funding.

New York State Resources

New York State Consolidated Funding Application (CFA)

A majority of New York State grants and incentives are offered on an annual basis through the Consolidated Funding Application (CFA) process. The CFA process is typically announced in May of each year with applications due in late July. Since 2011, when the CFA process was initiated, communities in Putnam County have received over $13.5million in grants, loans and incentives.

State agencies and authorities making resources available in the 2017 CFA include: Empire State Development; NYS Canal Corporation; NYS Energy Research and Development Authority; Environmental Facilities Corporation; Homes and Community Renewal; Department of Labor; Office of Parks, Recreation and Historic Preservation; Department of State; New York Power Authority; Department of Environment Conservation; NYS Council on the Arts; and the Department of Agriculture & Markets. Additional CFA related documents can be found on the CFA home page at www.regionalcouncils.ny.gov/cfa. The following list of resources is based off the 2017 CFA announcement:

Direct Assistance to Business and Other Organizations: Up to $247.25 million

- **Empire State Development**
  - Up to $150 million for ESD Grant Funds
  - Up to $75 million for Excelsior Jobs Program
  - Up to $1.25 million for Innovation Hot Spot Support Program
  - Up to $1 million for Strategic Planning and Feasibility Studies
  - Up to $15 million for Market New York
- **NYS Department of Agriculture and Markets**
  - Up to $5 million for NYS Grown & Certified Agricultural Producers' Grant Program

Community Development: Up to $73.1 million

- **New York State Council on the Arts**
  - Up to $5 million for Arts, Culture and Heritage Projects
  - Up to $20 million for NYSCA/ESD Arts & Cultural Facilities Improvement Program
- **Homes and Community Renewal**
  - Up to $20 million for New York State Community Development Block Grant Program
  - Up to $6.2 million for New York Main Street Program
- **Office of Parks, Recreation and Historic Preservation**
  - Up to $20 million for Environmental Protection Fund Grants
  - Up to $1.9 million for Recreational Trails Program (RTP)

Waterfront Revitalization: Up to $16.2 million

- **Department of State**
  - Up to $15.2 million for the Local Waterfront Revitalization Program
- **New York State Canal Corporation**
  - Up to $1 million for the Canalway Grants Program

Energy: Up to $40 million

- **New York State Energy Research and Development Authority**
  - Up to $40 million for Energy Efficiency Programs
- **New York State Power Authority**
  - Up to 157MW for the ReCharge NY Program

Environmental Improvements: Up to $105 million

- **Department of Environmental Conservation**
  - Up to $3 million for NYS DEC/EFC Wastewater Infrastructure Engineering Planning Grant
  - Up to $87 million for the Water Quality Improvement Projects (WQIP) Program
- **Environmental Facilities Corporation**
  - Up to $15 million for the Green Innovation Grant Program

Sustainability Planning and Implementation: Up to $14 million

- **Department of Environmental Conservation**
  - Up to $10 million for the Climate Smart Communities Program
- **Department of State**
  - Up to $4 million for Local Government Efficiency Grants

Education/Workforce Development: Up to $5 million

- **Department of Labor**
  - Up to $5 million for Workforce Development

Low Cost Financing: Up to $300 million

- **Empire State Development**
  - Up to $300 million for Industrial Development Bond (IDB) Cap

Additional NYS Infrastructure Resources:

New York State Environmental Facilities Corporation: www.efc.ny.gov/environmental-facilities-corporation

In relation to the American Recovery and Reinvestment Act, the Environmental Facilities Corporation (EFC) distributes grants to assist environmental initiatives. The EFC deals with issues pertaining to water reuse and conservation, energy efficiency, and environmental innovation. Grant seekers will be able to obtain applications through the EFC's website.

Loan Programs

Clean Water State Revolving Fund
Drinking Water State Revolving Fund

Grant Programs:

Engineering Planning Grant Program
Green Innovation Grant Program

Integrated Solutions Construction Grant Program
Intermunicipal Water Infrastructure Grants Program
Water Infrastructure Improvement Act

Other Programs

East of Hudson Septic System Rehabilitation Reimbursement Program
Emergency Financial Assistance
Industrial Finance Program
Septic System Replacement Program
Small Business Environmental Assistance Program

New York State Department of Transportation: www.nysdot.gov/funding

The grants distributed by the Department of Transportation exist to improve the roadways, the environment, and overall expense of commuting. The Department of Transportation also takes pedestrians and cyclists into consideration and offers grant opportunities for their commute. The following link provides a comprehensive list of all NYS DOT programs.

https://www.dot.ny.gov/divisions/operating/opdm/local-programs-bureau

New York State Department of Environmental Conservation: www.dec.ny.gov/pubs/grants.html

The Department of Environmental Conservation provides grants that are meant for environmental improvement and protection. An applicant will be classified in one of three groups, which will determine the size of the grant. The grants specifically focus on areas that include, water protection, environmental cleanup, land and forest protection, environmental justice, and solid waste.

Community Development and Housing

New York State community development and housing resources, which also includes infrastructure funding, may be secured through competitive application(s) submitted by local municipalities, non-profit housing agencies and private developers. The state resources are primarily made available through the New York State Office of Homes and Community Renewal (HCR) www.nyshcr.org/ through a Unified Funding Application round and the Consolidated Funding Application (CFA) process. Federal resources are typically made available through specific program announcements for funding and may be found through www.grants.gov.

New York State Office of Homes and Community Renewal (HCR)

New York State Homes and Community Renewal (HCR) preserves housing affordability and works with many private, public and nonprofit sector partners to create inclusive, safe, “green,” and resilient places to live in New York State. HCR programs provide financing to create and preserve multifamily housing; administer programs to improve housing conditions, ensure accessibility, and save energy; provide bonding authority and other resources to facilitate local public improvements and job creation; and help thousands of low- and moderate-income New Yorkers purchase a home. HCR

provides funding of services for low to middle income households and for special needs populations including veterans, seniors, homeless families, individuals with HIV/AIDS, and at-risk youth.

HCR is comprised of five agencies:

- Office of Homes and Community Renewal (HCR)
- Housing Trust Fund Corporation (HTFC)
- Housing Finance Agency (HFA)
- State of New York Mortgage Agency (SONYMA)
- Affordable Housing Corporation (AHC)

NYS HCR Unified Funding Application: www.nyshcr.org/Funding/UnifiedFundingMaterials/2017/

New York State Homes and Community Renewal (HCR) announces the availability of the following program on an annual basis, which typically includes:

- Low-Income Housing Trust Fund Program (HTF)
- New York State HOME Program (NYS HOME)
- Community Investment Fund Program (CIF)
- Supportive Housing Opportunity Program (SHOP)
- Homes for Working Families Program (HWF)
- Public Housing Preservation Program (PHP)
- Multifamily Preservation Program (MPP)
- Middle Income Housing Program (MIHP)

A Request for Proposals (RFP) for Unified Funding (UF) site-specific multi-family project applications (Capital Applications) seeking funding under these programs is typically announced in mid to late summer. The UF Capital Applications are submitted using the Community Development Online (CDOL) Application System, located on HCR's website at: www.nyshcr.org/Apps/CDOnline/

Application Deadlines

There are typically three UF application deadlines. The first deadline will be for Early Award Projects (EA), which meet criteria set forth in the RFP and are described, in part, below. The second deadline will be for Early Round Empire State Supportive Housing Initiative (ESSHI) Projects which meet criteria that will be set forth in the RFP and are described, in part, below. The third deadline will be for all other Capital Applications described in the upcoming RFP.

Example of Funding Allocations: UF 2017 FUNDS AVAILABLE (approximate budgets, subject to availability of appropriations)

- $65.2 million in HTF funds
- $7 million in NYS HOME funds
- $44.9 million in CIF funds
- $35 million in SHOP funds
- $4 million in HWF funds
- $10 million in PHP funds
- $15 million in MPP Funds
- $16 million in MIHP funds

Office Division of Housing and Community Renewal (HCR)

Community Development Block Grant (Consolidated Funding Application)

The Community Development Block Grant (CDBG) Program is a federally funded program authorized by Title I of the Housing and Community Development Act of 1974. The CDBG Program is administered by the Office of Community Renewal (OCR) under the direction of the Housing Trust Fund Corporation (HTFC).

NYS CDBG funds provide small communities and counties in New York State with a great opportunity to undertake activities that focus on community development needs such as creating or expanding job opportunities, providing safe affordable housing, and/or addressing local public infrastructure and public facilities issues. The primary statutory objective of the CDBG program is to develop viable communities by providing decent housing and a suitable living environment by expanding economic opportunities, principally for persons of low and moderate income. The state must ensure that no less than 70% of its CDBG funds are used for activities that benefit low- and moderate-income persons. A low-and moderate income person is defined as being a member of a household whose income is less than 80% of the area median income for the household size. A principal benefit to low- and moderate-income persons requires at least 51% of the project beneficiaries to qualify as low- and moderate-income.

Eligible Activities / Program Benefit Requirements

NYS CDBG applicants must address and resolve a specific community or economic development need within one of the following areas: (1) Public Infrastructure (2) Public Facilities (3) Microenterprise (4) Community Planning. Funding for municipalities and not-for-profits

New York Main Street Program (Consolidated Funding Application)

The New York Main Street (NYMS) Program was created by the Housing Trust Fund Corporation (HTFC) in 2004 to provide resources to assist New York's communities with Main Street and downtown revitalization efforts. NYMS provides resources to invest in projects that provide economic development and housing opportunities in downtown, mixed-use commercial districts. A primary goal of the program is to stimulate reinvestment and leverage additional funds to establish and sustain downtown and neighborhood revitalization efforts. There are four programs within the NYMS, which include

Eligible Types of Applicants:

Eligible applicants for NYMS Program applications are Units of Local Government or organizations incorporated under the NYS Not-for-Profit Corporation Law that have been providing relevant service to the community for at least one year prior to application.

Eligible Target Area:

All NYMS activities must be located in an eligible target area. Applicants must clearly identify how the target area meets each of the three components of the statutory definition of an eligible target area.

Traditional NYMS Target Area Building Renovation Projects

Applicants may request between $50,000 and $500,000 for Target Area Building Renovation Activities. Requests must not exceed an amount that can be reasonably expended in the identified target area, within a 24-month term. Requests generally should not exceed the amount of documented property owner need in the target area.

- Building Renovation: Matching grants available for renovation of mixed-use buildings. Recipients of NYMS funds may award matching grants of up to $50,000 per building, not to exceed 75% of the total project cost in a designated target area. Renovation projects that provide direct assistance to residential units may be awarded an additional $25,000 per residential unit, up to a per-building maximum of $100,000, not to exceed 75% of the total project cost.
- Streetscape Enhancement: Applicants may request up to $15,000 in grant funds for streetscape enhancement activities, such as: planting trees, installing street furniture and trash cans, or other activities to enhance the NYMS target area.
- Streetscape enhancement grant funds will be awarded only for activity ancillary to a traditional NYMS building renovation project and cannot be applied for on its own. NYMS Downtown Anchor or Downtown Stabilization applicants may not request Streetscape funds.
- Streetscape enhancement activities must be reviewed for eligibility and approved by HTFC prior to commencement of construction or installation. Streetscape activities must be completed within the proposed building renovation target area.

Administrative and soft costs are also eligible expenses covered by these grants. Each of these line items has specific requirements that may be found on the HCR website

NYMS Downtown Anchor Project:

Applicants may request between $100,000 and $500,000 for a standalone, single site, “shovel ready” renovation project. The NYMS Downtown Anchor Project funds may not exceed 75% of the Total Project Cost. NYMS Downtown Anchor Project funds are intended to help establish or expand cultural, residential or business anchors that are key to local downtown revitalization efforts through substantial interior and/or exterior building renovations.

Applicants for NYMS Downtown Anchor Project funds must:

- Document a compelling need for substantial public investment;
- Document project readiness, as evidenced by funding commitments, developer site control, pre-development planning completed, and local approvals secured;
- Provide cost estimates to substantiate the request amount;

- Identify source(s) of available construction financing and matching funds;
- Demonstrate the importance of the project for the neighborhood, community and region;
- Provide a Business Plan and Market Analysis to demonstrate project viability.

Middle Income Housing Program (MIHP)

MIHP provides financing assistance for acquisition, capital costs and related soft costs associated with the new construction of or the adaptive reuse of non-residential property to affordable middle income housing units as part of HCR's ongoing efforts to create greater income diversity in affordable housing while also providing affordable housing options for middle income New Yorkers in certain high cost rental markets, or as part of a concerted neighborhood-specific revitalization effort.

MIHP offers gap financing to developments which include units that will be occupied by households earning above 60% of AMI, up to 130% of AMI. MIHP must be requested in combination with 9% LIHC and must meet the standard LIHC set-aside requirements; that is, 20% of the units affordable to households with incomes at 50% or less of AMI or 40% of the units affordable to households with incomes at 60% or less of AMI. It is expected that projects with higher rent levels serving higher income households will be able to leverage conventional debt and therefore request less subsidy per unit.

NYS Financing and Funding Resources for Housing Developers

Low Income Housing Tax Credit Program (LIHC) – Federal

The LIHC program provides a dollar-for-dollar reduction in federal income tax liability for project owners who develop rental housing that serves low-income households. (Low-income is defined as households with incomes up to 60% of area median income.) The amount of LIHC available to project owners is directly related to the number of low-income housing units that they provide. Applicants eligible to receive allocations of LIHC include individuals, corporations, limited liability corporations and limited partnerships - with the latter two being the most widely used ownership entities. Economic and scoring incentives are provided to encourage the participation of Not-for-profit corporations in LIHC projects. www.nyshcr.org/Programs/LIHC/

State Low-Income Housing Credit Program (SLIHC) – New York State

The NYS Low Income Housing Tax Credit Program (SLIHC) is modeled after the federal LIHC program. The SLIHC must serve households whose incomes are at or below 90 percent of the area median income (vs. the 60 percent standard of the federal program). www.nyshcr.org/Programs/SLIHC/

Housing Trust Fund (HTF) Program

The New York State Housing Trust Fund (HTF) provides funding to eligible applicants to construct low-income housing, to rehabilitate vacant, distressed or underutilized residential property (or portions of a property) or to convert vacant or underutilized non-residential property to residential use for occupancy by low-income homesteaders, tenants, tenant-cooperators or condominium owners.

www.nyshcr.org/Programs/HousingTrustFund/

NYS Historic Properties Tax Credits (Commercial and Homeowner Programs)

Individual property owners who plan to rehabilitate an historic property can apply for a 20% income tax credit - 20% of Qualified Rehabilitation Expenditures (QRE) - on both state and federal income taxes. All rehabilitation work must meet federal preservation standards. For the homeowner tax credit, the residence must be an owner-occupied. Applicants must receive approval from the NYS Historic Preservation Office (SHPO) before work commences.

www.nysparks.com/shpo/tax-credit-programs/documents/NYSTaxCreditPrograms.pdf

Rental Housing Assistance

There are a number of affordable rental housing developments in Putnam County. Eligibility requirements are different for each complex, which may include income, age and family size. In addition to the affordable housing rental complexes, families and individuals may be eligible for rental assistance, which may be paid directly to the landlord. The rental assistance program, known as the Section 8 Housing Choice Voucher program, is administered by Putnam Housing Corporation.

Putnam County Monthly Rent Limits

by Income Percentage and Unit Size– FY 2017

FY-2017	0-BR	1BR	2BR	3BR	4BR
Fair Market Rent	$1,352	$1,419	$1,637	$2,102	$2,267
30% Rent Limit	$501	$573	$644	$715	$773
50% Rent Limit	$835	$895	$1,073	$1,240	$1,383
60% Rent Limit	$1,002	$1,146	$1,289	$1,431	$1,547
90% Rent Limit	$1,503	$1,719	$1,933	$2,147	$2,320
Low HOME Rent	$835	$895	$1,073	$1,240	$1,383

High HOME Rent	$1,115	$1,196	$1,437	$1,651	$1,823

Putnam County Area Median Income (AMI) Limits by Household Size – FY 2017

FY-2017	1-person	2-person	3-person	4-person	5-person	6-person
30% AMI	$20,050	$22,900	$25,750	$28,600	$30,900	$33,200
50% AMI	$33,400	$38,200	$42,950	$47,700	$51,550	$55,350
60% AMI	$40,080	$45,840	$51,540	$57,240	$61,860	$66,420
80% AMI	$53,450	$61,050	$68,700	$76,300	$82,450	$88,550
90% AMI	$60,120	$68,760	$77,310	$85,860	$92,790	$99,630
100% AMI	$66,800	$76,400	$85,900	$95,400	$103,100	$110,700

Additional Financing Resources for Multifamily Developers

New York State Housing Finance Agency (HFA) All Affordable Program

HFA offers financing for both new construction of multifamily rental housing and funds for the preservation and rehabilitation of existing affordable multi-family rental housing. Tax-exempt, taxable and 501(c)(3) bond proceeds may be used to finance these developments.
www.nyshcr.org/Topics/Developers/MultifamilyDevelopment/AllAffordableProgram.htm

New Development - To qualify for financing for new construction under the All Affordable Housing Program, all units must be affordable to households earning no more than 60% of the Area Median Income (AMI), adjusted for family size, in the county where the development will be located.

Preservation - Projects that were initially financed through federal and/or state affordable housing programs, as well as those not currently part of an affordable housing program, are

eligible for the All Affordable Housing Program. To qualify, a majority of the units in a project must be affordable to households earning no more than 60% of the AMI for the county where the development is located. For tax-exempt bond financed projects, rehabilitation costs must not be less than 20% of the bond amount (if enhanced by SONYMA's Mortgage Insurance Fund). Other credit enhancers require varied percentages of rehabilitation.

Subsidy Loans - Developers who obtain new construction and preservation mortgages from HFA are also eligible for HFA's Second Mortgage "Subsidy Loans." These loans provide subordinate, low interest rate subsidy loans to projects that are receiving HFA financing and which require subsidy to maximize the number of affordable units and to reach lower income or special needs populations.

New York State Energy Research and Development Authority (NYSERDA)

Low-Rise Residential New Construction (PON 2309)

NYSERDA Low-rise Residential New Construction Program incorporates the New York ENERGY STAR® Certified Homes Program as well as NYSERDA's offer of eligibility for certain gut rehabilitation projects to participate and receive the alternative New York Energy $mart designation. These Programs are designed and intended to encourage the construction of single-family homes and low-rise residential dwelling units which operate energy more efficiently, are more durable, more comfortable, and provide a healthier environment for their occupants than would otherwise be achieved. Technical assistance and financial incentives are offered to builders and developers, as well as to Residential Energy Services Network (RESNET) Home Energy Rating System (HERS) Providers and their Home Energy Raters to encourage the adoption of progressive building practices. http://www.nyserda.ny.gov/Funding-Opportunities/Current-Funding-Opportunities/PON-2309-low-rise-residential-new-construction-program.aspx

Alternative Housing Financiers

Community Preservation Corporation (CPC)

CPC is a non-profit, affordable housing and community revitalization finance company with offices throughout New York State. The Hudson Valley office, located in Ossining, serves Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester counties. CPC offers construction financing, Freddie Mac conventional financing, supportive housing financing and other customizable loan programs. CPC has financed more than 170,660 affordable housing units. With $9.7 billion in public and private investments, its work has helped revitalize countless neighborhoods and provided quality housing for low-income families, senior citizens, and individuals with disabilities.

CPC has been working in the Hudson Valley since the late 1980s and has provided financing for hundreds of affordable housing units. The approach is not to just provide funding; CPC provides

technical assistance in the community revitalization process and leverages many other local and statewide resources. CPC has a variety of loan products in its arsenal with attractive rates and terms.

2 Church Street, Suite 207
Ossining, NY 10562
(914)-747-2570
http://communityp.com/

Leviticus Fund

The Leviticus Fund supports transformative solutions that serve low-income and vulnerable people by combining flexible capital from social-impact investors and contributors with knowledge-sharing to create sustainable and affordable communities. The Leviticus Fund is a community development loan fund that spans the states of New York, New Jersey and Connecticut. This geographic landscape is certainly broad, yet the challenges for affordable, special needs and emergency housing, early education centers for children of low-income families, community health centers and other community facilities that improve communities and the lives of low-income residents cut across the region.

Leviticus recognizes that creating opportunities in these communities often makes a critical difference. That is why Leviticus partners with nonprofit organizations that are strong advocates for their communities. Their funds cover pre-development, acquisition, construction, mini-permanent and bridge loans, as well as working capital loans. For early education, Leviticus lends to both nonprofits and proprietary child care centers whose enrollment includes at least 50 percent of low-income families.

220 White Plains Road, Suite 125
Tarrytown, NY 10591
Tel. 914.909.4381
https://www.leviticusfund.org/borrow_overview.htm

Financing Programs for Homeownership

There are a number of programs funded through the State of New York Mortgage Agency (SONYMA). These programs have very strict guidelines and eligibility requirements. To begin the process, there are housing agencies that provide home buyer assistance counseling, such as Putnam Housing Corporation. In some cases, counseling agencies may have additional grant assistance programs such as First Home Club (matching savings for down payment and closing cost assistance), Section 8 to Homeownership and housing rehabilitation grants for existing home owners.

Putnam Housing Corporation
11 Seminary Hill Road
Carmel, New York 10512
845-225-8493

State of New York Mortgage Agency (SONYMA) http://www.nyshcr.org/SONYMA/

SONYMA provides a variety of low-interest mortgages primarily for first-time homebuyers. The agency also offers a popular down payment assistance program. Some of the programs are briefly outlined below. Others can be found on their website. Participating SONYMA lenders in the Mid-Hudson area: http://www.nyshcr.org/Topics/Home/Buyers/ParticipatingLenders/

SONYMA "Remodel New York"

The Remodel New York Program provides competitive interest rate financing to qualified first-time homebuyers for the purchase and renovation of 1- and 2-family homes in need of improvements or repairs. The renovation cost must be, at minimum, the lower of $5,000 or 5% of the property's appraised value (after the proposed repairs are made) and, at maximum, 40% of the property's appraised value after the proposed repairs are made. Down payment assistance of $3,000 or 3% of the home purchase price (not to exceed $15,000) is available. Eligible renovation includes repair or replacement of plumbing, electrical and heating systems, structural repairs, new kitchens, bathrooms, windows, etc.

See http://www.nyshcr.org/Topics/Home/Buyers/SONYMA/RemodelNewYorkProgram.htm for a list of eligible renovations. Under Remodel New York, applicants do not have to be first-time homebuyers in federally designated targets areas. Income and purchase price limits apply.

SONYMA's Achieving the Dream Program

The Achieving the Dream Program is geared towards low-income first-time homebuyers. The 30-year loan offers "lower" interest rates which can be used to finance one and two-family properties. Additionally, down-payment assistance can be provided up to $15,000. A borrower must contribute 1 percent to the down payment costs.

http://www.nyshcr.org/Topics/Home/Buyers/SONYMA/AchievingtheDreamProgram.htm

SONYMA's Construction Incentive Program

http://www.nyshcr.org/Topics/Home/Buyers/ConventionalPlusProgram.htm

SONYMA's Conventional Plus Program is a new mortgage program that combines 30-year fixed rate mortgages with SONYMA down payment assistance for both first-time homebuyers and previous homeowners. The program may be used for the purchase of a primary home or for the refinance of an existing mortgage (on a primary home). The down payment assistance may also be used to pay closing costs (including an upfront single mortgage insurance premium, if necessary, and thus eliminating the monthly mortgage insurance premium payment). With all these combined features including flexible underwriting guidelines, Conventional Plus offers a lower monthly payment than most mortgages.

SONYMA's Down Payment Assistance Loan (DPAL)

http://www.nyshcr.org/Topics/Home/Buyers/SONYMA/DownPaymentAssistanceLoan(DPAL).htm

SONYMA offers homebuyers down payment assistance in conjunction with SONYMA financing. Down Payment Assistance Loan (DPAL) allows SONYMA borrowers to secure down payment assistance through a second mortgage that can be used in combination with any currently available SONYMA program. DPALs have no interest rate and no monthly payments and will be forgiven after ten (10) years as long as the borrower keeps the SONYMA financing in place, and continues to owner occupy his or her home. The SONYMA DPAL can now be used to pay all or a portion of a one-time mortgage insurance premium, if applicable, thus significantly reducing your monthly mortgage payment.

Federal Housing Administration (FHA) 203(k) Insured Mortgage

The FHA 203(k) insured mortgage allows homebuyers to finance the purchase and rehabilitation of a property. Purchasers can borrow up to 110% of the "after-improved value" of the appraisal and also have a low down payment – as little as 3.5%. Owner-occupancy is required. The extent of the rehabilitation covered by Section 203(k) insurance may range from relatively minor (though it must exceed $5,000 in cost) to virtual reconstruction. A home that will be razed or has been demolished as part of rehabilitation is eligible, for example, provided that the existing foundation system remains in place. Section 203(k) insured loans can finance the rehabilitation of the residential portion of a property that also has non-residential uses; they can also cover the conversion of a property of any size to a one- to four-unit structure. https://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/sfh/203k

Federal Housing Administration (FHA) Limited 203 (k) Insured Mortgage

The FHA 203 (k) Limited or "Streamlined" insured mortgage is an effective alternative to the 203 (k) Rehab loans when mainly cosmetic repairs are all that is required. Under the Streamlined program, a maximum of $35,000 can be financed to improve or upgrade a home. No "structural repairs" are allowed. Borrowers are not required to hire engineers or architects under this program. A 203(k) consultant is also not required. Owner-occupancy is required.

https://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/sfh/203k/203k--df

HUD Good Neighbor Next Door program

This is a program for law enforcement officers, teachers (pre-K through 12th grade), firefighters and emergency medical technicians with houses available for 50% of the list price. The homebuyer needs to commit to living in the home for 36 months as your main residence.

https://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/sfh/reo/goodn/gnndabot

United States Department of Agriculture (USDA)

Housing for Individuals

USDA provides homeownership opportunities to rural Americans, and home renovation and repair programs. USDA also provides financing to elderly, disabled, or low-income rural residents in multi-unit housing complexes to ensure that they are able to make rent payments.

- Single Family Housing Direct Home Loans
- Single Family Housing Guaranteed Loan Program
- Multi-Family Housing Rental Assistance

Housing Development Opportunities

USDA works with public and nonprofit organizations to provide housing developers with loans and grants to construct and renovate rural multi-family housing complexes. Eligible organizations include local and state governments, nonprofit groups, associations, nonprofit private corporations and cooperatives, and Native American groups.

- Single Family Housing Repair Loans and Grants
- Mutual Self-Help Housing Technical Assistance Grants
- Multi-Family Housing Direct Loans
- Farm Labor Housing Direct Loans and Grants
- Housing Preservation Grants
- Rural Housing Site Loans

Middletown Service Center
225 Dolson Ave, Ste 104, 1st Floor
Middletown, NY 10940
(845) 343-1872, ext. 4

Assistance with Closing Costs, Down Payments

Federal Home Loan Bank First Home Club (FHC) Potential Homebuyers may enroll in the First Home Clubs (FHC) at any time with an approved FHLBNY member community lender. (Approved member list: http://www.fhlbny.com/community/housing-programs/fhc/hlb-participating-members.aspx . The first-time homebuyer must participate in the program for a minimum of 10 months of systematic savings, up to a maximum of 24 months. For every $1 saved and deposited into the dedicated account with the FHC member under a systematic schedule of savings, the FHLBNY will match with $4, not to exceed $7,500 in matching funds per household. Qualifying household income cannot exceed 80% of the median family income, adjusted for household size, for their current place of residence. http://www.fhlbny.com/community/housing-programs/fhc/fhc-information-for-first-time-homebuyer.aspx These resources may be available through PathStone. Their contact information is provided above.

Fannie Mae HomeStyle Renovation (HSR) Mortgage

HSR mortgage allows purchasers to include renovations, repairs, or improvements totaling up to 50 percent of the as-completed appraised value of the property. Any type of renovation or repair is eligible as long as it is permanently affixed to the property and adds value. Eligible borrowers include individual home buyers, investors, nonprofit organizations, and local government agencies. The loan applies to one- to four-family principal residences, as well as to one-unit second homes or one-unit investor properties. Borrowers must engage a contractor to perform the renovation work. HSR mortgages are available through most conventional mortgage lenders. https://www.fanniemae.com/singlefamily/construction-renovation#

Appendix 2:
Economic Analysis of Parking Regulations

PUTNAM CORRIDORS ECONOMIC ANALYSIS OF PARKING REGULATIONS

INTRODUCTION

Parking and parking management are primary concerns for city planners focused on improving community wellbeing and vitality. This section identifies four different types of parking management strategies—no regulation, time limits, metered parking, and managed parking—and describes the benefits and costs associated with their implementation.

NO REGULATION

Parking without regulation provides drivers with free access to parking spaces. In the suburban context these spaces are often provided by large lots in front of development, and/or at curbside. In town centers, the desire to park close to one's destination often means parking on the same block; this often generates a perceived lack of parking. This perception is the result of a lack of available parking spaces on blocks with high demand, while blocks which produce low parking demand are empty. Without regulations the spaces on popular blocks are more likely to remain occupied for longer periods of the day as no rules or regulations force drivers to move from a space, usually resulting in very low utility per space, contributing to a parking problem.

In areas with parking demand, the lack of regulations and low turnover rate produce a phenomenon called "cruising." This occurs when a driver cannot find a space in a desired area and then continues to circle one or a number of blocks until a desirable space becomes available. Cruising results in a number of negative externalities for a community including increased traffic congestion, unnecessary wear of the roadway, and air pollution produced by cruising vehicles searching for parking. A lack of parking can also have adverse effects on business conditions, as commercial businesses rely on ample and available parking to ensure business patrons can readily access their storefronts. The low rate of use per space produced by unregulated parking lessens the chance that spaces become available, inducing cruising, and reducing each space's utility for the community.

While unregulated parking is understood to be "free" because the driver does not have to pay for the use of the space, free parking is actually indirectly paid for by all members of the community, who contribute to the payment of costs associated with unregulated parking.[1] The hidden costs of unregulated parking are included in higher prices at stores, and higher taxes to pay for additional roadway repairs. This produces an uneven distribution of costs associated with parking, whereby a pedestrian who does not contribute to congestion or air pollution must support some of these costs associated with driving and parking.

While the driver must pay for the cost of operating their vehicle, the true cost of parking is not borne by the driver, but by the community at large.[2] This inaccurate pricing has the potential to induce inefficient automobile usage, as the driver does not accurately evaluate the costs of driving. Even with unregulated parking the driver still incurs numerous costs, including the costs of their time wasted searching for parking, those associated with the excess fuel used while cruising for parking, and the

[1] Shoup, D. (2005). The high cost of free parking. American Planning Association. p.205-207

[2] Shoup, D. (2005). The high cost of free parking. American Planning Association. p.205-207

excess ware on a personal vehicle. Even to the driver the cost of cruising for parking eliminates the benefits of "free" parking, and may be a greater cost to the driver than the utility of free parking.

The high costs associated with this form of parking management on both the community and individual driver make it efficient in only a few situations. Areas with low demand for parking, or ample parking at all times are likely the only suitable contexts for unregulated parking. Without any regulation the incentive to maximize the value of every parking space is removed. This lack of incentive for utility maximization in parking spaces has the potential to generate a significant parking shortfall in high-demand areas, producing a lose-lose result for both drivers and the community.

TIME LIMITATIONS

Implementing time restrictions on parking is widely used for regulating parking in a town centers and other areas with high parking demand. This strategy is popular with drivers, as they still can access free parking. Strict enforcement of the time limits are able to produce an increased turnover for parked vehicles, which can reduce cruising, lessen congestion, and improve air quality due to reduced air pollution. However, unlike other forms of parking regulation, instituting time regulations do not pass along the true cost of parking to the driver, which is likely to produce inefficient driving. Another result of time limits, particularly in areas with high numbers of offices, is the "two-hour shuffle," where drivers move spaces in a musical chairs-like manner to avoid going over the time limit. In this scenario, wherein cars are moved every 120-minutes, the true utility of the spaces is still highly limited as cars switch spaces, not allowing for other new vehicles to utilize the limited number of spaces.[3] Enforcement of time limits does not bring the community revenue to cover the costs associated with enforcement, but by reducing the negative impacts associated with unregulated parking, such as air pollution and congestion, the program can be efficient from the community's perspective.

METERED PARKING

Metering began in the 1930s as a form of parking regulation to address the trend of increased automobile ownership. The demand for parking spaces required a regulating mechanism to ensure spaces were utilized efficiently by the public. Metered parking is a parking regulation strategy by which motorists pay directly for utilizing a parking space. With metered parking spaces, drivers are charged a fixed amount to park for a specified period of time. The cost for a space usually remains static based on location and time of day, although newer technologies associated with metered parking now allow for more flexibility in pricing. For example, mobile metering allows drivers to pay for parking remotely, and centralized multi-meters provide a single machine to regulate an entire block of vehicles. Increasingly, these new technologies are also reducing the costs associated with meter installation as less upfront and physical infrastructure is required for operation.

BENEFITS OF METERED PARKING

- Promotes most efficient mode of transportation: With paid parking every trip becomes a financial decision where some drivers decide to drive around for free parking and others choose an alternative method of travel (e.g. public transportation or walking) to avoid the costs of parking.
- Improves efficiency of driver spending: By using alternative modes, drivers opting not to drive would take cheaper forms of transportation to access their destination. Further, those who drive would spend less on gas and congestion related expenses as more spaces are available for them to utilize.[4]

[3] Berkleyside (2015) December 18th, 2015 "Berkely wins $1M parking grant to fix 2-hour shuffle" http://www.berkeleyside.com/2015/12/18/berkeley-wins-1m-parking-grant-to-fix-2-hour-shuffle/

[4] Litman, T. (2006). Parking management: strategies, evaluation and planning. Victoria Transport Policy Institute p. 129

- Provides for a more balanced distribution of costs associated with parking: Compared to unregulated parking which is a cost borne by the community at large, metered parking is paid for by those who utilize it.
- Produces better consumer choices: Where parking is metered, individuals who decide not to drive do not support the costs of parking for drivers. Drivers are able to decide how much parking they are willing to purchase, providing better consumer flexibility and an incentive to save money.[5]
- Reduces negative externalities (e.g. cruising, congestion, air pollution and excess road damage): The reduction of cruising for parking provides a number of significant health and welfare improvements, particularly in denser town centers.[6] For example, in Aspen, Colorado, the introduction of metered parking reduced the City's parking utilization rate from 95 percent to 70 percent.[7] A study of drivers in Lower Manhattan revealed that 28 percent of drivers surveyed were searching for available free curbside parking.[8] According to a study conducted by Transportation Alternatives, in one year, drivers cruising for parking in Manhattan traveled an extra 366,000 miles searching for parking; this excess driving produced 325 tons of CO_2, wasted $130,000 in fuel and amounted to 50,000 hours of time.[9] Moreover the 366,000 miles of excess driving directly impacts roadway longevity, requiring more frequent road repairs and other maintenance expenses.
- Placing a cost on parking can create support for, and the funds necessary to provide alternative modes of transportation such as public transit or bicycling.

COSTS

- Implementation costs: developing metered parking requires the implementation of new systems including new parking meter infrastructure and technologies. It also includes the hiring of parking enforcement agents. While these costs can be significant, they are less than they used to be, and are largely offset by meter revenue and fines. Further, metered parking can be financed through build-operate-transfer agreements, which provide a share of parking revenue to a private operator, who installed the system, until the costs of installation are recuperated by the private partner.[10]
- Costs to drivers: with metered parking drivers pay the full price for parking. Compared to free parking, the inconvenience of paying for a space is higher for the motorist, offsetting community costs.

MANAGED PARKING AND PARKING BENEFIT DISTRICTS

Beyond traditional parking management strategies such as time limits and metered parking, in recent decades new strategies for public and on street parking management have emerged. Managed parking and parking benefits districts (PBDs) are two techniques for regulating parking which have been found to create more efficient parking, reduce congestion and generate revenue. Managed parking is a parking strategy which focuses on the economics of human behavior. The objective of managed parking strategies is to have vehicles park in the most efficient space possible. A PBD receives the revenues from paid parking and uses the revenues directly within the local community. Principally managed parking, and

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[5] Hess, D. (2001). Effect of free parking on commuter mode choice: Evidence from travel diary data. *Transportation Research Record: Journal of the Transportation Research Board*, (1753), 35-42.

[6] Shoup, D., & DALES, J. (2016). Parking Benefit Districts. *ACCESS Magazine*, *49*, 35-37.

[7] Ready, R. (1998). Public Involvement, Understanding, and Support: Lessons Learned from the City of Aspen Transportation and Parking Plan. *Journal of Parking*, *1*(2).

[8] Shoup D.(2007) "Gone Parking" *New York Times*, March 29th, 2007 http://www.nytimes.com/2007/03/29/opinion/29shoup.html last accessed 2/23/18

[9] Ensha, A. (2008). Can Parking Policy Ease Congestion?. *The New York Times*, *1*.

[10]] Shoup, D. (2005). The high cost of free parking. American Planning Association.p.441

PBDs exist as solutions to common problems and inefficiencies which have arisen in the regulation of on-street parking.

Inefficient parking regulations such as free curb-side parking, produce negative impacts to the local area such as limited space availability, low turnover, and increased cruising. In response to these issues, managed parking regulations take a holistic approach to regulating parking. This approach establishes parking regulations that influence the decisions of parkers, with the objective of producing efficient and convenient parking for all. To do this, managed parking strategies use economic principles of supply and demand, and tools such as time limits and parking fees to create a comprehensive parking plan that addresses the needs of the variety of demands within the local parking market.

In a managed parking strategy each potential parking "submarket" (e.g. full-day commuters, lunch time visitors, those running quick errands, etc.) is considered and a comprehensive parking plan is developed in order to most efficiently match the different parking needs to different types of parking. For example, long term parkers should not park directly in front of downtown stores, as they are not patronizing these businesses. Full day parking in these high-value spaces would result in a low space utilization rate and a perceived lack of parking spaces. Based on these principals, high-value parking spaces should have time limits and/or metered spaces, which would create disincentives for commuter parking. Beyond disincentivizing commuters from parking in downtown spaces, a managed parking system would also develop parking opportunities to meet the needs of commuter parkers, including providing secure spaces in proximity to their place of work, or transportation. Moreover understanding the needs of this specific submarket, a managed parking system would price these spaces at an appropriate level accounting for the premium commuters are willing to pay for these more suitable spaces.

PBDs, implemented in coordination with comprehensive managed parking, allow revenues generated through paid parking to be utilized for local road maintenance, enhanced street cleaning, sidewalk repair and streetscape improvements. Further, implementing managed parking PBDs can greatly improve community support for paid parking because the benefits of parking revenues are returned to the community and those most impacted by the negative effects associated with free parking.[11]

When implemented together, comprehensive managed parking and PBDs can create rationalized and efficient parking, reduce congestion, generate revenue, and provide for neighborhood improvements. Compared to other alternatives for parking regulation such as time limits and metered parking, these strategies provide significant benefits for communities, including higher revenues and parking space utilization, [12, 13]

THEORY AND PRINCIPLES

Managed parking is a parking strategy focusing on behavioral economics. The objective of managed parking strategies is to have vehicles park in the most efficient space possible.[14] In this context, efficiency is understood both as the utility of the single space for the car parked there, as well as the parking space as it relates to the market for public parking. In order to maximize these efficiencies, managed parking strategies utilize incentives and disincentives in an effort to influence driver's behavior. Primarily the incentives utilized are the same tools utilized in traditional parking management—time

[11] Shoup, D. (2005). The high cost of free parking. American Planning Association. p.435
[12] Shoup, D. (2005). The high cost of free parking. American Planning Association. p.443-444
[13] Litman, T. (2006). Parking management: strategies, evaluation and planning. Victoria Transport Policy Inst.. p. 69
[14] Litman, T. (2006). Parking management: strategies, evaluation and planning. Victoria Transport Policy Inst.. p. 68

limits and payment—however, the difference is the incentives and disincentives are implemented as a comprehensive strategy, which considers a variety of factors in establishing management practices.

While traditionally a downtown district may have metered parking, it may be inefficiently priced, and unable to respond to the variable demand for parking found at different times of day in various parking sub-markets.[15] As different drivers have different objectives when parking, they value their time differently. While one parker may intend on being downtown for 90 minutes, going to lunch and shopping, another parker may only need 20 minutes to post a letter. Commuters desire 10 hours of secure parking while they are at work. Unlike inflexible metered parking or rigid time limits, managed parking takes into account the various needs of different parkers and attempts to create a parking market which meets the needs of the various types of parkers in the most efficient way possible and at the best price.[16]

Installing metered parking in areas where parking is currently free is often unpopular as some business owners believe paid parking will reduce patronage to their businesses.[17] However these concerns are largely unfounded as, if priced correctly, paid parking increases the utility of each space allowing for more turnover and greater rates of patronage.[18] The creation of a PBD can be an effective technique to counter this negative perception of managed parking and generate community support for municipalities seeking to implement more efficient rationalized parking system. PBDs are described as creating both little winners, those who can find affordable parking, and big winners, residents and business owners who receive the benefits of parking revenues daily through public space and roadway improvements.[19] With PBDs, residents and business owners are able to see the improvements being made as a result of the revenue collected from metered parking, so while some may still be unenthusiastic about paying for parking, they often support the implementation of this strategy.[20]

BENEFITS

- Increases patronage of local businesses: Effective pricing and a managed parking system can encourage a healthy parking space turnover, and visitors are less constrained by limited parking opportunities when visiting a downtown district or main street.[21]
- Meets various parking demands: By pricing and distributing parking, a managed parking strategy can provide the most efficient parking product to a variety of parkers at a reasonable cost.
- Provides revenues for the community: PBDs provide revenues to those most directly impacted by the negative impacts of parking demand, such as neighborhood residents, and local store owners, in order to pay for neighborhood improvements which counteract the negative costs associated with parking. Less traditional improvements including the preservation of historic structures has also been funded through revenues generated by PBDs.[22]
- Reduction of air pollution, congestion and roadway wear which are generated by cruising for parking: A managed parking strategy encourages a higher utilization of existing parking spaces, and by varying price, encourages a distribution of open parking spaces across the parking district which can reduce cruising.

[15] Shoup, D. (2005). The high cost of free parking. American Planning Association.p.299-300
[16] Shoup, D. (2005). The high cost of free parking. American Planning Association.p.302-303
[17] Kolozsvari, D., & Shoup, D. (2003). Turning small change into big changes.
[18] Urban Land Institute Louisiana (2012). *Study on Parking Benefits Districts and Opportunities for New Orleans*.
[19] Shoup, D. (2005). The high cost of free parking. American Planning Association.
[20] Shoup, D (2004). "The Ideal Source of Local Public Revenue". Regional Science and Urban Economics, 34, 2004, 758.
[21] Urban Land Institute Louisiana (2012). *Study on Parking Benefits Districts and Opportunities for New Orleans.*
[22] Shoup, D. (2005). The high cost of free parking. American Planning Association.p.457-460

COSTS

- Cost of implementation: both managed parking and PBDs require substantial upfront costs to become effective parking management tools. The establishment of managed parking requires traffic and parking demand studies in order to identify the most efficient management practices. PBDs require upfront costs such as establishing a residents parking scheme and creating an entity which can receive revenues from parking and spend those on community improvements.
- Cost of Equipment: managed parking further requires an investment in the installation of parking meters or other modern parking management technology for managing the parking system and collecting parking payments. However, like with traditional metered parking, these costs can be offset by build-operate-transfer agreements.
- Enforcement of regulations: enforcement of managed parking regulations requires active oversight of parking areas, and a system to collect fines assessed to non-compliant drivers. Enforcement often requires the employment of parking enforcement personnel and other ancillary staff. These costs can be offset by the revenues collected through meter payments.

CASE STUDIES

Numerous cities including New York, San Francisco, Boulder and Los Angeles have implemented PBDs and managed parking in order to more efficiently respond to parking demands. San Francisco's SFpark program is perhaps one of the most well-known parking management systems. Created by the San Francisco Municipal Transportation Agency (SFMTA), SFpark utilizes real-time information collected from parking meters and an online parking application to provide drivers accurate information regarding the location of available spaces and track the utilization of parking within the district in order to adjust the price of parking to meet the demand.[23] This system is able to price parking in response to demand, with the objective of ensuring a few spaces are available on every block. Those who value proximate and immediate access to a space are able to pay a premium for a space, while those willing to "shop" for a better deal are able to do so, with full knowledge of where spaces were available and at what price.

In order to manage parking pricing, the SFpark pilot program developed six pricing structures, which varied depending on the time of day, and day of the week. Weekday rates were broken out between morning (9am-12pm) afternoon (12pm-3pm) and evening (3pm-6pm) in order to capture three distinct parking submarkets. Based on the time of day the price for parking could range from $0.25 to $6.00 per hour. Further based on demand pricing for spaces could be adjusted to encourage parking in certain areas of lower occupancy and push drivers away from areas of higher occupancy.[24] The rules for adjusting rates according to occupancy rates are detailed below:

- When occupancy is 60-80 percent the hourly rate will not be changed.
- When occupancy is 30-60 percent the hourly rate will be lowered by $0.25.
- When occupancy is less than 30 percent, the hourly rate will be lowered by $0.50.

A 2014 study of the SFpark program estimates that the implementation of variable rate parking within San Francisco reduced incidents of cursing by as much as 50 percent.[25] Further, the study's analysis suggests that this improved parking management contributed to a higher rate of utility per space

[23] Urban Land Institute Louisiana (2012). *Study on Parking Benefits Districts and Opportunities for New Orleans.*

[24] Urban Land Institute Louisiana (2012). *Study on Parking Benefits Districts and Opportunities for New Orleans.*

[25] Millard-Ball, A., Weinberger, R. R., & Hampshire, R. C. (2014). Is the curb 80% full or 20% empty? Assessing the impacts of San Francisco's parking pricing experiment. Transportation Research Part A: Policy and Practice, 63, 76-92.

(a proxy for business patronage in downtown areas) and more efficient use of the roadway network, which positively impacts roadway longevity.[26]

Seattle, Washington has also implemented a managed parking system in which 13,500 traditional metered spaces in 20 neighborhoods were converted into a managed parking system. Here pricing was set between $1 and $4 an hour (except for the downtown core, which was priced higher to encourage transit use) Monday through Saturday between 8am and 6pm. Implementation of the managed parking, including the expansion of the system, resulted in an approximate 11 percent average annual increase in revenue collected by the City's parking authority compared to traditional metered parking.[27]

While both San Francisco and Seattle's managed parking strategies are comprehensive city-wide programs, these management practices have also been implemented on a smaller scale. Within Los Angeles' "Old Pasadena" historic downtown district, a PBD was established to reduce parking congestion while also funding local streetscape improvements and the preservation of historic buildings. Before 1993 when the area did not have parking meters, only a two-hour parking limit, store patrons had difficulty finding parking because store workers parked in prime locations. To remedy this the town proposed paid parking, but business owners rejected the idea believing that paid parking reduced the number of visitors to their stores, with customers attracted to free parking offered at large shopping centers. Due to these objections, the district proposed the establishment of a PBD. Under this proposal, parking cost $1 per hour and all meter revenue went to public investments within the district. This strategy convinced many business owners to support paid parking. By 2001, the Old Pasadena PBD's 690 meters produced net revenue of $1.2 million annually (net of all enforcement and collection costs) which could be spent on neighborhood beautification and historic preservation efforts.[28]

PBDs are not exclusive to commercial districts; residential areas have also been successful at creating PBDs. Residential PBDs are similar to other residents parking programs where residents receive a permit to park (sometimes for a nominal fee), but spaces are also available for paid public parking. Boulder, Colorado maintains a robust residential PBD system. Within neighborhood permit parking zones Boulder sells parking permits to residents for $12 a year, but also sells commuter permits for $312 a year. These non-resident permits allow parking on specific blocks, and the number of non-resident permits is limited. Based on the revenues collected by the City of Boulder selling non-resident permits, each block within the district receives approximately $5,000 annually to fund pavement repairs, and other services such as enhanced street cleaning.[29]

CONCLUSIONS

In areas where there isn't a perceived lack of parking, unregulated parking would be the most cost-effective type of parking management. Such areas exhibit either an extremely low demand for parking, or a very high availability, neither of which is ideal for a community. In areas with higher demand for parking, time regulations and metered parking are an effective way to increase parking turnover. These strategies can also be successfully implemented in smaller and less dense urban communities. In areas with high demand for parking, regardless of size, the scarcity of spaces within the market suggests the need for more holistic management practices. The implementation of managed parking and PBDs can effectively address the high levels of automobile congestion, and demand for

[26] Urban Land Institute Louisiana (2012). *Study on Parking Benefits Districts and Opportunities for New Orleans.*

[27] Urban Land Institute Louisiana (2012). *Study on Parking Benefits Districts and Opportunities for New Orleans.*

[28] Kolozsvari, D., & Shoup, D. (2003). Turning small change into big changes.

[29] Shoup, D. (2005). The high cost of free parking. American Planning Association.p.451

parking. In small local areas where residents and businesses are accustomed to free on-street parking, establishing a benefits district can generate substantial support, as the improvements go directly to mitigating the harms of parking and cruising experienced by nearby community residents and other local stakeholders

Appendix 3:

Transit-Oriented Development (TOD) Information Guide and Zoning Recommendations

TRANSIT-ORIENTED DEVELOPMENT (TOD) INFORMATION GUIDE AND ZONING RECOMMENDATIONS

A. DEFINING TRANSIT-ORIENTED DEVELOPMENT

Transit-Oriented Development (TOD) is an urban planning concept developed in the 1990s to designate and encourage higher-density development and walkable communities centered on transit centers. Specifically, TOD is defined as "walkable, compact, mixed-use, higher density development within walking distance of a transit facility." According to the TOD Institute, the area within ½ mile of a transit station is an appropriate radius to consider for a walkable, high density, and mixed-use TOD. TOD generally incorporates a mix of residential and commercial uses and is designed to make public transit successful, enhance the convenience and safety of non-vehicular modes of transportation, and provide for a vibrant, livable community. According to a 2004 report prepared by Reconnecting America's Center for Transit-Oriented Development, by 2025, 14.6 million households will seek homes within walking distance to public transit and rail systems.

B. BENEFITS OF TOD

As a result of the benefits TOD can create, it is attractive for public agencies and private developers. Higher-density development characteristic for TOD, typically results in increased value generation and value capture. Increased value generation allows for higher private developer profits and provides the public with additional resources to develop non-market rate uses such as affordable housing and social infrastructure. According to the Federal Transit Administration and the Center for Transit-Oriented Development, successful TOD requires organized regional and/or local governments and provides numerous community and regional benefits including but not limited to the following:

- Increased ridership and associated revenue gains for transit systems. Also, developments that complement proposed transit support the project justification and increase chances for transit funding and political support;
- Public and private sector engagement and investment in the neighborhoods surrounding the transit facility;
- Revitalization or expansion of neighborhoods, particularly downtowns and central business districts;
- A concentrated mix of land uses leading to increased tax revenue and economic returns to surrounding landowners and businesses;
- Job creation and opportunities to attract a diverse talent pool;
- Positive regional impacts resulting from the creation of a mixed-use center with neighborhood retail, entertainment, and dining along a transit corridor or at a transit station;
- Opportunities to provide a range of housing types to accommodate individuals and families of varying incomes;
- Opportunities to provide affordable housing near a readily available source of transportation, creating a high-level of mobility for households on limited incomes;
- Congestion relief and associated environmental benefits at the destination locations including reduced annual greenhouse gas emissions;
- Opportunities to provide safe pedestrian and cyclist access through non-motorized infrastructure; and

- Improved public health by promoting a more active and healthier lifestyle with reduced commuting times.

Studies have shown that vibrant transit can enable a community to use market forces to increase densities near stations, where most services are located, thus creating more efficient subcenters and minimizing sprawl. Since TOD promotes infill development to create compact communities relying on existing infrastructure and utilities, a community with TOD elements and sufficient infrastructure capacity to accommodate new growth around the transit center can end up spending less over the long term when compared to a community experiencing outward sprawl. Sprawl can become costly since it requires the expansion of public infrastructure and utilities. Transit enables a community to be more transit corridor/transit station-oriented, making it easier to provide infrastructure. As vehicle use decreases in a TOD area, the community saves money on repairing infrastructure.

C. CONSIDERATIONS FOR IMPLEMENTATION

TOD can be implemented through a variety of methods such as comprehensive planning, adopting new zoning laws (including overlay zoning) and amendments to building codes. A municipality should consider the following factors to determine if TOD is the right fit for the community:

- The community has a transit station or other transit nodes such as a Bus Rapid Transit hub with regional access and a strong economic catchment area.
- An inventory of properties suitable for TOD near rail stations (e.g. state-owned land, brownfields, underutilized or vacant lots) has been compiled and the feasibility of using the property has been assessed.
- The community is interested in creating a new transit facility that will function as the focal point of TOD.
- The community is open to having higher-density development focused around the transit station.
- The community has developed or is in the process of developing strong relationships with transit providers.
- Demographic and market studies indicate TOD could be successful in the community.
- There is community and political support behind a TOD plan or ordinance, and resources/funding available to develop such a plan or ordinance.

If most or all of the above conditions are met, the municipality can take the following steps towards developing and implementing a successful TOD ordinance:

Step 1: Develop and adopt a plan (Comprehensive Plan, TOD Plan, etc.) with community input, which outlines a vision based on transit infrastructure, market and demographic studies. It will be critical to obtain a clear understanding of the feasibility of implementing TOD from a community, engineering/technical, and financial perspective. During this step, preliminary TOD district boundaries should be established.

Step 2: Develop appropriate zoning framework to match the adopted plan.

Step 3: Complete environmental review (SEQRA) for the proposed TOD plan and zoning framework. A Generic Environmental Impact Statement (GEIS) is one way to complete SEQRA for a broad set of actions such as an area-wide plan or zoning change.

Step 4: Adopt TOD zoning regulations.

Many communities with established partnerships and funding opportunities for TOD implementation have had success issuing requests for proposals from developers and consultants to assist with Steps 1-3.

Based on a review of successful TOD projects from around the U.S., the formation of partnerships between municipalities, developers and transit agencies is important to the success of TOD projects. Towns that can acquire parcels of land near transit stations (e.g., underperforming properties that are tax delinquent) and/or enter into joint development agreements with the transit agency for an anchor development will minimize development risks and be better able to attract developers.

Localities with the capacity to create conditions conducive to TOD have been successful. Many sites ripe for TOD are in locations in need of street lighting, public spaces/parks, landscaping, bike and pedestrian paths and other streetscape improvements. In high-traffic locations, street calming/complete streets measures may need to be implemented. Without these improvements, even quality development can fail to attract those who wish to live in walkable communities.

Parking requirements for new development should be carefully considered. Construction of parking is costly and affects the cost-effectiveness of development projects. Shared parking concepts should be explored as a means of reducing the amount of overall parking in the area. Use of shared parking has the potential to reduce development costs and, importantly, frees up land for residential and/or commercial development.

Planning for TOD should reflect a desire to create implementable and financeable projects. An area of 120 to 150 acres near a transit station has been suggested as the minimum acreage for a TOD district. Zoning should reflect a thorough market study; allowing for commercial/retail development that is not supported by the market can derail a TOD project. Municipalities should leverage their existing assets and any opportunities for joint development and/or circulation improvements with transportation agencies, and then form partnerships with developers that go beyond the regulator/regulated relationship to create a shared vision of successful TOD.

D. STRUCTURING A TOD ORDINANCE OR TOD OVERLAY

Many communities have adopted TOD zoning ordinances or overlay zones to promote infill development and compacted growth around transit centers. Similar to other types of zoning ordinances adopted by a municipality, a TOD ordinance can be structured to contain the following elements:

- Purpose and Intent
- Definitions
- Applicability and General Provisions
- Inconsistencies of Underlying Districts (if TOD overlay applies)
- Permitted Uses
- Prohibited Uses
- Uses requiring Conditional Use or Use Permit
- Affordable housing provisions
- Development standards for permitted uses
    - Setbacks and build-to lines
    - Density (floor area ratio, etcetera)
    - Building heights (min/max)
    - Lot coverage

    - Building frontage and facades
    - Building entry
- Street and sidewalk regulations
- Parking and loading regulations
    - Parking requirements per floor area or unit size and land use type
    - On-street parking location
    - Off-street parking location
    - Bicycle parking location
    - Loading and service area location

Design Guidelines should include consideration of the interface between the station area and streetscape, encourage convenience services in the station area, and indicate street orientation of housing.

TOD PLAN AND ORDINANCE EXAMPLES

1. Through a Comprehensive Plan process – Albany 2030:
http://www.albany2030.org/general/TOD

2. Through Urban Renewal plan process – Village of Brewster:
http://www.brewstervillage-ny.gov/images/stories/pdfs/URP/Urban_Renewal_Plan_Adopted_5-18-2016.pdf

3. As an Overlay Zone – City of New Rochelle:
https://www.newrochelleny.com/DocumentCenter/View/5222/DOZ-Zoning-Book-FINAL-12-2-15

SOURCES:

http://www.tod.org/principles.html

https://www.transit.dot.gov/TOD

https://www.itdp.org/library/standards-and-guides/tod3-0/

https://3gozaa3xxbpb499ejp30lxc8-wpengine.netdna-ssl.com/wp-content/uploads/2017/06/TOD_printable.pdf

http://www.reconnectingamerica.org/assets/Uploads/2004Ctodreport.pdf

http://www.reconnectingamerica.org/assets/Uploads/bestpractice230.pdf

https://www.completecommunitiesde.org/planning/complete-streets/tod/

https://www.completecommunitiesde.org/planning/complete-streets/tod-benefits/

http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.445.4939&rep=rep1&type=pdf

Appendix 4:
Sample Consumer Surveys

Cold Spring Shopper Survey

Zip Code of Residence _____ Zip Code (or Town) of Place of Work _____

1. When do you typically shop in Cold Spring?
(Choose UP TO SEVEN times total for the week)

	Before 11:00 a.m.	11:00 a.m.- 2:00 p.m.	2:00 p.m.- 5:00 p.m.	After 5:00 p.m.
Monday	☐	☐	☐	☐
Tuesday	☐	☐	☐	☐
Wednesday	☐	☐	☐	☐
Thursday	☐	☐	☐	☐
Friday	☐	☐	☐	☐
Saturday	☐	☐	☐	☐
Sunday	☐	☐	☐	☐

2. In general, during which of the following extended hours are you currently most likely to shop?
(Choose ONE)

- ☐ Monday after 7:00 p.m.
- ☐ Tuesday after 7:00 p.m.
- ☐ Wednesday after 7:00 p.m.
- ☐ Thursday after 7:00 p.m.
- ☐ Friday after 7:00 p.m.
- ☐ Sunday
- ☐ Other _____

3. How often do you eat out for the following meals? (Choose ONE answer for each meal)

	5 or more times a week	2-4 times a week	Once a week	Once a month	Once every few months	Never
Breakfast	☐	☐	☐	☐	☐	☐
Lunch	☐	☐	☐	☐	☐	☐
Dinner	☐	☐	☐	☐	☐	☐

4. How often do you come to Cold Spring for the following activities? (Choose ONE answer for each activity)

	5 or more times a week	2-4 times a week	Once a week	Once a month	Once every few months	Never
Retail shopping	☐	☐	☐	☐	☐	☐
Eating out	☐	☐	☐	☐	☐	☐
Personal care or professional services	☐	☐	☐	☐	☐	☐
Work	☐	☐	☐	☐	☐	☐
Recreational activities	☐	☐	☐	☐	☐	☐
Hudson River access	☐	☐	☐	☐	☐	☐
Passing through on your way to someplace else	☐	☐	☐	☐	☐	☐

5. How often do you shop at the following locations (Chose ONE answer for each location)

	5 or more times a week	2-4 times a week	Once a week	Once a month	Once every few months	Never
Cold Spring, NY	☐	☐	☐	☐	☐	☐
Hamlet of Carmel, NY	☐	☐	☐	☐	☐	☐
Hamlet of Mahopac, NY	☐	☐	☐	☐	☐	☐
Beacon, NY	☐	☐	☐	☐	☐	☐
Village of Fishkill, NY	☐	☐	☐	☐	☐	☐
Brewster, NY	☐	☐	☐	☐	☐	☐
Danbury, CT	☐	☐	☐	☐	☐	☐

6. If you shop at one of the following locations instead of Cold Spring, What are the main reasons why?
(Chose UP TO TWO answers for each location)

	I Don't Shop Here	Better Parking	Better Hours	Better Service	Better Location	Better Selection	Better Price	Other (Specify)
Hamlet of Carmel, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Hamlet of Mahopac, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Beacon, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Village of Fishkill, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Brewster, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Danbury, CT	☐	☐	☐	☐	☐	☐	☐	☐ _____

7. Which of the following amenities/businesses would you most like to see developed in Cold Spring ? (Choose up to FIVE)

☐ Antiques	☐ Coffee shop / Café	☐ Financial Services	☐ Grocery
☐ Art Gallery	☐ Discount	☐ Fine Dining	☐ Hardware
☐ Bar / Brewery	☐ Electronics	☐ Gas Station	☐ Other _____
☐ Clothing	☐ Fast Food	☐ Gifts / Knickknacks	☐ Other _____

8. Which of the following best describes where you shop most often? (Choose ONE)

- ☐ A downtown / main street
- ☐ A shopping center
- ☐ A mall
- ☐ Single stores not located with other stores
- ☐ Other (please specify) _____

9. Do you agree or disagree with the following statements? (Choose ONE answer for each)

	Agree	Neutral	Disagree
I always try to buy products and services locally.	☐	☐	☐
I like the look and feel of downtown Cold Spring	☐	☐	☐
Cold Spring salespeople are friendly and helpful.	☐	☐	☐
There are a lot of products and services in downtown Cold Spring	☐	☐	☐
There is plenty of convenient parking in downtown Cold Spring	☐	☐	☐
Cold Spring businesses are open when I want to shop.	☐	☐	☐
Cold Spring businesses sell products/services I want.	☐	☐	☐
Cold Spring businesses sell at a fair price.	☐	☐	☐
I recommend shopping in Cold Spring	☐	☐	☐
Cold Spring is pedestrian friendly	☐	☐	☐
Cold Spring is bicycle friendly	☐	☐	☐

10. What is the primary mode of transportation that you use to get to Cold Spring? (Choose ONE)

☐ Personal Vehicle	☐ Cab Service
☐ Bicycle	☐ Walking
☐ Train	☐ Bus

END OF SURVEY - THANK YOU !

Carmel Shopper Survey

Zip Code of Residence _____ Zip Code (or Town) of Place of Work _____

1. When do you typically shop in the Hamlet of Carmel?
(Choose UP TO SEVEN times total for the week)

	Before 11:00 a.m.	11:00 a.m.- 2:00 p.m.	2:00 p.m.- 5:00 p.m.	After 5:00 p.m.
Monday	☐	☐	☐	☐
Tuesday	☐	☐	☐	☐
Wednesday	☐	☐	☐	☐
Thursday	☐	☐	☐	☐
Friday	☐	☐	☐	☐
Saturday	☐	☐	☐	☐
Sunday	☐	☐	☐	☐

3. In general, during which of the following extended hours are you currently most likely to shop?
(Choose ONE)

- ☐ Monday after 7:00 p.m.
- ☐ Tuesday after 7:00 p.m.
- ☐ Wednesday after 7:00 p.m.
- ☐ Thursday after 7:00 p.m.
- ☐ Friday after 7:00 p.m.
- ☐ Sunday
- ☐ Other _____

3. How often do you eat out for the following meals? (Choose ONE answer for each meal)

	5 or more times a week	2-4 times a week	Once a week	Once a month	Once every few months	Never
Breakfast	☐	☐	☐	☐	☐	☐
Lunch	☐	☐	☐	☐	☐	☐
Dinner	☐	☐	☐	☐	☐	☐

4. How often do you come to the Hamlet of Carmel for the following activities? (Choose ONE answer for each activity)

	5 or more times a week	2-4 times a week	Once a week	Once a month	Once every few months	Never
Retail shopping	☐	☐	☐	☐	☐	☐
Eating out	☐	☐	☐	☐	☐	☐
Personal care or professional services	☐	☐	☐	☐	☐	☐
Work	☐	☐	☐	☐	☐	☐
Recreational activities	☐	☐	☐	☐	☐	☐
Hudson River access	☐	☐	☐	☐	☐	☐
Passing through on your way to someplace else	☐	☐	☐	☐	☐	☐

5. How often do you shop at the following locations (Chose ONE answer for each location)

	5 or more times a week	2-4 times a week	Once a week	Once a month	Once every few months	Never
Hamlet of Carmel, NY	☐	☐	☐	☐	☐	☐
Hamlet of Mahopac, NY	☐	☐	☐	☐	☐	☐
Cold Spring, NY	☐	☐	☐	☐	☐	☐
Beacon, NY	☐	☐	☐	☐	☐	☐
Village of Fishkill, NY	☐	☐	☐	☐	☐	☐
Brewster, NY	☐	☐	☐	☐	☐	☐
Danbury, CT	☐	☐	☐	☐	☐	☐

6. If you shop at one of the following locations instead of the Hamlet of Carmel, What are the main reasons why?
(Chose UP TO TWO answers for each location)

	I Don't Shop Here	Better Parking	Better Hours	Better Service	Better Location	Better Selection	Better Price	Other (Specify)
Hamlet of Mahopac, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Cold Spring, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Beacon, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Village of Fishkill, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Brewster, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Danbury, CT	☐	☐	☐	☐	☐	☐	☐	☐ _____

8. Which of the following amenities/businesses would you most like to see developed in the Hamlet of Carmel?
(Choose up to FIVE)

- ☐ Antiques
- ☐ Art Gallery
- ☐ Bar / Brewery
- ☐ Clothing
- ☐ Coffee shop / Café
- ☐ Discount
- ☐ Electronics
- ☐ Fast Food
- ☐ Financial Services
- ☐ Fine Dining
- ☐ Gas Station
- ☐ Gifts / Knickknacks
- ☐ Grocery
- ☐ Hardware
- ☐ Hotel / Conference Center
- ☐ Arts / Cultural Center
- ☐ Higher Education Institution
- ☐ Sports Arena / Complex
- ☐ Municipal Swimming Pool
- ☐ Other _____

8. Which of the following best describes where you shop most often? (Choose ONE)

- ☐ A downtown / main street
- ☐ A shopping center
- ☐ A mall
- ☐ Single stores not located with other stores
- ☐ Other (please specify) _____

9. Do you agree or disagree with the following statements? (Choose ONE answer for each)

	Agree	Neutral	Disagree
I always try to buy products and services locally.	☐	☐	☐
I like the look and feel of the Hamlet of Carmel	☐	☐	☐
Salespeople in the Hamlet of Carmel are friendly and helpful.	☐	☐	☐
There are a lot of products and services in the Hamlet of Carmel	☐	☐	☐
There is plenty of convenient parking in the Hamlet of Carmel	☐	☐	☐
Businesses in the Hamlet of Carmel are open when I want to shop.	☐	☐	☐
Businesses in the Hamlet of Carmel sell products/services I want.	☐	☐	☐
Businesses in the Hamlet of Carmel sell at a fair price.	☐	☐	☐
I recommend shopping in the Hamlet of Carmel	☐	☐	☐
The Hamlet of Carmel is pedestrian friendly	☐	☐	☐
The Hamlet of Carmel is bicycle friendly	☐	☐	☐

10. What is the primary mode of transportation that you use to get to the Hamlet of Carmel? (Choose ONE)

- ☐ Personal Vehicle
- ☐ Bicycle
- ☐ Train
- ☐ Cab Service
- ☐ Walking
- ☐ Bus

END OF SURVEY - THANK YOU !

Mahopac Shopper Survey

Zip Code of Residence _____ Zip Code (or Town) of Place of Work _____

1. When do you typically shop in the Hamlet of Mahopac?
(Choose UP TO SEVEN times total for the week)

	Before 11:00 a.m.	11:00 a.m.- 2:00 p.m.	2:00 p.m.- 5:00 p.m.	After 5:00 p.m.
Monday	☐	☐	☐	☐
Tuesday	☐	☐	☐	☐
Wednesday	☐	☐	☐	☐
Thursday	☐	☐	☐	☐
Friday	☐	☐	☐	☐
Saturday	☐	☐	☐	☐
Sunday	☐	☐	☐	☐

4. In general, during which of the following extended hours are you currently most likely to shop?
(Choose ONE)

- ☐ Monday after 7:00 p.m.
- ☐ Tuesday after 7:00 p.m.
- ☐ Wednesday after 7:00 p.m.
- ☐ Thursday after 7:00 p.m.
- ☐ Friday after 7:00 p.m.
- ☐ Sunday
- ☐ Other _____

3. How often do you eat out for the following meals? (Choose ONE answer for each meal)

	5 or more times a week	2-4 times a week	Once a week	Once a month	Once every few months	Never
Breakfast	☐	☐	☐	☐	☐	☐
Lunch	☐	☐	☐	☐	☐	☐
Dinner	☐	☐	☐	☐	☐	☐

4. How often do you come to the Hamlet of Mahopac for the following activities? (Choose ONE answer for each activity)

	5 or more times a week	2-4 times a week	Once a week	Once a month	Once every few months	Never
Retail shopping	☐	☐	☐	☐	☐	☐
Eating out	☐	☐	☐	☐	☐	☐
Personal care or professional services	☐	☐	☐	☐	☐	☐
Work	☐	☐	☐	☐	☐	☐
Recreational activities	☐	☐	☐	☐	☐	☐
Hudson River access	☐	☐	☐	☐	☐	☐
Passing through on your way to someplace else	☐	☐	☐	☐	☐	☐

5. How often do you shop at the following locations (Chose ONE answer for each location)

	5 or more times a week	2-4 times a week	Once a week	Once a month	Once every few months	Never
Hamlet of Mahopac, NY	☐	☐	☐	☐	☐	☐
Hamlet of Carmel, NY	☐	☐	☐	☐	☐	☐
Cold Spring, NY	☐	☐	☐	☐	☐	☐
Beacon, NY	☐	☐	☐	☐	☐	☐
Village of Fishkill, NY	☐	☐	☐	☐	☐	☐
Brewster, NY	☐	☐	☐	☐	☐	☐
Danbury, CT	☐	☐	☐	☐	☐	☐

6. If you shop at one of the following locations instead of the Hamlet of Mahopac, What are the main reasons why?
(Chose UP TO TWO answers for each location)

	I Don't Shop Here	Better Parking	Better Hours	Better Service	Better Location	Better Selection	Better Price	Other (Specify)
Hamlet of Carmel, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Cold Spring, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Beacon, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Village of Fishkill, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Brewster, NY	☐	☐	☐	☐	☐	☐	☐	☐ _____
Danbury, CT	☐	☐	☐	☐	☐	☐	☐	☐ _____

9. Which of the following amenities/businesses would you most like to see developed in the Hamlet of Mahopac?
(Choose up to FIVE)

- ☐ Antiques
- ☐ Art Gallery
- ☐ Bar / Brewery
- ☐ Clothing
- ☐ Coffee shop / Café
- ☐ Discount
- ☐ Electronics
- ☐ Fast Food
- ☐ Financial Services
- ☐ Fine Dining
- ☐ Financial Services
- ☐ Gas Station
- ☐ Gifts / Knickknacks
- ☐ Grocery
- ☐ Hardware
- ☐ Hotel / Conference Center
- ☐ Hardware
- ☐ Arts / Cultural Center
- ☐ Higher Education Institution
- ☐ Sports Arena / Complex
- ☐ Municipal Swimming Pool
- ☐ Public Waterfront Facilities
- ☐ Lake Mahopac Tour Boats
- ☐ Other _____

8. Which of the following best describes where you shop most often? (Choose ONE)

- ☐ A downtown / main street
- ☐ A shopping center
- ☐ A mall
- ☐ Single stores not located with other stores
- ☐ Other (please specify) _____

9. Do you agree or disagree with the following statements? (Choose ONE answer for each)

	Agree	Neutral	Disagree
I always try to buy products and services locally.	☐	☐	☐
I like the look and feel of the Hamlet of Mahopac	☐	☐	☐
Salespeople in the Hamlet of Mahopac are friendly and helpful.	☐	☐	☐
There are a lot of products and services in the Hamlet of Mahopac	☐	☐	☐
There is plenty of convenient parking in the Hamlet of Mahopac	☐	☐	☐
Businesses in the Hamlet of Mahopac are open when I want to shop.	☐	☐	☐
Businesses in the Hamlet of Mahopac sell products/services I want.	☐	☐	☐
Businesses in the Hamlet of Mahopac sell at a fair price.	☐	☐	☐
I recommend shopping in the Hamlet of Mahopac	☐	☐	☐
The Hamlet of Mahopac is pedestrian friendly	☐	☐	☐
The Hamlet of Mahopac is bicycle friendly	☐	☐	☐

10. What is the primary mode of transportation that you use to get to the Hamlet of Mahopac? (Choose ONE)

- ☐ Personal Vehicle
- ☐ Bicycle
- ☐ Train
- ☐ Cab Service
- ☐ Walking
- ☐ Bus

END OF SURVEY - THANK YOU !