

Chapter 6-2

Upper Hudson Overview

Moving Dutchess 2 defines the Upper Hudson area as the northwest block of communities located along the Hudson River and Route 9 and 9G corridors. The area encompasses the towns of Hyde Park, Red Hook, and Rhinebeck and the villages of Red Hook, Rhinebeck, and Tivoli.

The six Upper Hudson communities share similar demographic, land use, and transportation characteristics. These include moderate population growth during the past 20 years, low to average population density, average median household incomes, a low share of out-of-county commuters, and high rates of auto usage. These similarities make it more likely that the communities will face similar land use and transportation challenges during the next 30 years, and accordingly, make it more likely that they will benefit from the same types of land use and transportation strategies to improve travel conditions and quality of life.

The Upper Hudson is characterized by a mix of suburban and rural land use patterns that are interspersed with small, concentrated development patterns in villages and hamlets such as Rhinecliff and the Village of Rhinebeck in the Town of Rhinebeck, Staatsburg in Hyde Park, and the villages of Tivoli and Red Hook in the Town of Red Hook.

Demographics

The Upper Hudson communities had a 2010 population of 40,438. This was a 3.6 percent increase over 2000, an approximate growth rate of 0.4 percent annually from 2000-2010. The Upper Hudson’s level of growth was lower than Dutchess County’s overall 6.2 percent increase in total population. The town and village of Red Hook had the highest rates of growth in the area, while the villages of Rhinebeck and Tivoli lost population. Table 6-2-1 shows population change from 2000-2010 for the Upper Hudson communities.

Table 6-2-1. Total Population-Upper Hudson (2000-2010)

	2000	2010	Percent Change
Town of Hyde Park	20,851	21,571	3.5
Town of Red Hook	7,440	8,240	10.8
Town of Rhinebeck	4,685	4,891	4.4
Village of Red Hook	1,805	1,961	8.6
Village of Rhinebeck	3,077	2,657	-13.6
Village of Tivoli	1,163	1,118	-3.9

Source: U.S. Census Bureau, 2010 Census

In 2010 the Upper Hudson had an average population density of 371 people per square mile, which closely matched the County’s overall density of 374 per square mile. At almost 1,779 people per square mile, the Village of Red Hook had the highest population density in the area, while the Town of Rhinebeck had the lowest at 212. Population density information is shown on the Upper Hudson Population Density Map.

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The Upper Hudson contained 19,373 housing units in 2010, a 10.1 percent increase from 2000. This equaled an average gain of 178 housing units per year from 2000-2010. The area had 17,585 occupied housing units (households) in 2010, with an average household size of 2.4 persons per household, which was slightly higher than the 2.2 reported in 2000. The Village of Rhinebeck was the only community in the Upper Hudson to lose housing during the decade. Table 6-2-2 shows housing unit totals for the Upper Hudson communities.

Table 6-2-2. Total Housing Units- Upper Hudson (2000-2010)

	2000	2010	Percent Change
Town of Hyde Park	7,704	8,416	9.2
Town of Red Hook	3,840	4,384	14.2
Town of Rhinebeck	3,255	3,653	12.2
Village of Red Hook	798	947	18.7
Village of Rhinebeck	1,463	1,424	-2.7
Village of Tivoli	531	549	3.4

Source: U.S. Census Bureau, 2000 & 2010 Census

Age

Young people and older people have different transportation needs than others: they are less likely to drive, and therefore more likely to walk (both young and old), bicycle (young people), or use transit for transportation. The Upper Hudson communities all have lower percentages of young people (aged 16 and under) than the county average, while the Town and Village of Rhinebeck and the Village of Red Hook have substantially higher percentages of older people (aged 65 and

over). The Town and Village of Rhinebeck and Village of Red Hook also have higher than average percentages of these young and older groups combined.

Table 6-2-3. Percent Young and Elderly-Upper Taconic (2010)

	% 16 and Under	% 65 and Over	Total % Under 16 and Over 65
Town of Hyde Park	17	15	32
Town of Red Hook	16	13	29
Town of Rhinebeck	14	26	40
Village of Red Hook	17	20	37
Village of Rhinebeck	15	27	42
Village of Tivoli	16	11	27
Dutchess County	19	14	33

Source: U.S. Census Bureau, 2010 Census

Income

Lower-income households are also more likely to walk, bicycle and use transit for everyday needs. Based on data from the U.S. Census Bureau’s 2009-2013 5-year American Community Survey, none of the Upper Hudson municipalities had median household incomes that were below the county average of \$71,192-\$73,858; though the Towns of Hyde Park (at \$69,429-\$75,971) and Rhinebeck (at \$59,401-\$73,565) had household incomes hovering around the county average.

Vehicle Ownership

Households without a vehicle are much more likely to seek alternative transportation. Based on data from the U.S. Census

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Bureau's 2009-2013 5-year American Community Survey, none of the municipalities in the Upper Hudson had zero vehicle household rates above the county average of 7.9-8.9 percent.

Centers & Destinations

Centers

The Upper Hudson hosts a variety of centers and destinations that are located near major transportation facilities such as Routes 9 and 9G. Depending on the nature of the land use and amount of development, these centers and destinations affect travel and the transportation system to varying degrees.

Activity centers are classified as those areas that support a concentrated mix of residential and commercial development, most typically a village or hamlet, which are human in scale and supported by adequate pedestrian infrastructure. Such centers provide travelers with the ability to make more non-motorized trips than auto-dependent areas. The Dutchess County Planning Department's Centers and Greenspaces Guide identifies existing centers with high levels of residential or commercial activity. The Upper Hudson includes the following activity centers:

1. Hyde Park town center on Route 9
2. Staatsburg hamlet in Hyde Park
3. Village of Rhinebeck
4. Rhinecliff hamlet in the Town of Rhinebeck
5. Village of Red Hook

6. Village of Tivoli
7. Town of Red Hook South Broadway center
8. Haviland hamlet

The Centers and Greenspaces Guide also identifies suburban development and areas susceptible to suburban development, classified as parcels under five acres that are outside of centers. In the Upper Hudson, these areas are concentrated along the Route 9 and 9G corridors and in the southern half of Hyde Park.

Destinations

Major destinations include key transportation hubs, large commercial sites, colleges, and cultural centers. These sites can generate significant traffic volumes and contribute to peak hour traffic congestion. The Upper Hudson includes the following major destinations:

1. Commercial plazas on Routes 9 and 9G
2. The Culinary Institute of America (CIA) in Hyde Park
3. Franklin D. Roosevelt National Historic Site in Hyde Park
4. Vanderbilt Mansion National Historic Site in Hyde Park
5. FDR High School in Hyde Park
6. Rhinecliff train station
7. Northern Dutchess Hospital in Rhinebeck Village
8. Rhinebeck High School
9. Dutchess County Fairgrounds in Rhinebeck
10. Bard College in Red Hook
11. Red Hook High School

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The Upper Hudson Overview Map shows key centers and destinations in the area.

Major Projects

The Transportation Council’s 2013 Major Projects Report, which tracks large projects in the county, identified over 2,300 new residential units in the planning stages or under construction in the area’s six communities. In addition, over 1.5 million square feet of non-residential space was also being planned for the area. Some of the larger projects in the area include the following:

1. Carriage Trail Towne Centre in Hyde Park: 317 condo/townhouse units on Route 9G.
2. St. Andrew’s at Historic Hyde Park: 325 senior condo/townhouse units, 233 residential units, 290,000 sq. ft. hotel, 293,000 sq. ft. office, 85,000 sq. ft. public/institutional, and 405,000 sq. ft. retail/restaurant.
3. The Club at Hyde Park: 120 assisted living residential units, 300 senior condo/townhouse units, 122 condo/townhouse units, and 160,000 sq. ft. hotel on CR 40A (Saint Andrews Rd.).
4. Northern Dutchess Hospital Expansion in the Village of Rhinebeck: 87,000 sq. ft. medical on Route 9.

Although listed in the Major Projects Report, these projects may not be constructed as described or at all, due to changes made by the developer and/or through the local permitting process.

Transportation System

Since the Upper Hudson population primarily relies on the private vehicle for their transportation needs, the area’s transportation system is based on the highway network. One of the area’s major corridors, Route 9, is served by public bus and intercity rail is available in the Rhinecliff hamlet (Town of Rhinebeck). Village and hamlet locations are served by robust sidewalk systems.

Roads

The Upper Hudson’s road system consists of two major State highways: Routes 9 and 9G; smaller State highways including Routes 199 and 308; and major County roads including CR 16 (North Quaker Ln.), CR 37 (North Cross Rd.), CR 39 (Cream St.), CR 40A (Saint Andrews Rd.), CR 41 (Crum Elbow Rd.), and CR 103 (River Rd.). According to the NYSDOT 2013 Highway Mileage Report, the Upper Hudson communities hosted almost 362 miles of State, County, and local roads. Table 6-2-4 shows the distribution of centerline mileage in the Upper Hudson communities.

Table 6-2-4. Centerline Mileage-Upper Hudson

	Total Centerline Mileage
Town of Hyde Park	145
Town of Red Hook	93
Town of Rhinebeck	93
Village of Red Hook	11
Village of Rhinebeck	13
Village of Tivoli	7

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NYSDOT rates pavement condition on a scale of 1 to 10, with 1 being the worst and 10 the best. A rating of 5 or less is classified as poor. According to the 2014 NYSDOT Pavement Data Report, State-owned highways in the Upper Hudson had an average surface rating of 7. All State highways in the Upper Hudson were in good condition with none rated 5 or less, except for a very small section of Route 308 (Rhinecliff Rd.) in the Town of Rhinebeck, west of the Village of Rhinebeck.

In addition, DCDPW rates the condition of County-owned roads each year. According to 2014 data, no County roads in the Upper Hudson were in poor condition. The Transportation System Conditions Map shows pavement conditions in the Upper Hudson.

The Transportation Council collects traffic count data for County and local roads and receives count data from NYSDOT for State highways. Based on a review of data from 2010-2014, the following roads had the highest Average Annual Daily Traffic (AADT) volumes in the Upper Hudson:

1. Route 9 in Hyde Park: 22,000
2. Route 199 in Rhinebeck (Town): 20,700
3. Route 9G in Rhinebeck (Town): 12,600
4. Route 9G in Hyde Park: 12,300
5. Route 9 in Rhinebeck (Village): 11,000
6. Route 9 in Rhinebeck (Town): 10,000
7. CR 41 (East Market St.) in Hyde Park: 9,700
8. CR 40A (Saint Andrews Rd.) in Hyde Park: 8,600
9. Route 9G in Red Hook (Town): 8,000
10. CR 41 (Crum Elbow Rd.) in Hyde Park: 8,000

11. Route 9 in Red Hook (Village): 7,800

Congestion Management Process (CMP)

The Transportation Council completed a CMP progress report in 2006, which identified locations with severe, heavy, and moderate peak hour congestion. The Upper Hudson contained one facility that had a vehicle-to-capacity ratio above 0.8 and was classified as having moderate congestion during peak periods: Route 9G in Hyde Park from CR 41 (Crum Elbow Rd.) to Greentree Dr. (2.7 miles).

The 2011 Travel Time Survey elaborated on the Step 2 report data by collecting travel time data on key routes during morning, mid-day, evening, and weekend periods. Based on the data collected, the following roadways in the Upper Hudson experience overall congestion (defined as having a ratio of peak-period travel time to non-peak travel time greater than 1.3):

1. Route 199 between the Hudson River and Route 9G:
 - Eastbound: AM, Mid-day, PM
 - Westbound: AM, Mid-day, PM
2. Route 9G between Route 199 and Route 9:
 - Northbound: PM
 - Southbound: AM, Mid-day, PM
3. Route 9 between Route 9G and Route 308:
 - Northbound: AM, Mid-day, PM
 - Southbound: PM
4. Route 9G between CR 40A (St. Andrews Rd.) and CR 41 (Crum Elbow Rd.):
 - Northbound: AM, Mid-day, PM

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- 5. Route 9 approaching CR 41 (Market St.):
 - Northbound: Mid-day, PM
 - Southbound: AM, Mid-day

The Dutchess County Transportation System Performance Maps show travel time data by roadway segment.

Bridges

The Upper Hudson transportation system includes 51 bridges, defined as a bridge structure with a span of 20 feet or longer. The NYSDOT condition rating scale ranges from 1 to 7, with 7 being in new condition and a rating of 5 or greater considered as good condition. In 2010 the bridges collectively had an average NYSDOT condition rating of 4.5.

NYSDOT defines a deficient bridge as one with a State condition rating of less than 5. A deficient condition rating indicates deterioration to a level that requires corrective maintenance or rehabilitation to restore a bridge to a fully functional, non-deficient condition; it does not imply that the bridge is unsafe. The Upper Hudson has 21 bridges that are classified as deficient under the NYSDOT rating system. Table 6-2-5 lists the number of bridges by municipality and their average State rating.

The federal bridge rating system, which differs from the State system, rates bridges on a scale of 1 to 9. The federal ratings are used to identify bridges that do not meet contemporary Federal Highway Administration (FHWA) standards. Those bridges are classified as either “structurally deficient” or “functionally obsolete.”

Table 6-2-5. Average Bridge Ratings-Lower Hudson

	Number of Bridges	Average NYSDOT Rating
Town of Hyde Park	19	5.5
Town of Red Hook	19	4.9
Town of Rhinebeck	11	5.0
Village of Red Hook	0	NA
Village of Rhinebeck	1	4.5
Village of Tivoli	1	4.5

According to the FHWA, bridges are considered “structurally deficient” if significant load carrying elements are found to be in poor or worse condition due to deterioration and/or damage, the bridge has inadequate load capacity, or repeated bridge flooding causes traffic delays. A "structurally deficient" bridge does not imply that it is unsafe or likely to collapse. A "structurally deficient" bridge, when left open to traffic, typically requires significant maintenance and repair to remain in service and eventual rehabilitation or replacement to address deficiencies. In order to remain in service, structurally deficient bridges are often posted with weight limits.

“Functionally obsolete” refers to a bridge’s inability to meet current standards for managing the volume of traffic it carries, not its structural integrity. A bridge may be “functionally obsolete” if it has narrow lanes, no shoulders, or low clearances. The Upper Hudson has eight bridges classified as structurally deficient and seven classified as functionally obsolete. The number of each by municipality is listed in Table 6-2-6 below.

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Table 6-2-6. Structurally Deficient & Functionally Obsolete Bridges-Upper Hudson

	Structurally Deficient	Functionally Obsolete
Town of Hyde Park	2	1
Town of Red Hook	5	3
Town of Rhinebeck	0	2
Village of Red Hook	0	0
Village of Rhinebeck	1	0
Village of Tivoli	0	1

The Upper Hudson Transportation System Conditions Map identifies bridges in the Upper Hudson rated as structurally deficient and functionally obsolete based on federal standards and deficient under State standards.

Transit

The Dutchess County Public Transit bus system operates one fixed route in the Upper Hudson: Route C between Poughkeepsie and Tivoli. Service is provided Monday through Saturday from 5:35 a.m. to 10:15 p.m., with up to 14 buses per day including eight daily roundtrips between Poughkeepsie and Tivoli. Route C route primarily serves the Route 9 corridor and a portion of Route 9G. The City of Poughkeepsie’s Northside bus route also operates in Hyde Park, providing service to the Culinary Institute of America and Hyde Park Stop & Shop.

Amtrak operates a train station in the Rhinecliff hamlet in the Town of Rhinebeck. As of 2015 the station was served by two

inter-state rail lines: the Adirondack and Empire Service. The Adirondack travels between New York City and Montreal, while the Empire Service travels between New York, Albany, Buffalo, and Toronto. The Empire Service provides the most frequent service at the Rhinecliff station, including six daily trains to Penn Station in New York City, and six daily trains to Albany-Rensselaer. Additional trains are available on weekdays or weekends only. A single train stops at Rhinecliff for the Adirondack. There is no Metro-North Railroad service in the Upper Hudson.

Pedestrian and Bicycle Transportation

Sidewalk Systems

The Upper Hudson has approximately 41 miles of public sidewalks. The majority are in the Town of Hyde Park and Village of Rhinebeck. When considered on a per-resident basis, the Village of Rhinebeck has the most sidewalks per resident (and ranks second county-wide), followed by the Village of Red Hook, which ranks ninth in the county. Sidewalk mileage by municipality and per resident is shown in Table 6-2-7 below.

Table 6-2-7. Sidewalk Mileage & Population (2010)-Upper Hudson

	Sidewalks (miles)	Sidewalk Feet per Resident	County-wide Rank
Town of Hyde Park	11.2	2.7	17
Town of Red Hook	7.8	5.0	15
Town of Rhinebeck	2.0	2.2	22

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Village of Red Hook	6.0	16.2	9
Village of Rhinebeck	10.8	21.4	2
Village of Tivoli	3.2	14.9	10

There are also minor sidewalk segments on various private residential and commercial properties.

Trail Systems

The Upper Hudson has approximately 49 miles of trails. Major recreational trails in the area include:

1. Mills/Norrie State Park: 15.8 miles roads/trails.
2. Hyde Park trail system (FDR to Top Cottage): 7 miles.
3. Hyde Park River Trail: 3.4 miles.
4. Ferncliff Trails in Rhinebeck: 3.2 miles.
5. Tivoli Bay Trails in Red Hook: 7.9 miles.
6. Montgomery Place Trails in Red Hook: 3 miles.
7. Winnakee Nature Preserve in Hyde Park: 3 miles

Shared Use Paths

There is a network of shared-use paths on the Bard College campus, including along the west side of CR 103 (Annandale Rd.). The NYS Office of Parks, Recreation, and Historic Preservation completed a Statewide Trails Plan in 2010. The plan recommends the completion of the Greenway trail along the Hudson River, from Tivoli to Poughkeepsie.

Bicycling Facilities

There are currently no on-street bicycle facilities in the Upper Hudson. However, three of [NYSDOT's signed State Bicycle Routes](#) (SBR) pass through the area: SBR 9 passes through Hyde Park, Rhinebeck, and Red Hook on Route 9; SBR 199 crosses over the Kingston-Rhinecliff Bridge from State Bike Route 32 in Ulster County and connects to SBR 308 in Milan via Routes 9G and 199; and SBR 308 extends on Route 308 between Route 9 in Rhinebeck and Route 199 in Milan. SBR 199 and 308 connect to SBR 9 (in Red Hook and Rhinebeck, respectively).

In addition, the [Rhinebeck and Red Hook Historic District Bike/Hike Trails](#) are two signed routes on County and local roads connecting historic attractions in the two Towns. Loop A is a 10.5 mile route between the Village of Rhinebeck and hamlet of Rhinecliff. Loop B is a 10.9 mile route from the Village of Rhinebeck north into Red Hook.

Bicycle parking is provided at some of the area's key destinations, including the Hyde Park Town Hall, Red Hook Town and Village Hall, Starr Library in Rhinebeck, Bard College, and several commercial locations in the Village of Red Hook.

Accessibility

In 2010 NYSDOT conducted an ADA inventory of State roads. The inventory identified intersections and sidewalk segments that require improvements to fully achieve ADA accessibility standards. The following Upper Hudson locations require modifications to meet ADA standards:

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Route 9 in the Village of Rhinebeck

1. Intersection at Asher Rd.
2. Intersection at South St.
3. Sidewalk from Mill St. to Asher Rd. (0.11 miles).
4. Sidewalk from Asher Rd. to Rockefeller Ln. (0.10 miles).

Route 308 in the Village of Rhinebeck

1. Sidewalk from Mulberry St. to North Parsonage St. (0.09 miles).
2. Intersection at North Parsonage St.
3. Sidewalk from North Parsonage St. to Beech St. (0.11 miles).
4. Sidewalk from Beech St. to South St. (0.13 miles).
5. Sidewalk from Wall St. to Oak St. (0.18 miles).

Route 199 in the Village of Red Hook

1. Intersection at Benner Rd.
2. Sidewalk from Benner Rd. to Ludlow Ave. (0.08 miles).
3. Sidewalk from Ludlow to Phillips St. (0.12 miles).

For additional data on walking and bicycling patterns, see [Walk Bike Dutchess](#), Chapter 5.2 (Upper Hudson).

Park-and-Ride Facilities

The Upper Hudson contains one State operated park-and-ride facility on Route 199, near the Kingston-Rhinecliff Bridge (35 spaces).

Other Transportation Facilities

The Upper Hudson hosts two public aviation facilities:

1. Sky Park Airport (Public) near NYS Route 199 in Red Hook.
2. Air Haven (Public) near CR 16 (North Quaker Ln.) in Hyde Park.

Transportation Safety

The Transportation Council analyzed vehicle crash data from the NYS Governor’s Traffic Safety Committee (GTSC), focusing on total crashes and crash rates based on road mileage. In 2013, the most recent data available, the GTSC reported that 274 crashes with fatalities or injuries occurred in the Upper Hudson; this was markedly higher than the 236 fatal and injury crashes reported in 2009 for *Moving Dutchess*. Table 6-4-8 shows the total number of reported crashes with fatalities or injuries by municipality for 2011-2013.

Table 6-2-8. Fatal & Injury Crashes-Upper Hudson (2011-2013)

	Fatal & Injury Crashes			
	2011	2012	2013	3-Year Average
Town of Hyde Park	130	168	134	144
Town of Red Hook	33	44	46	41
Town of Rhinebeck	62	42	68	57
Village of Red Hook	2	9	11	7
Village of Rhinebeck	11	13	12	12
Village of Tivoli	1	0	3	1

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Measured in terms of road mileage, the Upper Hudson communities had an average fatal/injury vehicle crash rate of 0.8 crashes per road mile in 2013, which was the same as the county average. The Upper Hudson’s 2013 crash rate was higher than the 0.6 reported in 2009 for *Moving Dutchess*. Table 6-2-9 shows crash rates per mile by municipality from 2011-2013.

Table 6-2-9. Crash Rate per Mile-Upper Hudson (2011-2013)

	Crash Rate Per Mile			3-Year Average
	2011	2012	2013	
Town of Hyde Park	1.0	1.3	1.0	1.1
Town of Red Hook	0.4	0.5	0.5	0.5
Town of Rhinebeck	0.7	0.5	0.7	0.6
Village of Red Hook	0.2	0.9	1.1	0.7
Village of Rhinebeck	0.8	1.0	0.9	0.9
Village of Tivoli	0.2	0.0	0.5	0.2

NYSDOT, in conjunction with NYSDMV and the Office of Cyber Security & Critical Infrastructure Coordination (CSCIC), maintains an online database of motor vehicle crashes called the Accident Location Information System (ALIS). The Transportation Council conducted an analysis of 2009-2013 ALIS crash data to identify general crash trends in the Upper Hudson. Based on this 2009-2013 data, the Transportation Council identified high-crash intersections and roadway segments in the Upper Hudson. The following Upper Hudson locations experienced some of the highest number of crashes/crash rates over the five-year period (see also the [Upper Hudson Crash Analysis Map](#)):

Intersections (Total Crashes)

1. Route 9 (Albany Post Rd.) and Church St. in the Town of Hyde Park (58 crashes).
2. Route 9 (Albany Post Rd.) and Pine Woods Rd. in the Town of Hyde Park (51 crashes).
3. Route 9 (Albany Post Rd.) and CR 40A (Saint Andrews Rd.) in the Town of Hyde Park (44 crashes).
4. Route 9 (Albany Post Rd.) and Dorsey Ln. in the Town of Hyde Park (25 crashes).
5. Route 9 (Broadway) and Route 199 (Market St.) in the Village of Red Hook (28 crashes).
6. Route 9 and Route 9G in the Town of Rhinebeck (30 crashes).
7. Route 199 and CR 103 (River Rd.) in the Town of Rhinebeck (28 crashes).
8. Route 9G (Violet Ave.) and CR 41 (E. Market St./Crum Elbow Rd.) in the Town of Hyde Park (68 crashes).
9. Route 115 (Salt Point Turnpike) and CR 39 (Cream St.) in the Town of Hyde Park (26 crashes).
10. CR 16 (N. Quaker Ln.) and Forest Dr. in the Town of Hyde Park (28 crashes).

Roadway Segments (Total Crashes and/or Crashes per Mile)

1. Route 9 (Albany Post Rd.) between Rokeby Rd. and Old Farm Rd. in the Town of Red Hook (30 crashes; 103 crashes per mile).
2. Route 9 (Broadway) between Route 199 (Market St.) and Saint John St. in the Village of Red Hook (seven crashes; 154 crashes per mile).

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3. Route 9 between Dutchess County Fairgrounds and Garden Homes Dr. in the Town of Rhinebeck (41 crashes; 40 crashes per mile).
4. Route 9 between Route 9G and Wey Rd. in the Town of Rhinebeck (12 crashes; 154 crashes per mile).
5. Route 9 (Mill St./Montgomery St.) between South St. and Livingston St. in the Village of Rhinebeck (46 crashes; 240 crashes per mile; one fatality in 2009).
6. Route 9 (Albany Post Rd.) between CR 40A (Saint Andrews Rd.) and Kessler Dr. in the Town of Hyde Park (67 crashes; 205 crashes per mile).
7. Route 9G between Route 199 (W. Market St.) and Kelly Rd. in the Town of Red Hook (30 crashes; 32 crashes per mile).
8. Route 9G between Middle Rd. and Old Post Rd. in the Town of Rhinebeck (34 crashes; 54 crashes per mile).
9. Route 9G between Route 9 and Karabell Ln. in the Town of Rhinebeck (51 crashes; 49 crashes per mile).
10. Route 9G between Vlei Rd. and CR 19 (Slate Quarry Rd.) in the Town of Rhinebeck (37 crashes; 29 crashes per mile).
11. Route 9G (Violet Ave.) between Cabin Loop and CR 41 (E. Market St./Crum Elbow Rd.) in the Town of Hyde Park (24 crashes; 230 crashes per mile).
12. Route 199 between CR 103 (River Rd.) and Route 9G in the Town of Rhinebeck (41 crashes; 64 crashes per mile).
13. CR 19 (Slate Quarry Rd.) between Wurtemberg Rd. and White Schoolhouse Rd. in the Town of Rhinebeck (38 crashes; 37 crashes per mile).
14. CR 40A (Saint Andrews Rd.) between Route 9 and Route 9G (Violet Ave.) in the Town of Hyde Park (34 crashes; 31 crashes per mile).

15. Market St. between Route 9 and Center St. in the Village of Rhinebeck (25 crashes; 152 crashes per mile).

Pedestrian & Bicycle Safety

The Transportation Council also analyzed the 2009-2013 crash data to determine pedestrian and bicycle crash rates per 1,000 people for each municipality. Based on this analysis, the Villages of Rhinebeck and Red Hook had pedestrian crash rates (0.72 and 0.31 respectively) above the county average of 0.29 crashes per 1,000 people. In addition the Villages of Rhinebeck and Red Hook (0.54 and 0.41 respectively) had bicycle crash rates above the county average of 0.15 crashes per 1,000 people (the Town of Hyde Park was slightly above average at 0.16 crashes per 1,000 people).

Walk Bike Dutchess also identified one high-crash corridor for pedestrians and one for bicyclists in the Upper Hudson:

1. Pedestrian: Hyde Park, Route 9 between Market St. and south of St. Andrews Rd.: 13 crashes; 5.2 crashes per mile.
2. Bicycle: Hyde Park, Route 9 between Rogers Pl. and south of St. Andrews Rd.: three crashes; 1.8 crashes per mile.

Local Comprehensive Plans

The Council reviewed each community's comprehensive plan to identify land use and transportation recommendations that would be relevant for *Moving Dutchess*. Many communities' recommendations involve land use policies and projects that promote non-motorized travel, maintain community

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character, improve safety, and reduce congestion. Particular emphasis is placed on promoting pedestrian activity.

Town of Hyde Park

The Town of Hyde Park adopted its comprehensive plan in 2005. The plan recommends a series of projects and programs to improve the local transportation system.

The Traffic Patterns Project is an umbrella initiative to promote the effective movement of vehicles and pedestrians between Hyde Park neighborhoods. The project relies on four major components:

1. Transportation Corridors Program: working with NYSDOT, develop a bypass road between Routes 9 and 9G to reduce through traffic in the town center. The new road should accommodate pedestrians and bicyclists.
2. Grid Network Program: require that new residential developments use a grid pattern to spread traffic and provide multiple access points to major roads. The program also recommends a parallel service road to Route 9 for local traffic.
3. Scenic Roads Program: identify scenic roads that showcase the town's cultural, historic, and natural resources. The following roads have been locally designated as scenic roads:
 - Route 9 from Vanderbilt National Historic Site north for 2.3 miles.
 - Old Post Rd. between the southern and northern intersections with Route 9.
 - Golf Course Rd. between Old Post Rd. and Route 9.

- Norrie State Park roads from the entrance to the camping area.
4. Pedestrian Walkways Program: create a system of pedestrian ways to connect existing core areas to business districts and recreation parks. It also recommends sidewalks, lighting, and tree plantings within the core areas. Pedestrian crossings are recommended for major road intersections in core areas. Signs and textured crosswalks are recommended to establish pedestrian rights-of-ways.

The Hyde Park comprehensive plan further recommends the following transportation related improvements:

1. Create a pedestrian-oriented, traditional village square in the town center, near Town Hall on Route 9.
2. Develop a walkway or other link between the FDR and Val-kill Historic Sites (Already constructed).
3. Support the extension of Metro-North railroad service from Poughkeepsie, including one stop in Hyde Park.
4. Create a local bus system to provide service in the town and connect to the Dutchess County Public Transit system.

Town of Rhinebeck

The Town of Rhinebeck adopted its comprehensive plan in 2009. The plan's vision identifies walking and bicycling as important elements of the town's transportation system and states that new development should be more pedestrian-friendly and less auto-dependent.

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The Town's comprehensive plan included a variety of recommendations to improve the transportation system:

1. Establish a Rail Transportation Corridor District to integrate future trails with the existing rail line.
2. Require new commercial developments to have interconnected parking lots, internal service roads, and shared access, where possible, on Route 9 and 9G.
3. Require new residential developments to have sidewalks.
4. Install sidewalks and crosswalks near schools, parks, and community gathering places.
5. Reduce operating speeds by establishing a 25 MPH speed limit on historic roads, not widening roads, and installing traffic calming devices where appropriate.
6. Explore the potential to create a new rail-trail on the former Hucklebush Rail Line.
7. Consider the installation of stop signs or other traffic calming devices in Rhinecliff hamlet, especially along Kelly St. and Orchard St.
8. Discourage any widening of Route 9G.
9. Encourage the downsizing of Route 9 from four lanes to two, south of the Village of Rhinebeck, and add dedicated bicycle lanes.
10. Support the use of wooden guide-rails or steel box-beams on State highways.
11. Re-establish ferry service from Rhinecliff to Kingston.
12. Create a Transportation Safety Committee to develop programs to minimize traffic and support bus, rideshare, pedestrian, and bicycle transportation.
13. Ensure that the Rhinecliff train station continues to be served by Amtrak.

14. Discourage Metro-North commuter rail service at the Rhinecliff station.

In addition to roads officially designated by NYSDOT as scenic byways, the Rhinebeck comprehensive plan identified the following roads as having significant scenic value:

1. Kelly St. from Morton Rd. to Rhinecliff Rd.
2. Charles St. from Kelly St. to Rhinecliff Rd.
3. Rhinecliff Rd. from Charles St. to Route 9.
4. Route 9 from South Mill Rd. to Montgomery St. in the Village of Rhinebeck.
5. Astor Dr. from River Rd. to Montgomery St. in the Village of Rhinebeck.
6. Montgomery St. from Route 9 to Old Post Rd. at the town/village line.
7. Mt. Rutsen Rd. from Old Post Rd. (north of the Village of Rhinebeck) to River Rd.
8. Old Post Rd. from Montgomery St. to Route 9G.
9. Route 9G from Old Post Rd. to the Rhinebeck/Red Hook town line.

The comprehensive plan also recommended that the following roads be designated as Critical Environmental Areas (CEAs), due to their scenic value:

1. Route 9 from South Mill Rd. to Old Post Rd. in the Village of Rhinebeck
2. Grinnell St., Dutchess Terrace and Loftus St. in Rhinecliff.
3. Morton Rd. from South Mill Rd. to Rhinecliff Rd.
4. Rhinecliff Rd. from Morton Rd. to Ryan Rd. and River Rd.

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5. River Rd. from Morton Rd. to the Rhinebeck/Red Hook town line.
6. Astor Dr from River Rd. to Old Post Rd. in the Village of Rhinebeck.
7. Mt. Rutsen Rd. from River Rd. to Old Post Rd. (north of the Village of Rhinebeck).
8. Hook Rd. (Upper and Lower) from River Rd. to Old Post Rd.
9. Route 9G from Old Post Rd. to the Rhinebeck/Red Hook town line.
10. Route 199 from Route 9G to the Ulster County Line, via the Kingston-Rhinecliff Bridge.

Town of Red Hook

Red Hook adopted its comprehensive plan in 1993. The Plan recommended a variety of transportation related policies that the Town should implement to create a safe and efficient transportation system.

1. Interconnect parking lots and use service roads to reduce the number of driveways on State and County roads.
2. Require safe pedestrian access at commercial sites.
3. Design transportation facilities so that they are aesthetically pleasing to the community and complement natural and cultural resources.
4. Support bus transit in the town and install bus shelters at stops.
5. Provide a network of sidewalks and trails throughout the town.
6. Reduce the need to add road capacity by encouraging compact, high density development.

Village of Rhinebeck

Adopted in 1993, the Village of Rhinebeck comprehensive plan included a number of transportation related recommendations, which were derived, in part, from a survey of residents:

1. Improve traffic operations at the Route 9 (Montgomery/Mill St.) and 308 (East/West Market St.) intersection, by adding left-turn lanes on all approaches and removing on-street parking near the intersection.
2. Maintain and improve the Village sidewalk system to encourage pedestrian activity and reduce vehicle trips.
3. Provide pedestrian amenities throughout the Village.
4. Promote the use of bus transit by installing shelters at bus stops.
5. Encourage improvements to Route 9G so that it replaces Route 9 as a regional through-road.
6. Encourage the creation of a new park-and ride lot near the Village.
7. Redesign the intersections at Route 9 and Montgomery St., and Route 308 and South St. so that they are more perpendicular.
8. Use traffic calming devices to reduce vehicle speeds.
9. Create a Village trail system for pedestrians and bicyclists.

Village of Red Hook

The Village of Red Hook adopted its comprehensive plan in 1968. The plan was a joint effort of the Town of Red Hook and Village of Tivoli, both of whom later adopted separate plans.

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The Village's 40-year old plan recommended various improvements to intersections and streets.

Village of Tivoli

The Village of Tivoli revised its comprehensive plan in 2005. The plan establishes a number of vision statements for the Village, including one that seeks to create a walking village where pedestrian-based transportation takes precedence over the automobile. This vision statement is supported by the following recommendations:

1. Develop streetscapes that calm traffic and protect and promote pedestrian traffic, with elements such as trees, sidewalks, crosswalks, and street benches.
2. Develop gateways that announce and encourage reduced auto traffic speeds, including welcome signs at all five village gateways. Explore the use of speed tables in residential areas.
3. Reduce posted speed limits where possible.
4. Promote the construction of sidewalks on one side of all residential streets.
5. Create tree-lined sidewalks in Tivoli Acres, on Woods Rd., and on Broadway to the riverfront on the west and to Route 9G on the east.
6. Develop a nature trail for walking and biking along Woods Road to Clermont State Historic Site.
7. Install pedestrian right-of-way signs and crosswalks at high traffic points in the business district.
8. Keep retail businesses within a 5-minute walking distance of off-street parking.

9. Locate all new public and private parking lots behind buildings, so that only their access is visible from the street.
10. Encourage alternative forms of transportation such as bikes, public buses, a Bard-Tivoli-Red Hook shuttle, and jitney services.
11. Promote Tivoli as a biking-friendly village by:
 - Designating bike paths through Tivoli Bays to Bard College
 - Installing bike racks in front of village buildings and businesses
 - Exploring other opportunities for bike paths

The plan includes another vision that declares the importance of Route 9G as scenic roadway, since it serves as the Village's eastern boundary and main gateway for visitors. The plan recommends the following actions to preserve the highway's scenic quality and support its designation as a scenic road:

1. Purchase development rights to key open space properties along Route 9G and at the Broadway/9G gateway.
2. Develop a Corridor Management Plan for Route 9G (a precondition to apply for nomination as a State Scenic Byway).
3. Create a Local Scenic Road designation in the Zoning Code.
4. Apply for an official New York State Scenic Byway designation, in cooperation with the towns of Red Hook and Clermont.
5. Work with NYSDOT to maintain scenic features on the corridor.
6. Protect historic structures and features along the corridor.

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7. Preserve westward scenic views towards the Hudson River.
8. Maintain Route 9G as a two-lane highway.
9. Develop bike paths that link the village to Bard College.
10. Plant shade trees between structures and the highway.
11. Preserve agricultural space along on the corridor.

Previous Transportation Council Studies

The Transportation Council has performed or assisted with three local transportation planning studies in the Upper Hudson: the NYSDOT-sponsored Albany Post Road/Route 9 Corridor Management Plan (2006) in Hyde Park, the Hyde Park Recreational Trails & Community Recreation Conceptual Master Plan (2009), the Village of Rhinebeck Sidewalk Study (2011), and the Hyde Park Pedestrian Plan (2013). A summary of each is included below. Complete documents are available on the Transportation Council's website.

Albany Post Road (Route 9) Corridor Management Plan (2006)

Funded by NYSDOT, the Albany-Post Road (Route 9) Corridor Management Plan (CMP) identified strategies to improve transportation safety and operations along the Route 9 corridor, while maintaining Hyde Park's historic character and encouraging more pedestrian and bicycle activity. The CMP established objectives for roadway aesthetics and intersection design, access management, transportation system and land use management, and implementation and funding

The CMP identified a number of recommendations to improve the corridor's aesthetic qualities and design:

1. Use existing programs and practices to make gradual improvements to the corridor.
2. Establish standard features for intersections:
 - Add centerline stripes, stop bars, and crosswalks on side streets.
 - Install pedestrian countdown heads and push buttons at signalized intersections.
 - Improve shoulder pavement markings on Route 9.
 - Make street name signs uniform on all side streets.
 - Use pedestrian scale street lighting at intersections.
3. Improve key Route 9 intersections, such as East and West Market St. and Rogers Pl./Park Plaza, by adding right turn lanes on side roads, reducing corner radii, and prohibiting right turns on red.
4. Make long term improvements to the corridor by using raised crosswalks and bulb-outs at intersections, adding on-street parking in the town center, upgrading signals.
5. Develop standard roadway features or guidelines.

Recognizing the importance of access management tools to improve safety and operations:

1. Restrict the number of driveways along Route 9, while also increasing driveway spacing and interconnecting parking lots.
2. Use service roads and shared driveways to channel traffic.
3. Establish Town driveway standards.

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4. Develop a contiguous sidewalk system on Route 9 through the town center.

The CMP included proposed roadway sections for the Town Center with 11 foot travel lanes, wider sidewalks, a planted median with pedestrian refuges, and on-street parking.

Hyde Park Recreational Trails & Community Recreation Conceptual Master Plan (2009)

The Hyde Park Recreational Trails & Community Recreation Conceptual Master Plan provided concepts and plans for trails, recreational spaces, and bicycle routes. Goals included establishing a contiguous trail corridor linking parks and open space, improving and encouraging walkable routes to schools, and establishing bikeways to create greenway connections.

The Conceptual Plan identified potential Bicycle Routes on Route 9, Route 9G, Route 115 (Salt Point Turnpike), CR 16 (Quaker Ln.), CR 37 (North Cross Rd.), CR 40A (St. Andrews Rd.), and CR 41 (East Market St./Crum Elbow Rd.) based on pavement width, shoulders, and connections to parks and regional trails. Other recommendations included:

1. Upgrade the pedestrian connection between FDR and Vanderbilt.
2. Provide a pedestrian bridge connecting Hackett Hill Park to Pinewoods Park.
3. Institute bikeway routes along roadways where feasible (consider colored lanes, signage and posted speed limits). Create rest stops with bike racks.

4. Create more pedestrian-friendly environments at high-traffic zones and intersections (e.g. crosswalks, bulb-outs, and traffic calming measures).
5. Construct sidewalks in the hamlet center business district along Route 9 and in residential neighborhoods within a half-mile of schools.

Dutchess County Transit Development Plan (2009)

The 2009 Dutchess County Transit Development Plan included a long term recommendation to create a fixed bus route to serve the Route 199 corridor from the Town of Red Hook and Village of Tivoli to the Town of North East and Village of Millerton.

Village of Rhinebeck Sidewalk Study (2011)

The Village of Rhinebeck Sidewalk Study included an inventory of existing sidewalks and recommendations to improve walking access within the Village center, to public facilities (library and schools), and to the Village center from the north and south. Recommendations included reconstructing deficient sidewalks on Route 9, Market St., and several local streets; redesigning the Four Corners intersection; adding crosswalks at several locations across Route 9 and Market St.; and adding sidewalks and crosswalks to Livingston Elementary School, Rhinebeck High School, the Starr Library, Town Park, Northern Dutchess Hospital, and the County Fairgrounds.

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Hyde Park Town Center Pedestrian Study (2013)

The Hyde Park Town Center Pedestrian Study developed an inventory of existing sidewalks and recommendations for sidewalk improvements, land use, and street design. Short-term priorities focus on strengthening the Town center sidewalk system, adding crosswalks, minimizing curb cuts, and considering curb extensions, on-street parking, and other traffic calming treatments. Other recommendations included extending sidewalks on Route 9, retrofitting the shopping plazas south of Pinewoods Rd., extending sidewalks on Route 9G in the Haviland area, and updating the Town's zoning ordinance.

CR 16 (North Quaker Ln.) Safety Assessment (2013)

The Transportation Council conducted a Safety Assessment (SA) of CR 16 (North Quaker Ln.) in Hyde Park, focusing on a ¼ mile segment from Forest Dr. to Fallkill Rd. This short section witnessed 34 crashed from 2008-2012, resulting in 13 injuries. Relying on a SA Team with representatives from DCDPW, the Town Board, and Town Highway and Police Departments, the Council completed the SA in November 2013. Through its field work and the RSA checklist, the SA Team identified issues involving vehicle speeds, narrow shoulders, horizontal and vertical curves, limited sight distances, and wet-weather crashes. In turn the SA Team developed a variety of short-term improvements such as lowering the speed limit to 45 mph, repositioning existing warning signs, installing new signs, replacing worn guiderails, and improving sight distances. As a result of this SA, DPW improved signage along the road.

CR 19 (Slate Quarry Rd.) Safety Assessment (2014)

The Transportation Council's most recent SA dealt with a one-mile segment of CR 19 (Slate Quarry Rd.) from Route 9G to White Schoolhouse Rd in the Town of Rhinebeck. A winding, two-lane rural road, the segment experienced 59 crashes from 2009-2013, which resulted in one fatality and 26 injuries. Over the course of two-days in October 2014, a SA Team comprised of staff from the Transportation Council, DCDPW, NY State Police, County Sheriff's Office, Rhinebeck Village Police Department, and Rhinebeck Town Highway Department, completed the assessment. Using observations from its field work and the SA program, the Team developed a set of recommended short-term improvements that included improved shoulders, consistent signage, sightline improvements, and remarking the White Schoolhouse Rd. intersection, which experienced a high share of crashes. The Team also identified long-term improvements such as realigning curves and physically reconfiguring the White Schoolhouse Rd. intersection.

Natural & Historic Resources

The Transportation Council reviewed natural and historic resource information from the State and County to identify potential constraints relevant to transportation planning in the Upper Hudson area. This process started with an inventory of 100-year and 500-year floodplains, NYSDEC wetlands, federal, State, and locally designated parklands, agricultural lands, critical environmental areas, and designated historic

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districts. These resources are shown on the Upper Hudson Natural & Historic Resources Map.

Waterbodies & Watersheds

The Upper Hudson contains a number of significant water bodies including the Hudson River which forms the western border of the towns of Hyde Park, Rhinebeck, and Red Hook, and the Village Tivoli, as well as the NYSDEC-managed Tivoli Bays estuary in Red Hook and Tivoli. Smaller water bodies include the DeFlora Brothers and Fallkill Park lakes in Hyde Park, and Long Pond, Sepasco Lake, and Silver Lake in Rhinebeck. A number of streams pass through the Upper Hudson:

1. Town of Hyde Park: Indian Kill, Crum Elbow Creek, Maritje Kill, and Fallkill Creek.
2. Town of Red Hook: Landsman Kill, Saw Kill, Stony Creek, and Mudder Kill.
3. Town of Rhinebeck: Landsman Kill, Rhinebeck Kill, Fallsburg Creek, and Mudder Kill.
4. Village of Rhinebeck: Landsman Kill and Rhinebeck Kill.

Parts of three watersheds lie in the Upper Hudson: the Fallkill Creek watershed in Hyde Park; the Landsman Kill watershed, which covers Red Hook and Rhinebeck; and the Hudson River watershed, which covers the towns of Hyde Park, Red Hook, and Rhinebeck, and the Village of Tivoli.

Floodplains

Floodplains make up a moderate percentage of some Upper

Hudson communities, as shown in Table 6-2-10. The towns of Red Hook and Rhinebeck have the highest percentage of land area within 100-year and 500-year floodplains in this region and rank third and fourth in the county based on acreage of land in 100-year and 500-year floodplains.

Table 6-2-10. Floodplains-Upper Hudson

	Total Floodplain Acreage	Percent of Land Area
Town of Hyde Park	2,974	12
Town of Red Hook	3,341	14
Town of Rhinebeck	3,302	14
Village of Red Hook	1	<1
Village of Rhinebeck	53	5
Village of Tivoli	53	5

A number of transportation facilities in the Upper Hudson are subject to periodic flooding due to their location within designated 100-year and 500-year floodplains, NYSDEC wetlands, or adjacent to waterbodies. These include:

1. CR 39 (Cream St.) north of Route 115 in Hyde Park.
2. CR 41 (Crum Elbow Rd.) east of Route 9G in Hyde Park.
3. Route 9G north from CR 41 (E. Market St.) to CR 37 (N. Cross Rd.) in Hyde Park, and near the River Rd./Kelly Rd. intersection in Red Hook.
4. CR 80 (Lasher Rd.) east of Route 9G in Red Hook.
5. Route 9 and 9G intersection in Rhinebeck.
6. CR 19 (Slate Quarry Rd.) east of Route 9G in Rhinebeck.
7. CR 52 (Salisbury Turnpike) east of Route 9G in Rhinebeck.
8. Route 199 east of the town/village line in Rhinebeck.

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- 9. Segments of the Hudson rail line, especially through the NYSDEC Tivoli Bays recreational area.

Agriculture & Open Space

The Dutchess County Planning Department’s Centers and Greenspaces Guide identifies suburban development and areas susceptible to suburban development, defined as parcels under five acres that are outside of centers. The Town of Hyde Park contains the largest share of such parcels in the area. The guide also identifies protected and agricultural lands, which are concentrated in the western and eastern portions of the Towns of Red Hook and Rhinebeck.

The Upper Hudson contains 14,138 acres of land that received agricultural use assessments in 2014. These assessments identify properties that have active farms, nurseries, stables, or other agricultural operations. The agricultural assessed lands represent 19 percent of the area’s total land area. Table 6-2-11 shows the total acreage of agricultural assessed lands by municipality and its share of each municipality’s land area.

Table 6-2-11. Agricultural Assessed Land-Upper Hudson

	Total Agricultural Assessed Acreage	Percent of Land Area
Town of Hyde Park	1,526	6
Town of Red Hook	7,094	30
Town of Rhinebeck	5,337	22
Village of Red Hook	120	18
Village of Rhinebeck	4	<1
Village of Tivoli	56	6

The Upper Hudson also contains 19,400 acres of land certified by the NYS Department of Agriculture & Markets as Agricultural Districts. These districts are locally designated parcels that currently or could serve agricultural purposes. These districts represent 25 percent of the area’s total area and include most agriculturally assessed lands. Table 6-2-12 shows total agricultural district acreage by municipality and its share of each municipality’s land area.

Table 6-2-12. Agricultural Districts-Upper Hudson

	Total Agricultural District Acreage	Percent of Land Area
Town of Hyde Park	2,890	11
Town of Red Hook	8,210	35
Town of Rhinebeck	7,854	32
Village of Red Hook	125	18
Village of Rhinebeck	2	<1
Village of Tivoli	320	32

The Upper Hudson includes six farms, located in the Town of Red Hook and one park, located in the Town of Rhinebeck, that are protected through the Dutchess County Partnership for Manageable Growth:

1. Greig Farm (160 acres)
2. Linden Farms (234 acres)
3. Mead Orchards (100 acres)
4. Mead Orchards II (82 acres)
5. Steiner Farm (228 acres)
6. Wil-Hi Farm (16 acres)
7. Rhineson (71 acres)

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The Upper Hudson hosts 5,127 acres of major federal, State, and local parkland. Key parks include:

1. Eleanor Roosevelt National Historic Site (529 acres) in Hyde Park.
2. Fallkill County Park (117 acres) in Hyde Park and Poughkeepsie.
3. FDR National Historic Site (343 acres) in Hyde Park.
4. Hackett Hill and Pinewood town parks (48 and 29 acres respectively) in Hyde Park.
5. Mills Norrie State Park (970 acres) in Hyde Park.
6. Vanderbilt Mansion National Historic Site (210 acres) in Hyde Park.
7. Poet's Walk Park (110 acres) in Red Hook.
8. Tivoli Bay Wildlife Management Area (1,666 acres) in Red Hook.
9. Burger Hill Park (76 acres) in Rhinebeck.

Critical Environmental Areas

The Upper Hudson includes six locally designated Critical Environmental Areas (CEAs), which are recognized by NYSDEC as having significant impacts on the natural environment. All are located in the Town of Hyde Park:

1. Hogback Hill between Route 9 and 9G (protection of natural resource).
2. Hyde Park landfill site (inactive landfill; toxic pollutants present).
3. Indian Kill near Norrie Point on the Hudson River, west of Route 9 (protection of natural resource).

4. Jones Sanitation Sludge Disposal Site, east of Route 9G (inactive disposal area; toxic pollutants present).
5. Maritje Kill west of Route 9G (protection of natural resource).
6. Vanderburgh Cove on the Hudson River (west of Route 9; protection of natural resource).

The Draft New York State Open Space Conservation Plan of 2014 identifies the following Regional Priority Conservation Projects in the Upper Hudson:

1. Hudson River Corridor Estuary/Hudson River Estuary and Greenway Trail/ Hudson River School Art Trail/Quadricentennial Legacy Trail: Hudson River Access including the new riverfront parkland in Tivoli.
2. Hudson River Greenway Trail Links: Properties along the Hudson River that would establish a continuous trail from New York City to Saratoga County, including the Dutchess County Greenway Trail.
3. Hudson Tributaries: Sites which protect habitat and provide access to stream banks of tributaries, including the Fallkill Creek, Saw Kill Creek, Landsman Kill, and Stony Creek.
4. Scenic Viewsheds: Sites which provide scenic vistas, including the Hudson River National Historic Landmark District, the Franklin D. Roosevelt National Historic Site, and the Vanderbilt Mansion National Historic Site.
5. Buffer, Access or Addition to Historic Sites, Conservation and Park Lands: Properties which protect the integrity of existing conservation lands or historic sites, including the areas adjacent to Roosevelt/Vanderbilt National Historic

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sites, the Hudson River National Historic District, Tivoli Bays Buffer and inholding, and the Hudson River National Estuarine Research Reserve Sites.

6. Dutchess County's important agricultural areas: the Red Hook Breadbasket Area in the Town of Red Hook.

Historic Resources

The Upper Hudson is home to a number of historic districts that are essential to the area's character:

1. Hudson River Heritage Historic District (13,500 acres): includes parcels in the Towns of Hyde Park, Red Hook, and Rhinebeck, and Villages of Rhinebeck and Tivoli.
2. Sixteen Mile District (121,000 acres): includes parcels in the Town of Rhinebeck and Village of Tivoli.
3. Main St., Albiston St., and Park Pl. Historic District (68 acres) in Hyde Park.
4. Rhinebeck Village Historic District (1,670 acres).

In addition to national parks and historic districts, the area also contains 45 historic sites, many of which are located in the Town and Village of Rhinebeck.

Transportation Needs [To be updated]

Based on a review of local comprehensive plans, previous Transportation Council studies, and transportation system data, the Transportation Council identified a series of transportation needs in the Upper Hudson. These needs were reviewed and revised at an Upper Hudson stakeholder

meeting. The revised list of needs includes the following items:

Highway Maintenance

The following road segments, which are in poor condition or experience flooding, are in need of immediate repair:

1. CR 78 (Broadway) in the Village of Tivoli: Montgomery St.-Bridge RH-25 (0.1 miles).
2. CR 84 (Primrose Hill Rd.) in the Town of Rhinebeck: Route 9-Old Albany Post Rd. (0.4 miles).
3. Resolve periodic flooding on CR 41 (Crum Elbow Rd.) between Cardinal Rd. and Matuk Dr. in the Town of Hyde Park (e.g. culvert).

Bridge Maintenance

Bridges rated as structurally deficient or functionally obsolete under FHWA standards and also deficient under NYSDOT standards should be repaired or closed if necessary, with priority given to the following bridges:

1. Repair the North Cross Rd. Bridge over Crum Elbow Creek in Hyde Park, which is currently closed to one lane. (County-owned, rated as structurally deficient).
2. If possible, repairing the National Park Service Bridge on Bard Rock Dr. over the CSX line in Hyde Park should be delayed if the funds can be used to repair a more strategic bridge.

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Highway Capacity

1. Create a service road parallel to Route 9 in the town center (Hyde Park).
2. Improve Route 9G to replace Route 9 as a regional by-pass road (Village of Rhinebeck).
3. Widen Route 9G to four lanes in Hyde Park to better serve commuter/through traffic.

Access Management

1. Require new commercial developments to have interconnected parking lots, internal service roads, and shared access on Routes 9 and 9G (All).
2. Interconnect parking lots and use service roads to reduce the number of driveways on State and County Roads (All).
3. Require new residential development to use a grid pattern to spread traffic and provide multiple access points to major roads (Town of Hyde Park).
4. Provide a service road for Route 9 north of St. Andrews Rd. in Hyde Park.

Traffic Operations

1. Install stop signs or traffic calming devices in the Rhinecliff hamlet, especially along Kelly St. and Orchard St. (Town of Rhinebeck).
2. Install a traffic signal at the entrance to the FDR Historic Site on Route 9 (Hyde Park). (This has been conceptually approved by NYSDOT).
3. Improve key Route 9 intersections, including E./W. Market St. and Rogers Pl./Park Plaza, by adding right turn lanes on

side roads, reducing corner radii and prohibiting right-turn-on-red (Hyde Park).

4. Improve traffic operations at the Route 9 (Montgomery/Mill St.) and 308 (E./W. Market St.) intersection by adding left-turn lanes on all approaches and removing on-street parking near the intersection (Village of Rhinebeck).
5. Redesign the intersections of Route 9 and Montgomery St., and Route 308 and South St. so that they are more perpendicular (Village of Rhinebeck).
6. Improve the Route 9/Route 9G intersection by adding a right turn lane to southbound Route 9 (Town of Rhinebeck).
7. Evaluate changing the Route 9/Route 199 signal timing to incorporate a standard pedestrian crossing, where people cross with parallel traffic. This would reduce the wait both for people in vehicles and on foot. A leading pedestrian interval could be added to the signal timing to give walkers a head start before other traffic, and right turns on red could be restricted to reduce conflicts between vehicles and people in the crosswalk. Adjust vehicle detection as needed (Village of Red Hook). Evaluate the feasibility of adding curb extensions and removing some parking spaces to increase the visibility of people crossing, increase yielding, and shorten crossing distances on Route 9 at Route 199, and install crosswalk warning signs as appropriate to encourage drivers to yield to people crossing.
8. Create a program to regularly review and update signal timings at major State Route intersections.

Safety

1. Install pedestrian right-of-way signs and crosswalks at high traffic pedestrian points along Routes 9 and 308 (Village of Rhinebeck).
2. Establish a 25 mph speed limit on historic roads (Town of Rhinebeck).
3. Install pedestrian signals, a crosswalk, and pedestrian safety signs at the Route 9/Pinewoods Rd. intersection (in the Hyde Park town center) to allow pedestrians to cross Route 9 on the north side.
4. Encourage/reintroduce on-street parking on Route 9 and slow traffic speeds to 30 throughout Route 9 in the Hyde Park town center (from St. Andrews Rd. to Market St.).
5. Encourage pedestrian-level lighting and streetscape enhancements on Route 9 in the Hyde Park town center and on Route 9G in the East Park Business District.
6. Install sidewalks on Pinewoods Rd. and E. Market St. to connect Route 9 to Town parks and Route 9G. (CDBG funding has been allocated for a sidewalk on Pinewoods Rd., though it expires in April 2012) (Hyde Park).
7. Analyze the possibility of converting the intersection of Fire House Ln./Amherst Rd. at Route 9 to a standard four-way intersection by moving Fire House Ln. to the north, and install a traffic signal and pedestrian and bicycle safety improvements at the intersection (Town of Red Hook).
8. Evaluate the feasibility of adding curb extensions and removing some parking spaces to increase the visibility of people crossing, increase yielding, and shorten crossing distances at Prince St., Fraleigh St., and Laura Ln./Morgans

Way, while maintaining truck access through the Village (Red Hook).

Transit

1. Create a new fixed route to serve the Route 199 corridor between the Tivoli-Red Hook and Millerton-North East areas.
2. Install bus stop shelters at bus stops (Town of Red Hook and Village of Rhinebeck).
3. Encourage alternate forms of transportation such as bikes, public buses, a Bard-Tivoli-Red Hook shuttle, and jitney services (Tivoli). Expand DCPT service to provide a small circulator system in Red Hook. (Note: Bard College provides a jitney service for students, travelling between Bard, Tivoli, and Red Hook for students. This type of service should be expanded for seniors and include Rhinebeck).
4. Connect the Poughkeepsie train station to the Franklin Roosevelt historic site in Hyde Park with a bus system (possibly privately funded). (There is an existing shuttle from the Roosevelt site to other sites).
5. Provide more frequent DCPT bus service in Red Hook—adjust the schedule to better serve workers and others' schedules.
6. Provide more transportation options for seniors—possibly a volunteer-driver system using private cars, or coordinating with non-profit agencies such as Friends of Seniors.
7. Provide better information about DCPT bus service—where stops are, schedules, etc.

Sidewalks/Pedestrian Facilities (including ADA projects)

1. Repair State-owned, non-ADA compliant sidewalks and ramps on Routes 9 and 308 in the Village of Rhinebeck and Route 199 in the Village of Red Hook.
2. Install crosswalks at key intersections on Routes 9 and 308 (Village of Rhinebeck).
3. Improve pedestrian access to Livingston Elementary School, Rhinebeck High School, Starr Library & Recreation Park, Northern Dutchess Hospital, and the Dutchess County Fairgrounds (Village of Rhinebeck).
4. Complete repairs or replacement of deficient sidewalks and construct new sidewalks as detailed in the Village of Rhinebeck Sidewalk Study (Village of Rhinebeck).
5. Promote the construction of sidewalks in Tivoli Acres, on Woods Rd., and other major streets with higher densities in the Village of Tivoli.
6. In coordination with the planned replacement of the bridge over the Stony Creek, repair the sidewalk on CR 78 (Broadway) east of Montgomery St./North Rd., and extend the sidewalk to connect to Route 9G (Tivoli).
7. Repair the historic slate walk on Broadway (CR 78) and install a sidewalk down Broadway to Friendship St., based on the results of an engineering feasibility study (Tivoli).
8. Repair existing sidewalks on Montgomery St., Spring St., Pine St. and North Rd. in Tivoli.
9. Install pedestrian right-of-way signs and crosswalks in the Village of Tivoli business district, and repair the brick crosswalks at the four corners intersection of CR 78 (Broadway), North Rd. and Montgomery St.
10. Repair sidewalks to key destinations and fill gaps in the sidewalk system, as detailed in the Hyde Park Town Center Pedestrian Study. Provide pedestrian-scale street lighting and street trees in core areas and mark high-visibility crosswalks, create curb extensions, and prohibit right turns on red at major intersections (Hyde Park).
11. Install a sidewalk on the east side of Route 9G between the Hyde Park trail (near Valkill Park Rd.) and Smith Court, and on Haviland Rd. between Route 9G and Haviland Middle School. Install pedestrian signals and signage as needed to help students safely walk to Smith Elementary and Haviland Middle School.
12. Evaluate the feasibility of installing a crosswalk and signage to cross CR 39 (Cream St.) to Greenfields Park. Coordinate the crossing with the proposed trail easement between Greenfields Park and Top Cottage as shown in Hyde Park's Recreational Trails & Community Recreation Conceptual Master Plan.
13. Require new residential development to have sidewalks and install sidewalks and crosswalks near schools, parks and community gathering places (Town of Rhinebeck).
14. Provide a network of sidewalks and trails throughout the Town of Red Hook.
15. Install sidewalks on the east side of Route 9 between the Red Hook Town Hall and the Hannaford supermarket, and mark a high-visibility crosswalk at Old Farm Rd. and install appropriate signage to encourage drivers to yield to people crossing.
16. Develop a contiguous sidewalk system on Route 9 through the Hyde Park town center.

17. Redesign the Route 9/308 Four Corners intersection: add curb extensions at each corner to shorten crossing distances and increase pedestrian safety and visibility; realign the crosswalk at the northern leg so that it is perpendicular to the near street curb; add pavement markings and signs to encourage pedestrians to cross diagonally, consistent with the traffic signal timing; add diagonal parking on W. Main St. to calm traffic; provide additional shade trees, landscaping, and sitting places; and enhance the central green in front of the Beekman Arms hotel and add a patio and rear walkway at the Beekman Arms to activate the green. (Village of Rhinebeck).
18. Provide sidewalks on Route 9 from the Hyde Park Town Center to St. Andrews Rd. Install sidewalks or paths on both sides of Route 9 from Calmer Pl. (or South Dr/Terwilliger Rd.) to St. Andrews Rd., consistent with the Hyde Park Town Center Pedestrian Study. Install street lights along Route 9, especially near the drive-in, and install a crosswalk with lights at Calmer Pl. or Watertower Rd.
19. Install sidewalks on Route 9 between Quiet Cove Park and St. Andrews Rd. Coordinate with the recommended sidewalk or path connection between Marist College and Quiet Cove Park, and with the recommended sidewalk extension on Route 9 south to St. Andrews Rd. Alternatively, provide a connector street with sidewalks between the Hudson River Greenway Trail, through the north CIA campus, to Stop and Shop.
20. Evaluate the feasibility of providing a sidewalk, path, or widened shoulders on CR 41 (W. Market St.) and River Rd. between Route 9 and the Riverfront Park (Hyde Park).

21. Install a marked crosswalk with a flashing beacon at the Bard College entrance across Route 9G; evaluate the feasibility of a pedestrian-actuated signal or a HAWK signal. Widen the shoulders on Route 9G in this area, and implement traffic calming measures.
22. Plant street trees along Route 9 in Hyde Park.

Multi-use Trails & Bicycle Facilities

1. Complete the Greenway trail along the Hudson River, incorporating river access points into the trail. In Hyde Park, repair pedestrian bridges along Hudson River Greenway Trail routes at Crum Elbow Point, Dominican Camp, and Staatsburgh.
2. Create an unpaved trail along Route 9 between the Vanderbilt Mansion and Norrie-Mills State Park (at Old Post Rd. in Staatsburg), potentially crossing the existing Dutchess County Water and Wastewater Authority waterline,
3. Create a trail system for pedestrians and bicyclists (Village of Rhinebeck).
4. Implement the bicycle routes outlined in the Red Hook/Rhinebeck Historic District Bike/Hike Trail map, which include Mill St., Parsonage St., South St., Mulberry St., and Montgomery St. in the Village of Rhinebeck; Mill Rd., Morton Rd., Rhinecliff Rd., Ryan Rd., River Rd., and Astor Dr., Old Post Rd., Hook Rd., and Middle Rd. in the Town of Rhinebeck; and Middle Rd., River Rd., and Rokeby Rd. in the Town of Red Hook. Consider including Benner Rd. into the Village of Red Hook. Mark streets with bicycle lanes, sharrows, as bicycle boulevards, or maintain as shared lanes, as appropriate. Develop a demonstration

- project for a Bicycle Boulevard on one or more of the local streets on the route, such as Parsonage St., South St., or Mulberry St. in the Village of Rhinebeck.
5. Develop bike paths that link the Village of Tivoli with Bard College. In particular, develop a bicycle connection using the Tivoli Bays Wildlife Management Area access road. Make surface and other improvements as needed for people to safely bicycle on the access road, and install signs to identify the access road as part of the Village to Village (Tivoli to Red Hook) walk/bike trail.
 6. Evaluate the feasibility of constructing a shared-use walking and bicycling path along Woods Rd. from CR 78 (Broadway) in Tivoli to the Clermont State Historic Site (Tivoli).
 7. Create a rail trail on the former Hucklebush Rail Line between Rhinecliff and the Harlem Valley Rail Trail in Millerton passing through Rhinebeck, Red Hook, Milan, Columbia County, Pine Plains, and North East.
 8. Create a trail system for bicyclists in Hyde Park.
 9. Provide bicycle lanes on Route 9 (a State bike route). Outside of Town and Village centers, provide consistent shoulders of at least four feet on Route 9. Install appropriate bicycle-related signage to encourage safe sharing of the road.
 10. Widen the shoulders on Route 9G between Tivoli and Hyde Park to a consistent four foot minimum, and wider where feasible. Install appropriate bicycle-related signage to encourage safe sharing of the road and to identify Route 9G as part of the Village to Village (Tivoli to Red Hook) walking/bike trail.
 11. Create wider shoulders for bicyclists on River Rd. from Rhinecliff to Tivoli.
 12. Provide shoulders for bicyclists and pedestrians on both sides of CR 79 (Linden Ave.) from the Red Hook Recreation Park Pool to Linden Acres. Alternatively, Add bicycle lanes on CR 79 (Linden Ave.) or construct a shared-use path between the Recreation Park and Knox Rd. Install signs to identify Linden Ave. as part of the Village to Village (Tivoli to Red Hook) walking/bike trail. Provide a sidewalk and bicycle lane or path across the bridge over the Saw Kill Creek when it is replaced. In the longer-term, consider extending the sidewalk on the east side of Linden Ave. from the Recreation Park to Rockefeller Lane.
 13. Provide a bike trail (off-road path) from the Red Hook High School west on Route 199 to Manor Rd. (Town of Red Hook).
 14. Widen the shoulders on Route 199 to at least four feet between Route 9G and Meadow Dr. (wider where feasible), and six feet between Meadow Dr. and the Village line. Install appropriate signage to increase drivers' awareness of people on bicycles.
 15. Install sharrows and/or signage on Haviland Rd. from Route 9G to Cream St. to alert drivers to the presence of bicyclists in the lane.
 16. Provide signage and a map at the Hyde Park Trail on Route 9 (at the FDR Estate) showing the trail connection to Route 9G.
 17. Mark bicycle lanes, sharrows, or install a shared-use path along Pine Woods Rd., and add appropriate bicycle-related signage along the road.

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18. Evaluate the feasibility of adding paved shoulders on Creek Rd. between East Dorsey Ln. and Route 9G, and install where feasible, and add appropriate bicycle-related signage along the road.
19. Evaluate the feasibility of adding paved shoulders on East Dorsey Lane between CR 40 (Dutchess Hill Rd.) and CR 39 (Cream St.), and install where feasible. Add appropriate bicycle and pedestrian-related signage along the road.
20. Provide wider shoulders where feasible on CR 16 (South Quaker Ln.) between Salt Point Turnpike and CR 41 (Crum Elbow Rd./Netherwood Rd.), and add appropriate bicycle-related signage along the road.
21. Install bicycle lanes on St. Andrews Rd. between Route 9 and Route 9G as a demonstration project. Add appropriate bicycle-related signage and markings along the road, particularly at intersections. Conduct outreach to educate people about the bicycle lanes and determine their effectiveness.

Travel Demand Management

1. Promote 511NYRidesare program at the Route 199 Park-and-Ride lot (Town of Rhinebeck).
2. Develop a new Park-and-Ride lot in or near the Village of Rhinebeck and in the Town of Red Hook.
3. Re-establish ferry service from the Rhinecliff hamlet in Rhinebeck to the City of Kingston in Ulster County.
4. Establish a Park-and-Ride lot in Hyde Park (possibly at the Roosevelt Theater or drive-in site) with a shuttle to the Poughkeepsie train station at peak hours.

Planning Studies

1. Conduct sidewalk inventories and develop sidewalk improvement strategies for the Villages of Red Hook and Tivoli.
2. Conduct a sidewalk study to prioritize locations for sidewalks on Route 9G in Hyde Park.
3. Explore the need to develop a connector road between Route 9 and 9G, in the area between Pinewoods Rd. and St. Andrews Rd. (Hyde Park).
4. Revisit the possible extension of Metro-North Railroad service to Staatsburg and/or Rhinecliff.

Transportation Priorities [To be updated]

Based on discussions of the above needs with stakeholders, the following top priorities were identified:

Highway Maintenance

- Resolve periodic flooding on CR 41 (Crum Elbow Rd.) between Cardinal Rd. and Matuk Dr. in the Town of Hyde Park (e.g. culvert).

Traffic Operations

- Review and modify signal timing at the Route 199/Route 9 intersection to reduce traffic congestion. Possibly remove the exclusive pedestrian phase, and adjust vehicle detection (Village of Red Hook).

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Safety

- Encourage/reintroduce on-street parking on Route 9 and slow traffic speeds to 30 mph throughout Route 9 in the Hyde Park town center (from St. Andrews Rd. to Market St.).

Sidewalks/Pedestrian Facilities

- Install sidewalks on Pinewoods Rd. and East Market Street to connect Route 9 to Town parks and Route 9G. (Hyde Park).
- Plant street trees along Route 9 in Hyde Park.

Multi-use Trails & Bicycle Facilities

- Add dedicated bicycle lanes on Route 9 (Town and Village of Rhinebeck).
- Create wider shoulders for bicyclists on River Rd. from Rhinecliff to Tivoli.

Travel Demand Management

- Establish a Park-and-Ride lot in Hyde Park with a shuttle to the Poughkeepsie train station at peak hours.