Chapter 5

Transportation & Resource Overview

Moving Dutchess 2 seeks to identify projects and plans necessary to maintain the transportation system in a state of good repair and meet future travel needs, while preserving our natural and historical resources in the most sustainable manner possible. Inventorying and assessing existing conditions is a necessary step in this process. This chapter provides an overview of transportation facilities and resources in Dutchess County. The first section discusses the key components of the transportation system including roads, bridges, transit, sidewalks, and trails, as well as descriptions of park-and-ride facilities, freight movement, transportation safety and security, and ADA accessibility. The second section discusses key natural and historical resources in the County, including wetlands, floodplains, air quality, agricultural land, and historic districts.

Transportation Corridors

Discussions about the transportation system tend to focus on jurisdiction and function, which separates highways from transit, the driver from the bicyclist, and the interstate from the neighborhood road. Though convenient and easily understood, this glosses over the reality that travelers only see one system. This is not to say that facility type and jurisdiction are unimportant, but for most travelers, they are concerned about completing a trip safely, reliably, and efficiently.

Since the County's transportation system is an inter-related, multi-jurisdictional network, it is useful to first discuss it in terms of corridors. Corridors, which cut across transportation modes and municipal boundaries, are the key paths for inter- and intra-county travel. The previous *Moving Dutchess* identified three key transportation corridors in Dutchess County: the Hudson, Mid-County, and Harlem Valley corridors (see Figure 5-1).

Hudson Corridor

Located in the western portion of the County and centered on the Hudson River, the Hudson Corridor has been the traditional focus of activity in the County. Its proximity to the Hudson, led to the development of densely populated centers in Beacon and Poughkeepsie. The corridor contains the most robust transportation system in the County, including three major north-south highways (Routes 9, 9D, and 9G), passenger rail service (Amtrak and Metro-North Railroad), and the heaviest concentration of local and regional bus service (Dutchess County Public Transit and City of Poughkeepsie). In addition, the NYS Bridge Authority maintains three bridges that connect Dutchess to Orange and Ulster counties (the Newburgh-Beacon Bridge, Mid-Hudson Bridge, and Kingston-Rhinecliff Bridge). The corridor also supports freight activity along the river and is home to the Dutchess County Airport.

Mid-County Corridor

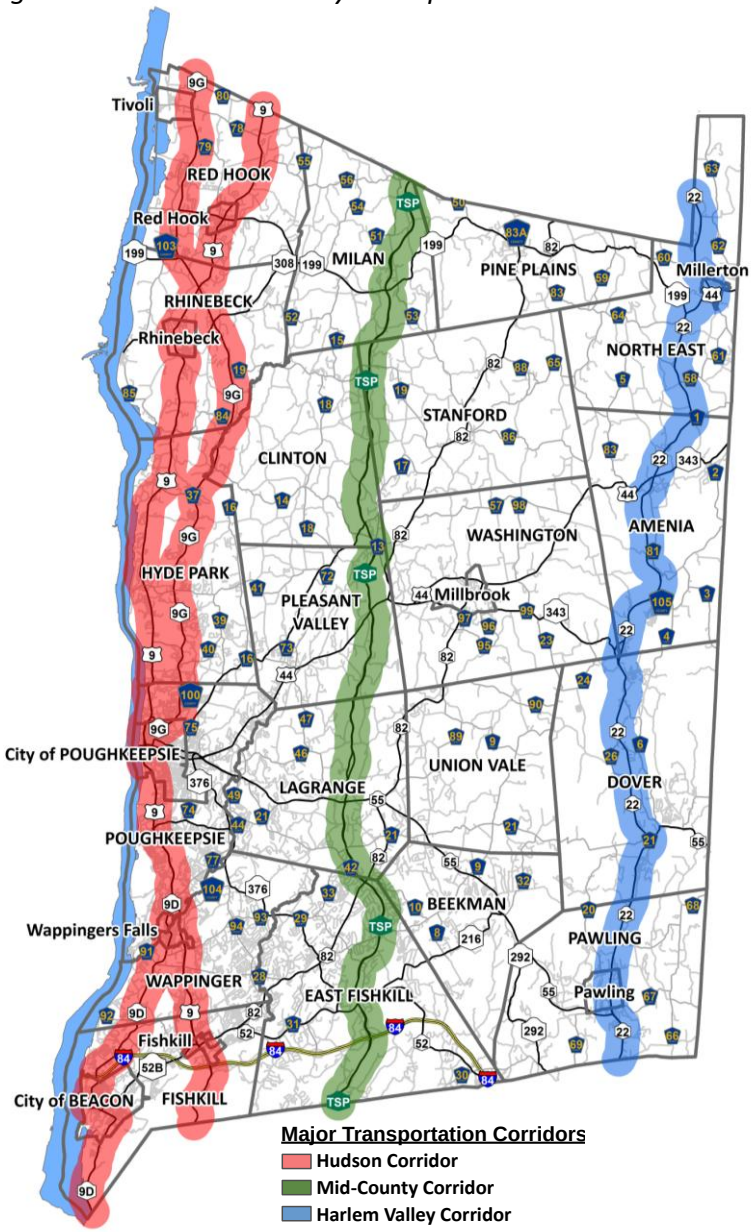
Located in the central portion of the County, the Mid-County Corridor spans a variety of land use patterns, from rural and agricultural areas in the north to suburban patterns in the

south. Development is typically residential with service-related commercial activities and public facilities and pockets of industrial and manufacturing activity located near I-84. Significant growth in this area over the past 20-years has led to increased demands on the transportation system. The major north-south connection in the corridor is the Taconic State Parkway (TSP), which serves as a major commuter facility, especially south of Route 44; the TSP prohibits commercial truck traffic. Major east-west connections include I-84 and Routes 44, 52, 55, 199, and 376. The Dutchess County Public Transit bus system provides service along some parts of the corridor. In addition, the 12-mile Dutchess Rail Trail provides a dedicated, mid-county pedestrian and bicycle connection between the City of Poughkeepsie and Towns of Poughkeepsie, LaGrange, and East Fishkill, while also connecting Dutchess County to the Walkway Over the Hudson and trails in Ulster County.

Harlem Valley Corridor

Located in the eastern-most portion of the County, the Harlem Valley corridor is predominantly rural with pockets of denser residential and commercial development. Route 22 serves north-south travel, while Routes 44, 55, 199, and 343 provide east-west connections and access to Connecticut. Metro-North provides service to New York City and White Plains from five stations on the Harlem Line, and Dutchess County Public Transit provides bus service to some Harlem Valley communities. The current 11-mile Harlem Valley Rail Trail connects the Wassaic train station to the Village of Millerton, though it will ultimately connect north to Columbia County.

Figure 5-1. Dutchess County Transportation Corridors.



Transportation System

Dutchess County's transportation system is an interconnected network of roads, bridges, bus routes, rail lines, sidewalks, and trails. Though unique in character, they accomplish the same purpose: providing people with a means of access and mobility.

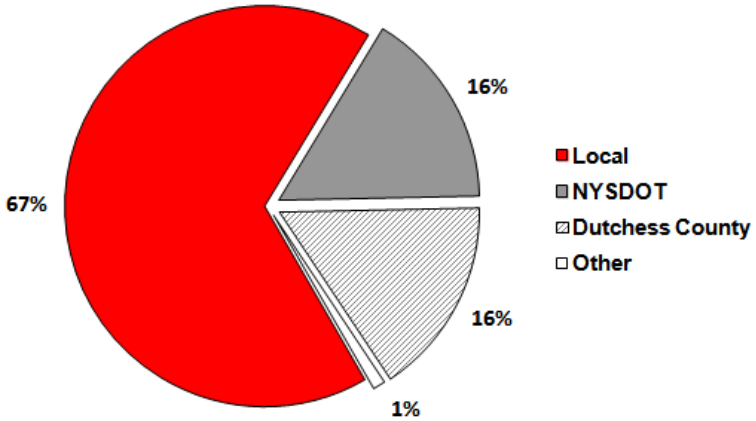
Highway System

The roads in Dutchess County support the highest share of trips and are the most-used element of our transportation system. Measured by centerline mileage, there are over 2,490 miles of public roads in the County, ranging from major highways such as I-84, commuter roads such as the Taconic State Parkway, major State highways such as Routes 9, 44, and 55, and major County roads such as CR 21 (Noxon Rd) and CR 93 (Myers Corners Rd).[1,2]

Though State highways and County roads are the most recognizable roadways, they make up only 32 percent of total road centerline mileage in Dutchess County. Local roads, those under city, town, and village jurisdiction, account for 67 percent of total road mileage. Table 5-1 and Figure 5-2 show the distribution of centerline mileage by jurisdiction.

With much of the County's road network under local control, local land use decisions and policies have a direct bearing on the transportation system. Routine site plan and subdivision reviews may seem minor, but over time, these decisions and policies, often made by communities in isolation from one another, have a cumulative impact on the function and safety of the transportation system. The impacts of these land use decisions often transcend a single community and affect nearby communities and the region.

Figure 5-2. Percent of Total Centerline Mileage in Dutchess County by Jurisdiction (2013)



National Highway System (NHS)

Congress created the National Highway System (NHS) through the National Highway Designation Act of 1995.[3] The NHS identifies roadways that are important to the nation's economy, defense, and mobility, and in turn, ensures that they are maintained and improved as necessary. The NHS was developed by U.S. DOT, in cooperation with the states, local officials, and MPOs, and includes the following road types:

1. Interstates: the Eisenhower Interstate System of highways.
2. Other Principal Arterials: highways in rural and urban areas that provide access between an arterial and a major port, airport, or public transportation facility.

Table 5-1. Total Road Centerline Mileage in Dutchess County by Jurisdiction (as of 2013)

Jurisdiction	Total Centerline Mileage	Percent of Total Mileage	Total Federal-Aid Eligible	Percent Federal-Aid Eligible
NYSDOT	405	16%	396	98%
Dutchess County	394	16%	151	38%
Town	1,473	59%	44	3%
City or Village	187	8%	40	22%
Other	32	1%	3	9%
Total	**2,491**		**634**	**25%**

Table 5-2. Functional Classification Mileage in Dutchess County (as of 2013)

Functional Classification	Total Centerline Mileage	Total Federal-Aid Eligible	Percent Federal-Aid Eligible
Rural			
Principal Arterial	129	129	
Minor Arterial	24	24	
Major Collector	111	111	21%
Minor Collector	165	0	
Local	828	0	
Total Rural	1,257	264	
Urban			
Principal Arterial (Interstate)	23	23	
Principal Arterial (Expressway)	14	14	
Principal Arterial (Other)	71	71	
Minor Arterial	79	79	30%
Major Collector	184	184	
Local	864	0	
Total Urban	1,234	370	
Total	**2,491**	**634**	**25%**

3. Strategic Highway Network (STRAHNET): highways that support the nation's strategic defense and provide defense access, continuity, and emergency capabilities for defense purposes.
4. Major Strategic Highway Network Connectors: highways that provide access between major military installations and the Strategic Highway Network.
5. Intermodal Connectors: highways that provide access between major intermodal facilities and the four NHS subsystems listed above.

The NHS in New York State totals over 7,000 miles.[4] In Dutchess County, the NHS totals 237 miles and primarily consists of NYSDOT highways such as I-84, Routes 9, 9D, 22, 44, and 55, and the Taconic State Parkway (see Figure 5-3).[5]

Functional Classification & Federal-Aid Eligibility

Another way to understand the road network is by examining functional classification. The concept of functional classification defines the role that a road plays in serving traffic flow throughout the entire network. Functional classification groups roads into classes according to their character and the role they play in the network:[6]

1. Interstates: the highest functional classification, these roads support long-distance travel and are officially designated as Interstates by U.S. DOT.
2. Other Freeways & Expressways: these roads have directional travel lanes that are usually separated by some type of physical barrier, and have limited access and egress points (e.g. on- and off-ramp s or very limited at-grade intersections).
3. Other Principal Arterials: these roads serve major urban centers, provide a high degree of mobility, and can also provide mobility through rural areas. Unlike access-controlled freeways, abutting land uses can be served directly by these Arterials.
4. Minor Arterials: these roads provide service for trips of moderate length and serve geographic areas that are smaller than served by Principal Arterials.
5. Major & Minor Collectors: these roads serve a critical role in the network by gathering traffic from Local Roads and funneling them to the Arterial network.
6. Local Roads: these roads are not intended for use in long distance travel, except at the origin or destination end of the trip, due to their provision of direct access to abutting land

For each classification, a road is further identified as being urban or rural based on its location within the defined Urbanized Area.

Functional classifications directly relate to federal-aid eligibility, which determines whether a road or other facility may receive federal transportation funding. Federal-aid highways are all the public roads not functionally classified as either local (rural or urban) or rural minor collector; they can include State, County, and major City, Town, and Village roads. Based on the latest functional classifications, approximately 25 percent (634 lane miles) of road mileage in Dutchess County is federal-aid eligible (see Table 5-2 and Figure 5-4).

Figure 5-3. National Highway System (NHS) in Dutchess County

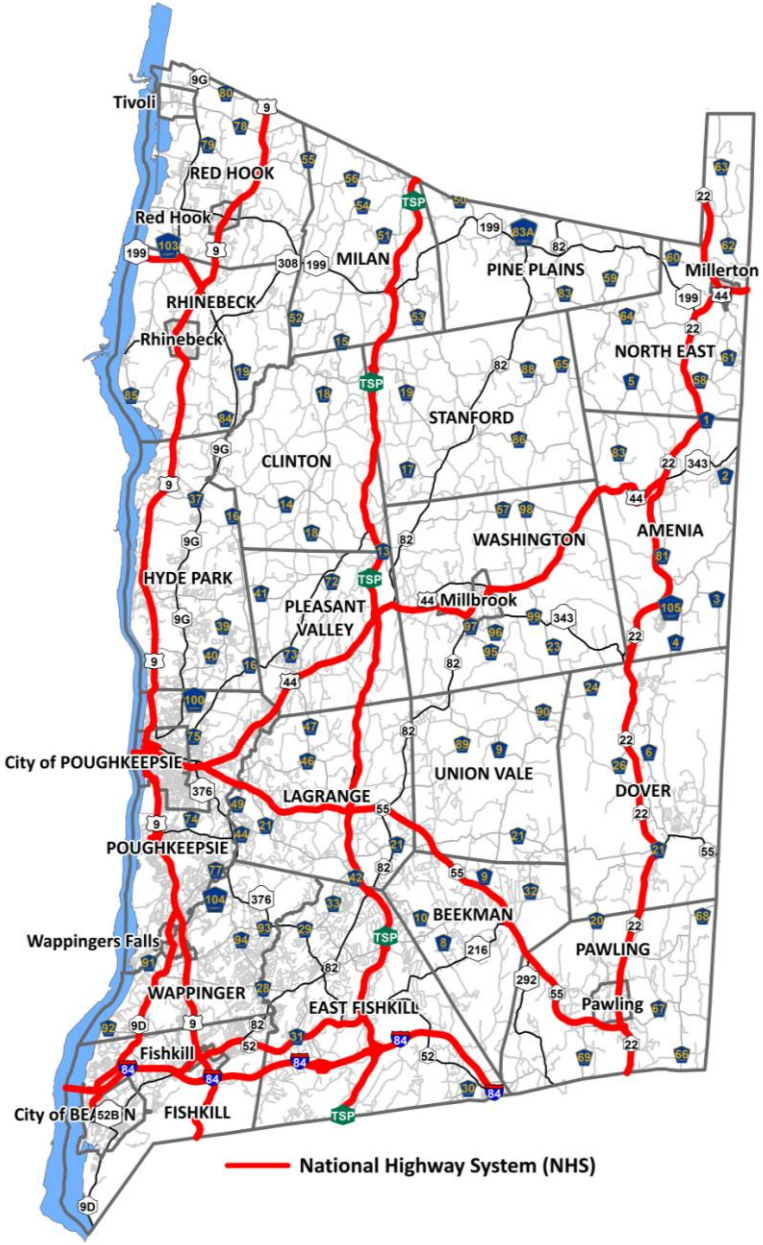
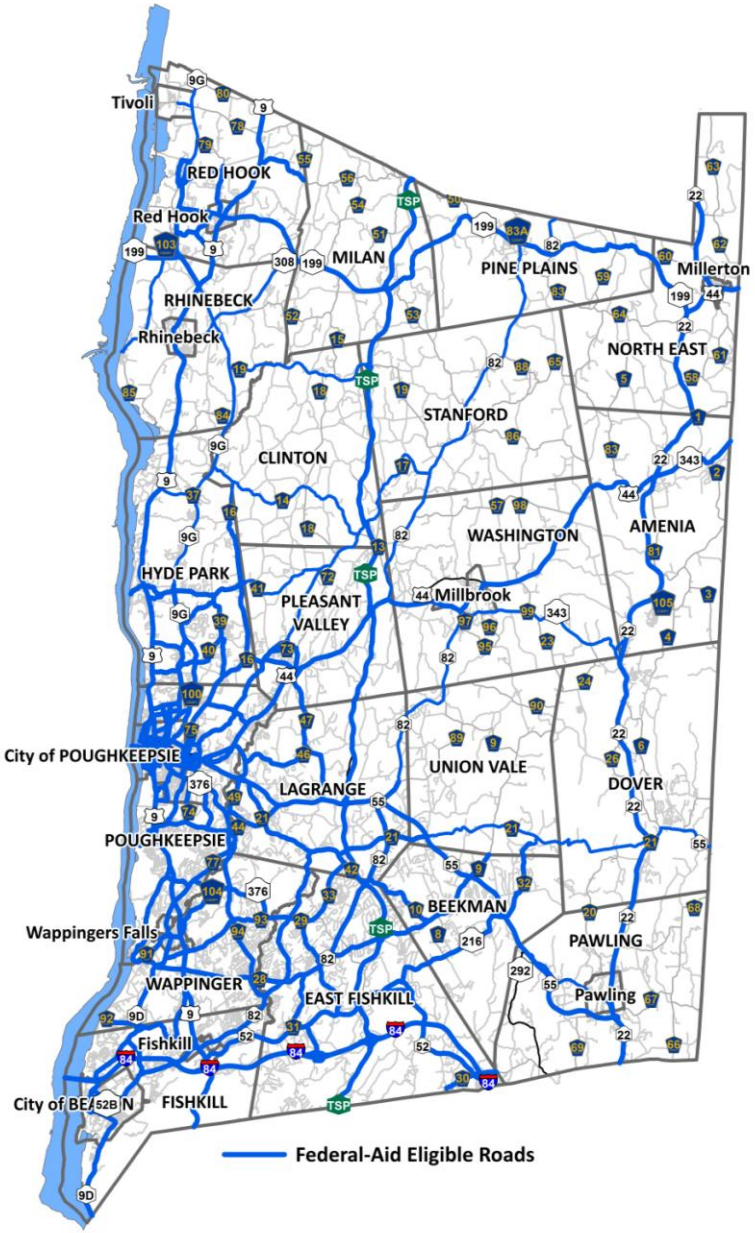


Figure 5-4. Federal-aid Eligible Roads in Dutchess County



The Transportation Council, in conjunction with NYSDOT and local agencies, periodically reviews and updates road functional classifications based on changes in their use or the urbanized area.

Highway Operations

The Council collects traffic count data for County and some local roads and also receives count data from NYSDOT for State highways. Based on a review of data from 2009-2014, the following roads have consistently had the highest ranges of Average Annual Daily Traffic (AADT) volumes in the County:

1. I-84: 50,000-68,000
2. Route 9 (south of Poughkeepsie): 18,000-64,000
3. Route 44 (east of Pleasant Valley): 14,000-38,000
4. Taconic State Parkway (south of LaGrange): 18,000-35,000
5. Route 55 (west of Pawling): 7,000-31,000
6. Route 376: 6,000-27,000
7. Route 9 (north of Poughkeepsie): 9,000-23,000
8. Route 82 (south of LaGrange): 6,000-21,000
9. Route 44 (west of Pleasant Valley): 3,000-21,000
10. CR 77 (Vassar Rd): 10,000-17,000
11. CR 44 (Red Oaks Mill Rd): 12,000-16,000
12. CR 93 (Myers Corners Rd): 7,000-15,000

In order to identify locations experiencing the most traffic congestion, the Council, in conjunction with the Orange and Ulster County Transportation Councils, conducted travel time surveys on major road corridors in the region. The GPS data, collected in 2011, measured the time it took to travel road segments for five time periods: weekday morning, mid-day, and evening peak periods, and Saturday and Sunday peak periods. The data was used to calculate a Travel Time Index (TTI), where the TTI is the ratio of time it takes to travel a segment during the peak hour versus the time it takes to travel at free flow. The TTI analysis used three profiles to classify congestion:

1. Congested: >1.30
2. Approaching Congestion: 1.15-1.30
3. Not congested: <1.15

Based on the congestion analysis, the following roadways in Dutchess County experienced congestion during one or more peak periods in 2011:[7]

1. Route 52 (westbound) from I-84 to the Taconic State Parkway: Weekday evening (TTI = 1.58).
2. Route 9 (northbound) from I-84 to Route 44/55: Weekday evening (TTI = 1.54).
3. Route 9 (southbound) from Route 9G to Route 44/55: Saturday (TTI =1.53).
4. Route 9 (southbound) from Route 44/55 to I-84: Saturday (TTI = 1.52) and Weekday evening (TTI = 1.51).

The Transportation System Performance maps at the end of this Chapter show more detailed travel time data by roadway segment for weekday morning, mid-day, and evening peak periods, and Saturday and Sunday peak periods.

Highway Conditions

NYSDOT and Dutchess County DPW collect a variety of information to assess the condition of highway pavement and to describe the physical characteristics of roadways. Both agencies use a Pavement Condition Index (PCI) to measure the quality of their roadways. The PCI combines scores for surface ratings, dominant distress, ride quality, rut depths, and faulting into a single value to represent a broad assessment of pavement condition. The PCI is calculated by starting with a perfect score of 100 and deducting points for each distress based on the distress type and severity. A score of zero indicates a failed pavement, while a 100 is new pavement. The PCI is classified into three general categories:

1. Good (PCI = 75-100): a new road or road with a few minor deficiencies, such as tiny cracks or minor distresses (e.g. small cracks, bumps, edge cracking). The road has a smooth overall ride.
2. Fair (PCI = 55-75): a road with moderate cracking, larger transverse and longitudinal cracks in travel lanes, some sagging of pavement, and more edge cracking. Noticeable surface and sub-base distresses are present on more than 30 percent of its surface.
3. Poor (PCI < 55): a road with extensive longitudinal and transverse cracks, frequent potholes, and rutting.

In 2014 NYSDOT highways in Dutchess County had an average PCI score of 81, indicating that the overall State highway system was in good condition.[8] As shown in Table 5-3, approximately 244 miles (61 percent) of State highways were rated in good condition, with only 29 percent rated fair, and ten percent rated poor.

Table 5-3. Pavement Condition of State Highways in Dutchess County (2014)

PCI Rating Category	Length (Miles)	Percent of State Road Mileage
Good	244	61
Fair	115	29
Poor	39	10

The following NYSDOT highway segments in Dutchess County had PCI ratings of less than 55:

1. I-84 from Route 52 to the Putnam County border in East Fishkill.
2. Taconic State Parkway from ½ mile south of I-84 to Miller Hill Rd in East Fishkill.
3. Route 52 from Primrose Ln to Overhill Rd in East Fishkill.
4. Route 82 from Tompkins Rd to CR 9 (N. Clove Rd) in Union Vale.
5. Route 82 from Route 199 to the Columbia County border in Pine Plains.
6. Route 199 from the Milan border to Woodward Hill Rd in Pine Plains.
7. Route 199 from ¼ mile east of Route 82 to just west of Finkle Rd in Pine Plains.
8. Route 199 from Route 308 to the Taconic State Parkway in Milan. This section had the lowest PCI and surface score of all State highways in the County.

9. Route 216 from CR 8 (Greenhaven Rd) to Route 55 in Beekman.
10. Route 308 (Ferncliff Rd) from Route 9 (Mill St) to Hutton St in the Town of Rhinebeck (Rhinecliff hamlet).
11. Route 343 from Killearn Rd to the Town of Dover border in Washington.

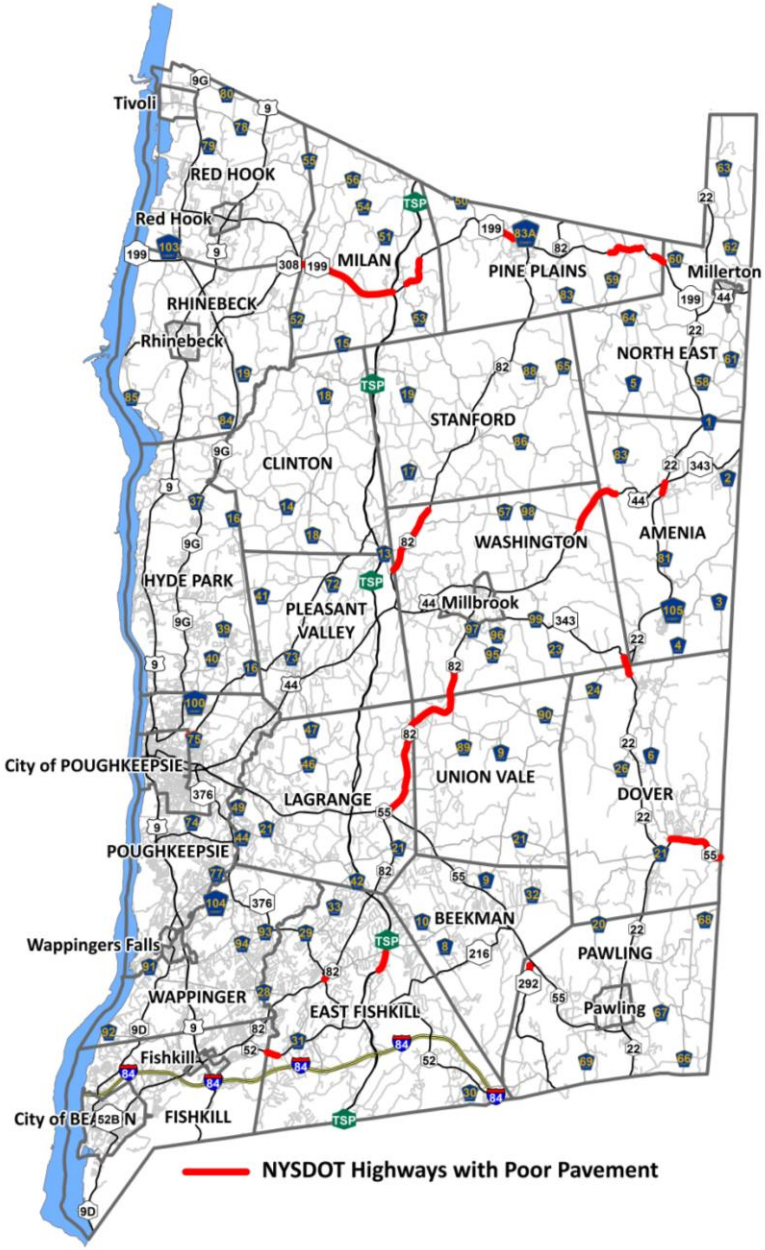
In addition to PCI scores, NYSDOT conducts windshield surveys to evaluate pavement surface conditions. The surveys use a one to ten rating scale to describe the severity and extent of surface distress for highway segments:

1. Excellent: 9-10 (No significant surface distress).
2. Good: 7-8 (Surface distress beginning to show).
3. Fair: 6 (Surface distress is clearly visible).
4. Poor: 1-5 (Distress is frequent and severe).

Based on 2014 data, the following State highways had lengthy sections rated in poor condition (see Figure 5-5):

1. Route 44 from Deep Hollow Rd to Turkey Hollow Rd in Amenia.
2. Route 55 from Old Route 22 to the Connecticut border in Dover.
3. Route 82 from Church Rd to ¼ mile south of the Stanford border in Washington.
4. Route 199 from Route 308 to the Taconic State Parkway in Milan.
5. Route 199 from CR 53 (Cold Spring Rd) to Wilbur Flats Rd in Milan.

Figure 5-5. NYSDOT Highways with Poor Pavement (2014)



Dutchess County DPW also rates its roads using PCI scores, incorporating data on surface condition and roughness. As shown in Table 5-4, in 2014 County-owned roads had an average PCI of 82, an overall good condition. Almost 74 percent of County-owned roads were in good condition, while none were rated poor.[9] The lowest PCI score (60) was recorded for a three mile section of CR 3 (Bog Hollow Rd) from CR 4 (Sinpatch Rd) to the Connecticut state line in the Town of Amenia.

Table 5-4. Pavement Condition of Dutchess County Roads (2014)

PCI Rating Category	Length (Miles)	Percent of County Road Mileage
Good	294	74
Fair	104	26
Poor	0	0

Only 3.7 miles (less than two percent) of the NHS in Dutchess County had poor pavement in 2014. These included short sections of the Taconic State Parkway in the Town of East Fishkill, Route 22 in Amenia, Route 44 in the Town of Amenia and Washington, and Route 52 in East Fishkill.

Bridges

Dutchess County is home to 364 bridges, which are defined as road or trail structures with a span over 20 feet long. NYSDOT and Dutchess County are collectively responsible for 76 percent of these bridges (37 and 39 percent respectively). The remaining 24 percent are under the responsibility of local municipalities, the New York State Bridge Authority (NYSBA), National Park Service (NPS), or other entities. The number of bridges by jurisdiction is shown in Table 5-5.

Table 5-5. Jurisdiction of Bridges in Dutchess County (2014)

	Number of Bridges	Percent of Total
NYSDOT	135	37
Dutchess County	141	39
Local	54	15
NYSBA	3	1
NPS	5	1
Other	26	7

As of 2014 the average age of all bridges in Dutchess County was 57 years, with 143 (39 percent) built in 1940 or before.[10] Of note, 42 bridges have been built (i.e. Dutchess Rail Trail bridges) or rebuilt since 2000, which equates to approximately three bridges being built or reconstructed per year.

Overall Bridge Conditions

NYSDOT rates bridge conditions on a scale ranging from one to seven, with seven being new condition and a rating of five or higher considered good condition. NYSDOT defines a deficient bridge as one with a rating below five. A deficient condition rating indicates deterioration to a level that requires corrective maintenance or rehabilitation to restore the bridge to a fully functional, non-deficient condition; it does not imply that the bridge is unsafe. Dutchess County has 153 bridges that are classified as deficient under the NYSDOT rating system; this represents 42 percent of all bridges in the County.

In 2014 non-NYSBA and NPS owned bridges had an average NYSDOT condition rating of 5.1, which was an improvement over the 4.9 average reported in 2011 with *Moving Dutchess*.[11] Table 5-6 shows bridge conditions by jurisdiction.

Table 5-6. Bridge Condition by Jurisdiction (2014)

	Average Condition Rating	Number Rated Deficient	Percent Deficient
NYSDOT	5.1	66	49
Dutchess County	5.0	60	43
Local	4.6	22	41
Other	5.6	5	15

Of the 364 bridges in Dutchess County, 99 are located on the NHS, with all but two under the jurisdiction of NYSDOT. In 2014, NHS bridges in the County had an average condition rating of 5.1. Using the NYSDOT rating system, 52 (i.e. 52 percent) of these NHS bridges were in poor condition, with the majority of them located on I-84, the Taconic State Parkway, Route 9, and Route 44.

Restricted Bridges

NYSDOT also identifies bridges that have limits on the type of vehicles that can use them. These limits are based on a design or condition that affects the bridge's capacity to accommodate heavy vehicles. Classified as "R" posted bridges, they are signed with a "No Trucks with R Permits" sign. As of 2014 there were ten "R" posted bridges in the County and none were located on the NHS (see Figure 5-6):

1. Route 115 (Salt Point Turnpike) over Little Wappinger Creek in the Town of Pleasant Valley (BIN 3343530).
2. CR 3 (S. Amenia Rd) over Webatuck Creek in the Town of Amenia (BIN 3342660).
3. CR 14 (Hollow Rd) over Little Wappinger Creek in the Town of Clinton (BIN 3342820).
4. CR 17 (Salt Point Turnpike) over Willow Brook in the Town of Stanford (BIN 3343870).
5. CR 17 (Salt Point Turnpike) over Wappinger Creek in the Town of Stanford (BIN 3343880).
6. CR 21 (Bruzgul Rd) over Fishkill Creek in the Town of Union Vale (BIN 3343920).
7. CR 21 (Bruzgul Rd) over Fishkill Creek in the Town of Union Vale (BIN 3343930).
8. CR 50 (Mount Ross Rd) over the Roeliff Jansen Kill in the Town of Pine Plains (BIN 3343490).
9. CR 78 (Broadway) over Stony Creek in the Village of Tivoli (BIN 1047720).
10. Canoe Hill Rd over Wappinger Creek in the Town of Washington (BIN 3344080).

Structurally Deficient & Functional Obsolete Bridges

The federal bridge rating system, which differs from the NYSDOT system, rates bridges on a scale of one to nine, with nine being in excellent condition and five being fair. The FHWA classifies problem bridges as *structurally deficient* and/or *functionally obsolete.*

The FHWA considers a bridge *structurally deficient* if its significant load-carrying elements are found to be in poor condition due to deterioration or damage, the bridge has

Figure 5-6. Restricted Bridges in Dutchess County (2014)

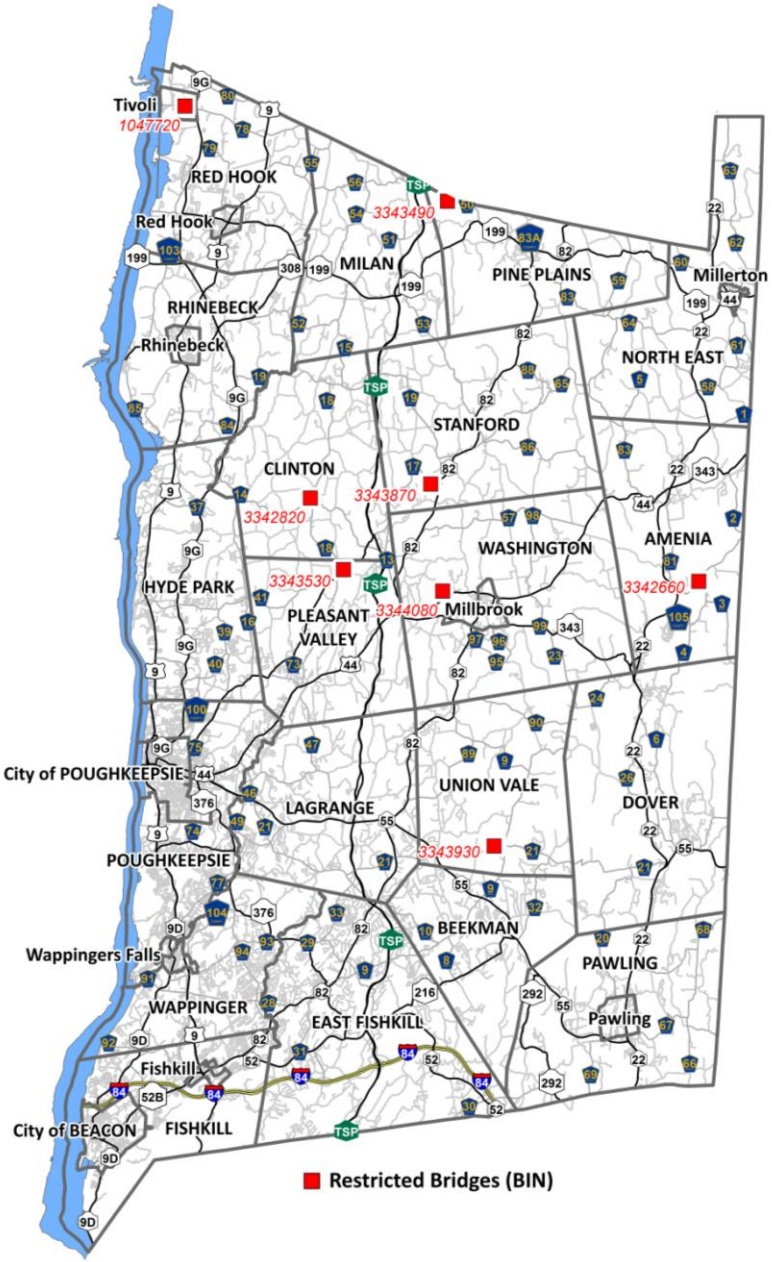
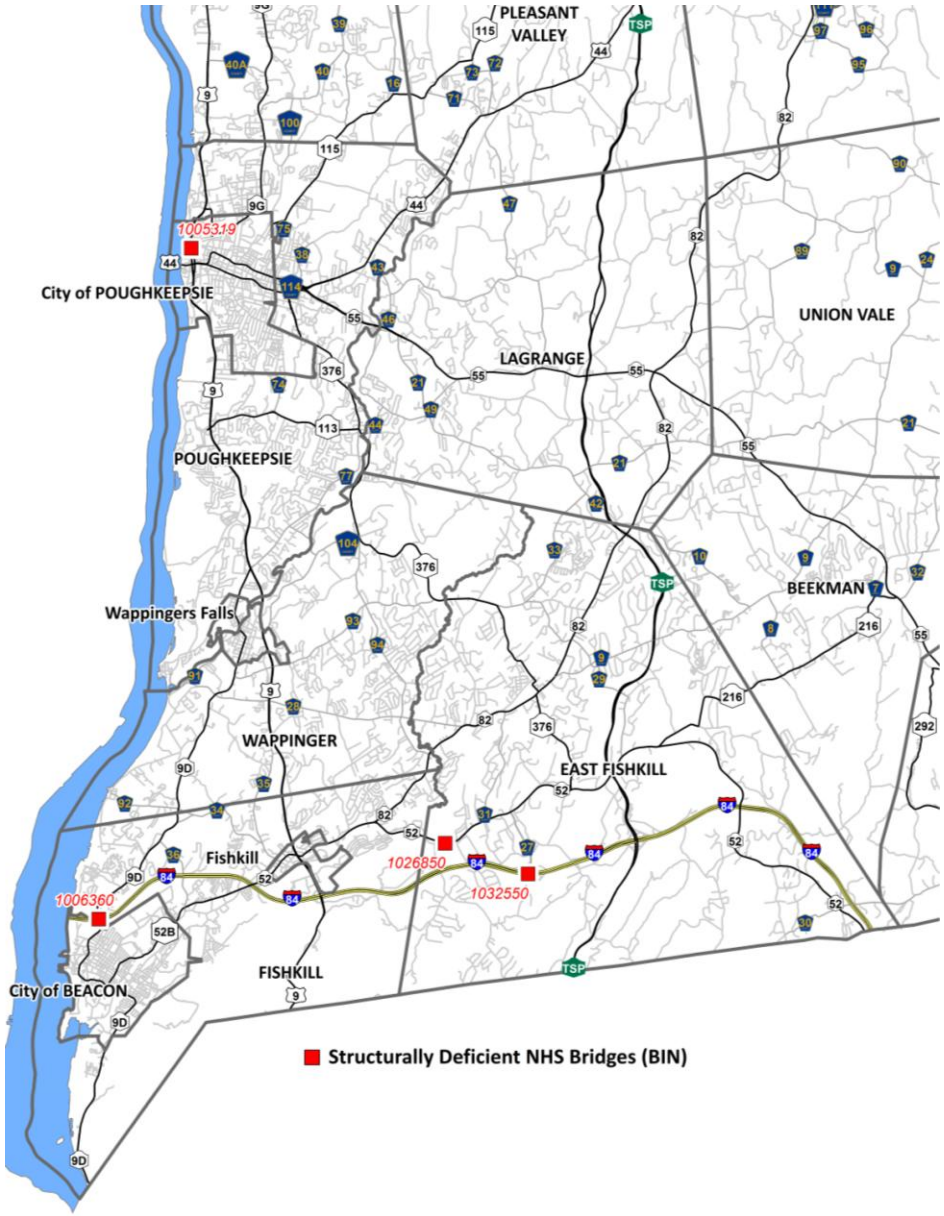


Figure 5-7. Structurally Deficient NHS Bridges in Dutchess County (2014)



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.

The FHWA also classifies bridges as *functionally obsolete* if they do not meet industry standards for managing the volume of traffic they carry. A bridge may be *functionally obsolete* if it has narrow lanes, no shoulders, or low clearances; however, this classification does not refer to the structure itself.

As shown in Table 5-7, 44 bridges in Dutchess County (12 percent) were classified as *structurally deficient* and 101 (28 percent) were classified as *functionally obsolete* in 2014.[12]

Table 5-7. Number of Structurally Deficient and Functionally Obsolete Bridges by Jurisdiction (2014)

	Structurally Deficient	Functionally Obsolete
NYSDOT	8	55
Dutchess County	27	23
Local	7	16
Other	2	7

Of the 44 *structurally deficient* bridges in Dutchess County, only four are located on the NHS (see Figure 5-7):

1. Route 9 over Railroad Plaza in the City of Poughkeepsie (BIN 1005319).
2. Route 9D over I-84 in the Town of Fishkill (BIN 1006360).
3. Route 52 over Wicopee Creek in the Town of East Fishkill (BIN 1026850).
4. Lime Kiln Rd over I-84 in the Town of East Fishkill (BIN 1032550).

NYSBA Bridges

In 2014 the three NYSBA bridges in Dutchess carried over 46.2 million vehicles – an increase of half-a-million vehicles since 2000. Over half of the vehicles (24.7 million) were carried on the Newburgh-Beacon Bridge, while the Mid-Hudson and Kingston-Rhinecliff bridges carried 13.8 and 7.7 million vehicles respectively.[13] Table 5-8 shows the number of vehicle crossings on NYSBA bridges from 2005-2014.

Table 5-8. Total Vehicle Crossings for NYSBA Bridges in Dutchess County (in millions)

	2005	2010	2014
Newburgh-Beacon	25.2	25.1	24.7
Mid-Hudson	14.0	14.0	13.8
Kingston-Rhinecliff	7.5	7.9	7.7

Transit System

Bus and rail transit play an important role in the County's transportation system, by providing travelers with transportation alternatives to the private automobile. This benefits those who do not own a car and those who cannot drive, including young people, older adults, and disabled

persons, as well as those who prefer not to drive. Transit, especially commuter rail, can offer more convenient access than the private car to jobs and destinations in the New York City metro area and other transit-oriented locations. Transit also enables employees and customers to access businesses, services, shopping areas, and regional destinations. Lastly, transit benefits the environment, especially regional air quality, by reducing personal vehicle trips.

Dutchess County benefits from a diverse range of transit services, but access to these services is neither universal nor evenly distributed across the County. This unevenness is due to limited resources for the operating costs of transit, as well as insufficient population densities to support robust transit service in parts of the County, notably in the eastern and northern areas. Changes in future development patterns or demographics may support improved transit in presently underserved areas. The following local and regional transit services operate in Dutchess County.

Dutchess County Public Transit

Dutchess County Public Transit (DCPT) provides fixed route bus service on major road corridors, connecting the higher population density areas to major activity centers in the County. DCPT operates seven fixed routes, as shown in Table 5-9, running on Routes 9, 9D, 44, 52, and 55 (see Figure 5-8). All of the fixed routes operate Monday-Saturday; DCPT does not provide bus service on Sundays.

Table 5-9. Dutchess County Public Transit Bus Routes

	Primary Service Areas
Route A	Poughkeepsie-Wappingers Falls-Fishkill-Beacon
Route B	Poughkeepsie-Wappingers Falls-Fishkill-Beacon
Route C	Poughkeepsie-Hyde Park-Rhinebeck-Tivoli
Route D	Poughkeepsie-Millbrook-Wassaic-Dover
Route E	LaGrange-Union Vale-Beekman-Pawling
Route F	Poughkeepsie-Beacon-Fishkill-Hopewell Jct.
Route G	Beacon

In addition to fixed routes, DCPT operates three RailLink lines, which provide morning and evening peak period bus service to the Poughkeepsie, New Hamburg, and Beacon train stations. These routes are designed to meet peak hour commuter trains operated by Metro-North Railroad.

DCPT also provides three demand response services that are available to the public:

1. ADA Complementary Paratransit: mandatory complementary paratransit service for the City of Poughkeepsie and Dutchess County. This serves individuals who live within ¾ mile of a City bus or DCPT fixed route and have a disability that precludes them from riding the fixed route service.
2. Dial-a-Ride: demand-responsive service open to the general public. Municipalities contract with the County for this service. To register, passengers must be a resident of a municipality with a current contract and the trip must originate in one of those municipalities. As of 2015, the service operated in six communities: City and Town of

Figure 5-8. Dutchess County Public Transit Bus Routes

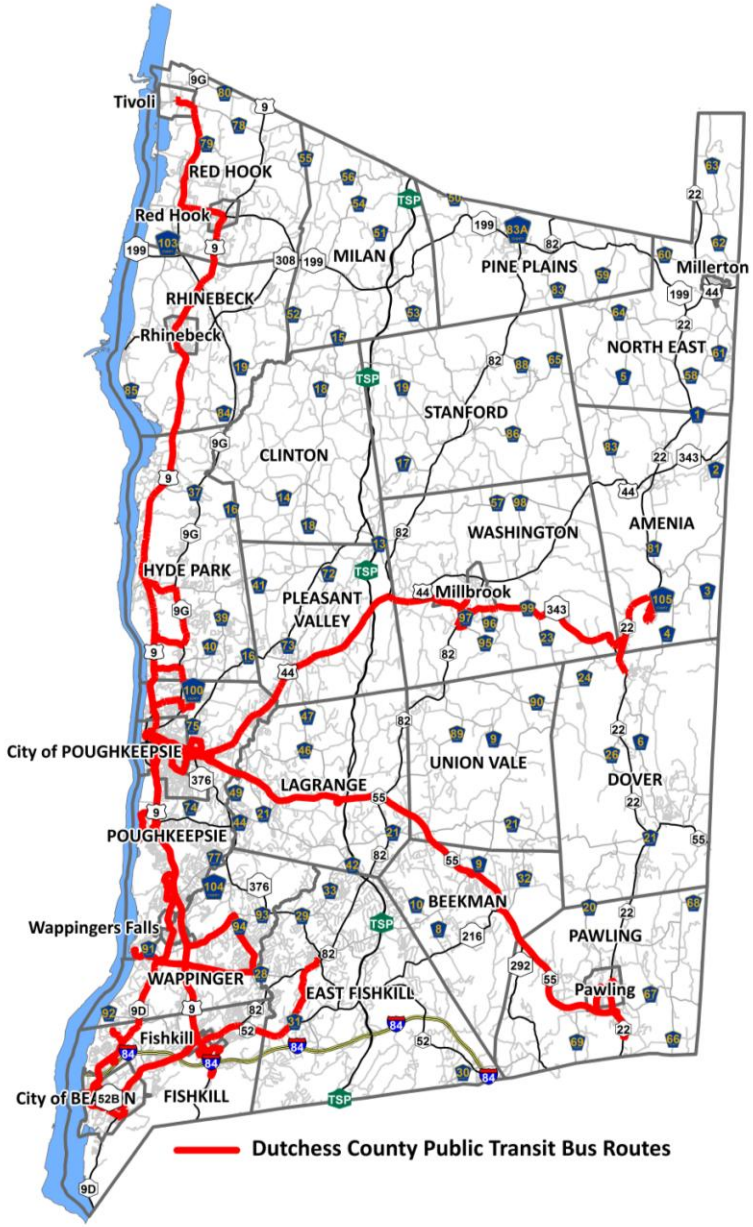
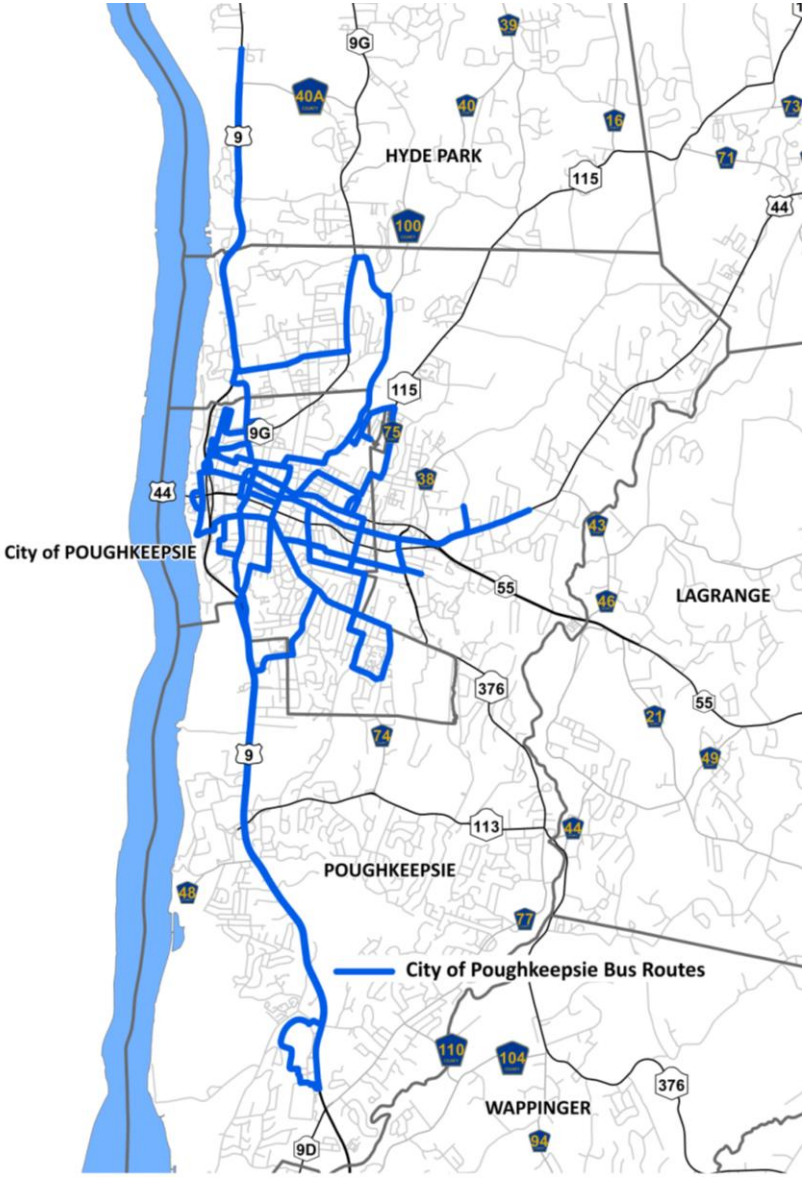


Figure 5-9. City of Poughkeepsie Bus Routes



Poughkeepsie, and Towns of East Fishkill, Fishkill, Hyde Park, and Wappinger.

3. Flex Service: demand-response, curb to curb service open to the public in areas without fixed-route service and outside the ¾ mile ADA-required areas. These include the Towns of Amenia, Dover, North East, Pine Plains, Stanford, and Washington. The service requires a reservation and is provided Monday-Friday during limited hours.

Fares on the DCPT bus system vary by passenger type and fare program. As of 2015, DCPT used the following fare structure:

1. Single Trip One-Way Fare: $1.75.
2. Senior Citizens, Medicare Card Holders, Children (aged 5 to 12), and Students: $0.75 per single trip.
3. Monthly Commuter Pass: $45 - designed for individuals who commute during regular business hours.
4. Monthly Ride-Anytime Pass: $62 - designed for frequent passengers, valid on all buses and at all times.
5. Special Transit Card: $0.75 per single trip – designed for disabled passengers, valid on all buses and at all times.

In 2014 the DCPT bus system carried over 483,000 passengers, with the vast majority of these passengers (almost 96 percent) travelling on the system's fixed routes. DCPT ridership has increased since major service changes were made in 2009-2010. From 2010-2014 DCPT experienced an annual increase of 3.4 percent in total passengers. DCPT ridership increased by almost 33,000 or seven percent from 2012-2014 (see Table 5-10). The 2012-2014 data also showed that DCPT fixed routes carried almost 36,700 passengers per month (see Table 5-11).

Table 5-10. Passengers served by the DCPT Bus System (2012-2014)

	2012	2013	2014
Fixed Route	426,225	455,911	463,464
Dial-A-Ride	15,819	13,942	14,488
Flex Service	8,568	5,336	5,357
Total	450,612	475,189	483,309

Routes A and B remain the most popular routes on the DCPT system, accounting for over 60 percent of total ridership.

Table 5-11. Average Monthly Passengers on DCPT Bus Routes (2012-2014)

	Average Monthly Ridership
Route A	12,243
Route B	11,182
Route C	5,425
Route D	2,519
Route E	2,337
Route F	2,821
Route G*	172
Total	36,699

*Route G monthly average reflects November 2012 start.

The DCPT bus system operates 47 buses that are based at a County-owned facility in the Town of LaGrange. All buses have front-end bicycle racks, which carry two bicycles each. Table 5-12 summarizes the vehicles in the DCPT bus fleet.

Table 5-12. Number and Average Age of Dutchess County DCPT Buses (2015)

	Number	Average Age
Heavy Duty Buses	11	3.2
Medium Duty Buses	36	4.0
Support Vehicles	5	6.0

City of Poughkeepsie Bus System

The City of Poughkeepsie bus system provides fixed route service in and around the Poughkeepsie area. The area's high population density and proximity to major activity centers makes it conducive to transit service. All of the City's six fixed routes operate Monday-Friday with most routes operating on Saturdays (with the exception of the Shopper's Special that does not operate on Saturday) (see Figure 5-9).

1. Galleria - primarily operates along South Rd (Route 9) between Downtown Poughkeepsie and the Poughkeepsie Galleria.
2. Shopper's Special - operates along Main St, Fulton Ave, Forbus St, and Dutchess Turnpike, providing service to Vassar College, K-Mart, Stop & Shop, Poughkeepsie High School, Downtown, and Poughkeepsie Train Station.
3. Main St - primarily operates east-west along Main St, with access to K-Mart, Stop & Shop, and Vassar College to the east, Main & Market and the Civic Center Downtown, and the Poughkeepsie Train Station.
4. Northside - provides service to Dutchess Community College, Marist College, Mid-Hudson Regional Hospital, and the Culinary Institute of America.
5. Special - operates throughout the City and includes service to various public schools.
6. Southside - operates along Main St, Hooker Ave, College Ave, Beachwood Ave, and South Rd, providing service to Price Chopper, Stop & Shop, Downtown, and Vassar Brother Medical Center.

The City of Poughkeepsie bus system served almost 349,000 passengers in 2013 (most recent data available), which represented a decrease of over 55,000 passengers (14 percent) from 2012. City bus ridership peaked in 2009 with almost 434,000 passengers, but has continued to decline in recent years (see Table 5-13).

Table 5-13. Passengers Served by the City of Poughkeepsie Bus System (2011-2013)

	2011	2012	2013	Annual Average
Fixed Route	409,168	403,164	348,746	387,026

The Main St and Northside routes are the most popular routes in the City bus system, accounting for over half of the City's annual ridership (see Table 5-14).

Table 5-14. Total Passengers on City of Poughkeepsie Bus Routes (2012)

	2012
Galleria Mall	69,408
Main Street	111,995
Northside	115,423
Southside	66,837
Shopper's Special	22,116

Special	20,799

Fares on the Poughkeepsie bus system vary by passenger type and fare program:

1. Adult (12 years old and over): $1.50 per single trip.
2. Senior Citizens, Students, Medicare, and Disabled passengers: $0.50 per single trip.
3. Children (6-11 years old): $0.50 per single trip.
4. Children under 6 years old: Free.
5. Transfers: $0.30 per single trip.

The City operates eight buses based at a City-owned facility. Table 5-15 summarizes the vehicles in the City bus fleet.

Table 5-15. Number and Average Age of City of Poughkeepsie Buses (2014)

	Number	Average Age
Heavy Duty Buses	6	5 years
Medium Duty Buses	2	10 years

In 2013 the City of Poughkeepsie constructed a new transit hub on Market Street that serves as a transfer point for the DCPT and City bus systems, and also inter-county bus services.

Regional Bus Service

Inter-county bus services are provided by a variety of public and private operators:

1. *Ulster County Area Transit (UCAT)* runs the Ulster-Poughkeepsie LINK bus, which provides weekday and weekend service between Rosendale, New Paltz, Highland and the Poughkeepsie Metro-North Station.
2. *Leprechaun Lines* operates weekday commuter service between Beacon, Poughkeepsie, and Stewart Airport and between Poughkeepsie, Wappingers Falls, Fishkill, and White Plains in Westchester County. It also provides weekend service between Stewart Airport, Beacon, and New York City.
3. *Coach USA/ShortLine* provides regular service between Rhinebeck, Poughkeepsie, and Fishkill in Dutchess County and New York City (via Newburgh and northern New Jersey), as well as service between Poughkeepsie and Binghamton.
4. *Trailways* provides regular service between Poughkeepsie and Albany, New York City, Long Island, and other destinations (via Kingston and Newburgh).

Passenger Rail Service

Amtrak and Metro-North Railroad provide passenger rail service in Dutchess County.

Metro-North Railroad

Metro-North Railroad provides commuter rail service between Dutchess County and the New York City metropolitan area. Metro-North operates eight train stations in Dutchess County: Poughkeepsie, New Hamburg, and Beacon on the Hudson Line, and Wassaic, Ten Mile River, Dover Plains, Harlem Valley/Wingdale, and Pawling on the Harlem Line.

In 2014, Metro-North Railroad carried over 6,000 passengers from Dutchess County stations on an average weekday. From 2010-2014, average weekday ridership decreased slightly: by three percent on the Hudson Line and 11 percent on the Harlem Line. However, when compared to 2000, average weekday ridership in 2014 was 27 percent higher. The Hudson Line remains the most popular, accounting for 87 percent of Metro-North ridership in the County. Likewise, the Beacon Station continues to serve as the most popular Metro-North station in Dutchess County, followed by the Poughkeepsie Station (see Table 5-16 and Figure 5-10).

Table 5-16. Metro-North Weekday Inbound Boardings by Line and Station (2010-2014)

		WEEKDAY INBOUND BOARDINGS		
Line	Station	2010	2014	% Change 2010-2014
Hudson	Poughkeepsie	1,850	1,736	-6%
	New Hamburg	1,020	1,035	1%
	Beacon	2,575	2,498	-3%
	Total Hudson Line	**5,445**	**5,269**	**-3%**
Harlem	Wassaic	278	250	-10%
	Tenmile River	27	28	4%
	Dover Plains	152	123	-19%
	Harlem Valley-Wingdale	135	114	-16%
	Pawling	280	257	-8%
	Total Harlem Line	**872**	**772**	**-11%**

From 2010-2014, weekend Metro-North ridership from Dutchess County stations remained constant, averaging over 8,400 passengers (see Table 5-17). As with weekday travel, the Hudson Line stations accounted for 86 percent of weekend inbound boardings in Dutchess County, with the Poughkeepsie and Beacon station being the most popular. Overall, weekend ridership has increased by almost 46 percent since 2000, from an average of 5,790 weekend passengers in 2000 to over 8,400 passengers in 2014.[14]

Table 5-17. Metro-North Weekend Inbound Boardings by Line and Station (2010-2014)

		WEEKEND INBOUND BOARDINGS		
Line	Station	2010	2014	% Change 2010-2014
Hudson	Poughkeepsie	3,347	3,260	-3%
	New Hamburg	953	1,003	5%
	Beacon	2,837	2,986	5%
	Total Hudson Line	**7,137**	**7,249**	**2%**
Harlem	Wassaic	690	632	-8%
	Tenmile River	58	54	-7%
	Dover Plains	144	132	-8%
	Harlem Valley-Wingdale	165	147	-11%
	Appalachian Trail*	4	4	NA
	Pawling	217	228	5%
	Total Harlem Line	**1,278**	**1,197**	**-6%**

*Only operates on weekends.

Amtrak

Amtrak operates rail service in Dutchess County on its Empire Service and Adirondack trains. The Empire Service runs 463

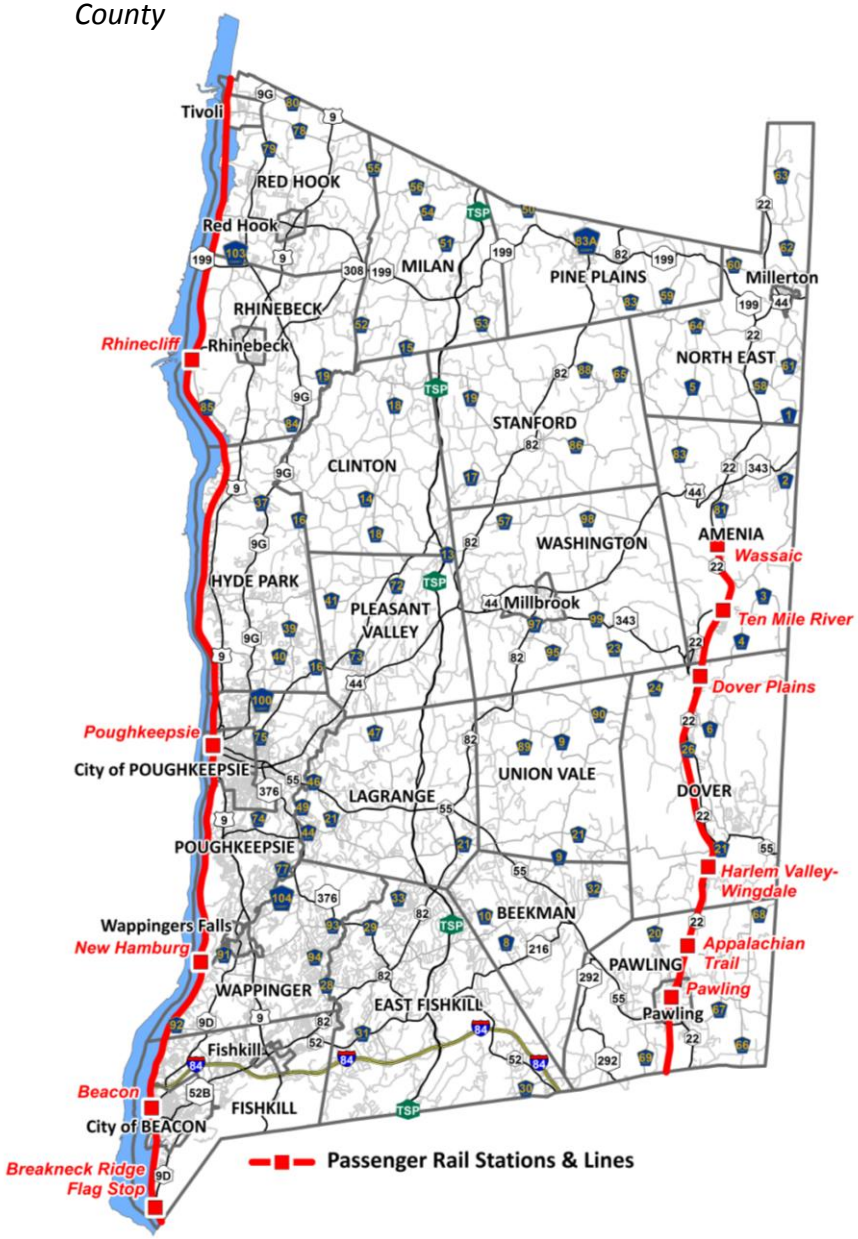
miles between Penn Station in New York City and Toronto, Canada with stops at Poughkeepsie, Rhinecliff, Albany, Saratoga Springs, Utica, Syracuse, Rochester, and Niagara Falls. For the period March 2014-March 2015, the service had a 72 percent on-time performance rate, with train interference cited as the primary cause for delays. The Adirondack train follows a portion of the Empire Service, but continues north to Montreal, Canada after stopping in Albany. The Adirondack train averaged a 66 percent on-time performance rate from March 2014-March 2015, with track and signal issues as the most cited causes for delays.

In FFY 2014 the Empire Service carried over 1.12 million passengers, while the Adirondack carried over 133,000 passengers. Both lines experienced a seven percent increase in total ridership from 2013-2014. Likewise, ridership at the two Dutchess County stations with Amtrak service increased slightly. From 2013-2014, ridership increased by 3.6 percent at the Poughkeepsie station, while the Rhinecliff station saw a modest one percent increase (see Table 5-18). Amtrak ridership at both stations has increased in the past 15-years; most notably at Poughkeepsie, which experienced a 66 percent increase from 2000-2014.[15]

Table 5-18. Amtrak Passenger Boardings and Alightings in Dutchess County (FFY 2013-2014)

	FFY 2013	FFY 2014
Poughkeepsie Station	95,083	98,516
Rhinecliff Station	184,452	186,273

Figure 5-10. Passenger Rail Stations & Lines in Dutchess County



Passenger Ferry Service

The Newburgh-Beacon Ferry, operated by Metro-North Railroad through a contract with NY Waterway, provides passenger service during weekday peak periods. The ferry serves six morning and eight evening train connections at the Beacon Metro-North station. In 2014 annual ridership totaled over 62,600 passengers.[16]

Human Service Agency & Non-Profit Transportation Services

Where public bus routes do operate in the County, they provide reliable curb-to-curb services. These fixed routes follow well established, pre-determined schedules that enable travelers to effectively schedule trips. Additionally, some communities contract with DCPT to provide Dial-a-Ride services that transport residents based on a predetermined schedule. However, public transit, whether it's a fixed route or Dial-A-Ride, is not available in all municipalities, nor does it operate 24 hours per day or on Sundays; bus drivers also cannot provide individual assistance in helping passengers board a bus, or with carrying packages. These limitations impact the ability of human service agencies and their clients to use available transit services.

A number of human service agencies provide their own transportation to supplement existing transit services. Many of the agencies rely on advance reservations and serve limited trip purposes and areas, using a variety of vehicles: buses, vans, and minivans, and cars driven by paid and volunteer drivers. Trip purposes include medical appointments, shopping excursions, and recreational activities.
The strength of human service agency transportation is that there is a higher degree of flexibility in administering their programs, which means that they are better able to respond to individual needs on a case-by-case basis. However, many human service agencies require up to two weeks lead time to schedule trips in order to match riders with volunteer drivers, making them less able to respond to last minute changes. Public transit systems do not have the ability to provide the specialized, door-through-door service that many elderly or disabled residents need. Therefore, we rely on human service agencies to provide transportation services to their clients.

Sidewalks & Trails

Dutchess County benefits from a variety of sidewalk and trail systems. These facilities provide an essential link in the transportation system by enabling people to travel short and long distances without a car. These facilities also support recreational activities that help the local economy.

Sidewalks

Dutchess County contains approximately 435 linear miles of sidewalks.[17] This total includes publicly and privately owned sidewalks, ranging from traditional systems in cities and villages, to campus systems at colleges and office parks, and storefront sidewalks at commercial locations. Approximately 370 miles of the sidewalks are publicly owned. Over half of the sidewalks (232 miles) are located in the County's pedestrian-oriented, higher-density cities, villages, and urbanized towns.

The City of Poughkeepsie alone accounts for 25 percent of all sidewalks in the County – approximately 115 miles. When combined with the Town of Poughkeepsie and City of Beacon, with 90 and 56 miles of sidewalks respectively, the three communities account for 60 percent of all sidewalks in the County.

Trails

Dutchess County also hosts approximately 300 miles of publicly accessible hiking and walking trails in the County. These include sections of the Appalachian Trail in Beekman, Pawling, and Dover, the Hudson River Valley Greenway Trail network (including riverside trails, countryside corridors such as the Harlem Valley Rail Trail, and connector trails), as well as trails in numerous State, County, and local parks. There are three main shared-use paths in the County, currently totaling about 25 miles (see Figure 5-11):

1. The *Harlem Valley Rail Trail*, from the Wassaic train station in Amenia to Chatham in Columbia County (46 miles). The trail is open in Dutchess County between the Wassaic station and Main St (Route 44) in the Village of Millerton (ten miles), as well as in Columbia County between Under Mountain Rd in the Town of Ancram and Copake Falls Station (four miles). The eight mile section from Main Street in the Village of Millerton to Under Mountain Rd is in development.
2. The *William R. Steinhaus Dutchess Rail Trail (WRSDRT)*, between the Walkway Over the Hudson in Poughkeepsie and Hopewell Junction in East Fishkill (13 miles). The trail was completed in 2013 with a 1.6 mile connection between Old Manchester Rd and Overocker Rd in the Towns of Poughkeepsie and LaGrange (including a bridge over Route 55) and a one-mile connection between the Walkway and Morgan Lake.
3. *Walkway Over the Hudson*, a State Historic Park between Poughkeepsie and Highland in Ulster County (1.3 miles; about one mile in Dutchess County). The Walkway Loop Trail (3.6 miles) connects the Walkway and the path on the Mid-Hudson Bridge with existing sidewalks and local streets and provides links to adjacent rail trails.

The Wilbur Boulevard path in the Town of Poughkeepsie is used by people walking, running and bicycling, but is not considered a true shared-use path because it is not accessible per ADA standards. Shorter shared-use paths exist in various locations, and many recreational paths exist in parks.

Bicycle Routes

NYSDOT has four signed State Bicycle Routes in the County. These routes typically use existing State, County, and local roads and accommodate bicyclists on shared travel lanes and/or shoulders. They are intended for experienced adult bicyclists and include the following:

1. NYS Bicycle Route 9: Signed route between New York City and Rouses Point, NY; then joins Quebec Route 223 and follows the Richelieu Valley and the Chamblay Canal Towpath to Montreal (340 miles). 53 miles of the route are in Dutchess County on State, County, and local roads in

Fishkill, Wappinger, Poughkeepsie (Town and City), Hyde Park, Rhinebeck, and Red Hook.

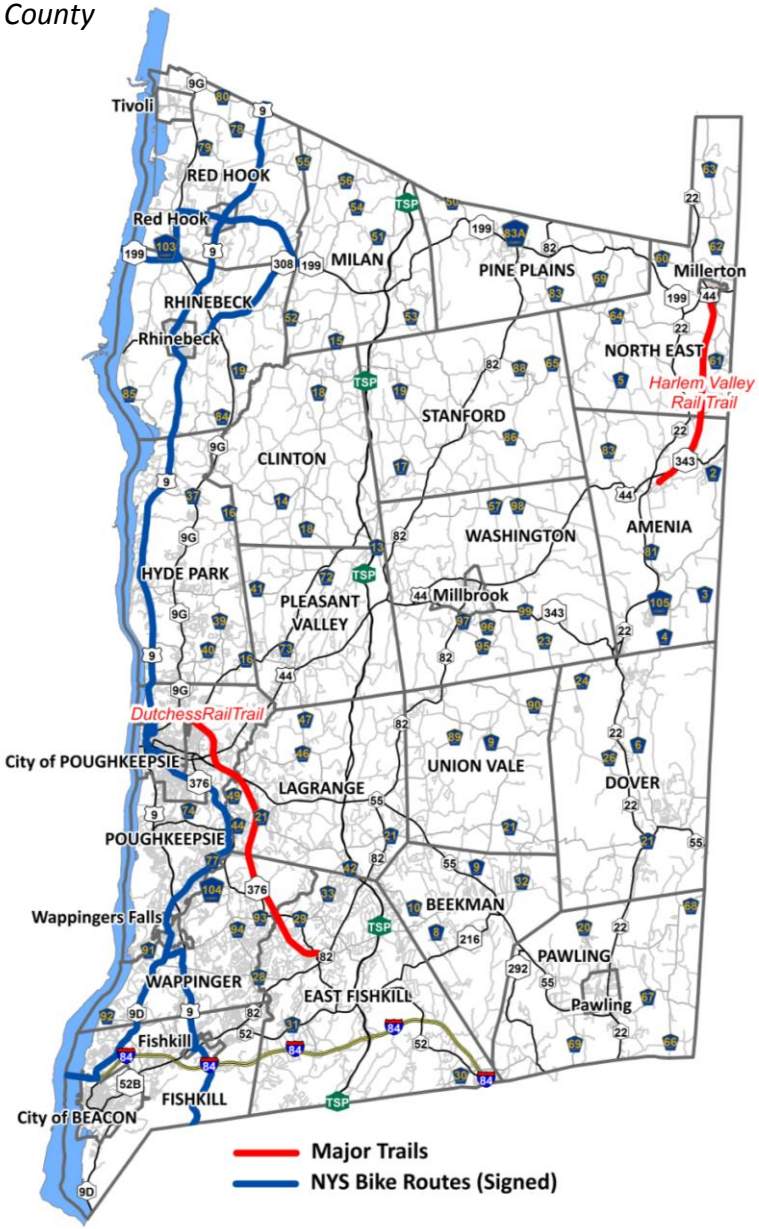
2. NYS Bicycle Route 17: Signed route between Lake Erie and Wappinger. It connects with Bicycle Route 9 at the intersection of Route 9D and CR 93 (Middlebush Rd) in the Town of Wappinger, and crosses the Newburgh-Beacon Bridge.
3. NYS Bicycle Route 199: Signed route along Route 199 from Route 32 in Ulster County, over the Kingston-Rhinecliff Bridge, to Route 308 in Milan.
4. NYS Bicycle Route 308: Signed route along Route 308 from Route 9 in Rhinebeck to Route 199 in Milan.

NYSDOT has proposed an extension of NYS Bicycle Route 199, as well as an extension of NYS Bicycle Route 22 through Dutchess and Putnam counties (currently a signed route through Columbia County, from New Lebanon to Ancram). In addition, NYSDOT has identified future potential State Bicycle Routes on Routes 44, 52, 55, and 82. Local bicycle routes have also been developed by the City of Poughkeepsie and the Red Hook and Rhinebeck Greenway Committees.

Park & Ride Facilities

There are nine park-and-ride facilities in Dutchess County. These facilities are located along major highways, and provide places for commuters to park their cars to catch a carpool, vanpool, bus, or train to work. They are typically free to use, and are served by express and commuter bus services or Metro-North Railroad. Park-and-ride facilities in the County include the following:

Figure 5-11. Major Trails and NYS Bike Routes in Dutchess County



1. East Fishkill: Kimberly Corners Shopping Plaza on Route 82, ¼ mile east of the Taconic State Parkway interchange (51 spaces, carpool only).
2. East Fishkill: I-84 at Lime Kiln Rd (90 spaces; carpool only).
3. East Fishkill: Taconic State Parkway at Route 52 (100 spaces; carpool only).
4. Hopewell Junction: Le Chambord Inn on Route 52, ¼ mile east of the Taconic State Parkway interchange (40 spaces, carpool only).
5. Hyde Park: Dutch Reform Church, Route 9 (15 spaces; carpool and DCPT connection).
6. LaGrange: Taconic State Parkway at Todd Hill Rd (28 spaces; carpool only).
7. Stanford: Taconic State Parkway at Bulls Head Rd (25 spaces; carpool only).
8. Wappingers Falls: Fishkill Transportation Center near Route 9D, adjacent to Dutchess Stadium (100 spaces; carpool and DCPT service to Metro-North Beacon station).
9. Rhinebeck: Route 199, near Route 9G and Kingston Rhinecliff Bridge (31 spaces; carpool only).

Freight Movement

Goods movement in Dutchess County primarily consists of transporting local goods between businesses and homes. However, a major distribution center for GAP/Old Navy is located in the Town of Fishkill near the I-84 and Route 9 intersection.

Regional goods movement occurs along rail lines, I-84, and the Hudson River. The Hudson River serves tankers and barges carrying heavy materials such as coal, fuel, and stone. CSX transportation operates rail freight service on the Hudson/Empire Line, mostly through service between Selkirk (near Albany) and points south.

According to the Census Bureau's 2012 Commodity Flow Survey, 97 percent of all freight tonnage in New York State was transported by truck; an increase of almost five percent from 2007. Other modes such as rail accounted for only 1.4 percent of freight movement in 2012, while the remaining tonnage was split between pipeline, air, water, and multiple modes. The Commodity Flow Survey estimated that 69 percent of freight in New York State was shipped fewer than 50 miles and that 80 percent of freight tonnage originating from New York State was destined for locations within the state.[18]

Shipping Docks

Dutchess County maintains five private shipping docks with access to the Hudson River's deep water channel:

1. A.C. Dutton Lumber Corporation Dock: located one mile north of the Mid-Hudson Bridge in the City of Poughkeepsie, this dock is occasionally used by U.S. Coast Guard vessels for mooring during shore leave.
    - Depth Alongside: 32 feet
    - Berthing Space: 450 feet
2. Love/Effron Dock: located one mile south of the Mid-Hudson Bridge, this dock receives petroleum products by barge.

- Depth Alongside: 13 feet
- Berthing Space: 460 feet

3. New York Trap Rock Corporation Clinton Plant Dock: located 2.6 miles north of the Wappinger Creek in Wappinger, this dock is used to transport dolomite by ship and barge.
    - Depth Alongside: 10 feet
    - Berthing Space: 2,025 feet
4. Point Street Terminal Dock: located 0.3 miles north of the Wappinger Creek in Wappinger, this dock is used to receive petroleum products by barge.
    - Depth Alongside: 12 feet
    - Berthing Space: 230 feet
5. Sousa Poughkeepsie Terminal Dock: located 1.2 miles south of the Mid-Hudson Bridge, this dock is not currently used.
    - Depth Alongside: 18 feet
    - Berthing Space: 150 feet

In 2012 the U.S. Army Corps of Engineers reported that 12.1 million short tons of domestic freight and 1.2 million short tons of foreign freight were shipped on the Hudson River between New York City and Waterford, NY. Petroleum and petroleum products comprised 58 percent of goods shipped through this corridor, with gasoline and distillate fuel oil making up 73 percent of all petroleum products shipped.[19] Commodity data is summarized in Table 5-19.

Table 5-19. Major Commodities Shipped on the Hudson River (2012)

Commodity	Short Tons
Petroleum and Petroleum Products	7,687,280
Soil, Sand, Gravel, Rock, and Stone	2,579,914
Cement and Concrete	797,242
Chemicals and Related Products	719,874
Food and Farm Products	538,457

Airports

The airports in Dutchess County serve private general aviation aircraft only. Commercial service at the Dutchess County Airport in Wappinger, the largest airport in the County, was suspended in 2001. There are four other public airports in the County: Airhaven (Hyde Park), Sky Acres (Union Vale), Sky Park (Red Hook) and Stormville (East Fishkill).

Stewart International Airport, located in neighboring Orange County and near the intersection of the New York State Thruway (I-87) and I-84, is a regional airport managed by the Port Authority of NY & NJ (PANYNJ). The airport offers scheduled passenger service to cities in Florida and major airline hubs in Detroit, and Philadelphia. The airport also handles a limited amount of domestic and international air freight. The PANYNJ reports that 80 percent of current activity at Stewart is general aviation. Passenger, freight, and aircraft movement data for Stewart Airport are shown in Table 5-20.[20]

Table 5-20. Selected Statistics for Stewart International Airport (2012-2014)

	2012	2013	2014
Total Passenger Traffic	364,848	320,682	309,357
Total Aircraft Movements	42,123	38,905	36,881
Total Freight (Short-tons)	18,781	17,490	15,227

Transportation Safety & Security

The Transportation Council remains committed to improving transportation safety and security across all modes and facilities.

Vehicle Safety

We often read about the tragic stories of death and injury that result from vehicle crashes. Young and old, male and female, local and visitor, driver, passenger, pedestrian, motorcyclist, and bicyclist, people killed or hurt performing an activity that most of us take for granted: travelling from point A to point B. Though our society accepts a certain level of risk on our roads, we owe it to ourselves to better understand the nature of crashes so that we can find ways to reduce them.

In 2013, the most recent data available, the NYS Governor's Traffic Safety Committee (NYS GTSC) reported that there were 6,174 reportable crashes in Dutchess County, resulting in 28 fatalities and 2,710 non-fatal injuries. The number of crashes in Dutchess County represented 1.9 percent of all crashes in the State for 2013, which was slightly lower than the 2.1 percent share reported in 2010 for *Moving Dutchess*. From 2011-2013, the County-wide crash rate stayed constant at 0.8 fatal and injury crashes per one roadway mile, which was below the statewide average of 1.1 for the same three years.[21] Table 5-21 summarizes crashes over the three-year period.

Table 5-21. Number and Type of Vehicle Crashes in Dutchess County (2011-2013)

	2011	2012	2013	3-year Average
Fatal/Injury Crashes	1,963	2,043	2,026	2,011
Non-Injury Crashes	4,022	3,830	4,148	4,000
Total	5,985	5,873	6,174	6,011

In general, the most common contributing factors associated with vehicle crashes have remained the same over time. In 2013, which was representative of previous years, *driver inattention/distraction* was cited as the most common contributing factor, being present in almost 21 percent of all crashes in the County. Other key contributing factors included *following too closely* and *unsafe speed* (each present in 15 percent of all crashes). Interestingly, 41 percent of all crashes occurred between noon and 6:00 p.m.

In addition, drivers under the age of 29 were involved in 31 percent of all crashes in 2013, though they made up only 19 percent of all licensed drivers in the County. 2013 also witnessed 178 alcohol related crashes; although alcohol-related crashes represented only three percent of all crashes, they resulted in nine fatalities, representing over 32 percent of all traffic fatalities in the County. Lastly, in 2013 89 percent

of all motorcycle crashes in the County resulted in injury or death to the motorcyclist.

The Village of Fishkill and City of Poughkeepsie have consistently had the highest annual crash rates per road mile in Dutchess County. In 2013 the Village had a crash rate of 6.4 crashes per mile, followed by the City of Poughkeepsie with 3.8 crashes per mile. The following municipalities had over one crash per mile in 2013:

1. Village of Fishkill: 6.4
2. City of Poughkeepsie: 3.8
3. Village of Wappingers Falls: 2.6
4. Town of Fishkill: 2.1
5. Town of Poughkeepsie: 1.7
6. Town of Red Hook: 1.6
7. Town of Wappinger: 1.1

Historic Crash Trends

From 2003-2013 Dutchess County averaged 26 traffic-related fatalities per year. The number of traffic fatalities spiked in 2004 with 46, while dropping to a record low of 13 in 2010 (see Figure 5-10). Likewise, from 2003-2013 Dutchess County averaged over 3,000 traffic-related injuries annually. Although the number of traffic-related injuries spiked in 2003 at 3,843, 2013 saw the lowest number of traffic-related injuries (2,434) during the decade – a decline of 37 percent from 2003 (see Figure 5-11).

Figure 5-10. Total Crash-Related Fatalities in Dutchess County (2003-2013)

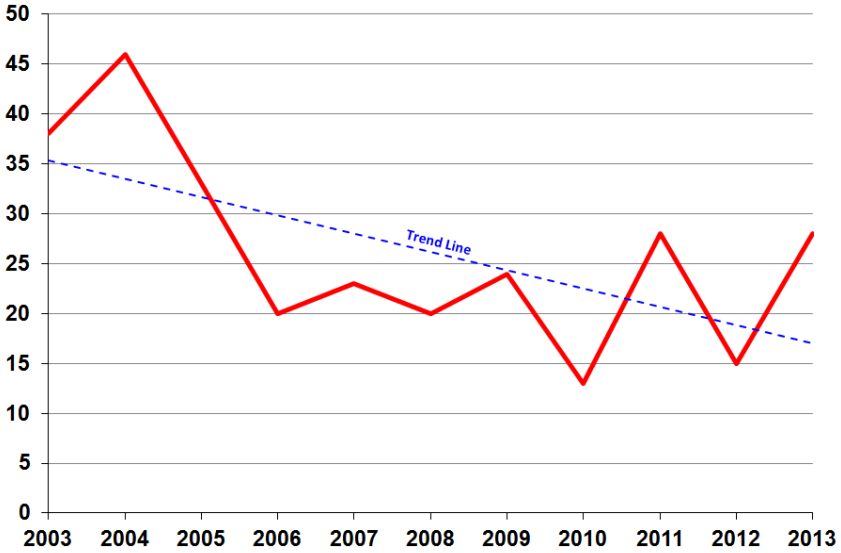
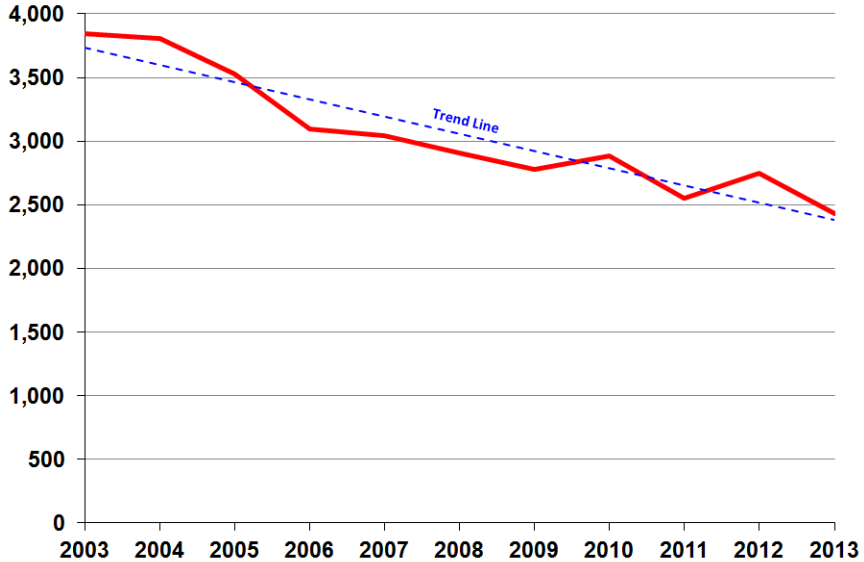


Figure 5-11. Total Crash-Related Injuries in Dutchess County (2003-2013)



Accident Location Information System (ALIS)

NYSDOT, in conjunction with NYSDMV and the Office of Cyber Security & Critical Infrastructure Coordination (CSCIC), maintains an online database of motor vehicle crashes called ALIS. The data in ALIS comes from two sources:

1. Traffic and Criminal Software (TraCS), which many police agencies have installed in patrol vehicles. TraCS allows crash data and locations to be coded in the ALIS database quickly and accurately, which greatly improves analysis and safety planning.
2. NYSDMV accident report forms (Form MV-104).

ALIS includes functions for querying crashes by date, location, and other attributes; mapping crash locations; and creating reports. MPO and NYSDOT staff uses the ALIS data to identify priority areas for safety improvements. NYSDOT continues to refine the software and encourage police agencies to submit crash data via TraCS to enable better safety planning. As of 2015, 12 police agencies in Dutchess County (11 municipalities and the County Sherriff's Office) have installed TraCS, and all but two are submitting crash reports via TraCS.

General Crash Trends

The Transportation Council conducted an analysis of 2009-2013 ALIS crash data to identify general crash trends in Dutchess County. During the five-year period, the County experienced over 37,800 vehicle crashes that resulted in 112 fatalities and over 13,000 injuries. The majority of these crashes involved collisions with other motor vehicles (61 percent), while collisions with fixed objects and deer strikes were the next most common crash types (21 and 13 percent respectively). Though crashes with fixed objects accounted for 21 percent of all crashes, they made up 51 percent of the traffic related fatalities in the County (see Table 5-22).

Over half of all crashes from 2009-2013 occurred at locations where a traffic control device was not present. Where traffic controls were present, 20 percent of the crashes occurred in no passing zones, while another 16 percent occurred at traffic signals. Like fixed object crashes, crashes in no passing zones experienced a higher share of traffic-related fatalities, accounting for 47 percent of traffic fatalities in the County.

With regards to weather, light, and road conditions, the ALIS crash data indicated that 57 percent of the crashes happened in clear weather, with another 24 percent occurring under cloudy conditions. Surprisingly, only 16 percent of crashes occurred in rainy or snowy conditions. Likewise, 66 percent of crashes occurred in daylight, with only 26 percent occurring under darkness. However, crashes during darkness (unlighted) had a slightly higher share of fatalities (28 percent) than their share of total crashes (16 percent) (see Table 5-23).

Specific Crash Trends

The Transportation Council also analyzed the ALIS crash data to identify high-crash locations in Dutchess County. The analysis identified locations that were above the County average for intersection and road segment crashes. The analysis classified crashes within 75 feet of an intersection as an intersection crash, while all others were classified as road

segment crashes. For road segment crashes, the analysis used crash rates by facility type: Interstate, State, County, local, and private to identify locations above-average for their facility type.

The crash analysis identified five intersections that experienced the highest number of total crashes from 2009-2013 (all had over 100 crashes for the five-year period):

1. Route 44 (Church St)-Route 9 intersection in the City of Poughkeepsie: 267 crashes.
2. Route 9-Merritt Blvd in the Town of Fishkill: 126 crashes.
3. Route 9-CR 104 (New Hackensack Rd) in Wappingers Falls: 116 crashes.
4. Main St-Columbus Dr in the City of Poughkeepsie: 108 crashes.
5. Route 9-CR 28 (Old Hopewell Rd) in Wappinger: 101 crashes.

In addition to intersections, the crash analysis identified road segments with the highest number of total crashes from 2009-2013. The following road segments experienced over 75 crashes over the five-year period:

1. I-84 (eastbound) from the Newburgh-Beacon Bridge to the toll plaza in the City of Beacon: 186 crashes.
2. I-84 (westbound) from the Route 9 exit ramp (northbound) to the Route 9 overpass in the Town of Fishkill: 103 crashes.
3. Route 9 (northbound) from the Alpine Commons (BJ's) driveway to CR 93 (Myers Corners Rd) in the Town of Wappinger: 94 crashes.
4. TSP (northbound) from Miller Hill Rd to I-84 in East Fishkill: 79 crashes.
5. Route 44/55 from the Mid-Hudson Bridge to Rinaldi Blvd in the City of Poughkeepsie: 79 crashes.

Lastly, the crash analysis identified road segments that had the highest number of crashes per mile for 2009-2013. The following locations experienced crash rates of over 500 per mile in Dutchess County:

1. Main St from Route 9 (southbound on-ramp) to Route 9 (northbound exit ramp) in the City of Poughkeepsie: 1,130 crashes per mile.
2. Route 9D ramp over I-84 in Fishkill: 994 crashes per mile.
3. Route 9 (southbound) from Route 44/55 (overpass) to the Route 9 Laurel St exit ramp in the City of Poughkeepsie: 665 crashes per mile.
4. South Rd from the South Ave exit ramp (Academy St) to Phoenix St in the City of Poughkeepsie: 551 crashes per mile.
5. Route 9 (northbound) from shopping plaza driveways (1554-1562 Albany Post Rd) and the Home Depot entrance (former Imperial Plaza) in Wappingers Falls: 549 crashes per mile.
6. Route 9 (northbound) at shopping plaza driveways (1520-1540 Albany Post Rd) in Wappingers Falls: 506 crashes per mile.

Table 5-22. NYS ALIS Crash Data Summary for Dutchess County by Crash Type and Traffic Control (2009-2013)

Crash Characteristics	Number of crashes	Percent of Total Crashes	Number of Fatalities	Percent of Total Fatalities	Number of Injuries	Percent of Total Injuries
Crash Type						
Other Motor Vehicle	22,922	61%	40	36%	9,197	70%
Pedestrian	438	1%	9	8%	422	3%
Bicyclist	217	1%	2	2%	187	1%
Deer	4,935	13%	1	1%	191	1%
Animal	479	1%	0	0%	22	0%
Fixed Object[1]	8,010	21%	57	51%	2,749	21%
No Collision	675	2%	3	3%	325	2%
Other[2]	151	0%	0	0%	6	0%
Traffic Control						
None	18,753	50%	46	41%	5,081	39%
Traffic Signal	6,078	16%	6	5%	3,103	24%
Stop Sign	2,260	6%	5	4%	1,128	9%
Yield Sign	829	2%	0	0%	244	2%
No Passing Zone	7,474	20%	53	47%	2,879	22%
Other[3]	2,433	6%	2	2%	664	5%
Total	37,827		112		13,099	

[1] Fixed objects include utility poles, guiderails, trees, sign posts, fences, earth embankments, and culverts.

[2] Other includes unspecified crash types.

[3] Other includes a flashing light, officer/guard, railroad crossing sign, construction work area, and school zone.

Table 5-23. NYS ALIS Crash Data Summary for Dutchess County by Crash Conditions (2009-2013)

Crash Conditions	Number of crashes	Percent of Total Crashes	Number of Fatalities	Percent of Total Fatalities	Number of Injuries	Percent of Total Injuries
Weather Conditions						
Clear	21,419	57%	62	55%	7,430	57%
Cloudy	8,984	24%	38	34%	3,300	25%
Rain	4,066	11%	9	8%	1,603	12%
Snow	1,721	5%	2	2%	435	3%
Other[1]	1,637	4%	1	1%	331	3%
Light Conditions[2]						
Daylight	24,912	66%	65	58%	9,519	73%
Dawn	785	2%	3	3%	171	1%
Dusk	1,096	3%	3	3%	327	2%
Dark-Road Lighted	3,890	10%	10	9%	1,454	11%
Dark-Road Unlighted	6,104	16%	31	28%	1,482	11%
Road Conditions						
Dry	27,083	72%	91	81%	9,500	73%
Wet	6,938	18%	17	15%	2,731	21%
Snow/Ice	2,490	7%	3	3%	641	5%
Other[3]	1,316	3%	1	1%	227	2%
Total	37,827		112		13,099	

[1] Other includes sleet, hail, freezing rain, fog, and smoke.

[2] Light conditions were not identified for 1,040 crashes that resulted in 146 injuries.

[3] Other includes muddy, slushy, or flooded road.

NYSDOT High Accident Locations (HALS) [TO BE UPDATED]

MAP-21 requires that New York State submit an annual report that lists High Accident Locations (HALs) on State facilities. HALs represent the top five percent of crash locations on public roads: those identified with "severe safety needs." The locations are designated based on a statewide severity weighted ranking of all reported crashes. Fatal and severe injury crashes are weighted more heavily than other crashes. NYSDOT's 2010 HAL report includes one location in Dutchess County, at the I-84/Route 9D intersection in the Town of Fishkill. According to NYSDOT, the existing interchange is insufficient to handle the traffic flow and does not have enough length for the required left turn lanes.

SAFETEA-LU also requires states to define their High Risk Rural Roads (HRRR). States are required to identify these roadways and expend HRRR funds on any rural collector or rural local road with a crash rate that exceeds the statewide average, or one that due to increased traffic is likely to have a crash rate that exceeds the statewide average. There are seven designated HRRR locations in Dutchess County on State and County roads. Funds are distributed by the NYSDOT regional office through a competitive process. At this time, no HRRR projects are planned.

In 2009 NYSDOT evaluated one location on Route 9 in Dutchess County through its Highway Safety Improvement Program. Improved pavement markings and signing at the site led to a 25 percent reduction in injury crashes and a 32 percent reduction in total crashes.[22]

Pedestrian & Bicycle Safety

The most recent 2013 data from NYS GTSC indicated that were 94 reported crashes involving pedestrians and 51 crashes involving bicyclists in Dutchess County. These represented 1.5 percent and 0.8 percent of all reported crashes in the County, respectively. Three pedestrians were killed and 93 injured as a result of motor vehicle crashes in 2013, while 50 bicyclists were also injured.[23] Table 5-23 summarizes the most recent published pedestrian and bicycle crash data.

Table 5-23. Non-motorized Crashes in Dutchess County (2011-2013)

	2011	2012	2013
Pedestrian/Motor Vehicle Crashes	92	81	94
Bicycle/Motor Vehicle Crashes	38	39	51
Total	130	120	145

NYSDOT's ALIS database contains detailed crash data on pedestrian and bicycle crashes. From 2009-2013, almost 56 percent of all pedestrian crashes in Dutchess County occurred in the City of Poughkeepsie (171 total) and the Town of Poughkeepsie (74 total); when factoring in the Towns of Fishkill, Hyde Park, and Wappinger, these five communities accounted for almost 75 percent of all pedestrian crashes in the County. When viewed in terms of the number of pedestrian-related crashes per 1,000 people, the Village of Fishkill and City of Poughkeepsie were the only communities that had pedestrian crash rates of over one per 1,000 people (1.11 and 1.04 respectively). Similar trends were evident in bicycle-related crashes, where the City and Town of Poughkeepsie accounted for over half of all such crashes in

the County (69 and 41 respectively).

ADA Accessibility

The Americans with Disabilities Act of 1990 (ADA) requires state and local governments to make their programs and services accessible to persons with disabilities. This includes removing any physical barriers from public facilities, including sidewalks.

Section 28 CFR 35.150 requires public entities with 50 or more employees to identify barriers that may limit accessibility for persons with disabilities, and to develop a transition plan describing how the identified barriers will be addressed.
In 2010 NYSDOT completed an ADA compliance inventory of sidewalks, crosswalks, and curb ramps on State roadways. A draft ADA Transition Plan was released in December 2010. The ADA plan identified intersections and sidewalk segments on State roads that are not yet fully ADA accessible.

In Dutchess County, NYSDOT identified a total of 78 locations that are not ADA accessible, including 39 intersections and 39 sidewalk segments. These include portions of Routes 9, 9D, 44, 52, 55, 82, 113, 199, 308, 343, and 376 (see Appendix C for details). According to NYSDOT's Draft ADA Plan, 90 percent of the 43 miles of NYSDOT sidewalks in the County comply with ADA. NYSDOT expects to fully comply with ADA by 2019.

The City of Poughkeepsie developed an ADA Transition Plan in 1992 based on an inventory of City-owned facilities. The City's ADA Plan identified 50 sites and ranks them as first, second, third, or fourth priority for improvements. The sites include city buildings, parks, fire houses, and parking facilities.
The plan included an inventory of crosswalk locations at approximately 400 intersections. Each location is rated based on whether it requires a curb ramp, detectable warnings, updated geometry and/or updated alignment. The plan prioritized ramp improvement locations as follows:

1. At crosswalks along accessible routes serving public entities.
2. At crosswalks along accessible routes serving places of public assembly and business.
3. All remaining crosswalks.

The plan states that all street corners that are integral with street paving or repair programs shall have construction of accessible curb ramps incorporated within the scope of such paving or repair programs. The City has incorporated many of the recommended ramp improvements into ongoing sidewalk and street projects.

As of 2015, NYSDOT and the City of Poughkeepsie were the only two agencies in the County that had conducted a comprehensive ADA evaluation of their pedestrian system.

Transit Safety

MAP-21 includes language in several provisions emphasizing that safety and security should be considered throughout the planning, programming, and operating of transit systems.

Metro-North Railroad tracks customer injuries at each station. From 2011-2014, there were 57 reported injuries at Dutchess County train stations, ranging from a high of 23 in 2011 to a low of nine in 2012. The Beacon and Poughkeepsie train stations had the highest share of injuries due to their higher passenger volumes, while the Harlem Line stations combined saw only four injuries during the four-year period. The Hudson Line stations had the highest share of injuries (93 percent). Amtrak also tracks the number of incidents by station.

Dutchess County's Division of Public Transit (DCPT) collects data on crashes involving DCPT buses. In 2014 there were a total of 14 DCPT crashes; seven were deemed "preventable" and seven "non-preventable." Preventable crashes are those where the driver could have reasonably avoided by controlling their speed, maintaining safe following distance, yielding right-of-way, signaling, and observing other safe driving practices. The number of crashes in 2014 represented a decrease from 2013, which saw 18 crashes, and 2012, which saw 19 crashes. Crashes involving DCPT vehicles have declined each year since 2011, including the number of preventable crashes.

DCPT follows several safety initiatives. These include ADA training for all employees; pre- and post-trip inspection training for all drivers; "Driving Sense and Sensibilities" training for drivers (a video on safe driving practices); "Lock Out-Tag Out" procedures to prevent buses that are being worked on or are out of service from being moved; and a policy requiring all employees to wear reflective safety vests. DCPT also has policies on seat belt use, cell phones, and a drug-free workplace.

The City of Poughkeepsie also tracks crashes involving its buses. In 2010 there were nine crashes, similar to 2009, in which there were eight crashes. The system averages two to four crashes per year.

Safety training for City bus drivers involves morning check-in meetings every day with the dispatcher to review any issues, annual defensive driving training, and driver training videos from NYSDMV to review skills and best practices. Drivers take both written and on-road commercial drivers tests every two years. The City's Public Works department has a safety manager who reviews reports of any incidents and helps the bus system develop strategies to avoid future incidents.

Traffic Safety Programs & Plans

Dutchess County Traffic Safety Board

Transportation safety in Dutchess County is promoted through awareness, education, and enforcement programs sponsored by the Dutchess County Traffic Safety Board. These include the following programs:

1. Police Traffic Services (PTS): Program that supports enforcement activities countywide focusing on seat belt compliance and aggressive driving, speeding, and other unsafe driving behaviors in a coordinated effort to reduce the number of related traffic crashes, fatalities, and injuries.
2. Child Passenger Safety (CPS) Program: Training in proper child passenger safety seat installation, coordinated seat

check events, distribution of car seats and educational materials, and participation in the County CPS Coalition, which coordinates efforts County-wide.

3. Bicycle/Pedestrian Safety: Bicycle safety presentations, bicycle rodeos, helmet check events, and distribution of bicycle helmets, reflective materials, and educational materials. Pedestrian safety focuses on educational programs for youth groups and organizations.
4. Safe Older Driver Mobility: Distribution of information and educational materials related to safe driving habits, transportation alternatives, and available services; Car Fit program to adapt older drivers' vehicles for safer driving; and Driver Evaluation Program.
5. School Bus Safety Awareness: Distribution of school bus safety video, teaching guides, and educational materials for school children; School Bus Driver of the Year award and driver skills rodeo; and promotion of Operation Safe Stop to educate the public about stopping for school buses.
6. Motorcycle Safety Awareness: Promotion of motorcycle training programs; educational materials for riders and motorists; promotion of approved helmets and rider safety gear; and targeted enforcement at safety checkpoints.
7. Transportation safety promotion through brochures, educational materials, press releases, and events.

Transportation Security

The Transportation Council recognizes the importance of safeguarding travelers' personal security. While most of the issues related to transportation security are outside the direct control of the Council, we are committed to supporting the efforts of federal, State, and local agencies in the development and implementation of their safety and security programs, wherever and whenever possible and appropriate.

The NYSDOT Transportation Master Plan discusses transportation security, and recommends identifying and protecting critical transportation infrastructure, conducting vulnerability and risk assessments, coordinating emergency preparedness and response strategies, and balancing security with reliability. NYSDOT works closely with major transportation operating agencies and emergency management agencies to carry out appropriate planning and response activities.

Metro-North Railroad provides security for customers and employees through the MTA Police Department, which develops and implements deterrence, detection, response, and recovery initiatives. The security program is designed to minimize or eliminate risks wherever possible, minimize the potential consequences of those risks that cannot be eliminated, and respond to and recover from any risks that occur.

The Hudson Valley Transportation Management Center (HVTMC) in Hawthorne, NY coordinates highway and transit management, incident response, and traveler information for the region. It is supported by NYSDOT, New York State Police, and other agencies. The HVTMC uses Intelligent Transportation Systems (ITS) and other technologies, including

traffic monitoring cameras, highway advisory radio, variable message signs, traffic signal coordination, and transit information system to allow transportation managers and the public to make better transportation decisions.

The Dutchess County Department of Emergency Response is responsible for developing and maintaining a Comprehensive Emergency Management Plan (CEMP) for Dutchess County. The CEMP seeks to provide an "all hazards" approach towards planning, response, and recovery operations as a result of larger scale emergencies and disasters within the County. The CEMP includes the results of a systematic investigation and analysis of potential hazards that could affect the County, an assessment of existing capabilities to deal with potential problems, and the development of necessary actions to achieve expected results. The Transportation Council assists as needed in the development and implementation of the CEMP.

Natural & Historical Resources

Dutchess County's natural and historical resources play an important role in the daily activities of its residents and visitors. These resources must be considered when carrying out the metropolitan transportation planning process, especially during the programming and implementation of specific transportation projects. The Transportation Council conducted an inventory of natural and cultural resources from the following sources:

- State and County GIS data
- *Dutchess County Greenway Connections (2000)*
- *Recommendations for Stream & Flood Management in Dutchess County (2008)*
- *New York State Open Space Plan (2009)*
- *Natural Resource Inventory (NRI) of Dutchess County (2010)*
- *Climate Change Adaptation Strategies for Metropolitan Planning Organizations (2012)*
- *Biggert-Waters Flood Insurance Reform Act (2012)*
- *Dutchess County Agriculture and Farmland Protection Plan (2015)*

Natural Resources

Dutchess County encompasses over 509,000 acres of land (796 square miles), a territory that contains critical wetlands, varying topographies, rich agricultural lands, forests, and diverse animal species. Key natural resources include:

1. Hudson River: The Hudson River is the most significant watercourse in the region, extending approximately 153 miles from Troy, NY to New York City. The County is closely connected to the Hudson River, a relationship that dates back to the region's first settlers, who used the river as a means of travel and a venue to conduct commerce. Serving as the County's western border, it limits movement between Dutchess, Orange, and Ulster counties, forcing travelers to use one of three bridges or a ferry. The river carries a significant amount of freight between Albany and New York City. The Hudson River includes the State-designated Hudson River Estuary, defined as the tidal portion of the river from Troy to New

York City. NYSDEC manages the estuary to ensure clean water, protect fish and wildlife, and provide access to the river.

2. Wetlands: There are over 30,000 acres of NYSDEC-designated wetlands in Dutchess County, representing six percent of the County's total area.[24] These areas have water at or near the surface during the year, creating natural places for the storage, filtration, and recharge of groundwater. They are particularly important for waterfowl, wildlife, and plant species. Wetlands are regulated at the federal and State level, with State wetlands having a 100-foot buffer zone. Regulated wetlands often combine with low-lying floodplains along waterways to form linear patterns that are generally restricted from development and conducive to trails. At almost 2,500 acres, the DP-22 (Great Swamp) wetland in Dover and Pawling is the County's largest freshwater wetland, followed by the PP-8 wetland in Pine Plains at 1,100 acres and the SG-3 wetland in Red Hook at 700 acres.

3. Floodplains: As demonstrated by 2011's Tropical Storm Irene, flooding is common with many of the region's rivers and streams. Dutchess County has over 40,000 acres of land located in 100-year and 500-year floodplains, representing eight percent of the County's total area. Large areas along the Ten Mile River and Wappinger Creek are particularly prone to flooding, as are areas adjacent to the Fallkill Creek and Crum Elbow Creek. Municipalities regulate the 100-year floodplains, while the Federal Emergency Management Agency (FEMA) regulates 500-year floodplains by restricting residential and other uses that could be damaged by high waters. Since floodplains store stormwater flows, compromising them with new construction endangers downstream properties.

4. Air Quality: Based on data from the NYSDEC air monitoring station in Millbrook, the annual average parts per million (ppm) of ozone has remained constant at 0.027 since 2011. Until 2012, Dutchess County was part of the Poughkeepsie Ozone Non-attainment Area, which included Putnam and Orange counties. National Ambient Air Quality Standards (NAAQS) require that the 4th highest daily maximum 8-hour average for the most recent three year period not exceed 0.075 ppm; notably, this standard increased from 0.080 ppm to 0.075 ppm in 2008. From 2011 to 2013, the Millbrook station recorded an average of 0.070 ppm, thus meeting the new NAAQS standards.

5. Agricultural Lands: Dutchess County contains almost 185,000 acres of land certified by the NYS Department of Agriculture and Markets as Agricultural Districts. These districts are locally designated parcels that currently or could in the future serve agricultural purposes. The majority of these agricultural lands are located in the central, northern, and eastern areas of the County.

6. Highlands: Ridgelines and hillsides provide large blocks of land for wildlife habitat, important species, and scenic woodlands. Because of steep slopes, exposed bedrock, shallow erodible soils, and increased water runoff,

highlands are generally only appropriate for scattered housing, forests, and recreational uses. Due to these reasons, some local municipalities have passed steep slope ordinances to minimize the development of these regions.

7. Steep Slopes: Dutchess County contains two major areas with grades of 25 percent or more: the Hudson Highlands (including the Fishkill Ridge) located in southern Dutchess and the Taconic Ridge (Harlem Valley) in eastern Dutchess. The Taconic Ridge forms a transition zone between the Hudson Valley to the west and the Hudson Highlands to the south. In Dutchess County, the southern portion of the Taconic Ridge is significantly more developed than the northern region, which predominantly contains forested and agricultural lands. The Hudson Highlands provide a critical natural buffer zone and an outer boundary from the New York City metropolitan area. While there is some rural residential development in the Hudson Highlands, the majority of this ecological region remains forested.

8. Forests: Large stands of woods, over 280,000 acres, exist in almost every part of the County, with the exception of the most densely urbanized areas, particularly around the City and Town of Poughkeepsie. Forests encompass over 50 percent of the County and provide a viable habitat for flora and fauna, as well as help to maintain a clean and abundant water supply. The northwestern and southeastern sections of the County contain the highest distribution of forests.

9. Endangered Species: The U.S. Fish and Wildlife Service has identified two endangered species in Dutchess County: the Indiana Bat and the Dwarf Wedgemussel Clam. In addition, the Bog Turtle and the Northern Long-Eared Bat have been designated as threatened species and the New England Cottontail Rabbit is a candidate species.

10. Critical Environmental Areas (CEAs): As of 2015, the NYSDEC recognized 42 CEAs in Dutchess County.[25] These are State or locally designated areas that have exceptional or unique character with respect to any of the following:

    - Benefit or threat to human health;
    - Natural setting (e.g., fish and wildlife habitat, forest and vegetation, open space and areas of important aesthetic or scenic quality);
    - Agricultural, social, cultural, historic, archaeological, recreational, or educational values; or
    - An inherent ecological, geological or hydrological sensitivity to change that may be adversely affected by any change.

    Following designation, the potential impact of any development proposal on the environmental characteristics of the CEA must be evaluated in the determination of significance prepared pursuant to State Environmental Quality Review (SEQR).

Tropical Storm Irene (2011)

Tropical Storm Irene made landfall in New York City on August 28, 2011, producing 7-9 inches of rain on the eastern side of Dutchess County and 9-11 inches of rain on the western side of Dutchess County, over a 24-hour period. According to the National Weather Service, the higher rainfall amounts nearly equated to a 500-year storm. The amount of rain, coupled with already saturated soils from previous storms, resulted in extreme flooding that impacted numerous State, County, and local roads and bridges.

Irene resulted in extensive flooding, washouts, bridge damage, and culvert damage. Fallen debris clogged drainage channels, exacerbating flooding. Given the extent of damage, President Obama issued a federal disaster declaration for the State, authorizing the federal Department of Homeland Security (DHS) and Federal Emergency Management Agency (FEMA) to coordinate disaster relief efforts.

Due to the devastating effects of Irene, the National Flood Insurance Program adopted a new plan called the Biggert-Waters Flood Insurance Reform Act of 2012.[26] The Biggert-Waters Flood Insurance Reform Act of 2012 updated requirements related to the Flood Insurance Rate Map (FIRM): addressing structures that do not meet current elevated building standards, increasing monetary penalties for non-compliant lenders regarding mandatory flood insurance purchase requirements, and increasing federal mitigation funds available to local municipalities after a natural disaster. Notably, the Act authorized $400 million for flood mapping per year for fiscal years 2013 through 2017; a Technical Mapping Advisory Council was established to develop recommendations for future-conditions mapping and future risk assessment, including impacts of climate change and development.

Tropical Storm Irene illustrated the importance of inter-municipal and inter-agency cooperation when managing the effects of a natural disaster. It also illustrated the significance of a safe and reliable transportation system.

Planning for Climate Change Resiliency

In recent years, many MPOs have adopted plans and policies to research, review, and mitigate potential impacts from climate-related events. These efforts range in scale and scope from developing inventories/maps of vulnerable assets to creating frameworks in order to accurately access criticality and potential risk for transportation operations and infrastructure. MPOs are uniquely situated at the forefront of this process, due to their nature as regional informational hubs. In exploring these themes, progress will necessitate more inter-municipal and inter-agency cooperation, with the MPO as an active participant in the comprehensive process.

Within Dutchess County, the Estuary Resilience Project focuses on the intersections between research and educational outreach to address the potential challenges of flooding, stream and watershed management, and climate change. The project was commissioned by the New York State Water Resources Institute at Cornell University and Cornell

Cooperative Extension, with institutional support from the NYSDEC's Hudson River Estuary Program.

Natural disasters tend to highlight vulnerabilities in transportation systems and infrastructure. The role of the MPO in this process is efficiency in climate change planning; this includes adaptation and mitigation, aiding in alleviating these vulnerabilities, and increasing overall resiliency.

Dutchess County Agriculture & Farmland Protection Plan

Agriculture has been and continues to be one of Dutchess County's primary industries. Conservation of agricultural lands and open spaces protects the environment, promotes local sustainability, supports the local economy, and enhances community character. Dutchess County has experienced significant changes in its agricultural economy since the adoption of the last *Agricultural and Farmland Protection Plan* in 1998; most notably, farmland loss is decreasing, interest in local products is growing, and opportunities for land preservation are increasing.

In 2013, Dutchess County received a NYS Farmland Protection Planning Grant to update *the Agricultural and Farmland Protection Plan*. The new Agricultural Plan was unanimously approved by the County Legislature in 2015. The new Agricultural Plan outlines ways to sustain the local agricultural economy. The goals include the improvement of agricultural economic development, technical assistance to farmers, the protection of and access to farmland, the promotion of farm-friendly regulatory policies, fostering public awareness and support, and inter-municipal and inter-agency cooperation and communication.

The Dutchess County Partnership for Manageable Growth, created in 1999, is designed to help the County and municipalities implement the recommendations of adopted planning documents including *Directions: the Plan for Dutchess County*, the *Dutchess County Agriculture and Farmland Protection Plans* of 1998 and 2015, *Greenway Connections*, and the *Dutchess County Water and Wastewater Plan*. It enhances the NYS Farmland Protection Planning Grant Program through a partnership program to secure project funding, to improve water and sewer services throughout the County, and to introduce initiatives to further Greenway Partnerships between the County and its municipalities. Since its inception, the program has helped protect over 3,330 acres of farmland and open space in Dutchess County.

Scenic Byways

The New York State Scenic Byways Program recognizes transportation corridors that are of particular statewide interest. These corridors are of scenic, recreational, cultural, natural, historic, or archaeological significance.

In 1992, the New York State Legislature designated the Taconic State Parkway as a State Scenic Byway in recognition of its scenic, cultural, and historic significance. The designation covers the entire 104 mile length of the Taconic between Westchester and Columbia counties. NYSDOT developed the Taconic State Parkway Scenic Byway Corridor Management

Plan in 1999 to address management issues such as safety, vegetation, and land use, and to encourage tourism and recreation within the corridor.

There are no nationally-designated scenic byways in Dutchess County or the greater Mid-Hudson Valley, but several municipalities have designated local roads as scenic roads.

Historic Resources

Dutchess County hosts a number of important historic assets. These include the Hudson River Valley National Heritage Area, major lakes and riverfronts, the Hudson River Greenway Trail, and the Walkway Over the Hudson. Initiatives, such as the Hudson River Greenway Plan and the Walkway Over the Hudson, aim to enhance areas along the Hudson River by providing greater access to the waterfront and preserving areas along the Hudson River Corridor. The Walkway Over the Hudson State Historic Park, opened in 2009, is a linear walkway traversing the Hudson River; this converted railroad corridor is the longest elevated pedestrian bridge in the world and welcomes over 750,000 visitors annually.

The Dutchess County Planning Department maintains a list of nearly 250 Historic Places in the County, based on the National Register of Historic Places, which is administered by the National Park Service to identify, evaluate and protect historic and archeological resources in the United States. There are also over 30 historic museums in the County.

In addition to individually-listed historic sites, several municipalities in the County have historic districts listed on the National Register. This designation facilitates the historic preservation of larger areas. The largest district in the County is the Hudson River Historic District, nominated by the U.S. Secretary of the Interior in 1990. It includes over 20,000 acres, is comprised of 1,261 parcels that span portions of five municipalities (towns of Hyde Park, Red Hook, and Rhinebeck, and villages of Rhinebeck and Tivoli), and extends north to Columbia County. The District is also a National Landmark District.

There are numerous other historic districts in the County, many of which are located along historic streets. These include:

1. City of Beacon: Lower Main St (50 acres)
2. City of Poughkeepsie: Academy St, Balding Ave, Dwight St–Hooker Ave, Garfield Place, Mill St–North Clover St, Union St, and Upper Mill St. (770 acres)
3. Town of Hyde Park: Main St, Albeston St, and Park Pl (68 acres)
4. Town of North East: Coleman Station (18,120 acres)
5. Town of Poughkeepsie: Main St and Stone St (20 acres)
6. Town of Wappinger: Wheeler Hill Rd (3,200 acres)
7. Village of Fishkill: Fishkill Village (180 acres)
8. Village of Millerton: Main St (266 acres)
9. Village of Rhinebeck: Rhinebeck Village (1,670 acres)

[1] NYSDOT, *Highway Mileage Summary Reports*, 2013

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