The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.
RESOLUTION 16-03

TO ADOPT THE POUGHKEEPSIE-DUTCHESS COUNTY TRANSPORTATION COUNCIL’S NEW LONG-RANGE METROPOLITAN TRANSPORTATION PLAN, MOVING DUTCHESS 2

WHEREAS, the Poughkeepsie-Dutchess County Transportation Council (PDCTC) has been designated by the Governor of the State of New York as the Metropolitan Planning Organization (MPO) responsible, together with the State, for the comprehensive, continuing, and cooperative transportation planning process for the Dutchess County portions of the Poughkeepsie-Newburgh NY-NJ and New York-Newark NY-NJ-CT Urbanized Areas; and,

WHEREAS, the federal surface transportation programs that are the responsibility of the Poughkeepsie-Dutchess County Transportation Council are authorized by the Fixing America’s Surface Transportation (FAST) Act (Pub. L. 112-141, December 4, 2015); and,

WHEREAS, the Federal Highway Administration and Federal Transit Administration issued a Final Rule (Federal Register Vol. 72, No. 30) on February 14, 2007 that implements the provisions of Title 23 U.S.C. 134 and 135, and Title 49 U.S.C. 5303 and 5304; and,

WHEREAS, 23 CFR Parts 450 (Planning Assistance and Standards) and 500 (Management and Monitoring Systems), and 49 CFR Part 613 (Metropolitan and Statewide Planning) set forth the national policy on the metropolitan transportation planning process, including the development of a Metropolitan Transportation Plan (MTP); and,

WHEREAS, Section 1201 of the FAST Act continues the requirements for metropolitan transportation planning in 23 U.S.C. 134, and Section 3003 of the FAST Act continues the national policy on metropolitan statewide planning in 49 U.S.C. 5303; and

WHEREAS, said Metropolitan Transportation Plan will serve as the official multimodal transportation plan of the MPO, addressing no less than a 20-year planning horizon and developed through the metropolitan transportation planning process; and,

WHEREAS, the Poughkeepsie-Dutchess County Transportation Council has developed a new Metropolitan Transportation Plan entitled, Moving Dutchess 2; and,

WHEREAS, Moving Dutchess 2 was developed in accordance with 23 CFR Part 450.322 (Development of the Metropolitan Transportation Plan) and includes the following:

(1) The projected transportation demands of persons and goods in the planning area over the period of the plan.
(2) A description of existing and proposed transportation facilities in the planning area.
(3) Operational and management strategies to improve the performance of existing transportation facilities to relieve vehicle congestion and maximize the safety and mobility of people and goods.
(4) Consideration of the results of the Congestion Management Process.
RESOLUTION 16-03

(5) An assessment of the capital investment and transportation/land use strategies needed to preserve the existing and projected transportation system.
(6) Sufficient project level information to demonstrate air quality conformity.
(7) A discussion of potential environmental mitigation strategies to maintain or restore environmental conditions affected by the plan.
(8) Consideration of pedestrian and bicycle transportation facilities.
(9) Consideration of transportation and transit enhancement activities.
(10) A Financial Plan that demonstrates how the plan will be implemented.

WHEREAS, the Poughkeepsie-Dutchess County Transportation Council consulted, as appropriate, with federal, State, and local agencies when it developed Moving Dutchess 2; and,

WHEREAS, Moving Dutchess 2 has as one of its goals improving the safety of the transportation system, and recommends actions consistent with the State’s Strategic Highway Safety Plan; and,

WHEREAS, the Poughkeepsie-Dutchess County Transportation Council afforded citizens, public agencies, and representatives of transportation providers with a reasonable opportunity to comment on Moving Dutchess 2, in accordance with its Public Participation Plan; and,

WHEREAS, the Poughkeepsie-Dutchess County Transportation Council held a 30-day public comment period for the Draft Moving Dutchess 2, starting February 17, 2016 and ending March 17, 2016; now therefore be it

RESOLVED, that the Poughkeepsie-Dutchess County Transportation Council adopts Moving Dutchess 2 as the Metropolitan Transportation Plan for the Dutchess County portion of the Poughkeepsie-Newburgh Urbanized Area and New York-Newark NY-NJ-CT Urbanized Areas; and,

RESOLVED, that the Poughkeepsie-Dutchess County Transportation Council hereby authorizes the acting Secretary of the Poughkeepsie-Dutchess County Transportation Council to transmit Moving Dutchess 2 to the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), and New York State Department of Transportation (NYSDOT).

CERTIFICATE, the undersigned, duly qualified and acting Secretary of the Poughkeepsie-Dutchess County Transportation Council, certifies that the foregoing is a true and correct copy of a resolution adopted on March 24, 2016.

 Date

3/24/16

By

Todd B. Westhuis, P.E., Acting Secretary
Poughkeepsie-Dutchess County
Transportation Council
# Moving Dutchess 2

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Chapter 1

Welcome to Moving Dutchess 2

Moving Dutchess 2 is the sixth long-range, Metropolitan Transportation Plan of the Poughkeepsie-Dutchess County Transportation Council (hereafter referred to as the “Transportation Council”), continuing an almost 35-year tradition of metropolitan transportation planning in Dutchess County, New York.

From its designation in 1982 as the Metropolitan Planning Organization (MPO) for the Poughkeepsie Metropolitan Area to its present role in the three-county Mid-Hudson Valley Transportation Management Area, the Transportation Council has sought to meet the transportation needs of the county’s residents, workers, and visitors. This goal has been at the core of previous Metropolitan Transportation Plans and endures with Moving Dutchess 2. The premise behind each and every Transportation Plan has remained the same – to identify policies and projects that will maintain and prepare the existing and future transportation system to meet the mobility challenges in the coming decades. What has changed is how the Transportation Council has tried to accomplish these goals.

As Dutchess County has changed over the past 35-years, the Transportation Council, as an organization and through its policies, has adapted to meet new challenges, while still adhering to its core transportation mission:

To provide the resources (funding) and tools (planning) necessary to build and maintain a transportation system that promotes the safe and efficient movement of people and goods in a sustainable manner.

Supporting this mission has required that the Transportation Council recognize shifting norms, be they based on demographics, human behavior, technology, or the environment. Flexibility has therefore become a mainstay for the Transportation Council, allowing it to maintain its relevancy to the community by addressing local transportation priorities that transcend basic statutory obligations. This is especially important given the significance of the transportation system to the health, safety, and welfare of the public—a fact that requires decisions be based on a thorough understanding of regional and local conditions.

The Metropolitan Planning Organization (MPO)

Federal transportation laws require that Urbanized Areas be represented by a MPO, which is responsible for ensuring that federal transportation funding (highway and transit) is committed through a locally driven, comprehensive planning process. The MPO provides a forum for state and local officials to address various transportation issues and reach consensus on transportation plans and projects. The United States Department of Transportation (USDOT) relies on each MPO to make sure that federally funded projects are the products of a credible planning process, meeting the goals and priorities of the metropolitan area, while also addressing federal planning priorities.
Moving Dutchess 2

Transportation Council Responsibilities

The Transportation Council’s planning area covers the entirety of Dutchess County and it produces three core documents, common to all MPOs, which are necessary to meet federal transportation planning requirements:

Metropolitan Transportation Plan (MTP)

The MTP serves as the strategic, guiding document for improving transportation in Dutchess County over the next 20 to 25-years. The MTP establishes goals for the county’s future transportation system, which are supported by specific project and planning recommendations. These goals and recommendations influence the types of projects pursued in the five-year Transportation Improvement Program (TIP) and the planning studies supported by the annual Unified Planning Work Program (UPWP) (both discussed below). Federal guidance requires an update to the MTP every five years for an MPO located in an EPA designated air quality attainment area. Federal law also requires that recommendations in the MTP be based on a reasonable assumption of future funding, reflecting fiscally constrained conditions.

Transportation Improvement Program (TIP)

The TIP lists the funding sources, locations, schedule, and sponsors for federally-funded transportation projects over a five-year period. The TIP implements the short range goals and recommendations of the MTP. The Transportation Council, working with member agencies, updates the TIP on a biannual basis, with project scheduling based on the Federal Fiscal Year (FFY) calendar, which starts on October 1st and ends on September 30th of the following year. In addition to federally-funded projects, the TIP also lists major transportation projects wholly financed by state funding or through agencies such as NYSDOT, MTA, NYS Bridge Authority, and NYS Thruway Authority. The Transportation Council’s TIP is included in the Statewide Transportation Improvement Program (STIP), which is managed by NYSDOT.

Unified Planning Work Program (UPWP)

The UPWP serves as the annual statement of work that describes the activities, budget, and planning studies the Transportation Council will complete during the upcoming year. As with the TIP, the UPWP must support the actions promoted in the MTP; this especially holds true for Transportation Council staff work on local transportation planning studies. The UPWP is organized around the State Fiscal Year (SFY), which starts on April 1st.

Mid-Hudson Valley Transportation Management Area

The planning boundary for the Transportation Council stems in part from its location within the Poughkeepsie-Newburgh NY-NJ Urbanized Area, which was designated by the Census Bureau in March 2012. This four-county Urbanized Area (UA) includes parts of Dutchess, Orange, and Ulster counties in New York and Passaic County in New Jersey. The UA has an urbanized population of over 423,000, well over the 200,000 population threshold used by USDOT to designate a Transportation Management Area (TMA). Figure 1-1 shows

Chapter 1: Introduction
Moving Dutchess 2

the PDCTC Urbanized Area, while Figure 1-2 shows the Mid-Hudson Valley TMA Area.

The TMA denotation, first instituted by the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), carries additional responsibilities for an MPO. These include the development of a Congestion Management Process (CMP), methods to disburse Federal Transit Administration (FTA) funds, and an in-person federal certification review every four years. The most recent TMA federal certification occurred in 2014 and concluded that the MPOs were in compliance with federal transportation planning requirements.

Prior to the 2000 Census, two MPOs – our Transportation Council and the Orange County Transportation Council (OCTC) – operated within the Mid-Hudson Valley. In 2002 a third MPO, the Ulster County Transportation Council (UCTC), was designated as the MPO for the newly designated Kingston UA. Since then, the three MPOs have participated in a collaborative planning partnership that focuses on addressing regional transportation issues and meeting the federal requirements for a TMA. The joint CMP completed in 2005, supplemented by follow on reports in 2006 and 2011, is an example of this ongoing collaboration, as is the annual allocation of regional FTA funds to local transit operators. Though the three MPOs collaborate on regional issues, they each produce an individual MTP, TIP, and UPWP for their respective county.

In 2014 the three MPOs began to work with the North Jersey Transportation Planning Authority (NJTPA) – the MPO responsible for the federal transportation planning process in Passaic County, New Jersey – on meeting the planning requirements for the Poughkeepsie-Newburgh NY-NJ UA. This relationship was formalized through a Memorandum of Understanding between OCTC and NJTPA in early 2015.5

TMA Responsibilities

In addition to developing the MTP, TIP, and UPWP, the Transportation Council must also addresses issues related to traffic congestion and transit funding, which are products of the county’s location and population density.

Congestion Management Process (CMP)

An MPO located within a designated TMA must develop a CMP5, which institutes a formal process to measure and manage the performance of the transportation system. Such a process must describe methods to collect and analyze transportation system data, with the intent of developing effective strategies to mitigate identified congestion. The Transportation Council, OCTC, and UCTC adopted a joint CMP in 2005, followed by a report of congestion in 2006. The MPOs subsequently completed a travel time survey in 2011.

Federal Transit Funding

Federal transit funding is apportioned to the Poughkeepsie-Newburgh Urbanized Area as a whole, based on statistics reported by transit operators through the National Transit Database (NTD).7 The annual FTA apportionment does not directly allocate transit funding to transit operators; instead,
Chapter 1: Introduction
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this responsibility rests with the three MPOs of the Mid-Hudson Valley TMA. It is the responsibility of our Transportation Council, OCTC, and UCTC to distribute the funds across the three counties, and then sub-allocate the funds to eligible public transit operators within each county. In Dutchess County, these include Dutchess County Public Transit, the City of Poughkeepsie bus system, and MTA. These transit operators are referred to as designated recipients.

Transportation Council Organization

The Transportation Council, acting as the local MPO decision-making body, is comprised of 16 voting members. Membership on the Transportation Council is based on a municipality’s urbanized area classification, with the urbanized cities and towns serving as permanent voting members and the remaining towns and villages serving on a rotating basis or as nominated by the Dutchess County Supervisors and Mayors Association. In addition, Dutchess County, NYSDOT, and the MTA serve as voting members on the Transportation Council, while the FHWA, FTA, NYA Bridge Authority (NYSBA), and the Dutchess County Department of Planning and Development, Department of Public Works (DCDPW), and Division of Public Transit (DCPT) serve as non-voting advisory members. Figure 1-3 shows the Transportation Council’s voting structure.

The Transportation Council relies on a number of agreements to carry out the transportation planning process in Dutchess County:

1. NYSDOT-PDCTC Master Agreement (1982): the original agreement between NYSDOT and Dutchess County that established the Transportation Council and its responsibilities.

2. Mid-Hudson Valley TMA Memorandum of Understanding (2006): provides a common understanding and structure for the continuing coordination and communication among the MPOs responsible for the TMA.

3. PDCTC Written Agreement (2011): identifies the roles, responsibilities, and cooperative procedures for carrying out the metropolitan transportation planning process in Dutchess County, agreed to by the Council, Dutchess County, City of Poughkeepsie, NYSDOT, MTA/Metro-North Railroad, and NYS Bridge Authority.

4. NYSDOT-PDCTC Host Agency Agreement (2012): reauthorized the host agency relationship between Dutchess County and NYSDOT and provided a 10-year schedule for funding Council activities.

5. PDCTC Public Participation Plan (2015): establishes the framework for public involvement during the development of the MTP, TIP, and UPWP and outlines standard public participation activities.

6. PDCTC Bylaws (2015): establishes the roles, responsibilities, and structure of the Council, to include voting membership, meeting protocols, decision-making process, and procedures for changing transportation projects on the TIP. The Bylaws codified voting membership based on the 2010 Census defined Urbanized Area.
### Permanent Voting Members
- Dutchess County Executive (Permanent Chairperson)
- NYSDOT Commissioner
- Metropolitan Transportation Authority Chairman and CEO
- City of Beacon Mayor
- City of Poughkeepsie Mayor
- Town of Beekman Supervisor
- Town of East Fishkill Supervisor
- Town of Fishkill Supervisor
- Town of Hyde Park Supervisor
- Town of LaGrange Supervisor
- Town of Poughkeepsie Supervisor
- Town of Wappinger Supervisor

### One Member from the Partially Urbanized Towns (rotating)
- Town of Pawling Supervisor
- Town of Pleasant Valley Supervisor
- Town of Union Vale Supervisor

### One Member from the Urbanized Villages (rotating)
- Village of Fishkill Mayor
- Village of Pawling Mayor
- Village of Wappingers Falls Mayor

### Two Members from the Non-Urban Towns and Villages
- Town of Amenia Supervisor
- Town of Clinton Supervisor
- Town of Dover Supervisor
- Town of Milan Supervisor
- Town of North East Supervisor
- Town of Pine Plains Supervisor
- Town of Red Hook Supervisor
- Town of Rhinebeck Supervisor
- Town of Stanford Supervisor
- Town of Washington Supervisor
- Village of Millbrook Mayor
- Village of Millerton Mayor
- Village of Red Hook Mayor
- Village of Rhinebeck Mayor
- Village of Tivoli Mayor

### Non-Voting Members
- Federal Highway Administration
- Federal Transit Administration
- NYSDOT Regional Director (Permanent Secretary)
- NYS Bridge Authority Director
- Dutchess County Department of Planning & Development
- Dutchess County Department of Public Works
- Dutchess County Division of Public Transit

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1 As nominated by the Dutchess County Supervisors and Mayors Association.
Moving Dutchess 2

Planning Committee

The Transportation Council is assisted by a Planning Committee that reviews plans and programs prior to Transportation Council action. The Planning Committee is responsible for providing agency, municipal, and public input during the development of the MTP, TIP, UPWP, and other Transportation Council products. Membership on the Planning Committee is open to all 30 municipalities in Dutchess County.

Transportation Council Staff

Day-to-day Transportation Council activities are performed by staff at the Dutchess County Department of Planning and Development, which assumes primary responsibility for the development and administration of the UPWP, the coordination of plans and projects, maintenance of the TIP, and long-range transportation planning.

The Dutchess County Department of Planning and Development and NYSDOT-Region 8 provide administrative and logistical support for Transportation Council staff. The Dutchess County staff section includes a Transportation Program Administrator, Senior Planner, and Junior Planner. The mechanics of how the Transportation Council carries out its mission, including how it involves the public, are codified in its Bylaws and Public Participation Plan that were updated effective January 1, 2015.8

Guiding Principles for Moving Dutchess 2

Moving Dutchess 2 is a 25-year, multi-modal transportation plan for Dutchess County. With a planning horizon year of 2040, it identifies strategies to preserve the existing transportation system and meet future demands as determined by projected demographic and travel trends in the county. To meet this objective, the Transportation Council identified four planning principles for Moving Dutchess 2. These principles were based on a review of existing laws and guidance, and an understanding of how the federally-supported, metropolitan transportation planning process is applied at the State, regional, and local level:

1. Relevant: Moving Dutchess 2 will not only meet federal and state planning requirements, but will serve as a valuable planning tool, relevant to the public, local communities, and decision-makers.

2. Sustainable: Moving Dutchess 2 will establish a fiscally and environmentally sustainable way forward to meet our future transportation challenges, with the intent of creating livable communities that improve our quality of life.

3. Targeted: Moving Dutchess 2 will identify specific measures, both planning and project-based, to improve the safety, efficiency, and effectiveness of our transportation system to meet our future mobility needs.

4. Inclusive: Moving Dutchess 2 will seek input from a full range of stakeholders and interests, addressing the diverse transportation needs of all our residents and visitors.
These principles provide the framework for how Moving Dutchess 2 was developed and organized.

**Transportation Plan Organization**

The previous MTP – Moving Dutchess – served as the foundation for the new Transportation Plan. Therefore, Moving Dutchess 2 follows the same structure as its predecessor, addressing the various federal planning requirements through the following chapters:

**Chapter 2: Federal, State, Regional, & Local Guidance & Plans**

Moving Dutchess 2 begins with a review of relevant federal, state, regional and county laws, policies, and planning guidance that have a direct or indirect effect on the metropolitan transportation planning process. Given the importance that our transportation system plays in maintaining our safety, environment, economy, and quality of life, many public bodies and government agencies have passed laws or issued guidance about the direction, shape, and scope of the transportation planning process.

The literature review sought to capture those planning policies and recommendations that best support the Transportation Council’s mission and the goals set forth in Moving Dutchess 2. More often than not, similar themes arise from these documents, whether they were legal statutes, state, regional and local plans, or best practices. The Transportation Council referred to these themes as it established the ten planning goals for Moving Dutchess 2:

1. Preserve our highways and bridges.
2. Maintain our transit system.
3. Improve transportation safety.
4. Reduce traffic congestion.
5. Increase bicycling and walking.
6. Increase the use of carpool/vanpools.
7. Improve transportation security.
8. Reduce transportation-related impacts to the environment.
9. Increase public participation in the transportation planning process.
10. Improve the delivery of federally-funded transportation projects.

Moving Dutchess 2 summarizes the key points from available literature and identifies those aspects most relevant to its goals.

**Chapter 3: Regional Perspective**

The Transportation Council recognizes that our transportation system is part of an interconnected regional, statewide, and national system. Moving Dutchess 2 provides an overview of the Mid-Hudson region, focusing on the common regional transportation and land use issues facing Dutchess and its neighbors – especially Orange and Ulster counties. The Plan also notes how the three counties have worked together to address regional issues and makes recommendations for future planning efforts, with a focus on addressing regional freight and transit needs.
**Moving Dutchess 2**

**Chapter 4: Demographic Overview**

Though discussed in the language of funding and projects, a transportation system has more to do with people than infrastructure. Our transportation system has one simple, fundamental purpose: to serve people, whether for their own personal mobility or the mobility of the goods and services they require. Given the link between people and transportation, effective planning requires that we understand the nature of the population we serve. The new Transportation Plan provides an overview of Dutchess County using data relevant to transportation planning. This countywide snapshot includes data on population and socio-economic characteristics, employment, housing, and travel behavior. Recognizing the link between land use decisions and the transportation system, *Moving Dutchess 2* includes an assessment of two land use scenarios:

1. **Build-out Analysis**: the amount of development that could occur in each community under current local zoning laws and bulk regulations.
2. **Center-Focused Build-out Analysis**: the amount of development that would occur if the county’s *Centers and Greenspaces* guide was fully implemented by local communities.

**Chapter 5: Transportation & Natural 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. The Transportation Plan provides an overview of transportation facilities and resources in the county, discussing the key components of the transportation system: roads, bridges, transit, sidewalks, trails, and bicycle facilities, as well as park-and-ride facilities, freight activity, and safety and security. The chapter also analyzes vehicle crash data for the most recent five-year period to identify locations with safety concerns, and also travel time data to identify locations with congestion. *Moving Dutchess 2* also outlines important natural and historical resources in the county, including wetlands, floodplains, air quality, agricultural land, and historic districts, and their interplay with the transportation system.

**Chapter 6: Area Transportation Plans**

*Moving Dutchess 2* then takes a closer look at the characteristics and special needs of five distinctive areas within the county, which represent groups of similar communities. The five areas were first established in 2011 with *Moving Dutchess* through an assessment of development patterns, travel characteristics, and demographic profiles. This approach supports the Transportation Plan’s four guiding principles, by providing greater detail on existing and future conditions, and targeting resources to meet future needs.

Analyzing smaller areas has allowed the Transportation Council to better comprehend local nuances and increase the Plan’s value to local communities. *Moving Dutchess 2* accordingly describes each area’s demographics, activity
centers, and transportation facilities, and summarizes transportation issues identified in local comprehensive plans and previous studies. The Transportation Plan looks at the following planning areas (shown in Figure 1-4):

1. **Upper Hudson**: The northwestern section of communities located near the Hudson River, encompassing the Village of Tivoli, Town and Village of Red Hook, Town and Village of Rhinebeck, and Town of Hyde Park.
2. **Lower Hudson**: The southwestern section of communities located near the Hudson River, encompassing the City and Town of Poughkeepsie, Town of Wappinger, Village of Wappingers Falls, Town and Village of Fishkill, and City of Beacon.
3. **Upper Taconic**: The north-central section of communities located along the Taconic State Parkway and Route 82 corridors, encompassing the towns of Clinton, Milan, Pine Plains, Pleasant Valley, Stanford, and Washington, and the Village of Millbrook.
4. **Lower Taconic**: The south-central block of communities located along the Taconic State Parkway and Route 55 corridors, encompassing the towns of LaGrange, Union Vale, East Fishkill, Beekman, and Pawling, and the Village of Pawling.
5. **Harlem Valley**: The eastern section of communities located near Connecticut and along the Route 22 corridor, encompassing the towns of North East, Amenia, and Dover, and the Village of Millerton.

**Figure 1-4. Moving Dutchess 2 Planning Areas**

The area planning strategy seeks to identify the varied transportation needs across different parts of the county, which sometimes get lost when viewed from a ‘one size fits all’ standpoint: for example, the transportation needs of a heavily urbanized area are often different from the needs of a more rural area. Zeroing in on smaller areas allows the Transportation Council to better comprehend local nuances.
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and increase its value to local communities. Each area chapter will describe its demographics, activity centers, and transportation facilities (e.g. roads, bridges, and transit), and a summary of transportation issues identified in local comprehensive plans and previous Transportation Council studies.

Chapter 7: Performance Monitoring

Public agencies are increasingly using performance measures to gauge progress towards meeting specific goals. The Transportation council is no different. Moving Dutchess 2 carries over 70 performance measures to quantify progress on meeting our short-range and long-range goals. The performance measures rely on available data to measure existing conditions for key aspects of the transportation system, including safety, highway/bridge maintenance, transit operations, bicycle/pedestrian facilities, the environment, public participation, and project deliverability. Each performance measure uses current data to establish a base starting point. Goals are then established for two future years: 2020 (the next update) and 2040 (the planning horizon year).

Chapter 8: Recommendations & Financial Plan

Moving Dutchess 2 includes over 170 specific recommendations to preserve and improve the transportation system. The Transportation Council developed these recommendations through a review of existing guidance, input from State and local agencies, an analysis of transportation system data, and feedback from the public. The Transportation Council chose to identify specific projects to increase the value of the Transportation Plan to public agencies and communities – providing them greater detail on where to target future investments.

The recommendations are divided into short-range (2016-2020), mid-range (2021-2030), and long-range (2031-2040) time periods, which are related to each project’s relative priority and complexity, and the availability of funding. The Transportation Plan categorizes recommendations into eight major project types:

1. Bridge Maintenance: replacement or rehabilitation of bridges that are in or are expected to be in poor condition.
2. Highway Maintenance: reconstruction or rehabilitation of roadway segments that are in or are expected to be in poor condition.
3. Highway Operations: intersection, turning lane, and traffic signal projects to improve operations and reduce congestion.
4. Safety: projects and studies to improve safety.
5. Pedestrian/Bicycle: construction or rehabilitation of sidewalks, crosswalks, and trails to improve safety and accessibility.
6. Travel Demand Management: rideshare/vanpool services to reduce congestion.
7. Transit: bus replacements, operating assistance, and preventive maintenance for transit providers, as well as facility upgrades for bus and commuter rail.
8. Planning: topics or locations that require additional transportation planning work.

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These categories, and their related recommendations, represent the transportation priorities identified by the Transportation Council through its review of existing guidance, data analysis, and public outreach (see Figure 1-5).

Figure 1-5. Moving Dutchess 2 Planning Process

Literature Review
- Federal Guidance
- State Guidance
- PDCTC Studies
- County Plans

Data Review
- Demographics
- System Conditions
- Natural Resources

Outreach
- Stakeholders
- Public

Moving Dutchess 2 includes a financial plan that uses planning-level cost estimates and forecasts of reasonably expected funding to financially constrain its recommendations and avoid a wish list of projects. Project cost estimates are adjusted for inflation based on the project’s Year of Expenditure, providing a more realistic estimate of funding needs. The financial plan uses three funding scenarios that are tied to the three time-periods:

1. **Short-Range (2016-2020):** This scenario uses current funding targets to prioritize recommendations. These targets form the basis of the upcoming 2017-2020 STIP, with the short-range recommendations mostly representing projects already programmed on the TIP. This is a system preservation program, reflecting a lack of substantial increases in federal transportation funding.

2. **Mid-Range (2021-2030):** This scenario assumes that funding will return to pre-2007-2009 recession levels, sometime during 2021-2030. This would enable a larger number of system preservation projects and some state of good repair projects to move forward. It would also enable small-scale improvement projects to progress.

3. **Long-Range (2031-2040):** This scenario assumes that funding increases above pre-2007-2009 recession levels and continues to increase with the rate of inflation, further enabling the progression of state of good repair and system preservation projects, and even large-scale improvement projects.

Moving Dutchess 2 also identifies unfunded project concepts (i.e. illustrative projects) that were provided during public workshops or garnered from local comprehensive plans and previous studies.

Given that there is insufficient funding available to reach a true state of good repair, Moving Dutchess 2 outlines a preservation-based approach to maintain transportation safety and mobility. However, the Transportation Council does recommend a number of projects that go beyond just preservation to meet future needs,

**Moving Dutchess 2 recommends the investment of over $1.1 billion in highway, transit, and planning projects to preserve and improve the county’s transportation system over a 25-year planning period.**

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including two regionally-significant, long-range projects to improve transportation safety and operations:

1. Redesigning the Route 9/44/55 interchange in the City of Poughkeepsie
2. Redesigning the I-84/Route 9D interchange in the Town of Fishkill

Appendices

Moving Dutchess 2 includes five appendices that cover definitions used throughout the Transportation Plan, a list of recommended bridge repairs, public outreach summary, ADA inventory data, and an illustrative list of unfunded projects.

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2 76 Fed. Reg. No.164 (53030), August 24, 2011: an Urbanized Area consists of contiguous, densely settled census block groups and blocks that meet minimum population density requirements, along with adjacent densely settled census blocks that together encompass a population of at least 50,000 people.
3 77 Fed. Reg. No. 59 (18652), March 27, 2012: established the Poughkeepsie-Newburgh NY-NJ Urbanized Area with a total urbanized population of 423,566.
5 Memorandum of Understanding on MPO Boundaries and Coordination of Transportation Planning and Programming between OCTC and NJTPA (February 17, 2015).
7 49 USC 5307.
8 PDCTC Resolution 14-07, December 17, 2014.
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Chapter 2

Federal, State, Regional, & County Guidance

The Transportation Council began Moving Dutchess 2 with a review of relevant federal, state, regional, and county laws, policies, and planning guidance. This literature review sought to capture those planning policies and recommendations that best support the Transportation Council’s mission and the goals set forth in Moving Dutchess 2. More often than not, similar themes arose from these documents, whether they were legal statutes, State, regional and local plans, or best practices. The Transportation Council referred to these themes as it developed the transportation recommendations needed to fulfill the requirements in the recently enacted federal transportation law, the Fixing America’s Surface Transportation (FAST) Act, and the previous transportation law – Moving Ahead for Progress in the 21st Century (MAP-21). In fulfilling these federal requirements, the Transportation Council also sought to support its overall mission and promote the four guiding principles of Moving Dutchess 2 (described in Chapter One).

A number of documents and concepts proved most valuable to the Transportation Council as it developed Moving Dutchess 2. These included the previous long range plan, Moving Dutchess, which formed the basis of this new Plan, the Dutchess County Planning Department’s Centers & Greenspaces guide and Greenway Connections (Greenway Compact Program and Guides for Dutchess County Communities), NYSDOT’s Transportation Strategies for a New Age: New York’s Transportation Plan for 2030, and the federal Livability Initiative. These documents and concepts, coupled with proposed MAP-21 planning guidance and newly enacted FAST Act requirements, shaped the strategic direction of Moving Dutchess 2. Figure 2-1 illustrates the relationship between the FAST Act planning factors and federal, State, and county guidance.

Federal Laws, Policies, & Guidance

The Transportation Council, as with any MPO, must adhere to a set of federal laws, guidance, and policies that govern the metropolitan planning process and establish the requirements for programming federal transportation funds. These regulations prescribe the basic roles and responsibilities of an MPO, while also guiding the content for key products such as the MTP.

The requirement to produce a long-range plan first appeared in 1991 with passage of the Intermodal Surface Transportation Efficiency Act (ISTEA), which, in addition to providing federal funding for traditional highway and transit programs, laid the groundwork for a number of new metropolitan planning initiatives that remain to this day; the Congestion Management Process being one example.

In 1998, the Transportation Equity Act for the 21st Century (TEA-21) modified and in some cases expanded federal planning requirements for MPOs. This continued with the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005 and MAP-21 in 2012.
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In December 2015, MAP-21 was succeeded by the FAST Act. Regardless of their different titles and programmatic nuances, these federal transportation laws have shaped how the Transportation Council seeks to meet the transportation needs of Dutchess County and formed a precedent that will likely remain for years to come.

### Fixing America’s Surface Transportation Act (FAST) Act

The Transportation Council operates under the tenets of the FAST Act, the law that provides federal funds for transportation projects and planning efforts, and establishes federal transportation priorities. The FAST Act requires that the metropolitan transportation planning process, which results in the Metropolitan Transportation Plan (MTP), address ten planning factors:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
2. Increase the safety of the transportation system for motorized and non-motorized users.
3. Increase the security of the transportation system for motorized and non-motorized users.
4. Increase the accessibility and mobility of people and freight.
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system.
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation.
10. Enhance travel and tourism.

The Transportation Council referred to these planning factors throughout the development of Moving Dutchess 2; though not discussed individually, they are addressed throughout the MTP and frame its recommendations.

### Metropolitan Transportation Plan Requirements

Though not final at the time of writing, the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) issued a Notice of Proposed Rulemaking (NPRM) in 2014 to implement the planning requirements of the previous transportation law – MAP-21. It is likely that the Final Rule for MAP-21 (and subsequent rulemakings for the FAST Act) will not significantly change the proposed content requirements of an MTP, which include the following items:

1. The projected transportation demands of persons and goods in the planning area over the period of the plan.
2. Existing and proposed transportation facilities in the planning area, giving emphasis to those facilities that serve...
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important national and regional transportation functions over the period of the plan.
3. A description of the performance measures and performance targets used in assessing the performance of the transportation system.
4. A system performance report evaluating the condition and performance of the transportation system with respect to established performance targets.
5. Operational and management strategies to improve the performance of existing transportation facilities to relieve vehicle congestion and maximize the safety and mobility of people and goods.
7. An assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure and provide for multimodal capacity increases based on regional priorities and needs.
8. Transportation and transit enhancement activities, including transportation alternatives.
9. A discussion of potential environmental mitigation strategies to maintain or restore environmental conditions affected by the Plan.
10. Consideration of pedestrian and bicycle transportation facilities.
11. A Financial Plan that demonstrates how the plan can be implemented. The Financial Plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain federal-aid highways and public transportation systems within the planning area.

additional federal laws

Beyond transportation-specific laws, the Transportation Council must also adhere to laws that apply to programs that receive federal funding. These federal laws include the following:

1. Civil Rights Act of 1964: Prescribes that no person shall, on the grounds of race, color, national origin, age, sex, or disability be subjected to discrimination under any program or activity receiving federal financial assistance.7
2. National Environmental Policy Act of 1969 (NEPA): Signed into law in 1970, NEPA establishes national environmental policy and goals for the protection, maintenance, and enhancement of the environment and provides a process for implementing these goals within federal agencies.8
3. Clean Air Act (CAA) and Amendments (CAAA): Originally signed into law in 1970 and amended in 1990, the CAA and CAAA establish federal responsibilities for protecting and improving the nation's air quality and mandate that transportation plans, programs, and projects conform to state air quality implementation plans.9,10
4. Americans with Disabilities Act of 1990 (ADA): Institutes enforceable standards to prevent discrimination against individuals with disabilities.11

Livability Initiative

The Livability Initiative is an ongoing, federal policy that leverages federal resources towards projects and plans that support sustainable development. The Livability Initiative
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recognizes that many federal funding programs share similar goals, such as protecting the environment, promoting economic development, and meeting transportation needs. It supports the simple premise that these goals are better achieved if agencies work together instead of along separate tracks.

In 2009 the U.S. Department of Transportation (DOT), U.S. Department of Housing and Urban Development (HUD), and U.S. Environmental Protection Agency (EPA) launched a Partnership for Sustainable Communities program to formally align federal transportation, housing, and environmental goals. Through a set of livability principles and inter-agency agreements, the partnership coordinates federal transportation, housing, and other infrastructure investments to protect the environment, promote equitable development, and help address the challenges of climate change. The Livability Initiative has six fundamental principles:

1. Provide more transportation choices to decrease household transportation costs, reduce our dependence on oil, improve air quality and promote public health.
2. Expand location- and energy-efficient housing choices for people of all ages, incomes, races and ethnicities to increase mobility and lower the combined cost of housing and transportation.
3. Improve economic competitiveness of neighborhoods by giving people reliable access to employment centers, educational opportunities, services and other basic needs.
4. Target federal funding toward existing communities – through transit-oriented development and land recycling – to revitalize communities, reduce public works costs, and safeguard rural landscapes.
5. Align federal policies and funding to remove barriers to collaboration, leverage funding and increase the effectiveness of programs to plan for future growth.
6. Enhance the unique characteristics of all communities by investing in healthy, safe and walkable neighborhoods, whether rural, urban or suburban.

The livability approach attempts to tie the quality and location of transportation facilities to broader opportunities such as access to good jobs, affordable housing, quality schools, and safer streets and roads. USDOT supports livable communities through funding transportation projects that enable people to live closer to jobs, save households time and money, and reduce pollution.

Published in 2010, the FHWA-sponsored Livability in Transportation Guidebook illustrates how livability principles have been incorporated into transportation planning, programming, and project design, using examples from State, regional, and local sponsors.
The Transportation Council views the Livability Initiative as an important framework for Moving Dutchess 2. It reinforces the work that the Transportation Council has performed in the past, especially on planning studies conducted in conjunction with the Dutchess County Department of Planning and Development.

**Context Sensitive Solutions**

One method of achieving livability is considering Context Sensitive Solutions (CSS) during the development of transportation projects. The CSS approach seeks to design facilities that fit the surrounding physical setting, preserve scenic, aesthetic, historic and environmental resources, and maintain safety and mobility. CSS focuses on the employment of early, continuous and meaningful involvement of the public and all stakeholders throughout the project development process. According to the FHWA, CSS promotes the following core principles:

1. The project satisfies the purpose and needs, as agreed to by a full range of stakeholders. This agreement is forged in the earliest phase of the project and amended as warranted during project development.
2. The project is a safe facility for both the user and the community.
3. The project is in harmony with the community and preserves environmental, scenic, aesthetic, historic, and natural resource values of the area.

4. The project exceeds the expectations of both designers and stakeholders and achieves a level of excellence in people's minds.
5. The project involves efficient and effective use of the resources (time, budget, community) of all involved parties.
6. The project is designed and built with minimal disruption to the community.
7. The project is seen as having added lasting value to the community.

The Dutchess County Department of Planning and Development’s Greenway Connections includes design guidelines that are representative of the CSS approach and provide examples of how projects can be best integrated within an existing community. In addition the Transportation Council’s Pedestrian-Bicycle Plan, Walk Bike Dutchess, includes design guidelines on how to better integrate walking and bicycling elements into new and existing transportation facilities.

**Environmental Justice**

Environmental Justice refers to the requirement that federal agencies (including federally funded projects and programs) identify and address, as appropriate, any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. This requirement was first established through a 1994 Executive Order (#12898), which was reaffirmed in 2014. In the original Executive Order,
federal agencies such as FHWA and FTA were directed to make Environmental Justice part of their missions. This included focusing agencies on the environmental and human health conditions in minority and low-income communities, enhancing efforts to assure nondiscrimination in federal programs affecting human health and the environment, and promoting meaningful opportunities for access to public information and for public participation in matters relating to minority and low-income communities and their environment. These themes feed into the three fundamental principles of Environmental Justice:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

In 2011 USDOT, along with other Federal agencies, signed a Memorandum of Understanding (MOU) on Environmental Justice and Executive Order 12898, confirming the continued importance of identifying and addressing Environmental Justice considerations in agency programs, policies, and activities. As part of the MOU, each agency agreed to review and update their existing Environmental Justice strategy as appropriate. FHWA and FTA subsequently clarified their Environmental Justice policies in 2012, declaring their intent to actively ensure nondiscrimination in federally funded activities. They further declared their goals to identify and prevent any potential discriminatory effects by actively administering their programs and activities to ensure that the social impacts to communities and people are recognized early and continually throughout the transportation decision-making process. The Transportation Council performed an Environmental Justice analysis for Moving Dutchess 2, which is discussed in Chapter 4.

State Guidance

New York State Transportation Plan

Released in 2006, Strategies for a New Age: New York State’s Transportation Master Plan for 2030 presents a comprehensive, 25-year outlook for transportation in New York State and includes a range of ideas for managing and operating the State’s multi-modal transportation network. The Transportation Plan was designed to foster the creation of a seamless, customer-friendly transportation network that is predictable, convenient, and accountable to the public.

The Transportation Plan also outlines a simple, but broad vision statement: “a seamless system in which travelers can conveniently shift between modes and operators to complete trips that meet their individual and business needs.” To achieve this vision, NYSDDOT developed five priority areas to define measurable goals and monitor progress in achieving this vision:
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1. Mobility and Reliability – Places a high priority on travel time predictability for both personal travel and goods movement. Reliable transportation requires that all systems be adequately maintained to support predictable, efficient, and safe travel.

2. Safety – Safe travel is the highest priority for all modes of travel, both for people and goods. An emphasis is on improving vehicle operator performance through enforcement and education.

3. Security – Mitigate the vulnerabilities of the transportation system, develop emergency plans to assist with recovery, and protect critical data, information, and communication networks.

4. Environmental Sustainability – Transportation investments should protect human, natural, and built environments, conserve non-renewable energy resources, and reduce emissions and greenhouse gases. Transportation actions should support the goals of the State Energy Plan.

5. Economic Competitiveness – The transportation system should strengthen the economic sustainability and improve the quality of life in local communities. One strategy is to more closely integrate transportation planning and local land use planning, in coordination with MPOs and other partners.

The 25-year Transportation Plan recommends improving coordination among transportation operators, focusing investment on the most critical multimodal transportation corridors, increasing compatibility between existing and desired land uses and transportation, adopting performance management practices to ensure progress, and promoting sound environmental and energy policies in all transportation investments. The Plan further defines four types of corridors:

1. Trade Corridors support the flow of high volume/high value commodities and services, and provide connections to major economic centers within and outside the state.

2. Intercity Passenger Corridors support non-commuting business and personal travel between major urban centers within and outside the state.

3. Commuter Corridors support high volume travel from residential centers to employment centers, and are usually characterized by heavy demand at peak periods. NYSDOT has requested assistance from PDCTC and other MPOs to identify commuter corridors.

4. Tourism Corridors support high volume tourist travel from inside and outside the state to major tourist destinations.

The State Transportation Plan outlines a simple, but broad vision statement: “a seamless system in which travelers can conveniently shift between modes and operators to complete trips that meet their individual and business needs.”
Some corridors and facilities serve more than one type of travel. The State’s criteria for designation included current and projected levels of demand, and the value and criticality of connections between major centers and activities. The Transportation Plan identified the following facilities in Dutchess County as significant corridors:

1. I-84
2. Hudson River
3. Newburgh-Beacon Bridge
4. Mid-Hudson Bridge
5. Kingston-Rhinecliff Bridge
6. Hudson Line (Commuter Rail)
7. Harlem Line (Commuter Rail)
8. NYS Routes 9, 22, 44, and 55
9. Taconic State Parkway

New York State Strategic Highway Safety Plan

NYSDOT’s 2010 Strategic Highway Safety Plan offers a variety of best practices and strategies to substantially reduce the number of crash-related fatalities and injuries in New York State. The Safety Plan establishes a broad safety vision for the State, relying on a multi-agency and jurisdictional safety community that “will ensure that those who live, work and travel in New York have a safe, efficient, balanced, and environmentally sound transportation system, and that safety is appropriately considered in all education, enforcement, engineering, and emergency medical services activities in order to reduce fatal and injury crashes.” The Safety Plan includes two statewide safety goals:

1. Reduce motor vehicle fatalities from 1,231 in 2008 to 1,169 in 2010 and 1,035 in 2014.
2. Reduce the fatal crash rate per 100 million vehicle miles traveled (VMT) from 0.87 in 2008 to 0.83 in 2010 and 0.74 in 2014.

The Safety Plan notes that MPO plans, such as Moving Dutchess 2, should include a safety element that reflects the priorities, goals, and objectives of the Safety Plan. This closely relates to federal safety priorities and the proposed MAP-21 rulemakings on safety performance.

To achieve these two goals, the Safety Plan recommends behavioral and infrastructure strategies that improve data sharing and strengthen partnerships with MPOs. It also includes specific objectives, performance measures, and strategies for seven emphasis areas: driver behavior, pedestrians, large trucks, motorcycles, highways, emergency medical services, and traffic safety information systems. For example, in order to reduce the number speed-related fatalities, the Safety Plan proposes an increase in the number of statewide and local speed enforcement campaigns.
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New York State Highway Safety Strategic Plan

The annual Highway Safety Strategic Plan, completed by the Governor’s Traffic Safety Committee (GTSC), establishes the Committee’s safety goals for the State. The FFY 2015 Safety Plan carries on the Committee’s long-standing goals to prevent motor vehicle crashes, save lives, and reduce the severity of injuries on New York’s roads. The Safety Plan establishes performance measures to track the overall highway safety program as it relates to traffic fatalities, serious injuries, and three fatality rates based on vehicle miles travelled (VMT). The Safety Plan also assesses the State’s progress towards meeting goals for eight priority areas:

1. Impaired driving
2. Police traffic services
3. Motorcycle safety
4. Pedestrian and Bicycle safety
5. Occupant protection
6. Traffic records
7. Younger/Older drivers
8. Public information and education

The FFY 2015 Safety Plan indicated that only slight progress was made toward reducing fatalities; in 2012, fatalities in motor vehicle crashes in New York State declined to 1,168 compared to 1,171 in 2011. Based on this trend, the Board’s target to decrease fatalities by three percent from the 2010-2012 average of 1,180 to 1,145 was set for 2015.

The FFY 2015 Safety Plan also noted that progress was not made in the core measure of reducing serious injuries. Based on State crash data, following a decrease in the number of serious injuries from 2010-2011, the number increased in 2012. Due to this fluctuating trend, the Committee set a 2015 target of reducing serious injuries by 3 percent from 2010-2012 (from an average of 12,326 to 11,956).

Of note in the FFY 2015 Safety Plan, a new measure, bicyclist fatalities, was added to the original set of core performance measures (e.g. speed-related and pedestrian fatalities), as recommended by the National Highway Traffic Safety Administration (NHTSA) and the Governors Highway Safety Association (GHSA).

New York State Rail Plan

The 2009 New York State Rail Plan presents a 20-year plan for the state’s rail system, describing strategies and initiatives to build and maintain an efficient passenger and freight rail system. The Rail Plan identifies a series of goals and objectives to implement the State’s vision for improved and expanded rail service. Most applicable to Dutchess County are the Plan’s goals related to intercity passenger and commuter rail service:

1. Double the number of total intercity rail passengers that travel across the State’s three main rail corridors, to include the New York City to Albany corridor.
2. Provide reliable and frequent travel connecting New York City to Albany with an on-time performance of 95 percent.
3. Provide high-speed intercity passenger rail service through the Northeast corridor.
4. Provide greater intercity passenger services based on market demand.

The Rail Plan goes on to identify the State's rail needs and future investment requirements, which total $10.7 billion.

**New York State Energy Plan**

Developed by the New York State Energy Board, the 2015 New York State Energy Plan sets forth a vision for New York's energy future. The Energy Plan identifies ways to connect the private sector market with communities and individual customers, in order to create a dynamic, clean energy economy.21 The Energy Plan builds upon the State’s 2009 Energy Plan and contains actionable policy recommendations and analysis to guide the State’s efforts to advance new energy technologies that foster an innovative clean energy economy.22

The Energy Plan establishes a way forward to build a resilient and affordable energy system for New York, supported by the State’s new energy initiative: Reforming the Energy Vision (REV). REV seeks to support policies and projects that build a stronger and healthier economy by stimulating the private sector market to provide clean energy solutions to communities and individual customers. The Energy Plan, guided by statutory requirements of Article 6 of the State’s Energy Law, offers a variety of key initiatives under seven general, interrelated categories:

1. Renewable Energy
2. Buildings and Energy Efficiency
3. Clean Energy Financing
4. Sustainable and Resilient Communities
5. Energy Infrastructure Modernization
6. Innovation and Research & Development
7. Transportation

The State Energy Plan addresses energy use, its sources and impacts, and provides detailed background data. It also provides forecasts for energy supply and demand, a statewide inventory of greenhouse gas emissions, and the vulnerabilities of the energy system.

For the transportation sector, the Energy Plan includes initiatives to build a cleaner, more efficient, and sustainable transportation system. The Energy Plan seeks to increase the number of vehicles using clean transportation fuels such as plug-in electric vehicles (PEV), while supporting public transportation systems to use less energy per passenger mile and transportation management infrastructure that integrates communication technology to improve traffic operations. The Energy Plan establishes a number of transportation-related initiatives:
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1. ChargeNY – a new initiative that seeks to build a self-sustaining market for PEVs. State agencies will collaborate to advance ChargeNY’s goal of 3,000 PEV charging stations to support an expected 40,000 PEVs by 2018.
2. Clean Fleets NY and Innovative Ownership Models – a new initiative where State agencies will ensure that at least 50 percent of their new, administrative-use vehicles will be Zero Emission Vehicles (ZEVs) by 2016.
3. Expanded smart mobility through improved information and communication technologies (e.g. 511NY) to reduce travel times.
4. More efficient public transportation services to reduce their energy use.
5. Expanded Transportation Demand Management (TDM) Programs to reduce vehicle use.

The Energy Plan notes that gasoline made up the largest share of the State’s transportation energy use at 69 percent in 2012. Data on New York’s major energy consuming sectors (i.e. residential, commercial, industrial, and transportation) shows that the greatest net energy use occurs within the transportation sector: 38 percent of the total energy consumed in the State in 2011. It further notes that 94 percent of the energy used by the transportation sector is derived from petroleum fuels and that transportation accounted for 77 percent of all petroleum consumed in New York. The Energy Plan forecasts that from 2012 to 2030, gasoline use in the transportation sector is projected to decrease at an average annual rate of 0.6 percent. This may have ramifications on the federal Highway Trust Fund, which is supported by fuel tax receipts.

New York State Interim Climate Action Plan

In 2010 the New York State Climate Action Council developed an Interim Climate Action Plan that established a strategy to reduce greenhouse gas (GHG) emissions. The Interim Climate Action Plan seeks to meet the State’s goal of reducing GHG emissions 80 percent below 1990 levels by 2050 (referred to as “80 by 50”).

A collaborative effort among 100 technical experts and agencies, the Interim Plan identifies policy options and strategies to address GHG emissions in four sectors: buildings and industry, transportation and land use, power supply/delivery, and agriculture, forestry, and waste. For the transportation/land use sector, the Interim Plan identified the following climate change policies:

1. Advocate for stronger federal vehicle efficiency standards or adopt stricter California standards if available.
2. Create financial incentives to promote the purchase of low-GHG vehicles or institute emissions based registration fees.
3. Establish a revolving loan fund for replacing fleet vehicles with lower GHG-emitting vehicles.
5. Promote travel demand management programs: commuter and traveler assistance, parking pricing, telecommuting, and congestion pricing.
6. Assist municipalities in designating priority growth centers.
7. Identify and prioritize key freight projects to reduce GHG emissions.
8. Encourage and incentivize local planning and zoning to reduce vehicle trips.
9. Pursue multi-state strategies to reduce GHG emissions.

The Interim Climate Action Plan recommends the expansion of transit and high-speed rail to reduce emissions. It also encourages the development of transit oriented developments (TODs) in and around train stations, such as those in the cities of Beacon and Poughkeepsie.

New York Statewide Trails Plan

Developed by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP), the 2010 Statewide Trails Plan establishes a vision of a statewide trails system that includes a network of greenway trails, hiking trails, and water trails, as well as interstate connections. The Trails Plan seeks to accomplish six objectives:

1. Provide statewide policy direction for trail planning, development, and management.
2. Develop a framework for the statewide trails system.
3. Identify trail related issues and provide strategies to address them.
4. Provide standards and guidelines and resources for development of sustainable trails statewide.
5. Recommend the creation of a Statewide Trails Clearinghouse
6. Define roles and responsibilities for implementation.

Within Dutchess County, the Trails Plan statewide network includes the Hudson River, the Dutchess Rail Trail, Harlem Valley Rail Trail, Walkway Over the Hudson, Appalachian Trail, and the proposed Greenway Trail along the Hudson River. The Trails Plan also describes the different types of trails, outlines trail needs, trends, and benefits, and includes guidelines for trail development. The Trails Plan also offers a variety of strategies to promote the development and design of trails and improve access and education. Some of these strategies directly relate to the MPO transportation planning process:
1. Maximize the involvement of interested individuals and groups, including landowners, businesses, community groups, municipalities, and the general public, in the process of planning new trails.

2. Identify and facilitate the use of existing corridors for community trails and work towards their permanent protection as public open space.

3. Locate trailheads and road crossings to maximize the safety of trail users.

4. Consider appropriate access points in the design of new trails to include sufficient space for the trailhead and parking.

5. Consult with NYSDOT and local DOTs when determining locations of new trail parking areas.

6. Design trails to the extent possible to be accessible to persons with disabilities.

7. Use sustainable design techniques and standards when constructing trails to ensure long-term use and protection of resources.

8. Provide sufficient and clear road signage directing trail users to trailhead parking areas and trail crossings at roads.

9. Adhere to design standards in constructing or rehabilitating trails.

New York State Open Space Conservation Plan

A joint effort of the NYS Department of Environmental Conservation (DEC), NYS OPRHP, and NYS Department of State, the Draft 2014 New York State Open Space Conservation Plan is an update and revision of the 2009 Open Space Plan. The fundamental purpose of the Open Space Plan remains the same: to urge increased protection of our state's significant natural, scenic, recreational, historic and cultural resources. The Draft Open Space Plan identifies the types and locations of open space resources and various open space conservation tools and methods. The Draft Open Space Plan addresses the open space conservation actions under four critical priorities:

1. Promoting Outdoor Recreation.
2. Addressing Climate Change.
3. Ensuring Clean Water, Air and Land for a Healthy Public and Vibrant Economy.
4. Protecting, Using and Conserving Our Natural Resources and Cultural Heritage.

The Draft Open Space Plan makes recommendations to State, federal, and local governments, non-profits, and private entities concerning programs and partnerships, education and outreach, policies and regulations, and research and funding.
Many of the recommendations have been started or will be implemented in the near term. With relation to the metropolitan transportation planning process, the Draft Open Space Plan identifies a number of strategies to promote smart growth and improve transportation choices:

Promoting Smart Growth
1. Provide a variety of transportation choices – provide people with efficient and alternative transportation choices to foster more opportunities for housing, shopping, and jobs, compliant with Smart Growth principles.
2. Create walkable neighborhoods – encourage walkable communities by mixing land uses and building compactly, expanding transportation options, and creating complete streets that better serve a range of users, including pedestrians, bicyclists, transit riders, and automobiles.
3. Strengthen and direct development toward existing communities – direct development toward existing communities already served by public infrastructure, to use the resources they offer and to conserve open space and natural resources.
4. Mix land uses – promote mixed use development, placing commercial uses in proximity to residential areas to conserve land.

Improving Transportation Choices
1. Implement the requirements and promote the principles of the New York State Smart Growth Public Infrastructure Policy Act.
2. Implement the 2005-2030 Statewide Transportation Master Plan.
3. Work collaboratively with planning partners at regional and local levels, including MPOs, public authorities and planning boards/departments as a means of coordinating land-use planning and transportation investment strategies.
4. Encourage transportation operators to support community planning efforts that promote higher population densities, friendly development and preservation of farmland.
5. Support local land-use planning efforts to ensure that transportation implications of specific local plans are appropriately considered.
6. Promote transportation connecting communities to open space, including low-cost and easily accessible public transportation.
7. Implement, as appropriate, Context Sensitive Solutions (CSS).
8. Use form-based codes to transform or create town centers.

Priority conservation projects in Dutchess County include the Great Swamp (in Pawling and Dover), Hudson Highlands State Park/Fishkill Ridge/Scofield Ridge (south of Beacon), the Taconic Ridge/Harlem Valley, the Hudson River Greenway Trail, various wetland and upland turtle conservation sites, and the Appalachian Trail.

Smart Growth Public Infrastructure Policy Act

Enacted in 2010, the Smart Growth Public Infrastructure Policy Act requires that state infrastructure spending meet smart
growth criteria, which include using, maintaining or improving existing infrastructure; locating projects in developed areas; protecting open space; and improving transportation options. The Smart Growth Act defines infrastructure as “transportation, sewer and waste water treatment, water, education, housing and other publicly supported infrastructure” and applies to projects approved, undertaken, supported or financed by State agencies or authorities, including through grants, awards, loans and assistance programs.27

The Smart Growth Act identifies ten Smart Growth criteria for evaluating public infrastructure improvements:

1. Advance projects for the use, maintenance, or improvement of existing infrastructure.
2. Advance projects located in municipal centers.
3. Advance projects in developed areas or areas designated for concentrated infill development in an approved comprehensive land use plan, local waterfront revitalization plan and/or brownfield opportunity area plan.
4. Protect, preserve, and enhance the state’s resources, including agricultural land, forests, surface and groundwater, air quality, recreation and open space, scenic areas, and significant historic and archeological resources.
5. Foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, the diversity and affordability of housing in proximity to places of employment, recreation, and commercial development, and the integration of all income and age groups.
6. Provide mobility through transportation choices including improved public transportation and reduced automobile dependency.
7. Coordinate between state and local government and intermunicipal and regional planning agencies.
8. Participate in community based planning and collaboration
9. Ensure predictability in building and land use codes
10. Promote sustainability by strengthening existing and creating new communities, which reduce greenhouse gas emissions and do not compromise the needs of future generations, by among other means encouraging broad based public involvement in developing and implementing a community plan and ensuring the governance structure to sustain its implementation.

The Smart Growth Act directed State agencies, including NYSDOT, to create individual Smart Growth Advisory Committees to ensure compliance with its provisions. NYSDOT subsequently created a Committee that helped develop a Smart Growth policy to promote smart growth principles in its program and projects. NYSDOT also developed Smart Growth guidelines and criteria to enforce the Act, addressing project planning, selection, and design processes. In 2013 NYSDOT published a Smart Growth Screening Tool for NYSDOT and local project sponsors to evaluate projects for consistency with Smart Growth design criteria.
New York State enacted a Complete Streets law in 2011, which amended State highway law, in relation to enabling safe access to public roads for all users by utilizing Complete Street design principles. Complete Streets is a design concept that seeks to retrofit streets so that they can safely accommodate all modes of transportation: pedestrians, bicyclists, motorists, and transit, while also accommodating travelers of all ages and abilities. Common design elements include sidewalks, bicycle lanes, wider shoulders, refuge medians and bulb-outs, bus shelters, raised crosswalks, and audible pedestrian signals. These features encourage walking and bicycling within a community, reducing its dependence on private vehicles and thus reducing overall energy consumption. Complete Streets provide communities with multiple transportation choices, enabling them to adapt to changes in travel behavior caused by an aging population or increasing energy costs.

As per the law, NYSDOT and local agencies - typically counties and municipalities - are responsible for implementing Complete Streets. The law applies to projects that are undertaken by NYSDOT, or to local projects that receive both federal and State funding and are subject to NYSDOT oversight. Projects that are 100 percent locally funded are not subject to the law, but local agencies can choose to adopt Complete Streets practices. Many local agencies have already passed Complete Streets resolutions or adopted their own Complete Streets policies. Dutchess County is in the midst of developing a local Complete Streets policy.

The law also requires NYSDOT to publish a report showing how it has complied with the amended highway law and changed its procedures to institutionalize Complete Street Design elements into the planning, project scoping, design and implementation of applicable projects. The report must also include a discussion of revisions to State guidance documents regarding lane width, design speed, average daily traffic thresholds, level of service and roadway classification.

The State’s Complete Streets law directly supports the federal livability initiative and the USDOT Policy Statement on Bicycle and Pedestrian Accommodation. Adopted in March 2010, this Policy states that it is “USDOT policy to incorporate safe and convenient walking and bicycling facilities into transportation projects.” The Policy encourages local agencies to go beyond minimum standards to provide safe and convenient facilities for pedestrians and bicyclists of all ages and abilities, and to consider walking and bicycling as equals with other transportation modes.

Regional Plans

Regional Strategic Plan for the Mid-Hudson Region

Completed by the Mid-Hudson Regional Economic Development Council (EDC) in 2011, the Regional Strategic Plan promotes strategies to create an economically vibrant Mid-Hudson Region, defined as Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester counties.
As part of its economic development strategy, the Strategic Plan includes a variety of transportation-related recommendations:

1. Improve key regional infrastructure to make the region more business-ready.
2. Develop an Infrastructure Bank that combines State, federal, and union pension funds to finance projects.
3. Prioritize anchor projects to include rebuilding the Tappan Zee Bridge and strengthening the capacity of Stewart Airport to support businesses.
4. Promote infrastructure investments in priority growth areas and established city or village centers to take advantage of existing infrastructure.
5. Support Transit Oriented Developments (TODs) to provide more sustainable, mixed-use development around transportation hubs.
6. Promote a reduction in transportation demand and energy use by shifting more trips from single-occupant vehicles reliance to public transit, ride sharing/carpooling, and biking and walking.
7. Preserve undeveloped land, by encouraging higher density mixed use development in centers and along major transportation corridors, and enhancing current regional planning efforts.

Mid-Hudson Regional Sustainability Plan

The 2013 Mid-Hudson Regional Sustainability Plan was developed as part of the New York State Energy Research and Development Authority’s (NYSERDA) Cleaner, Greener Communities program. The Sustainability Plan identifies smart growth practices and recommendations for the seven-county Mid-Hudson Region: Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester counties.31

The Regional Sustainability Plan frames its recommendations under five interconnected objectives: a diverse natural environment, a vibrant economy, strong transportation accessibility and connectivity, numerous existing centers, and an exceptional quality of life. The Sustainability Plan includes a variety of transportation related recommendation:

1. Implement Transit-Oriented Development (TOD).
2. Promote land efficient development.
3. Invest in livability improvements.
4. Expand and upgrade mass transit.
5. Use Transportation Demand and Systems Management to relieve roadway congestion and improve freight efficiency.
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6. Improve streets, sidewalks, and trails.
7. Expand and upgrade bicycle infrastructure.
8. Mandate improvements in fleet vehicle fuel efficiency.
9. Create new commuter incentives.

The Mid-Hudson Regional Sustainability Plan establishes a vision for sustainable development that builds on the Region’s unique social, cultural, and natural history, with the goal of promoting economic development, environmental sustainability, and enhancing quality of life.

The Sustainability Plan noted that the Region’s transportation infrastructure is in need of repair and upgrades, and that the replacement of infrastructure presents opportunities to incorporate new design features and best practices, while also improving our resilience to the impacts of climate change.

Dutchess County Plans & Guidance

Moving Dutchess

In 2012 the Transportation Council approved its fifth MTP – Moving Dutchess, representing the Council’s strategic 30-year vision for maintaining and improving the area’s transportation system through 2040. The Transportation Council developed Moving Dutchess in accordance with the federal metropolitan planning and programming requirements in effect at the time (SAFETEA-LU).32

Moving Dutchess provides a framework for addressing the transportation needs and priorities for Dutchess County, which were identified through a planning process that encompassed four major elements:

1. A review of federal, State, and local guidance, including previous Transportation Council studies and local comprehensive plans.
2. An analysis of transportation system data, including road and bridge conditions, transit use, vehicle crashes, traffic volumes, and travel times (congestion).
3. Information gathered from public outreach efforts, which included six workshops held throughout the county, a public survey, and monthly meetings of the Transportation Council’s Technical Committee.

Moving Dutchess included a discussion on the regional planning issues facing the Mid-Hudson Valley TMA: Dutchess, Orange, and Ulster counties. The Plan recommended that the three counties pursue a regional transit study to improve inter-county connections and expand transportation choices.
**Moving Dutchess 2**

Carried forward in *Moving Dutchess 2*, the Transportation Council began *Moving Dutchess* with a review of relevant federal, State, and local laws, policies, and guidance. This literature review sought to capture existing policies and recommendations that supported the Transportation Council’s mission, while also serving as part of the Council’s consultation work with other agencies. This review eventually provided the framework for the ten goals used in both Plans:

1. Preserve our highways and bridges.
2. Reduce traffic congestion.
3. Maintain our transit system.
4. Increase the use of carpools/vanpools.
5. Increase bicycling and walking.
6. Improve transportation safety.
7. Reduce transportation-related impacts to the environment.
8. Increase public participation in the transportation planning process.
9. Improve the delivery of federally-funded transportation projects.
10. Improve transportation security.

**Demographic & Transportation Data**

*Moving Dutchess* included an overview of Dutchess County using data relevant to transportation planning. This included information on population and socio-economic characteristics, employment and housing trends, and travel behavior. Census 2010 data was used to identify population trends and to benchmark various demographic forecasts. The Plan also looked at two future land use scenarios:

1. A build-out analysis that quantifies the amount of development that could occur under current local zoning and
2. A center-focused build-out analysis that assesses the scope of development under the county’s Centers and Greenspaces concept. *Moving Dutchess 2* will revisit these scenarios.

*Moving Dutchess* further provided an overview of the county’s transportation system, presenting condition and use data on highways and bridges, bus and rail transit, bicycle and pedestrian facilities, and freight. The Plan also analyzed vehicle crash data to identify locations with safety concerns, and travel time data to identify locations with congestion.

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Planning Areas

Moving Dutchess established the Transportation Council’s practice of looking at the characteristics and special needs of five distinct areas within the county. The five areas (discussed in Chapter One) were established through an assessment of development patterns, travel characteristics, and demographic profiles. This approach allowed for greater detail on existing and future conditions, and helped target resources. Analyzing smaller areas has allowed the Council to better comprehend local nuances and increase its value to local communities. Moving Dutchess describes each area’s demographics, activity centers, and transportation facilities, and summarizes transportation issues identified in local comprehensive plans and previous studies.

Performance Measures

For the first time in its history, the Transportation Council established performance measures in a MTP. These measures, continued in Moving Dutchess 2, quantify the Council’s progress on meeting the goals in the first Moving Dutchess. The performance measures relied on available data to measure existing conditions for key aspects of the transportation system, including safety, highway/bridge maintenance, transit operations, bicycle/pedestrian facilities, the environment, public participation, and project deliverability. Goals were established for 2015, when Moving Dutchess would be updated, and 2040, the Plan’s horizon year.

Recommendations & Funding

In a departure from previous MTPs, Moving Dutchess recommended specific projects to preserve and improve the transportation system. This was done to increase the value of the Plan to public agencies and local communities, by providing them greater detail on where to target future investments. Moving Dutchess recommended over 150 projects to preserve and improve the transportation system, which was done to increase the value of the Plan to public agencies and local communities by providing greater detail on where to target future investments. The project recommendations were divided into three general time periods, under three funding scenarios:

1. Short-range (2012-2015), where funding remained flat at 2011 levels over four years.
2. Mid-range (2016-2025), where funding increased at the rate of inflation (approx. three percent annually).
3. Long-range (2026-2040), where funding continued to increase at the rate of inflation.

The Plan included a financial constraint analysis that used estimates of future funding ($1.5 billion total) to support its recommendations, which were categorized into eight project types:

1. Bridge Maintenance ($607 million)
2. Highway Maintenance ($399 million)
3. Highway Operations ($89 million)
4. Pedestrian/Bicycle Transportation ($81 million)
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5. Safety ($128 million)
6. Transit ($192 million)
7. Planning Studies ($2 million)
8. Travel Demand Management ($7 million)

Moving Dutchess outlined a preservation based approach to maintain transportation safety and mobility, noting that there was insufficient funding available to reconstruct the majority of the system or reach a true state of good repair.

Walk Bike Dutchess

Adopted in 2014, Walk Bike Dutchess represents the Transportation Council’s second Pedestrian-Bicycle Plan in 20-years. The Transportation Council developed Walk Bike Dutchess in accordance with the federal planning requirements set forth in MAP-21, while building upon federal and State initiatives to promote sustainable communities. Its completion also fulfilled a key short-term recommendation from the original Moving Dutchess. Walk Bike Dutchess relied on input from a new Bicycle-Pedestrian Advisory Committee (BPAC) that included residents and representatives from municipalities, county departments, NYSDOT-Region 8, and local organizations.33

Walk Bike Dutchess serves as a resource for municipalities by summarizing design guidelines, analyzing data, highlighting best practices, recommending projects, and identifying funding sources and implementation steps to make walking and bicycling safer, more convenient forms of transportation and recreation in Dutchess County.

Walk Bike Dutchess provides a long-term (20-year) vision for walking and bicycling in Dutchess County, and aims to address the gap between our desire to make these activities a greater part of everyday life and the current limitations of our built environment.

Walk Bike Dutchess includes an analysis of current walking and bicycling travel data, crashes, facilities, and programs, as well as performance measures and a series of county-wide recommendations. The Plan includes discussions on the following items:

1. A review of relevant policies and plans, including recommendations from local plans.
2. Descriptions and detailed guidance for the location and design of various walking and bicycling facilities.
3. A review of demographic and transportation data, inventories of existing walking and bicycling facilities, and analysis of crash data, and describes current walking and bicycling programs in the county.
4. An analysis of walking and bicycling patterns and identified recommendations for five the planning areas.
5. Projects and programs to be implemented at the county level, while setting short and long-term performance measures organized under the Five E’s of Engineering, Education, Encouragement, Enforcement, and Evaluation.
Moving Dutchess 2

6. Steps to help municipalities undertake a local bicycle or pedestrian plan and to implement local projects, including descriptions of funding sources and an online cost estimation tool.

Performance Measures

Walk Bike Dutchess includes objectives and performance measures to support the goals of increasing walking and bicycling and improving pedestrian and bicycle safety. These measures were expanded upon to create a fuller set of goals for walking and bicycling. For each measure, the existing status is listed, as well as short-term and longer-term goals. The Plan sets ambitious 2040 goals to improve walking and bicycling in Dutchess County:

1. Double the length of shared-use paths in the county, from 25 to 50 miles.
2. Build over 50 miles of sidewalks (from 435 to 486 miles).
3. Install 20 miles of on-street bicycle facilities.
4. Add bicycle parking racks at 500 key locations.
5. Increase walking trips from 8.5 percent of all trips to 15 percent.
6. Increase bicycle trips from less than one percent of all trips to five percent.
7. Pass a Complete Streets policy in each municipality.
8. Increase the annual number of Walk/Bike to School Day events from four to 20.

Recommendations

Walk Bike Dutchess recommends over 100 projects to make walking and bicycling a safer, more convenient part of everyday life in the county. They include ideas on new sidewalks and crosswalks; road shoulder improvements; shared-use paths and trails; sharrows, bicycle lanes, and bicycle boulevards; traffic calming; and specific studies. They were developed through a review of previous plans, an analysis of issues by the BPAC, and suggestions by municipal officials, the public, and staff from NYSDOT-Region 8, Dutchess County Public Works, and Dutchess County Planning.

While Walk Bike Dutchess identifies potential funding sources, it does not provide funding for implementation. Given this limitation, the project ideas are recommendations only and are intended to help municipalities and agencies identify priorities, refine project ideas, and develop future applications for federal, State, and other funding programs.

Greenway Connections

In 2000 the Dutchess County Department of Planning and Development completed Greenway Connections – a guidebook that demonstrates the benefits of the Greenway Compact Program and outlines policies and site specific design guidelines that promote sustainable development. The guidebook was developed in cooperation with the Hudson River Valley Greenway, a State-sponsored, regional planning agency that provides technical assistance and funding to the thirteen counties in the Hudson River Valley.

The regional Greenway Compact Program is a voluntary partnership between the Greenway Council and local
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communities, which is guided by a policy framework that covers five major goals:

1. Regional Cooperation
2. Environmental and Cultural Protection and Enhancement
3. Economic Development
4. Public Access
5. Heritage and Environmental Education

The county’s Greenway Connections implements the Greenway Compact Program in Dutchess County, describing Greenway goals and principles, outlining the benefits of community participation, and presenting practical “how to” guides for encouraging development that creates better communities. Greenway Connections describes the Compact as “a voluntary partnership between the Greenway Council and local communities to work toward Greenway goals, help build a network of connecting routes and use the Greenway Guides to improve their surroundings,” with five main goals:

1. Natural and cultural resource protection.
2. Economic development including agriculture, tourism, and urban redevelopment.
3. Public access and trail systems, including a Hudson River Greenway Trail.
4. Regional planning.
5. Heritage and environmental education.

Centers & Greenspaces

Unveiled in 2010, the Centers & Greenspaces Guide integrates regional land use, transportation, and ecological planning to help implement Greenway principles and prevent an expansion of current commercial strip and residential sprawl patterns. Recognizing that close-knit centers save surrounding greenspace, the overall goal is to encourage municipalities to identify priority growth centers with positive development potential as well as natural and agricultural greenspaces for possible protection. The Centers & Greenspaces map, designed as a vision for future local and intermunicipal planning initiatives, highlights four key patterns:

1. Walkable, Mixed-Use Centers
2. Natural and Agricultural Greenspaces
3. Natural Greenway Corridors
4. Connecting Network of Greenway Routes

Dutchess County Transit Development Plan (TDP)

The 2009 Dutchess County Transit Development Plan (TDP) was a cooperative effort of the Transportation Council,
Dutchess County Division of Public Transit, the City of Poughkeepsie, and NYS DOT. The TDP sought to improve the efficiency and operations of the two local bus systems (Dutchess County and City of Poughkeepsie) and improve (or establish) connections to regional and inter-county services. The TDP included a passenger survey, extensive public outreach, and a detailed analysis of existing bus operations.

The service proposals identified in the TDP were developed under the premise that transit service should match the type of development it serves. The proposals supported the following project goals: eliminating duplication between the two bus systems, creating seamless transit policies (e.g. parallel fare structures), promoting more frequent service on major corridors, increasing user friendliness, improving efficiency, and improving service for specialty markets (e.g. colleges and tourist sites). Equally important, the proposals were based on current budgetary constraints.

The TDP proposed a simpler, more straightforward route system for Dutchess County Public Transit, consisting of six bus routes that served the major road corridors in the county. These new routes significantly increased the availability of one-seat connections along the Route 9 corridor between Hyde Park, Poughkeepsie, and Fishkill. The TDP also recommended a demand-response flex-service in rural areas, and if feasible, long-term proposals for three additional fixed routes in the northern and eastern areas of the county. In 2010 Dutchess County reconfigured its bus routes and schedules based on the TDP and subsequently added additional routes based on passenger demand and local input.

Prior to implementing the TDP, Dutchess County Public Transit operated a complicated route structure that included 30 different bus routes, with many offering only one round trip per day. The TDP streamlined these routes and created a more user-friendly system with more efficient schedules.

**Coordinated Public Transit-Human Services Transportation Plan**

In 2015 the Transportation Council completed a Coordinated Public Transit-Human Services Transportation Plan (“Coordinated Plan”) for Dutchess County. Required under MAP-21, the Coordinated Plan identifies the transportation needs of disabled persons, older adults, and low income populations, and prioritizes strategies to meet unmet needs. The Coordinated Plan forms the basis for distributing funds under the FTA Section 5310 (Enhanced Mobility of Seniors & Individuals with Disabilities).

The Coordinated Plan recommends that additional vehicles be provided to human service agencies to meet growing demand and that the vehicles be replaced more frequently due to wear and tear. It also calls for Dutchess County Public Transit to
explore the feasibility of allowing county vehicles to operate outside the county, to provide travel training for persons not familiar with local bus systems, and to expand marketing of existing bus services.

### Congestion Management Process (CMP)

In 2005 the Transportation Council, in conjunction with its TMA partners the Orange County and Ulster County Transportation Councils, adopted a Congestion Management Process (CMP) to quantify, evaluate, and manage congestion. The adopted CMP established a four-step process to measure and define recurring congestion in the three counties. The three MPOs completed a joint progress report in 2006 which identified the locations of severe congestion in the TMA region.

The MPOs continued to refine the CMP, and completed a Travel Time Survey in 2011 which collected data on key road corridors. In Dutchess County, the survey included data on over 100 road miles for nine key routes: Routes 9, 9D, 9G/199, 44, 52, 55, 376, I-84, and the Taconic State Parkway. The survey data established baseline travel times for the corridors during morning, evening, and mid-day peak periods, as well as Saturdays and Sundays for some routes. The MPOs intend to use the data to track congestion over time, to help identify priority corridors for improvements, and to calibrate their travel demand models.

### Dutchess County Agricultural and Farmland Protection Plan

In 2015 the Dutchess County Agricultural and Farmland Protection Board (AFPB), in coordination with the Dutchess County Department of Planning and Development, completed an Agricultural and Farmland Protection Plan for Dutchess County. The Agricultural Plan was developed by a steering committee composed of AFPB members, farmers, staff from County Planning, Cornell Cooperative Extension Dutchess County, County Soil and Water Conservation District, and Dutchess Land Conservancy. The Agricultural Plan builds on the county’s agricultural assets, and addresses future challenges to maintain and grow the local farm economy.

The Agricultural Plan noted that commercial transportation to the New York City area could be improved, enabling local farmers to take advantage of direct sales to customers.

The Agricultural Plan identifies 19 goals to help the county preserve and promote farming. The goals address agricultural economic development, technical assistance to farmers, protection of and access to farmland, promotion of farm-
Moving Dutchess 2

friendly regulatory policies, and the fostering public awareness, education, and communication. The goals establish a direction for increasing farm profitability and decreasing production costs. They also call for diversifying agricultural products and increasing direct-to-consumer sales.

Other goals include providing technical and educational assistance, enhancing purchase of development rights programs to preserve more farmland, and helping towns update plans and zoning to be supportive of farm activities. Enhancing educational opportunities to recruit the next generation of farmers and increasing education and public awareness about farming are also among the goals. Finally, the goals establish the need to promote communication and collaboration among farmers, the public, and organizations and agencies in the county. The Agricultural Plan establishes five initiatives:

1. Initiative 1 - Coordination and Collaboration through an Agricultural Navigator & Agricultural Advisory Committee
2. Initiative 2 - Agricultural Economic Development and Business Retention & Expansion Program
3. Initiative 3 - Farmland Preservation
4. Initiative 4 - Farm Friendly Regulation
5. Initiative 5 - Marketing, Public Relations and Awareness

Moving Dutchess 2 Goals

Based on the variety of federal and State guidance and plans, coupled with numerous regional and local plans, Moving Dutchess 2 reaffirms the ten goals first identified in 2012 for Moving Dutchess. The goals support the ten FAST Act planning factors and the Transportation Plan’s four guiding principles, and are reflective of the Transportation Council’s mission.

1. Maintain highways and bridges in a state of good repair.
2. Maintain the transit system in a state of good of repair and increase ridership to reduce traffic and promote sustainable development.
3. Reduce traffic congestion to improve our quality of life and promote economic development.
4. Increase bicycling and walking to reduce traffic, improve operations, and promote sustainable development.
5. Increase carpools/vanpools to reduce traffic, improve operations, and promote sustainable development.
6. Improve safety to reduce transportation-related fatalities, injuries, and property damage.
7. Reduce transportation-related impacts to the environment and promote sustainable development and smart growth.
8. Increase public participation in the transportation planning process.
9. Improve the delivery of federally-funded transportation projects.
10. Improve transportation security.

These goals relate to the performance measures established in Chapter 7.

Summary

The amount of federal, State, and local laws and guidance affecting transportation points to the importance that
transportation plays in people’s daily lives, while also reinforcing the importance that transportation plays in attaining national, State, and local goals for the environment, public safety, economic development, and quality of life (see Figure 2-1).

The laws, policies, and guidance presented in this chapter converge on a number of themes about the way forward for transportation:

1. Continue to invest in a ‘state of good repair’ to maintain the transportation system.
2. Maintain and improve the safety and security of the travelling public.
3. Expand people’s transportation choices to include more opportunities for walking, bicycling, and transit.
4. Promote greater energy efficiency and explore alternative energy sources.
5. Support both community revitalization and open space and farmland protection activities to support orderly and sustainable growth.
6. Improve coordination between agencies and communities over transportation and land use decision making processes.

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28 New York State Complete Streets Law, August 15, 2011
Figure 2-1. FAST Act Planning Factors Compared with Federal, State, Regional, & Local Guidance

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<tr>
<th>Federal, State, Regional, &amp; County Guidance</th>
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<td>Dutchess County Transit Development Plan</td>
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<td>Congestion Management Plan</td>
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Chapter 3 Regional Perspective

Dutchess County is located at the center of the Hudson Valley, halfway between New York City and Albany. It is at the northern reaches of New York City commuting distance, yet beyond the Hudson Highlands, which cross the Hudson River below Beacon and provide a clear geographic separation from the more built-up counties to the south. Dutchess and its neighboring two counties across the river, Orange and Ulster, are at the heart of the Mid-Hudson Valley region, adjacent to the potential high growth perimeter of one of the largest global markets in the nation. The north-south orientation of the Hudson Valley and its parallel Harlem-Tenmile River Valley in eastern Dutchess have facilitated road and rail connections to major population and employment centers to the south.

Dutchess, Orange, and Ulster counties have a combined population of approximately 850,000, hosting a variety of landscape patterns, from the Catskill Park preserve and other highlands to a mix of natural and agricultural lands, suburbs, and traditional urban centers. The constellations of remaining crossroad hamlets, villages, and cities are connected by a branch-like road system that generally funnels toward the waterfront cities of Poughkeepsie and Beacon in Dutchess, Newburgh in Orange, and Kingston in Ulster. These were the primary ports for the original shipping trade along the Hudson, the sites for ferry crossings, 19th century railroad hubs, and the locations for the area’s three Hudson River bridges.
As State and Interstate highways superseded water and rail as the primary means of transport, the transportation system relied more on cars and trucks, and a decentralized land use pattern of residential subdivisions, highway strip commercial development, and scattered locations for offices and manufacturing. In Orange and Ulster counties, the New York State Thruway has become the central spine, making their economies more convenient for trucking related businesses. Orange County also has Stewart International Airport and long east-west sections of I-84 and Route 17 (future I-86). On the east side of the river, the remaining Hudson and Harlem commuter rail lines, a short segment of I-84, and the scenic Taconic State Parkway are the major transportation linkages in Dutchess County.

Since 2002, Dutchess, Orange, and Ulster counties have coordinated regional transportation planning activities as part of the Mid-Hudson Valley TMA (discussed in Chapter 1). Moving Dutchess 2, and the complementary plans for Orange and Ulster counties, expands on this coordination, concentrating in particular on cross-county and regional transportation connections to urban centers, transit-oriented development sites, and major employment destinations. These activities can be viewed in the context of three key focus areas: Regional Land Use Planning, Regional Transit Planning, and Regional Freight Planning.

Regional Planning – Bridging Boundaries

Regional planning requires an ongoing exercise in breaking down barriers, both physical and political. The Hudson River is the centerpiece of the region, not just a borderline between separate counties. The region is united in many ways, by similar environmental features, by overlapping history and traditions, and by mutual economic interests. Many residents travel to other counties for employment, shopping, services, recreation, and entertainment opportunities. For example, it is often more convenient for northern Dutchess residents to shop in Kingston and for Orange and Ulster residents to work at major employers in Dutchess. In addition, regional travelers fly to/from Stewart Airport, hike in the Catskills, and visit historic sites along the Hudson. The three counties also have common challenges, requiring cooperation on regional transportation solutions.

Some barriers to effective regional planning are policy based. New York is a home rule state, where policy-oriented transportation decisions are sometimes made separately from housing, economic development, and environmental considerations. This keeps land use approvals at the local level to simplify the process and allow close public participation, but local land use regulations typically rely on separation and segmentation. Land is partitioned into various zoning classifications that separate residential areas from employment and shopping areas; the environment is segmented into various categories of natural constraints (e.g. wetlands or floodplains) with different rules and regulating agencies, while overlapping governmental responsibilities can fragment the planning process.

The Hudson River Valley Greenway was designed as a voluntary regional planning program for the 13 riverfront
Moving Dutchess 2

counties to begin to bridge these barriers, promote better governmental communication, and improve intermunicipal cooperation. The Greenway works from the bottom-up, respecting home rule and relying on incentives and guidelines rather than any state or county requirements. In Dutchess County, 29 of the 30 municipalities have joined the Greenway Compact by cross-referencing Greenway Connections into their zoning and subdivision regulations. More than half of these Compact communities have undertaken revisions to their comprehensive plans and zoning laws to help implement the Greenway principles and guidelines, and over $2 million has been awarded to Dutchess County communities in Greenway-related State grants.

Dutchess, Orange, and Ulster counties are active members of the Greenway program and are moving toward coordinated Greenway Compact plans. The region’s economy and transportation needs continue to become more intertwined and the desire for regional planning has grown.

Coordinating Land Use Policies

Three recent innovative policy initiatives at the federal, State, and local levels are promising to replace segmented, department-driven processes with an integrated, whole systems approach more conducive to regional planning and cooperation. Combined, they form an important new framework for Moving Dutchess 2, based on sustainable, smart growth, and greenway principles with common goals and characteristics.

As introduced in Chapter 2, the USDOT, HUD, and EPA have begun working together on a Sustainable Communities program “to support metropolitan and multijurisdictional planning efforts that integrate housing, land use, economic and workforce development, transportation, and infrastructure investments.” The program’s Livability Principles emphasize increasing transportation choices, reducing our dependence on oil, improving air quality and public health, and lowering the combined household cost of housing and transportation. Primary methods include removing barriers to collaboration, more efficiently targeting federal funding toward existing communities, and promoting walkable neighborhoods and transit-oriented development. Dutchess, Orange, and Ulster counties with other partners have used this as an inspiration for long-term regional planning.

At the State level, New York adopted the Smart Growth Public Infrastructure Policy Act in 2010. Its criteria specifically focus future State funding on existing infrastructure, projects in mixed-use municipal centers, and areas designated for concentrated infill development in adopted local land use plans. The criteria also stress improved public transportation and reduced automobile dependency, diverse and affordable housing, sustainability, and intermunicipal and regional planning. All State infrastructure agencies and authorities must use the ten listed criteria to target State grants and investments toward smart growth locations, thereby minimizing the “unnecessary costs of sprawl development.”
At the local level Dutchess County has introduced a *Centers & Greenspaces* guide as part of the Greenway Compact program. Consistent with historic Hudson Valley landscape patterns, the guide specifically defines smart growth in terms of locating new development in or immediately around existing or emerging centers, either strengthening existing cities, villages, and hamlets or transforming suburban strips or subdivisions into more walkable, mixed-use centers. The Centers and Greenspaces initiative attempts to redesign the spread-out patterns of the last 60 years, which generally feature separated land uses, over-reliance on automobiles, and fragmentation of the natural environment. This regional pattern guide will be linked to an interactive website, with up-to-date digital mapping layers and our best local planning examples where centers have been designed to save greenspaces.

The *Centers & Greenspaces* approach and mapping methodology was initially tested in local comprehensive plan processes for the Villages of Red Hook and Tivoli, the Towns of Red Hook and Rhinebeck, the more suburban Towns of Pleasant Valley and Poughkeepsie, and the City of Beacon. The model featured in the guide is Red Hook, where an Intermunicipal Task Force from the Town and two Villages recommended a new Agricultural Business district to cut back sprawling development potential and protect critical farmland, counterbalanced by a new Traditional Neighborhood Development district to redevelop the South Broadway commercial strip into a walkable, mixed-use area that will reinforce the adjacent Village center. The Town of Red Hook Centers and Greenspaces plan and zoning amendments were adopted in 2011.

Centers are defined within a ¼- to ½-mile radius, a convenient 10-15 minute walking distance from surrounding residential blocks to a commercial core and potential transit stop. As historic examples, the eight villages in Dutchess County average about a half-mile from center to built-up edge, while cities and larger town centers merge multiple neighborhood centers. Focusing most new development within these compact centers encourages a close-in mix of uses and guarantees that walking, bicycling, and transit are viable alternatives to the automobile. Greenspaces combine farmland, natural areas, and parks or protected lands, forming large continuous “biodiversity blocks” in the countryside. Ecological studies identify greenspaces over 1,000 acres and undivided by roads with more than 25 vehicles per hour as essential for area-sensitive species. Large nearby greenspaces are critical for recreation, food production, wildlife habitat, water quality protection, and other natural cycles and services. Thus, the *Centers & Greenspaces* concept applies a balanced approach to land use, transportation, and ecological concerns, from urban cores to the rural countryside, with simple, straightforward mapping methods.

A major goal for Dutchess, Orange, and Ulster counties, working together as part of the Mid-Hudson Valley TMA, is to integrate the new federal Livability Principles, NYS Smart Growth Infrastructure Act criteria, and Centers and Greenspaces guide and mapping techniques into more structured forms of regional planning. The common theme of
all three initiatives is to focus new development and public funding support toward existing and designated centers, thereby safeguarding rural landscapes, enabling a broader diversity of housing options, and promoting transportation choices within more walkable, transit-oriented neighborhoods. Most development before World War II was built around walkable centers and neighborhoods with businesses and job sites close to housing, schools, and other civic institutions. Re-centering the region is thereby a return to traditional development patterns with a modern overlay of enhanced transportation connections. A regional planning process will also envision the larger landscape and transportation elements as part of an interconnected network, rather than relying on separate land use plans, open space plans, housing plans, and transportation plans, with additional bicycle and pedestrian plans.

The three counties have already cooperated on several regional-scale projects. From 2007-2009 they jointly developed the Three-County Housing Needs Assessment, which quantified out to 2020, the affordability gaps for various household income groups up to 120 percent of area median income and fair-share housing goals down to the town level. The assessment incorporated smart growth goals, where more housing units are concentrated in and around existing centers with central utilities and transportation infrastructure potential. In Dutchess County the assessment found a substantial affordability gap for both ownership and rental units. The study suggested addressing this important need through the construction of over 9,000 affordable units by 2020.

The three MPOs have also worked cooperatively on a Congestion Management Process since 2005 and more recently on a Regional Travel Time Survey to collect more accurate data about congested corridors. One of the primary challenges in the region is its dependence on automobiles for most trips, fueling a basic suburban paradox: low density levels of development generate high levels of traffic congestion. According to the 2009 National Household Travel Survey, 84 percent of all trips in Dutchess County and 92 percent of trips to work were made in a personal vehicle (car, van, SUV, pickup/truck, RV, and motorcycle). Only four percent of trips involved bus or rail transit. This dominance of one travel mode makes the regional economy extremely vulnerable to traffic choke points, service disruptions, and gasoline price spikes. It also creates hardships for those who do not drive because of age, income, or disability. To build resilience into the transportation system, a major long-term objective should be to re-center our land use patterns, making walking and bicycling possible and generating the kinds of concentrated development patterns needed to make transit work more efficiently.

Regional Transit

The area’s public bus systems serve limited parts of each county, mostly serving major corridors. Due to funding constraints and low population densities, many communities have infrequent transit service or no service at all. Bus routes operating through rural or suburban areas have a difficult time competing with automobiles in the areas of cost, comfort, and convenience. Buses use the same streets as cars and contend
with the same traffic congestion, but have more stops, less flexibility, and typically take longer than private automobile trips. Buses can only attract customers away from cars if they provide regular service, a comfortable ride, and comparable speeds to destinations along direct, express routes.

Bus Rapid Transit (BRT) can be an effective approach in urban areas or as express connections between major centers or employment destinations. BRT combines attributes of a light rail system, such as limited stops at designated stations, prepayment rather than the slow process of paying on the bus, dedicated travel lanes, and traffic signal priority. The primary advantage of bus rapid transit is that it can use existing street infrastructure, so it costs considerably less than new rail lines and takes less time to implement. It can also be built incrementally with more flexibility for future changes. In 2011 the Capital District Transit Authority began a BusPlus rapid transit route between Albany and Schenectady. The system has limited stops and signal priority, but does not use a dedicated bus lane.

Rail systems in Dutchess and Orange offer convenient and reliable commuter access to New York City and points south for portions of these two counties, but provide no east-west linkages or connections to the central cities of Newburgh or Kingston. Metro-North and the Port Authority have been studying several options for improved transit connections between New York City, central Orange County, and Stewart International Airport, including bus rapid transit and a long-term rail extension north from the Port Jervis Line.

Metro-North Railroad has also helped fund a ferry service between the Newburgh waterfront and the Beacon train station to limit local traffic and parking problems, but train service in the region is still oriented toward New York City and dependent on automobile access. A majority of railroad users drive alone to the station and park their cars in all-day parking lots. As a result, local stations are surrounded by seas of parked cars, overwhelming smaller hamlets, dividing the cities of Poughkeepsie and Beacon from their riverfronts, and subjecting local streets to peak hour traffic jams. One of the most efficient and environmentally responsible solutions would be to transform park-and-ride lots around stations into walk-and-ride neighborhoods.

**Transit-Oriented Development (TOD)**

Transit-oriented development (TOD) is a term that refers to compact, mixed-use, and pedestrian-friendly development within a 10-15 minute walk of a rail station or express bus stop. A TOD has multiple benefits:

1. Reinforces traditional centers, taking advantage of existing infrastructure and civic sites.
2. Mixes commercial, residential, and employment opportunities with multiple means of transportation access.
3. Enables broader housing choices for smaller households, singles, retirees, and commuters.
4. Supports public transit by increasing ridership and the value of transit agency-owned land.
5. Replaces dead-all-day station parking lots with high quality economic redevelopment districts.
6. Reduces congestion and pollution by making many trips possible by walking, bicycling, and transit.

In many areas TOD promotes overall housing transportation affordability by allowing households to have smaller units and fewer automobiles. After housing, transportation is the second largest expenditure in the average household budget, well above food, clothing, or health care. Moving from an auto-dependent suburb to a TOD reduces average transportation costs from 25 percent of a household budget to only 9 percent, offering substantial savings in the basic cost of living.7

A high percentage of America’s greenhouse gases are attributable to sprawling land use patterns, inefficient buildings, and auto-dependency. Even the most energy-efficient houses are not truly green if they produce 10-12 vehicle trips a day, the national average for detached single-family homes.8 Compared to spread-out suburban houses, TOD units reduce vehicle trips by 25 to 50 percent and produce far less greenhouse gases.9 Compact walk-and-ride neighborhoods are perhaps our best antidote to sprawl, traffic congestion, and environmental pollution.

Dutchess, Orange, and Ulster counties have been working to integrate land use and transportation by encouraging communities to focus new development in priority growth centers along transit routes. In Dutchess County, the Transportation Council has prepared specific illustrative site plans for rail stations with the greatest TOD potential, including the Hudson River waterfront cities of Poughkeepsie and Beacon and the Wingdale and Tenmile stations in eastern Dutchess.

**City of Poughkeepsie TOD Planning – One Example**

As an example of TOD planning, in 1997 the Transportation Council, working with a 21-person steering committee and two private consultants, prepared the City of Poughkeepsie Transportation Strategy with federal transportation planning funds. The final report, which included specific illustrative plans and sketches for the waterfront district around the Railroad Station, was unanimously endorsed by the Poughkeepsie Common Council and has been partially implemented in subsequent years. Metro-North built an award-winning parking structure and walkway connections to Main Street and the waterfront with state and federal funding assistance. The City used state Greenway funds to reconstruct the shoreline with a paved promenade, and several former industrial buildings in the area have been redeveloped for mixed commercial, housing, and the Mid-Hudson Children’s Museum.

In 2013 the City and Metro-North railroad jointly prepared a TOD Market Study for the train station. The Market Study focused on the commercial and residential possibilities for the train station area and included three development scenarios: a baseline development scenario and two pro-forma scenarios. The baseline scenario showed that the area in and around the train station could support over 965,000 square feet of multifamily residential space (over 1,000 new units) by
2025. The Market Study was followed-up in 2014 by the completion of a Waterfront Redevelopment Strategy that identified ways to reconnect the City with the Hudson River. The Waterfront Redevelopment Strategy had three overall goals:

1. Build a Continuous Greenway Trail along the Riverfront.
3. Create a High-Quality Waterfront Park and Regional Destination Between Main Street, the Railroad Station, and Walkway Elevator.

The Redevelopment Strategy developed an illustrative Plan that included improved park features that benefit Poughkeepsie’s residents and businesses, organized around three major objectives (see Figure 3-2):

1. Increasing public access to and along the river.
2. Gaining net greenspace and usable park land.
3. Adding a variety of new attractions and river views.

Specific recommendations include a new pedestrian promenade along the riverfront, a new inland bicycle boulevard that runs parallel to the river, a gateway park plaza that replaces surface parking at the train station, and a new event lawn to support picnicking and special events.

**Regional Freight**

While planning for freight has been a consideration in the transportation planning process since ISTEA, the passage of the recent transportation legislation, MAP-21, increases the emphasis on freight considerations. MAP-21 is the first transportation legislation that contains a National Policy on Freight and Goods Movement.\(^\text{10}\) This includes freight movement as a performance measure.

Though interstate freight is less of an issue in Dutchess County versus Orange and Ulster counties, the PDCTC has begun to focus on the importance of freight movement in the county. In consideration of MAP-21, NYSDOT is in the process of developing a State Freight Plan and a joint advisory committee. Currently there are no dedicated studies or plans that address freight issues amongst the three MPOs; however there is growing interest to develop a regional freight plan. Each of the MPOs participates in the NYSAMPO Freight Working Group which began in 2012.

In the past several years there have been several major operational improvements to the connections between highways, as well as rail crossing improvements. The Mid-Hudson Valley area is at a cross roads between several major interstate highways: I-87, I-84, and Route 17 (future I-86). Trucks pass through from NYC to Montreal or Buffalo on I-87 (New York State Thruway) and I-84 from Pennsylvania into Connecticut. The recent interchange project connecting I-87 to I-84 vastly improved the operation and time it takes for passenger and freight movement alike. Freight trains and oil tankers move along the west side of the Hudson River down from Canada, Chicago, North Dakota, and Albany. In recent years there have been a number of projects programmed in the Statewide Transportation Improvement Program (STIP) to
Figure 3-2. City of Poughkeepsie Waterfront Redevelopment Strategy
improve at-grade crossings in the Mid-Hudson Valley using Railway-Highway Crossing Improvement Program (HSIP) funds.

**Regional Recommendations**

Given these land use and transportation patterns and potential solutions, two top priorities for the three-county TMA should be the development of two regional plans: a Regional Transit Plan and Regional Freight Plan, both of which might be potentially sponsored by the Mid-Hudson TMA or NYSDOT.

The Regional Transit Plan should emphasize express bus, rail, and ferry connections between adjacent counties, urban centers, housing concentrations, transit hubs, and major employment destinations. The Transit Plan would also identify and conceptually design transit-oriented development sites in cities and other major centers where jobs, housing, and transportation can work together to create walkable, mixed-use, transit-friendly neighborhoods. The Transit Plan should incorporate or address the following steps and issues:

1. Regional mapping of existing conditions, major centers, employment destinations, and transportation connections, as well as potential linkages and development sites.
2. Extensive public outreach, promoting education on regional issues and emphasizing public participation during the process.
3. Three-county Centers & Greenspaces mapping, working with local municipalities to identify priority growth centers, priority greenspaces, and greenway connections.
4. Coordination among federal and State agencies and counties to link potential implementation measures with the Livability Principles and Smart Growth Act criteria.
5. The use of access management tools to minimize operational deficiencies, including the use of roundabouts in lieu of signalized intersections at key intersections.
6. Integrate Complete Streets design guidelines to consider pedestrian, bicycle, and transit enhancements for all major centers and transportation projects.
7. Regional transit connections plan that includes bus improvements and rapid transit routes, potential rail extensions, and enhanced ferry or water taxi connections.
8. Transit-oriented development case study projects coordinated with local governments and property owners, including detailed illustrative plans, sections, and sketches, a diversity of uses, incomes, and housing types, community connections, and economic development and job opportunities.
9. An investigation into how alternative fueled vehicles such as natural gas and electric powered vehicles could be supported through coordinating policies and plans, including the integration of supporting infrastructure at TODs, centers, and other suitable areas in the region.
10. Implementation list and schedule for follow-up federal, State, and local action.

The Regional Freight Plan should build upon the ongoing work being done by NYSDOT on the Statewide Freight Plan, The
Moving Dutchess 2

Port Authority of NY & NJ Goods Movement Action Plan, and previous MPO freight plans such as the PDCTC’s 1996 Goods Movement Plan. At a minimum, the Regional Freight Plan should meet the following objectives:

1. Create a better understanding of the regional freight network and freight issues, to include an inventory of existing operations across all modes (e.g. truck, rail, barge, and air).
2. Establish a dialog with freight operators, shippers, receivers, and customers.
3. Identify key issues and potential solutions for improving freight operations in the region.
4. Understand the MPO-related implications of various freight solutions and studies being undertaken by other planning organizations and agencies in the TMA.

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4 Environmental Conservation Law § 6-0103, NYS Smart Growth Public Infrastructure Policy Act, 2010, [http://assembly.state.ny.us/leg/?default_fld=&bn=+A08011%09%09&Summary=Y&Actions=Y&Text=Y](http://assembly.state.ny.us/leg/?default_fld=&bn=+A08011%09%09&Summary=Y&Actions=Y&Text=Y).
Chapter 4

Demographic Overview

Though discussed in the language of funding and projects, a transportation system has more to do with people than infrastructure. Our transportation system has one simple, fundamental purpose: to serve people, whether for their own personal mobility or the mobility of the goods and services they require. Given the link between people and transportation, effective planning requires that we understand the nature of the population we serve, since they are the single most important influence on our transportation system. Where we choose to live, work, and shop, and how we choose to get there are the reasons we have roads, buses, and trains, and why the Transportation Council exists.

Population

People travel for work and play; by foot, car, bus, bike, and train; within their hometown, throughout the county, and across the region. Our transportation system provides people with the ability to live their lives, earn a living, and pursue their interests.

Dutchess County has experienced high rates of population growth during the past 60 years. From 1950 to 2010, the county’s population grew by nearly 161,000 or 117 percent (see Figure 4-1).1 This growth, most pronounced from 1950 to 1970, was spurred by a variety of factors, including high birth rates, economic growth, and regional migration.

Population and economic growth have greatly influenced the county’s land use patterns and transportation system. The popularity of the private vehicle as a travel mode translated into high rates of vehicle ownership among those who had the means and ability to live farther from traditional urban centers. The economic centers of the county underwent a similar shift, with major manufacturing and commercial activities relocating near major highways and closer to the suburban work force.

Dutchess County had a 2010 population of 297,488, which was six percent higher than reported in 2000 (280,150).2 This translated into an average increase of over 1,700 people per
year during the decade. The 2010 Census also showed that the Town of Poughkeepsie, with a population of 42,399, remained the most populated municipality in Dutchess; the City of Poughkeepsie followed with the second-highest population of 32,736. Combined, these two municipalities accounted for more than a quarter of the county’s total population: a share that has remained consistent since the 1980’s.

The rate of population change from 2000-2010 varied across the county’s 30 municipalities, with 25 gaining population and five losing population. The Village of Fishkill had the largest percent change, increasing by 25 percent from 2000-2010. The Towns of Fishkill, East Fishkill, Pawling, and Red Hook, and Village of Wappingers Falls followed with population increases of 11 to 16 percent each. The Town of East Fishkill had the largest absolute growth, increasing by 3,440 people from 2000-2010; the City of Poughkeepsie and Town of Fishkill followed with increases of 2,865 and 2,415 respectively. Together, these three municipalities accounted for half of the county’s population growth over the decade.

Not all municipalities grew from 2000-2010. The Towns of North East, Pine Plains, and Washington, and the Villages of Rhinebeck and Tivoli lost population. The Village of Rhinebeck’s population decreased by 420 people or over 13 percent, the largest decrease in the county; the Town of Pine Plains followed with a decline of 96 people or almost four percent. Figure 4-2 shows the percent change in 2000-2010 population by municipality. A detailed map showing 2010 population densities is provided at the end of this chapter.

*Figure 4-2. Percent Change in Population by Municipality (2000-2010)*
The 2010 Census also showed that Dutchess County had a household population of 277,523 living in 107,965 housing units. This equated to an average household size of 2.57 persons, which was lower than the 2.63 persons reported in 2000. This decline in average household size mirrored similar declines from 1960-1990, when average household size went from 3.23 to 2.69 persons. Figure 4-3 shows the percent change in households from 2000-2010.

Young & Elderly Populations

The young and elderly have different transportation needs than other population groups: they are less likely to drive, and therefore more likely to walk (both young and old), bicycle (young people), or in the case of the elderly, use special transit services such as Dial-a-Ride for transportation. The 2010 Census indicated that almost 57,000 residents were below the age of 16, representing 19 percent of the county’s total population, while over 40,000 were aged 65 and over, representing 13.5 percent of total population. Together, these two groups represented a third of the county’s population.

At the municipal level, the Town and City of Poughkeepsie had the highest number of elderly residents in the county, collectively totaling over 10,000 or 25 percent of all elderly residents in the county. The Village and Town of Rhinebeck had the highest percentages of elderly residents (27 and 26 percent respectively). In contrast, the Towns of East Fishkill, LaGrange, and Union Vale had the highest percentages of residents below 16, each ranging from 22-23 percent of total population.
Title VI & Environmental Justice

As a recipient of federal funding, the Transportation Council must demonstrate its compliance with Title VI of the Civil Rights Act of 1964 and the Environmental Justice provisions set forth in Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed in 1994. Title VI prohibits the discrimination by recipients of federal financial assistance, including federal transportation funds, on the basis of race, color, and national origin, or matters related to language access for Limited English Proficient (LEP) persons, while Environmental Justice builds upon this by adding low income populations to the groups that should be protected from the adverse impacts of federally funded actions. The Transportation Council assures that no person conducting business with it will be excluded from participating in, be denied the benefits of, or otherwise be subjected to discrimination on the grounds of race, color, national origin, sex, disability, age, language, or income.

Identifying the locations of minority, low income, and LEP populations is an important step in complying with Title VI and Environmental Justice requirements. The Transportation Council relied on guidance from the FTA to identify these populations. For the Title VI and Environmental Justice analysis, the Council used 2010 Census block group data to identify block groups that were above-average for total minority and Hispanic populations, and the Census Bureau’s 2010-2014 American Community Survey (ACS) 5-year Estimate to identify municipalities with above average low-income and LEP populations. Figure 4-4 shows Title VI and Environmental Justice populations as a percent of total county population.

Figure 4-4. Title VI & Environmental Justice Populations as a Percentage of Total County Population (2010)

Minority Population

The Transportation Council calculated total minority population by summing the Black/African-American, Asian, American Indian/Alaskan Native, and Native Hawaiian/Pacific Islander populations. In 2010 the county had a total minority population of 40,956 people, which was 13.8 percent of the county’s total population. Using this average, 66 of 248 block groups were identified as being above-average for minority population. The Cities of Beacon and Poughkeepsie, Towns of Hyde Park, Fishkill, Poughkeepsie, and Wappinger, and Villages of Fishkill and Wappingers Falls contained block...
groups that were above average for total minority population. Figure 4-5 shows the 2010 Census block groups that had an above-average percentage of minorities.

**Hispanic Population**

The Transportation Council calculated total Hispanic population by analyzing the Hispanic, non-white population. In 2010 the county had a total Hispanic population of 31,267 people, which was 10.5 percent of the county’s total population. Using this average, 79 of 248 block groups were identified as being above-average for Hispanic population. The Cities of Beacon and Poughkeepsie, Towns of Amenia, Beekman, Dover, Hyde Park, Fishkill, Pawling, Poughkeepsie, and Wappinger, and Villages of Fishkill, Millerton, Pawling, and Wappingers Falls contained block groups that were above average for total Hispanic population. Figure 4-6 shows 2010 Census Block Groups that had an above-average percentage of Hispanics.

**Low-Income Population**

The Transportation Council identified low-income population areas using the estimated percent of the population living below poverty at the municipal level. Based on the Census Bureau’s 2010-2014 ACS 5-year Estimates, 22,800 to 26,800 individuals in Dutchess County were living below the poverty level (approximately 8.1-9.5 percent of total population). These ranges represent the lower and upper bounds based on the reported margins of error for each estimate. Regardless, these numbers were higher than those reported in the 2000 Census, which found that 19,900 or 7.5 percent of the county’s population was living in poverty.

For the Title VI and Environmental Justice analysis, the Transportation Council identified municipalities that had above average percentages of low income populations, defined as the percent of individuals below the poverty level, compared to the county average. The percentages were calculated as ranges (lower and upper bounds) that incorporated the reported margins of error for each municipality. Municipalities that had a lower bound above 9.5 percent were classified as being above-average for low-income population. The Council identified the City of Poughkeepsie (at 20.6-26.6 percent) as the only municipality that was above average for low income population, and it stands out as well above the county average. Figure 4-7 shows municipalities above average for low income population.

**Limited English Proficiency (LEP) Population**

The Transportation Council identified Limited English Proficiency (LEP) populations using the estimated number of LEP households in each municipality. Based on the Census Bureau’s 2010-2014 ACS 5-year Estimates, 2.9 to 3.5 percent of the county’s households were limited English speaking; this range represents the lower and upper bounds based on the estimate’s margin of error (+/- 0.3 percent). Similar ranges were calculated at the municipal level based on the margins of error for each municipality. Those municipalities with a lower-bound above 3.5 percent were classified as being above-average for LEP households. Using this methodology, the
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Figure 4-7. Municipalities Above-Average for Low Income Population (U.S. Census 2010-2014 ACS 5-year Estimate)

Figure 4-8. Municipalities Above-Average for Limited English Proficiency (LEP) Households (U.S. Census 2010-2014 ACS 5-year Estimate)
Cities of Beacon and Poughkeepsie had above-average percentages of LEP households. Figure 4-8 shows municipalities above average for LEP households.

**Housing and Development**

The 2010 Census reported a total of 118,638 housing units in Dutchess County, which was an 11.8 percent increase from 2000; this rate outpaced the six percent population increase from 2000 to 2010. The 12,535 new housing units built during the decade translated into an average increase of 1,250 new units per year, or a 1.2 percent annual increase. Over the decade, 29 municipalities saw increases in total housing units, with only the Village of Rhinebeck losing units. The Towns of Fishkill and Union Vale had the largest percent increases in housing, with 31.4 percent and 30.5 percent respectively (see Figure 4-9). Areas that saw the largest increases in population also saw sharp increases in the number of housing units. The Towns of Fishkill and East Fishkill experienced the largest increases in total housing units, with 2,210 and 1,544 new units respectively.

The Transportation Council maintains a Major Projects database that tracks significant development projects across the county. The database tracks projects of 25 or more residential units or more than 25,000 square feet of non-residential gross floor area. For rural municipalities, the threshold is ten or more residential units or more than 10,000 square feet of non-residential floor space. The 2013 Major Projects Report identified over 12,000 proposed housing units and almost seven million square feet in non-residential development in the county. Compared to 2012, these totals represent a 21 percent decrease in planned housing units and a three percent decrease in non-residential square footage.  

The Major Projects Report noted that the southern and central portions of the county saw the most development proposals. The Towns of Dover, East Fishkill, Hyde Park, and LaGrange each had over 1,000 proposed housing units, accounting for over 54 percent of all proposed residential units in the county. Non-residential development proposals were also concentrated in the southern and central parts of the county. The Towns of East Fishkill and Hyde Park led with a combined total of over 3.9 million square feet, 56 percent of the county total. The City of Beacon and Towns of Dover, Fishkill, LaGrange, Pawling, and Poughkeepsie each had more than 200,000 square feet of proposed non-residential space proposed.

Related data from the Dutchess County Department of Planning and Development supports the observation that development activity continues to lag in Dutchess County. The Planning Department reviews local development applications under the authority of New York State General Municipal Law (Sections 239-l and m), which requires city, town, and village municipal boards to forward certain land use actions to the county planning agency for review. These actions, known as referrals, include area and use variances, site plans for locations within 500 feet of a state or county road, and zoning amendments. Comparing the number of referrals processed each year provides us with a general understanding of the level of development activity in the
Within the past ten years, 2005 and 2006 represented the peak years for referrals (683 and 643 respectively). The number of referrals declined after the 2007-2009 recession, reaching only 513 in 2010 and 447 in 2014. The number of referrals in 2014 represented 65 percent of the number of referrals processed in 2005, a decline of 35 percent.  

**Economic Activity**

Economic factors such as employment and personal income directly influence people’s travel behavior and how the transportation system is used. Measuring the economic health of a community allows us to better understand existing and future travel trends. Commuting to work is one reason people travel, so a significant change in employment will have a corresponding effect on the transportation system. Likewise, income affects people’s transportation choices, including their access to a personal vehicle and their use of public transit, especially bus transit. The Transportation Council reviewed recent employment and income trends that provide insight into potential impacts on transportation. Overall economic activity in Dutchess County, whether measured by employment or income levels, has generally tracked national, state, and regional trends.  

**Total Employment**

Data from the Bureau of Labor Statistics’ (BLS) Quarterly Census of Employment and Wages shows that private and public sector employers in Dutchess County supported approximately 109,000 employees in 2014, with the private
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sector accounting for almost 82 percent of total employment. Within the private sector, the health care and social assistance industries accounted for over 20 percent of private employment, followed by retail trade at almost 16 percent, and manufacturing at 11 percent. Combined, these three sectors constituted almost half of all private employment in Dutchess, a share that has been consistent throughout the past ten years. Within the public sector, local governments (including school districts) employed 13,200 workers, followed by State agencies with over 5,800 workers, and federal agencies with 1,200 workers.

*Figure 4-10. Dutchess County Total Employment (2004-2014)*

BLS employment data from the past ten years suggests that Dutchess County was not immune to the economic recession of 2008, and more importantly, has yet to fully recover from the downturn (see Figure 4-10). In Dutchess County, the total number of public and private sector employees in 2014 was the lowest reported for the eleven year period from 2004-2014 and six percent lower than the 2005 high of 117,500 employees. The effects of the recession were most evident in the dramatic drop in employment from 2008 to 2009, when the county’s total employment decreased from 115,200 to 111,500, a loss of 3,700 jobs or three percent in one year. Employment data for 2010-2014 indicates that total employment in Dutchess remained flat until 2013, then dipped again in 2013-2014.

In addition to establishment employees reported by the BLS, the NYS Department of Labor (NYSDOL) notes that self-employed persons can make up a significant part of an area’s total employment. Various estimates suggest that the number of self-employed persons can range from as little as six percent of total employment to as much as 25 percent. Although the disparity in these estimates makes it difficult to pinpoint the exact number of self-employed persons in the county, we can presume that total employment is higher than what is reported in BLS data.

**Mid-Hudson Valley TMA Employment**

From a tri-county TMA perspective, the BLS data shows that Orange County experienced a higher rate of employment growth than Ulster and Dutchess during the past decade. Private and public employers in Orange County had a total of 126,300 employees in 2004 compared to 136,200 in 2014, an increase of almost eight percent. The same data showed that
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employment decreased slightly in Ulster County, where the public and private sectors employed 61,800 in 2004 compared to 58,600 in 2014, a decline of over five percent.

Measured as a share of total employees in the TMA, Orange County employers accounted for 45 percent of all regional employment, followed by Dutchess with 36 percent, and Ulster with 19 percent. These employment patterns suggest that Orange County may be a more attractive destination for workers in the three-county area, given its larger share of total employees and the employment growth it has experienced in the past decade. Beyond the TMA, employment in Rockland and Westchester counties remained steady from 2004 to 2014, which suggests that they retained their importance as regional employment centers, and in turn, their attractiveness to regional workers.

**Total Unemployment**

Unemployment data provides additional insight into the health of the local economy. The BLS Local Area Unemployment Statistics program showed that the unemployment rate in Dutchess County increased from 4.3 percent in 2004 to an estimated 5.3 percent in 2014 (see Figure 4-11). Not surprisingly, the county’s unemployment rate rose after the 2007-2009 recession, climbing to 7.8 percent in 2009 and 2010, while still not returning to pre-recession levels by 2014. Unemployment rates for Orange and Ulster counties followed similar trends, both spiking in 2010 at 8.3 percent and then falling to 5.5 and 5.8 percent respectively in 2014.

**Labor Force**

Additional data on labor is available from the U.S. Census Bureau. The Census Bureau’s 2010-2014 ACS 5-year Estimates approximated that there were between 138,000 and 141,400 workers aged sixteen and older living in Dutchess County. Dutchess County was the most popular work destination for these workers, accounting for approximately 67 percent of all work destinations. This share was similar to the rates reported in the 2000 Census (69 percent) and the previous 2009-2013 ACS 5-year Estimates (67 percent). Similarly, 2010-2014 ACS 5-year Estimates showed that the share of county workers commuting out-of-state remained relatively constant at about four percent of the workforce. When the number of workers
in the county is compared to the total number of jobs in the county (the 109,000 employees reported by Dutchess County employers), the ACS estimates suggest that there is a shortfall of local jobs for the workforce, requiring some to travel to other counties and states for work.

Data from the latest iteration of the Census Transportation Planning Products (CTPP) program, derived from the Census Bureau’s 2006-2010 ACS 5-year Estimates, indicated that Westchester, New York City, Putnam, Orange, and Ulster counties were still the most popular out-of-county work destinations for Dutchess County workers, and that Ulster and Orange counties provided the largest share of non-resident workers to Dutchess County. Less recent, but more specific data from the 2000 Census showed similar work destinations for out-of-county workers to include their share of the workforce: Westchester County (12 percent), New York City (4.5 percent), Putnam County (3.5 percent), Orange and Ulster counties (three percent each), and Connecticut (three percent).

Income & Transportation

Besides employment activity, household income also influences how the transportation system is used. Higher-income households tend to have more vehicles and are thus more inclined to travel by car, whereas lower-income households may have limited access to a private vehicle and are more likely to travel by public transit, particularly bus, and by walking and bicycling.

The Census Bureau’s 2010-2014 ACS 5-year Estimates indicated that Dutchess County had a Median Household Income (MHI) range of $71,000 to $74,000. At the municipal level, the ACS data showed that households in the Town of Amenia ($49,800-$65,900) and City of Poughkeepsie ($36,900-$41,000) had Median Household Incomes well below the county average, while households in the Towns of Beekman ($94,900-$107,500), East Fishkill ($94,000-$107,500), and LaGrange ($94,900-$107,500) had the highest median incomes in the county. In terms of per capita incomes, the 2010-2014 ACS 5-year Estimates showed a range of $33,400 to $34,500 in Dutchess County, compared to $23,940 reported in the 2000 Census (1999 dollars), an increase of 40 to 44 percent. When adjusted by the Consumer Price Index (CPI), the increase was insignificant, with the current buying power of individuals and households in Dutchess County remaining the same as reported in 2000.

Vehicle Ownership

Households without a vehicle are much more likely to seek alternative transportation. Based on data from the Census Bureau’s 2010-2014 5-year ACS Estimates, between 8 and 9 percent of county households have no vehicle available. The Cities of Beacon (at 11-18 percent) and Poughkeepsie (at 24-29 percent) had the highest percentages of zero-vehicle households in the county. The 2009 NHTS estimated that 93 percent of surveyed households owned or had regular access to at least one vehicle, while seven percent had no vehicle. This distribution was almost identical to that reported in the

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2001 NHTS (94 and six percent respectively). The 2009 National Household Travel Survey (NHTS) further noted that the majority of zero-vehicle households had annual household incomes below $25,000.

Transportation Related Expenses

Transportation-related purchases represent a significant investment for consumers. According to the BLS Consumer Expenditures Survey, in 2014 the average American consumer spent $9,073 on transportation, representing 17 percent of their total annual expenses. This included average expenditures of $2,468 for gasoline and $581 for public transit. These amounts are considerably higher than the amounts reported in 2009 for Moving Dutchess. In particular, gasoline expenditures peaked in 2012 at $2,756, over twice the expenditure reported in 2003.

Travel Behavior

Factors related to demographics, economic conditions, and the housing market influence people’s travel behavior. A number of surveys show that Dutchess County residents still rely primarily on the automobile for their transportation needs. The 2009 National Household Travel Survey (NHTS), which included data specific to Dutchess County, estimated that 84 percent of all surveyed trips in the county were made by personal vehicle, with the remaining trips made by walking (nine percent), school bus (four percent), public transit (one percent), bicycling (one percent), and other (one percent) (see Figure 4-12). Ninety percent of trips to work were made by a personal vehicle (83 percent as driver and seven percent as a passenger). This distribution is similar to the 2001 NHTS.

The Census Bureau’s 2010-2014 ACS 5-year Estimates further supported the observation that the automobile was the primary means of travel in Dutchess County, especially for work related travel. The ACS estimated that approximately 84 percent of work trips were made by a personal vehicle: approximately 76 percent of workers drove alone to work, with eight percent carpooling, five percent using public transit, and four percent walking. The ACS also estimated that over five percent of workers worked at home (see Figure 4-13). These shares were similar to data from the 2000 Census, which reported that 78 percent of workers drove alone to work, with ten percent carpooling, four percent using transit,
and another four percent walking. Three percent of workers worked at home in 2000.

*Figure 4-13. Means of Transportation to Work for Dutchess County Workers (2010-2014 ACS 5-year Estimate)*

The 2009 NHTS provided data on why Dutchess County residents travel. The return trip home, whether from shopping, work, or other activities, represented 35 percent of all trips, the highest share of any trip purpose. Other trip purposes included shopping (13 percent), social/recreational (13 percent), family business (eight percent), and eating out (six percent). Work trips represented eight percent of all trips taken by county residents, which was the same share reported in the 2001 NHTS (see Figure 4-14).

The 2009 NHTS also indicated that different trip purposes had different travel characteristics. For example, the distance traveled by Dutchess County residents varies based on trip purpose. Whole, the average trip length in Dutchess County was 11.2 miles; this is slightly higher than the 10.3 miles reported in the 2001 NHTS. Some transportation modes had longer trip lengths – for example, train trips to work averaged 59 miles, compared to 16 miles for vehicle-based work trips. Non-motorized trips had the shortest trip lengths, with walking trips to work averaging 0.5 miles and bicycling trips to work averaging 7.5 miles. These trip distances were consistent with the 2001 NHTS.

*Figure 4-14. Residential Household Person Trips by Purpose for Dutchess County Household Population (2009 NHTS)*

The 2009 NHTS estimated that people traveled an average of 13 miles for social/recreational purposes and 16 miles for work-related trips, whereas trips to school, shopping, or for family business were shorter than ten miles. Measured as a
The Census Bureau’s 2010-2014 ACS 5-year Estimates for Dutchess County indicated that the mean travel time to work was between 31 and 32 minutes, with over half of work commutes taking 24 minutes or less. The ACS also found that 37 percent of workers in Dutchess County leave home for work between 7:00 and 8:30 a.m. These estimates were consistent with data from the 2000 Census and previous ACS estimates.

The New York Metropolitan Transportation Council (NYMTC)’s 2010-2011 Regional Household Travel Survey (RHTS) also included information on local travel behavior. Based on a sample of 463 Dutchess County residents, the survey found that 85 percent of all trips taken by county residents were by automobile, while 6 percent were made by walking and other non-motorized modes, 6 percent by bus, 2 percent by rail or ferry, and 0.7 percent by other modes. With regard to trip purposes, the NYMTC Travel Survey indicated that 27 percent of all trips were work related, with 14 percent for social reasons, nine percent for shopping, and seven percent for school (“other” trip purposes make up the remaining 43 percent of trips). The survey also found that the average trip duration for all trips (by all modes) was about 21 minutes. These ranged from 25 minutes for trips home, 23 minutes for school trips, 20 minutes for trips to work, and 18 minutes for other trips.

**Transportation Activity**

Travel activity remains closely tied to the economy. The 2007-2009 recession not only affected employment and housing, but also the amount of travel on our roads. Traffic volume data from FHWA showed that nationally, the number of vehicle miles traveled in 2009 was lower than reported from 2004 through 2007, and in 2008, total annual travel actually fell (by approximately 1.8 percent) for the first time since 1988. Although traffic volumes have increased in recent years, most notably from 2011-2013, they still have not reached the levels seen in 2007, when traffic volume peaked at over 3,031 billion vehicle miles - the highest recorded total from 1988-2013. In 2013 national traffic volume stood at 2,972 billion vehicle miles, 1.9 percent lower than 2007. Preliminary data from 2014 indicates that national travel continues to increase slowly, possibly reaching 3,000 billion vehicles miles for the year.

Travel activity in New York State has mostly followed national trends. The number of vehicle miles traveled in the state decreased for five consecutive years from 2007-2011, and by 2012, total vehicle miles travelled in the state remained 4.4 percent lower than 2006, when travel peaked at 141 billion miles in the state. In 2012 total miles travelled in New York State roughly equaled the same amount observed 12-years earlier in 2000.

The recent decline in miles travelled differs from the steady growth observed in previous years: during 1980-2006 vehicle miles travelled grew by 82 percent across New York State. When compared to population growth, the growth in miles travelled far outpaced growth in the state’s population. From 1980-2010, vehicle miles travelled grew by 69 percent while the state’s population grew by only ten percent. However, this
trend appears to be waning; the decade of 2000-2010 saw miles travelled and population each increase by two percent.

**Vehicle Registrations & Drivers Licenses**

Vehicle registration data from the NYS Department of Motor Vehicles (DMV) affirms that the private vehicle is ubiquitous in Dutchess County. From 2003 to 2014, the number of standard vehicle registrations in the county increased by 3.5 percent, from 203,212 to 210,336 vehicles. Most of this increase occurred before the 2007-2009 recession, with the number of standard registrations rebounding after 2011 (see Figure 4-15). 2014 saw the highest number of vehicle registrations in the county’s history. However, the number of commercial vehicle registrations in the county declined by 15 percent from a high of 15,765 in 2007 to 13,354 in 2014.\(^\text{20}\)

NYS DMV data on the number of driver licenses in-force generally tracked with the changes in vehicle registrations. During 2003-2014, the number of driver licenses in Dutchess County peaked at 214,028 in 2007, declined from 2008-2012, and then rebounded to 213,452 by 2014. Through the past decade, the number of driver licenses in-force in the county has increased by only 1.8 percent, averaging about 210,700 per year. The changes in miles travelled, vehicle registrations, and licenses point to the speed at which economic conditions can change travel activity and behavior. It appears evident that the 2007-2009 recession affected how we travelled, whether it was due to changes in household income, employment, or the costs associated with transportation.

**Future Population, Employment, & Housing**

*Moving Dutchess 2* recommends projects and policies to preserve and improve the county’s transportation system over the next 25 years. To accomplish this, the Transportation Council must understand how the area will change, particularly with regard to population, employment, and housing. Demographic forecasts and projections inform our understanding of potential trends and allow us to better assess the potential impacts of change on the transportation system. The Council recognizes that forecasts are imprecise, and unforeseen events, whether international or national in scope, can quickly alter future conditions and affect how
people use the transportation system. Nonetheless, the Council must identify future trends based on the best available data, in order to satisfy its planning mission.

Prior to developing its own estimates of future population and housing, the Transportation Council reviewed demographic forecasts and projections from three sources: the New York State Department of Labor (NYSDOL), the New York State Department of Transportation (NYSDOT), and the New York Metropolitan Transportation Council (NYMTC). All three provided future population data at the county level, which the Transportation Council used to benchmark its own build-out estimate.

**NYSDOL Population Projections**

The NYSDOL projections were prepared in 2011 through a collaborative effort with the Cornell Program on Applied Demographics. The projections relied on historic data to estimate future conditions and spanned the 30-year period from 2010 to 2040. Unlike forecasts, the NYSDOL projections are meant to gain insight into what might happen if the future mirrors previous trends. The NYSDOL projections estimated that Dutchess County’s population could grow to approximately 326,000 by 2040 – a total increase of 9.7 percent or 0.3 percent annually. The projection estimated that the population aged 65 and over could increase by 51 percent or 1.7 percent annually. When measured as a share of the total population, the projection estimated that the 19 and under age group could represent 24 percent of the population, compared to 19 percent for those aged 65 and over. The labor force, defined as those between the ages 20 and 64, was projected to increase by nine percent.21

**NYSDOT Population & Employment Forecasts**

In 2012 NYSDOT contracted with IHS Global to prepare population and employment forecasts for New York counties for the 30-year period from 2012 to 2042. The forecast estimated that Dutchess County’s population would grow to approximately 334,700 by 2040, an increase of 12.5 percent or 0.4 percent annually from 2010. Not surprisingly, growth rates differed by age group. The forecast estimated that the population aged 65 and over would increase by 88 percent, representing 22 percent of the county’s 2040 population. In contrast, the forecast estimated that the 24 and under age group would decrease by two percent by 2040 – though this age group would still represent over 28 percent of the county’s population, compared to 22 percent for those aged 65 and over. The civilian labor force, defined as those between the ages of 25 and 64, was forecast to increase by only 2.9 percent by 2040. The forecast also estimated that total non-farm employment in the county would increase by 20 percent from 2010-2040, with the education, health, information services, and professional business sectors growing the fastest.22

**NYMTC 2050 Socio-Economic Demographic Forecast**

Prepared in 2015, the NYMTC forecast spans the period from 2010 to 2050 and provides county-level estimates for total population and employment. For Dutchess County, the
forecast estimated that total population would grow to 337,000 by 2040, an increase of almost 40,000 or 13.4 percent from 2010. Representing an annual increase of 0.4 percent, this growth rate compares favorably with the growth rates seen in the NYSDOT forecasts and NYSDOL projections. The NYMTC forecast also estimated that the number of households (i.e. occupied housing units) would increase by 20 percent from 2010-2040, with the higher growth rate reflective of the trend for smaller sized households. The NYMTC forecast estimated that the county’s labor force would increase by almost ten percent from 2010-2040, while total employment would increase by 18.9 percent.²³

The three futures offered by the NYSDOL, NYSDOT, and NYMTC forecasts and projections align closely with one another – they all agree that Dutchess County’s population will increase by 10-12 percent over the next 25 years (see Figure 4-16). In particular, the three population estimates converge around 2030, where total population is expected reach 321,000. The estimates further agree that the 65 and over population will grow at a faster rate than other age groups, especially those 24 and under. Likewise, the estimates agree that total employment will increase in the county, possibly at a faster rate than total population. The similarities in the forecasts provided the Transportation Council with a solid benchmark to gauge the accuracy of the build-out analysis it completed for Moving Dutchess 2.

PDCTC Build-out Analysis – Scenario Planning

In addition to the population estimates described above, the Transportation Council performed its own estimate of future population, which was based on a build-out analysis completed by the Dutchess County Department of Planning and Development. The premise behind this approach was that the county has a finite capacity to support new housing units, and this capacity will affect the rate of population growth. By determining how many housing units could be built, we can better estimate future population based on historic occupancy rates and average household sizes.

Figure 4-16. Estimates of Future Total Population in Dutchess County (2010-2040)

Existing Zoning Build-out Scenario

The build-out analysis assumed that all undeveloped parcels that are currently zoned residential would be developed to
their full potential. For Moving Dutchess 2, it was assumed that this build-out would occur over 35-years (i.e. 2050). The analysis identified the number of possible new housing units that could be legally supported for over 7,200 individual parcels, based on local zoning and subdivision bulk regulations for the county’s 30 municipalities. This gross build-out was then constrained based on environmental features such as floodplains, watersheds, steep slopes, protected lands, and agricultural lands that would limit the number of housing units on each parcel. An additional 15 percent of land area was set aside for roads and other infrastructure. This produced a net total of potential housing units by parcel, which was adjusted by the presence of any existing housing units.

The analysis estimated that over 30,000 new housing units could be developed on residential parcels, with an additional 13,000 housing units if residentially zoned agricultural lands were developed. Assuming that land being used for agricultural purposes would be protected, it was estimated that by 2050, almost 20,000 of the 30,000 new units could be developed. This scenario is illustrated in the 2040 Build-out Analysis: Existing Zoning Scenario map.

To estimate future population, the total number of potential future households (occupied housing units) was calculated by applying occupancy rates to the number of new housing units. The occupancy rates were based on average vacancy rates from 1980-2010 Census data by municipality. Future population was determined by multiplying the number of occupied housing units (i.e. households) by the average number of persons per household by municipality. This generated a total new population, which was added to 2010 Census data.

The pro-rated build-out analysis estimated that the county’s population could total 336,000 by 2040, a 13 percent increase from 2010. As with the NYSDOT, NYSDOL, and NYMTC estimates, this represented annual growth rate of 0.4 percent. Overall, the Transportation Council’s build-out analysis tracks with the level of population growth shown in the other three estimates (see Figure 4-16).

Centers & Greenspaces Build-out Alternative

In addition to the traditional build-out analysis, the Dutchess County Planning Department performed an alternative build-out analysis to measure how much development could be absorbed by the centers identified in the county’s Centers and Greenspaces concept. This build-out assumed the same environmental constraints and 15 percent set-aside for infrastructure as the build-out based on existing zoning. Assuming a 10 unit per acre density within the 66 centers, undeveloped land within the centers could potentially absorb 55 percent of total build-out development. This build-out scenario would preserve all of the current agricultural parcels and 36 percent of the other residentially-zoned land projected to be developed under the existing zoning build-out. This scenario is illustrated in the 2040 Build-out Analysis: Centers & Greenspaces Scenario map.

Mid-Hudson Valley TMA Population Growth

The Transportation Council expects population growth to
occur unevenly across the Mid-Hudson Valley TMA, with Orange County growing faster than Dutchess or Ulster counties. The NYSDOL projections estimate that Orange County’s population will grow to 444,000 by 2040, an increase of 19 percent or 0.6 percent annually, while the NYMTC forecasts show an even more aggressive growth rate, estimating that Orange County will grow by 32 percent, or one percent annually, to over 493,000 by 2040. The same estimates show slow to no growth in Ulster County. The NYMTC forecast estimates that Ulster County’s population will grow to 196,000 by 2040, an increase of only eight percent, while the NYSDOL projection actually shows a 6.8 percent decline in population to approximately 170,000 by 2040.

Taken as a whole, the Mid-Hudson Valley TMA will experience some level of population growth by 2040. If we use the NYMTC forecasts, Dutchess, Orange, and Ulster counties could see a combined population of over one million by 2040, a 20 percent increase from 2010. Similarly, the NYSDOL projections show a 2040 three-county population of over 940,000, a 10.3 percent increase from 2010. These two estimates lead us to conclude that the TMA’s population will increase by a range of 10 to 20 percent from 2010-2040. Given the likelihood of this population growth, the Transportation Council expects that additional pressure will be placed on regional infrastructure, public services, and natural resources.

**Future Economic Activity**

The Transportation Council relies on national, State, and regional data sources to understand economic activity in Dutchess County. Understanding how the economy may change allows us to better gauge future demands on the transportation system, since economic, employment, and income trends directly influence travel behavior. The BLS Employment Projection Program estimated that national employment would grow by 10.8 percent from 2012-2022, or one percent annually. The projections indicated that two major employment sectors would experience the highest rates of growth: health care/social assistance and construction. The BLS projects that the health care/social assistance sector will grow by five million jobs or 2.6 percent annually from 2012-2022, which would account for nearly one-third of the total projected increase in jobs during the ten years. Not surprisingly, this growth reflects the need to care for an ever-aging population. The BLS also projects that the construction sector will grow by 1.6 million jobs or 2.6 percent annually from 2012-2022. Combined, these two sectors are expected to create almost half of all new jobs over the ten-year period. Other sectors such as educational services and leisure and hospitality will also experience high rates of growth. The manufacturing sector is projected to experience the highest rate of job loss, losing 0.5 percent annually from 2012-2022.24

Though the national, State, and regional economies will require time to regain their footing, it is reasonable to expect that there will be economic growth over the next 25-years. Employment forecasts completed in 2012 by IHS Global for NYSDOT estimated that the number of jobs in Dutchess County would increase by 43 percent between 2010 and 2040,
from 114,500 to over 163,000, while NYMTC’s forecasts show employment reaching 225,000 by 2040.

The Dutchess County Planning Department, in conjunction with Orange and Ulster counties, completed a Regional Housing Needs Assessment (RHNA) in 2009 that included housing and economic forecasts for the three counties. For Dutchess County, the forecast indicated that non-farm employment would grow by 0.4 percent annually from 2010 to 2020, with most new jobs occurring in the education and health sectors. The 2009 RHNA identified three major issues related to the region’s future economy: 1) credit is expected to be more difficult to obtain in the near term, 2) energy prices are expected to remain elevated relative to historic prices, and 3) the struggling economy will likely further slow the relatively weak population growth forecasted in the region.

Future economic conditions, especially tighter credit lending practices, will make home ownership less likely for households and make it more difficult for businesses to expand. Higher energy prices will increase the cost of doing business and reduce discretionary household spending and a slowdown in the housing market will likely lead to slower population growth in the region. The 2009 RHNA noted that the demographic changes forecasted to occur in the area, particularly from 2010-2025, will be different than years prior due to slow economic growth.

The Transportation Council expects employment to grow gradually due to the lingering effects of the 2007-2009 recession. In Moving Dutchess, the Council noted that the NYSDOL had estimated that it would take five years for the State’s economy to rebound from the recession, suggesting that employment would not reach pre-recession levels until 2015. Given the relatively flat rates of employment since 2011, it seems unrealistic that we will achieve pre-recession employment by 2015. Instead, the Council expects that employment may not fully rebound until the latter part of the decade, and then increase over the following 20-years. As indicated by the NYMTC forecasts, total employment in Dutchess County could reach 144,000 by 2040, which would be a 19 percent increase from 2010 or 0.6 percent annually. This would constitute a higher growth rate than estimated for future population.

Future Housing

The Transportation Council used data from its 50-year build-out analysis to identify the number of future housing units and households. However, the 2009 RHNA also estimated the number of future housing units in Dutchess County. The RHNA estimated that the county would have a total of 119,600 units by 2020, which is slightly lower than the 125,000 housing units estimated by the Council’s build-out analysis for 2020. The RHNA estimated a total of 116,500 households by 2020, which is similar to the 114,000 estimated by the build-out analysis.

The RHNA projected housing growth across the TMA, estimating that Orange and Ulster counties would reach 146,300 and 82,000 housing units respectively by 2020. These increases are similar to the growth rates projected for Dutchess County. Combined, the TMA is projected to have
almost 348,000 housing units by 2020. By extrapolating each county’s projected growth, the Transportation Council estimates that the TMA could have a total of over 400,000 housing units by 2040.

**Future Travel**

The Transportation Council maintains a travel demand model that simulates vehicle travel within Dutchess County. The model uses a three step process (trip generation, trip distribution, and trip assignment) to estimate trips and relies on GIS (Geographic Information Systems) mapping to simulate the highway network and land use patterns. The model measures the impact of demographic and land use changes on the transportation system, incorporating data about future population, employment, housing, and households within the county. The model measures this future travel in terms of Vehicle Miles Traveled (VMT), which represents the sum of miles driven by all vehicles in a given area over a specific period of time.

Updated in 2013 with base data from the 2010 Census, the Transportation Council’s travel demand model estimated that the county’s daily (i.e. 24-hour) VMT would grow from 7.8 million in 2015 to over 9.2 million by 2040, an increase of 1.4 million VMT or 18 percent over a 25-year period (see Figure 4-17). This equates to an annual growth rate of 0.7 percent, which is slightly higher than the estimated growth rates in population and employment for the same period (0.4 percent and 0.6 percent respectively).

**Figure 4-17. Forecasted Daily Vehicle Miles Travelled (VMT) in Dutchess County (2010-2040)**

Forecasting transit demand is less detailed. The two public bus systems (Dutchess County Public Transit and City of Poughkeepsie) maintain data on day-to-day passenger boardings. Although these agencies do not make passenger forecasts for their systems, the Transportation Council expects passenger levels to continue at current levels, potentially increasing if fuel prices rise, the systems expand, or transit-oriented development becomes more prevalent in urban areas. The Council also expects commuter demand for intercounty transit connections to remain at current levels and perhaps increase as employment grows, fuel prices rise, or improvements are made to the transit systems.
The Metropolitan Transportation Authority (MTA), as part of its Regional Strategic Review of operations, including Metro-North Railroad, assumes growth on the Hudson and Harlem lines, including new demand for off-peak and weekend service. The strategy supports MTA’s 20-year Needs Assessment (2015-2034) and proposed five-year Capital Program (2015-2019).

Like demographic forecasts, travel forecasts are based on recent trends and do not account for global or national forces that may impact our transportation system, such as disruptions to the supply or price of fuel, a downturn in economic activity, public and private responses to global climate change, or other behavior-altering events.

Implications for the Transportation System

Irrespective of future changes in population, employment, or travel behavior, the challenge continues to lie in finding an acceptable balance between competing needs and limited resources. The Transportation Council seeks to promote projects that will satisfy Dutchess County’s most pressing short, mid, and long-range transportation needs. Changes in regional and local population, employment, and land use all have an impact on travel behavior, as do external influences such as the economy and energy prices. The past decade saw the county’s population and housing stock grow, while employment fell. These fluctuations in growth will likely continue, with economic conditions not fully rebounding until the latter part of this decade. Yet, even if no more growth occurs, our infrastructure will still age and require adequate investment to maintain acceptable levels of safety and mobility.

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1 U.S. Census Bureau: 1950-2010 Census
2 U.S. Census Bureau: 2000 and 2010 Census
3 As per FTA C 4702.1B, Limited English Proficient (LEP) persons refers to persons for whom English is not their primary language and who have a limited ability to read, write, speak, or understand English. It includes people who reported to the U.S. Census that they speak English less than very well, not well, or not at all.
4 As per FTA C 4702.1B, low-income person means a person whose median household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines.
5 FTA C 4702.1B dated October 1, 2012 and FTA C 4703.1 dated August 15, 2012.
13 Note: the 2010-2014 ACS indicated that the City of Beacon MHI increased to $55,400-71,200, making it above the county average.
Chapter 4: Demographic Overview

dollars equals $32,912 in 2014 dollars, which is within the range of the ACS estimate.


16 Non-motorized trips include walking, bicycle, wheelchair, mobility scooter, skates, skateboard, kick scooter, Segway, and others.


25 Dutchess, Orange, and Ulster County Planning Departments, A Three-County Regional Housing Needs Assessment, February 2009.
This population surface map is an interpolation of block-level Census 2010 corrected population totals, assigned to points representing structures. Each point was assigned total population per Census block, divided by the number of structures in the Census block (average population per structure), in order to accurately represent population centers.

This map is intended for planning purposes only. The PDCTC shall not be held liable for any misuse or misrepresentation of this information. Map contents and data are subject to change.
This population surface map is an interpolation of block-level Census 2010 corrected population totals, assigned to points representing structures. Each point was assigned total population per Census block, divided by the number of structures in the Census block (average population per structure), in order to accurately represent population centers.

This map is intended for planning purposes only. The PDCTC shall not be held liable for any misuse or misrepresentation of this information. Map contents and data are subject to change.
Land Use Scenario 2
2040 Smart Growth Scenario
(Centers & Greenspaces)

This population surface map is an interpolation of block-level Census 2010 corrected population totals, assigned to points representing structures. Each point was assigned total population per Census block, divided by the number of structures in the Census block (average population per structure), in order to accurately represent population centers.

This map is intended for planning purposes only. PDCTC shall not be held liable for any misuse or misrepresentation of this information. Map contents and data are subject to change.
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, trails, and bicycle facilities, 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

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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.
Moving Dutchess 2

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.).

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. 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)

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Total Centerline Mileage</th>
<th>Percent of Total Mileage</th>
<th>Total Federal-Aid Eligible</th>
<th>Percent Federal-Aid Eligible</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYSDOT</td>
<td>405</td>
<td>16%</td>
<td>396</td>
<td>98%</td>
</tr>
<tr>
<td>Dutchess County</td>
<td>394</td>
<td>16%</td>
<td>151</td>
<td>38%</td>
</tr>
<tr>
<td>Town</td>
<td>1,473</td>
<td>59%</td>
<td>44</td>
<td>3%</td>
</tr>
<tr>
<td>City or Village</td>
<td>187</td>
<td>8%</td>
<td>40</td>
<td>22%</td>
</tr>
<tr>
<td>Other</td>
<td>32</td>
<td>1%</td>
<td>3</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,491</strong></td>
<td></td>
<td><strong>634</strong></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Functional Classification</th>
<th>Total Centerline Mileage</th>
<th>Total Federal-Aid Eligible</th>
<th>Percent Federal-Aid Eligible</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rural</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Principal Arterial</td>
<td>129</td>
<td>129</td>
<td></td>
</tr>
<tr>
<td>Minor Arterial</td>
<td>24</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Major Collector</td>
<td>111</td>
<td>111</td>
<td></td>
</tr>
<tr>
<td>Minor Collector</td>
<td>165</td>
<td>0</td>
<td>21%</td>
</tr>
<tr>
<td>Local</td>
<td>828</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Total Rural</strong></td>
<td><strong>1,257</strong></td>
<td><strong>264</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Urban</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Principal Arterial (Interstate)</td>
<td>23</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Principal Arterial (Expressway)</td>
<td>14</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Principal Arterial (Other)</td>
<td>71</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Minor Arterial</td>
<td>79</td>
<td>79</td>
<td>30%</td>
</tr>
<tr>
<td>Major Collector</td>
<td>184</td>
<td>184</td>
<td></td>
</tr>
<tr>
<td>Local</td>
<td>864</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Total Urban</strong></td>
<td><strong>1,234</strong></td>
<td><strong>370</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,491</strong></td>
<td><strong>634</strong></td>
<td></td>
</tr>
</tbody>
</table>
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. In Dutchess County, the NHS totals 309 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).

**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:

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-ramps 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 2010-2014, the following roads have consistently had the highest ranges of Average Annual Daily Traffic (AADT) volumes in the county:

1. I-84 (Newburgh-Beacon Bridge): 68,000
2. Route 9 (Town of Poughkeepsie-South): 44,000-64,000
3. I-84 (Town of Fishkill): 52,000-58,000
4. I-84 (Town of East Fishkill): 50,000-53,000
5. Route 9 (City of Poughkeepsie): 35,000-49,000
6. Route 9 (Town of Wappinger): 30,000-45,000
7. Route 9 (Town and Village of Fishkill): 30,000-43,000
8. Route 44/55 (City of Poughkeepsie): 26,000-42,000
9. Route 9 (Town of Poughkeepsie-North): 23,000-39,000
10. Taconic State Parkway (Town of East Fishkill): 25,000-33,000
11. Route 376 (Town of Poughkeepsie-Red Oaks Mill): 27,000
12. Route 55 (Town of Poughkeepsie): 25,000
13. Route 55 (Town of LaGrange): 19,000-24,000

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 period 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:

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 detailed 2011 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. 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)

<table>
<thead>
<tr>
<th>PCI Rating Category</th>
<th>Length (Miles)</th>
<th>Percent of State Road Mileage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>244</td>
<td>61</td>
</tr>
<tr>
<td>Fair</td>
<td>115</td>
<td>29</td>
</tr>
<tr>
<td>Poor</td>
<td>39</td>
<td>10</td>
</tr>
</tbody>
</table>

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 82 from Church Rd. to ¼ mile south of the Stanford border in Washington.

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. The lowest PCI score (60) was

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

<table>
<thead>
<tr>
<th>PCI Rating Category</th>
<th>Length (Miles)</th>
<th>Percent of County Road Mileage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>294</td>
<td>74</td>
</tr>
<tr>
<td>Fair</td>
<td>104</td>
<td>26</td>
</tr>
<tr>
<td>Poor</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Only 3.8 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.

Please refer to the Bridge and Highway Condition maps at the end of each sub-area chapter for the locations of poor pavement.

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.

As of 2014 the average age of all bridges in Dutchess County was 57 years, with 143 (39 percent) built in 1940 or before. 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.

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

<table>
<thead>
<tr>
<th>Number of Bridges</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYSDOT</td>
<td>135</td>
</tr>
<tr>
<td>Dutchess County</td>
<td>141</td>
</tr>
<tr>
<td>Local</td>
<td>54</td>
</tr>
<tr>
<td>NYSBA</td>
<td>3</td>
</tr>
<tr>
<td>NPS</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>26</td>
</tr>
</tbody>
</table>

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.
Moving Dutchess 2

over the 4.9 average reported in 2011 with Moving Dutchess.\textsuperscript{12} Table 5-6 shows bridge conditions by jurisdiction. 

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

<table>
<thead>
<tr>
<th></th>
<th>Average Condition Rating</th>
<th>Number Rated Deficient</th>
<th>Percent Deficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYSDOT</td>
<td>5.1</td>
<td>66</td>
<td>49</td>
</tr>
<tr>
<td>Dutchess County</td>
<td>5.0</td>
<td>60</td>
<td>43</td>
</tr>
<tr>
<td>Local</td>
<td>4.6</td>
<td>22</td>
<td>41</td>
</tr>
<tr>
<td>Other</td>
<td>5.6</td>
<td>5</td>
<td>15</td>
</tr>
</tbody>
</table>

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).

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.\textsuperscript{13}

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

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Structurally Deficient</th>
<th>Functionally Obsolete</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYSDOT</td>
<td>8</td>
<td>55</td>
</tr>
<tr>
<td>Dutchess County</td>
<td>27</td>
<td>23</td>
</tr>
<tr>
<td>Local</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

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).

Please refer to the Bridge and Highway Condition maps at the end of each sub-area chapter for the locations of structurally deficient or functionally obsolete bridges.

\textbf{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.\textsuperscript{14} Table 5-8 shows the number of vehicle crossings on NYSBA bridges from 2005-2014.

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

<table>
<thead>
<tr>
<th>Bridge</th>
<th>2005</th>
<th>2010</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newburgh-Beacon</td>
<td>25.2</td>
<td>25.1</td>
<td>24.7</td>
</tr>
<tr>
<td>Mid-Hudson</td>
<td>14.0</td>
<td>14.0</td>
<td>13.8</td>
</tr>
<tr>
<td>Kingston-Rhinecliff</td>
<td>7.5</td>
<td>7.9</td>
<td>7.7</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Primary Service Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route A          Poughkeepsie-Wappingers Falls-Fishkill-Beacon</td>
</tr>
<tr>
<td>Route B          Poughkeepsie-Wappingers Falls-Fishkill-Beacon</td>
</tr>
<tr>
<td>Route C          Poughkeepsie-Hyde Park-Rhinebeck-Tivoli</td>
</tr>
<tr>
<td>Route D          Poughkeepsie-Millbrook-Wassaic-Dover</td>
</tr>
<tr>
<td>Route E          LaGrange-Union Vale-Beekman-Pawling</td>
</tr>
<tr>
<td>Route F          Poughkeepsie-Beacon-Fishkill-Hopewell Jct.</td>
</tr>
<tr>
<td>Route G          Beacon</td>
</tr>
</tbody>
</table>

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.
Chapter 5: Transportation & Resource Overview

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Figure 5-8. Dutchess County Public Transit Bus Routes

Figure 5-9. City of Poughkeepsie Bus Routes
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 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>
<thead>
<tr>
<th>Table 5-10. Passengers served by the DCPT Bus System (2012-2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Fixed Route</td>
</tr>
<tr>
<td>Dial-A-Ride</td>
</tr>
<tr>
<td>Flex Service</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Table 5-11. Average Monthly Passengers on DCPT Bus Routes (2012-2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Monthly Ridership</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Route A</td>
</tr>
<tr>
<td>Route B</td>
</tr>
<tr>
<td>Route C</td>
</tr>
<tr>
<td>Route D</td>
</tr>
<tr>
<td>Route E</td>
</tr>
<tr>
<td>Route F</td>
</tr>
<tr>
<td>Route G*</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

*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>
<thead>
<tr>
<th>Number</th>
<th>Average Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>3.2</td>
</tr>
<tr>
<td>36</td>
<td>4.0</td>
</tr>
<tr>
<td>5</td>
<td>6.0</td>
</tr>
</tbody>
</table>

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 over 364,500 passengers in 2014 (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 declined in recent years (see Table 5-13).

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>Annual Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Route</td>
<td>403,164</td>
<td>348,746</td>
<td>364,501</td>
<td>372,137</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Route</th>
<th>Passengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Galleria Mall</td>
<td>69,408</td>
</tr>
<tr>
<td>Main Street</td>
<td>111,995</td>
</tr>
<tr>
<td>Northside</td>
<td>115,423</td>
</tr>
<tr>
<td>Southside</td>
<td>66,837</td>
</tr>
<tr>
<td>Shopper’s Special</td>
<td>22,116</td>
</tr>
<tr>
<td>Special</td>
<td>20,799</td>
</tr>
</tbody>
</table>

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.
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)

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
<th>Average Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy Duty Buses</td>
<td>6</td>
<td>5 years</td>
</tr>
<tr>
<td>Medium Duty Buses</td>
<td>2</td>
<td>10 years</td>
</tr>
</tbody>
</table>

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


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>
<thead>
<tr>
<th>Line</th>
<th>Station</th>
<th>2010</th>
<th>2014</th>
<th>% Change 2010-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hudson</td>
<td>Poughkeepsie</td>
<td>1,850</td>
<td>1,736</td>
<td>-6%</td>
</tr>
<tr>
<td></td>
<td>New Hamburg</td>
<td>1,020</td>
<td>1,035</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>Beacon</td>
<td>2,575</td>
<td>2,498</td>
<td>-3%</td>
</tr>
<tr>
<td></td>
<td>Total Hudson Line</td>
<td>5,445</td>
<td>5,269</td>
<td>-3%</td>
</tr>
<tr>
<td>Harlem</td>
<td>Wassaic</td>
<td>278</td>
<td>250</td>
<td>-10%</td>
</tr>
</tbody>
</table>

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 2014.15

<table>
<thead>
<tr>
<th>Line</th>
<th>Station</th>
<th>2010</th>
<th>2014</th>
<th>% Change 2010-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hudson</td>
<td>Poughkeepsie</td>
<td>3,347</td>
<td>3,260</td>
<td>-3%</td>
</tr>
<tr>
<td></td>
<td>New Hamburg</td>
<td>953</td>
<td>1,003</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>Beacon</td>
<td>2,837</td>
<td>2,986</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>Total Hudson Line</td>
<td>7,137</td>
<td>7,249</td>
<td>2%</td>
</tr>
<tr>
<td>Harlem</td>
<td>Wassaic</td>
<td>690</td>
<td>632</td>
<td>-8%</td>
</tr>
<tr>
<td></td>
<td>Tenmile River</td>
<td>58</td>
<td>54</td>
<td>-7%</td>
</tr>
<tr>
<td></td>
<td>Dover Plains</td>
<td>144</td>
<td>132</td>
<td>-8%</td>
</tr>
<tr>
<td></td>
<td>Harlem Valley-Wingdale</td>
<td>165</td>
<td>147</td>
<td>-11%</td>
</tr>
</tbody>
</table>

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

Table 5-17. Metro-North Weekend Inbound Boardings by Line and Station (2010-2014)
Moving Dutchess 2

<table>
<thead>
<tr>
<th></th>
<th>Wingdale</th>
<th>Appalachian Trail*</th>
<th>Pawling</th>
<th>Total Harlem Line</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>4</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>217</td>
<td>228</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>1,278</strong></td>
<td><strong>1,197</strong></td>
<td><strong>-6%</strong></td>
</tr>
</tbody>
</table>

*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.\textsuperscript{16}

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

<table>
<thead>
<tr>
<th></th>
<th>FFY 2013</th>
<th>FFY 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poughkeepsie Station</td>
<td>95,083</td>
<td>98,516</td>
</tr>
<tr>
<td>Rhinecliff Station</td>
<td>184,452</td>
<td>186,273</td>
</tr>
</tbody>
</table>

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.\textsuperscript{17}

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.

Complete Streets

Across the country, the concept of Complete Streets is gaining traction. Complete Streets is the concept that streets should be planned, designed, operated and maintained to support safe travel by all types of users: people walking, bicycling, taking transit, and driving, as well as by people of all ages and abilities. Complete Streets may include sidewalks, crosswalks,
paved shoulders, bicycle lanes, bus pull-outs, traffic calming measures, or other features depending on the street’s characteristics and land use context. Complete Streets support local businesses, promote economic development, improve health and safety, and make our communities more inviting.

In 2014, the PDCTC convened a Dutchess County inter-departmental Complete Streets Committee, based on a recommendation in Walk Bike Dutchess. The Committee includes staff from the PDCTC, Planning & Development, Public Works, Health, Office for the Aging, Division of Public Transit, Traffic Safety Board, and Sheriff’s Office. Transportation Council staff coordinates the committee and serves as a liaison between County departments, as well as with local municipalities, NYSDOT, and others. The committee has developed a Complete Streets checklist to assist the County in achieving its vision for complete streets, and shares resources and ideas to promote walking, bicycling, and transit use in the county. For more information, see www.dutchessny.gov/CompleteStreets.

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. 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. The County’s Healthy Communities Trail Map Series includes maps of nearly 70 trail systems throughout the county. 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.

### Bicycling Facilities

#### Bike Lanes

There are currently no bicycle lanes in the county, with the exception of short segments on State Bicycle Routes approaching right-turn pockets at intersections, where the shoulder transitions to a bicycle lane through the intersection to prevent bicyclists from being cut off by right-turning traffic (for example, on Route 9 northbound near Marist College).

#### Shared-Lane Use Markings (Sharrows)

Sharrows have been marked in three municipalities: in the City of Beacon on Main Street between North Avenue (Route 9D) and East Main Street; in the Village of Pawling on Charles Colman Boulevard between West Main Street and Union Street and on West and East Main Street between Dutcher Avenue and Coulter Avenue; and in the Town of Amenia on Mechanic Street between the Harlem Valley Rail Trail and East Main Street.

#### 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
Moving Dutchess 2

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 identified by the City of Poughkeepsie (see City Code Chapter 15, Article V) and the Red Hook and Rhinebeck Greenway Committees (the Historic District Bike/Hike Trail, which includes two signed bicycle route loops).
Bicycle Parking

Bicycle parking exists at various destinations across the county. The PDCTC’s online Bicycle Parking Finder map identifies locations, type, and condition of bike parking.

Park & Ride Facilities

There are eight formal park-and-ride facilities in Dutchess County that are not directly related to MTA Metro-North Railroad stations. These facilities are located in strategic locations to facilitate opportunities for the traveling public to use alternatives to traveling alone and/or to congested destinations. The facilities provide places for travelers to meet and park their cars or bike and catch a carpool, vanpool, bus, or train to work. They are open to public use, and some are served by bus services. Additional and up-to-date information can be found through the 511NY Rideshare portal at https://511nyrideshare.org/. The current park-and-ride facilities in the county include the following:

1. East Fishkill: Kimberly Corners Shopping Plaza park-and-ride at the 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. East Fishkill: Le Chambord Inn on Route 52, ¼ mile east of the Taconic State Parkway interchange (30 spaces, carpool only).
5. LaGrange: Taconic State Parkway at Todd Hill Rd. (60 spaces; carpool only).
7. Town of Fishkill: Fishkill Intermodal Center near Route 9D, adjacent to Dutchess Stadium (100 spaces; carpool and DCPT service to Metro-North Beacon station).
8. Rhinebeck: Route 199, between Route 9G and the Kingston Rhinecliff Bridge (35 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...
moving dutchess 2

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.¹⁹

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.

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.²⁰

commodity data is summarized in table 5-19.

<table>
<thead>
<tr>
<th>commodity</th>
<th>short tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>petroleum and petroleum products</td>
<td>7,687,280</td>
</tr>
<tr>
<td>soil, sand, gravel, rock, and stone</td>
<td>2,579,914</td>
</tr>
<tr>
<td>cement and concrete</td>
<td>797,242</td>
</tr>
<tr>
<td>chemicals and related products</td>
<td>719,874</td>
</tr>
<tr>
<td>food and farm products</td>
<td>538,457</td>
</tr>
</tbody>
</table>

airports

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 an increasing 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 5-20.21

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

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Passenger Traffic</td>
<td>364,848</td>
<td>320,682</td>
<td>309,357</td>
</tr>
<tr>
<td>Total Aircraft Movements</td>
<td>42,123</td>
<td>38,905</td>
<td>36,881</td>
</tr>
<tr>
<td>Total Freight (Short-tons)</td>
<td>18,781</td>
<td>17,490</td>
<td>15,227</td>
</tr>
</tbody>
</table>

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).

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 published data available, the NYS Governor’s Traffic Safety Committee (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.22 Table 5-21 summarizes crashes over the three-year period.

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

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>3-year Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal/Injury Crashes</td>
<td>1,963</td>
<td>2,043</td>
<td>2,026</td>
<td>2,011</td>
</tr>
<tr>
<td>Non-Injury Crashes</td>
<td>4,022</td>
<td>3,830</td>
<td>4,148</td>
<td>4,000</td>
</tr>
<tr>
<td>Total</td>
<td>5,985</td>
<td>5,873</td>
<td>6,174</td>
<td>6,011</td>
</tr>
</tbody>
</table>
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

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

**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).
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 2010-2014 ALIS crash data to identify general crash trends in Dutchess County. During the five-year period, the county experienced almost 37,700 vehicle crashes that resulted in 110 fatalities and over 12,700 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 (20 and 13 percent respectively). Though crashes with fixed objects accounted for 20 percent of all crashes, they made up 54 percent of the traffic related fatalities in the county (see Table 5-22).

Half of all crashes from 2010-2014 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 43 percent of traffic fatalities in the county.

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

![Graph showing total crash-related injuries in Dutchess County from 2003 to 2013.](image)
### Table 5-22. NYS ALIS Crash Data Summary for Dutchess County by Crash Type and Traffic Control (2010-2014)

<table>
<thead>
<tr>
<th>Crash Characteristics</th>
<th>Number of crashes</th>
<th>Percent of Total Crashes</th>
<th>Number of Fatalities</th>
<th>Percent of Total Fatalities</th>
<th>Number of Injuries</th>
<th>Percent of Total Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crash Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Motor Vehicle</td>
<td>22,850</td>
<td>61%</td>
<td>36</td>
<td>33%</td>
<td>8,953</td>
<td>70%</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>435</td>
<td>1%</td>
<td>8</td>
<td>7%</td>
<td>419</td>
<td>3%</td>
</tr>
<tr>
<td>Bicyclist</td>
<td>216</td>
<td>1%</td>
<td>3</td>
<td>3%</td>
<td>184</td>
<td>1%</td>
</tr>
<tr>
<td>Deer</td>
<td>4,820</td>
<td>13%</td>
<td>0</td>
<td>0%</td>
<td>187</td>
<td>1%</td>
</tr>
<tr>
<td>Animal</td>
<td>599</td>
<td>2%</td>
<td>0</td>
<td>0%</td>
<td>18</td>
<td>0%</td>
</tr>
<tr>
<td>Fixed Object¹</td>
<td>7,648</td>
<td>20%</td>
<td>59</td>
<td>54%</td>
<td>2,598</td>
<td>20%</td>
</tr>
<tr>
<td>No Collision</td>
<td>759</td>
<td>2%</td>
<td>3</td>
<td>3%</td>
<td>325</td>
<td>3%</td>
</tr>
<tr>
<td>Other²</td>
<td>355</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
<td>79</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Traffic Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>18,861</td>
<td>50%</td>
<td>51</td>
<td>46%</td>
<td>4,946</td>
<td>39%</td>
</tr>
<tr>
<td>Traffic Signal</td>
<td>6,062</td>
<td>16%</td>
<td>4</td>
<td>4%</td>
<td>3,072</td>
<td>24%</td>
</tr>
<tr>
<td>Stop Sign</td>
<td>2,247</td>
<td>6%</td>
<td>3</td>
<td>3%</td>
<td>1,054</td>
<td>8%</td>
</tr>
<tr>
<td>Yield Sign</td>
<td>802</td>
<td>2%</td>
<td>0</td>
<td>0%</td>
<td>222</td>
<td>2%</td>
</tr>
<tr>
<td>No Passing Zone</td>
<td>7,412</td>
<td>20%</td>
<td>47</td>
<td>43%</td>
<td>2,798</td>
<td>22%</td>
</tr>
<tr>
<td>Other³</td>
<td>2,298</td>
<td>6%</td>
<td>5</td>
<td>5%</td>
<td>671</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>37,682</td>
<td></td>
<td>110</td>
<td></td>
<td>12,763</td>
<td></td>
</tr>
</tbody>
</table>

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.
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 15 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 (25 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 calculated the number of crashes per centerline mile to identify above-average, non-intersection crash locations. Both crash analyses relied on GIS tools to determine crash rates and identify problem locations.

The crash analysis identified nine intersections that experienced the highest number of total crashes from 2010-2014:

1. Route 44 (Church St.)-Route 9 (southbound) intersection in the City of Poughkeepsie: 244 crashes.
2. Route 9 (northbound)-Route 44 (Church St.) Ramp in the City of Poughkeepsie: 124 crashes.
3. Route 9-West Merritt Blvd. in the Town of Fishkill: 113 crashes.
5. Main St.-Columbus Dr. in the City of Poughkeepsie: 103 crashes.
6. Route 44 (Church St.)-Jefferson St. in the City of Poughkeepsie: 101 crashes.
7. Route 9-East Main St. in the City of Poughkeepsie: 98 crashes.
9. Route 9-Route 52 (Main St.) in the Village of Fishkill: 91 crashes.

In addition to intersections, the crash analysis identified road segments with the highest number of total crashes from 2010-2014. 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: 150 crashes.
2. Route 9 (northbound) from the Alpine Commons (BJ’s) driveway to CR 93 (Myers Corners Rd.) in the Town of Wappinger: 81 crashes.
3. TSP (northbound) from Miller Hill Rd. to I-84 in East Fishkill: 79 crashes.
4. Route 9 from CR 40A (Saint Andrews Rd.) to Farm Ln. in the Town of Hyde Park: 79 crashes.
5. TSP (northbound) from CR 9 (Beekman Rd.) to Route 82 in the Town of East Fishkill: 79 crashes.
Table 5-23. NYS ALIS Crash Data Summary for Dutchess County by Crash Conditions (2010-2014)

<table>
<thead>
<tr>
<th>Crash Conditions</th>
<th>Number of crashes</th>
<th>Percent of Total Crashes</th>
<th>Number of Fatalities</th>
<th>Percent of Total Fatalities</th>
<th>Number of Injuries</th>
<th>Percent of Total Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weather Conditions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear</td>
<td>21,486</td>
<td>57%</td>
<td>65</td>
<td>59%</td>
<td>7,275</td>
<td>57%</td>
</tr>
<tr>
<td>Cloudy</td>
<td>9,041</td>
<td>24%</td>
<td>30</td>
<td>27%</td>
<td>3,245</td>
<td>25%</td>
</tr>
<tr>
<td>Rain</td>
<td>3,853</td>
<td>10%</td>
<td>11</td>
<td>10%</td>
<td>1,477</td>
<td>12%</td>
</tr>
<tr>
<td>Snow</td>
<td>1,800</td>
<td>5%</td>
<td>2</td>
<td>2%</td>
<td>457</td>
<td>4%</td>
</tr>
<tr>
<td>Other(^1)</td>
<td>1,502</td>
<td>4%</td>
<td>2</td>
<td>2%</td>
<td>309</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Light Conditions(^2)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daylight</td>
<td>24,897</td>
<td>66%</td>
<td>67</td>
<td>61%</td>
<td>9,241</td>
<td>72%</td>
</tr>
<tr>
<td>Dawn</td>
<td>797</td>
<td>2%</td>
<td>2</td>
<td>2%</td>
<td>172</td>
<td>1%</td>
</tr>
<tr>
<td>Dusk</td>
<td>1,119</td>
<td>3%</td>
<td>1</td>
<td>1%</td>
<td>339</td>
<td>3%</td>
</tr>
<tr>
<td>Dark-Road Lighted</td>
<td>3,888</td>
<td>10%</td>
<td>11</td>
<td>10%</td>
<td>1,439</td>
<td>11%</td>
</tr>
<tr>
<td>Dark-Road Unlighted</td>
<td>6,059</td>
<td>16%</td>
<td>28</td>
<td>25%</td>
<td>1,433</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Road Conditions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry</td>
<td>27,239</td>
<td>72%</td>
<td>86</td>
<td>78%</td>
<td>9,312</td>
<td>73%</td>
</tr>
<tr>
<td>Wet</td>
<td>6,652</td>
<td>18%</td>
<td>20</td>
<td>18%</td>
<td>2,581</td>
<td>20%</td>
</tr>
<tr>
<td>Snow/Ice</td>
<td>2,600</td>
<td>7%</td>
<td>2</td>
<td>2%</td>
<td>648</td>
<td>5%</td>
</tr>
<tr>
<td>Other(^3)</td>
<td>1,191</td>
<td>3%</td>
<td>2</td>
<td>2%</td>
<td>222</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>37,682</td>
<td></td>
<td>110</td>
<td></td>
<td>12,763</td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Other includes sleet, hail, freezing rain, fog, and smoke.
\(^2\) Light conditions were not identified for 851 crashes that resulted in one fatality and 139 injuries.
\(^3\) Other includes muddy, slushy, or flooded road.
6. Route 55 from CR 47 (Freedom Rd.) to Dr. Fink Rd. in the Town of LaGrange: 75 crashes.
7. Route 55 from Route 82 to Velie Rd. in the Town of LaGrange: 75 crashes.

Lastly, the crash analysis identified road segments that had the highest number of crashes per mile for 2010-2014. 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 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.

NYSDOT High Accident Locations (HALs)

Federal law requires that New York State submit an annual report that lists High Accident Locations (HALs) on State facilities. HALs represent those crash locations on public roads that have “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.

In particular, NYSDOT’s 2014 HAL report includes one corridor in Dutchess County that is among the top five percent crash locations: the Route 44/55 corridor (eastbound arterial) through the City of Poughkeepsie from Market St. to Streit Ave. According to the HAL report, NYSDOT identified the following issues with the road:

1. Pattern of rear end accidents occurring on eastbound approaches to intersections possibly due to small 8-inch traffic signal faces and morning sun glare.
2. Pattern of right-angle accidents occurring at signalized intersections where eastbound vehicles ran the red light, possibly due to small 8-inch signal faces.
3. Pattern of overtaking accidents occurring on eastbound approaches to signalized intersections.
4. Patterns of pedestrian and bicyclist accidents, notably when vehicles are making turns at intersections.
5. Pedestrian ramps do not meet ADA standards.

The HAL report recommends traffic signal upgrades, ADA compliant ramps, pedestrian and bicycle warning signs, and advance street name signs along the City’s eastbound arterial.
Pedestrian & Bicycle Safety

The most recent data (2013) from the Governor’s Traffic Safety Committee (GTSC) indicated that there 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 5-24 summarizes the most recent published pedestrian and bicycle crash data.

Table 5-24. Non-motorized Crashes in Dutchess County (2011-2013)

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian/Motor Vehicle Crashes</td>
<td>92</td>
<td>81</td>
<td>94</td>
</tr>
<tr>
<td>Bicycle/Motor Vehicle Crashes</td>
<td>38</td>
<td>39</td>
<td>51</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>120</td>
<td>145</td>
</tr>
</tbody>
</table>

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). See Chapters 6.1-6.5 and Walk Bike Dutchess for more detailed pedestrian and bicycle crash analysis.

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...
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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

The FAST Act 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 86 reported injuries at Dutchess County train stations, ranging from a high of 34 in 2011 to a low of 16 in 2014. 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 seven injuries during the four-year period. The Hudson Line
stations had the highest share of injuries (92 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:

1. State and county GIS data
2. Dutchess County Greenway Connections (2000)
4. New York State Open Space Plan (2009)
5. Natural Resource Inventory (NRI) of Dutchess County (2010)
8. 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. These areas have
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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 0.070 ppm; notably, this standard has gradually increased from 0.080 ppm in 1997, to 0.075 ppm in 2008, and recently to 0.070 ppm in 2015. From 2013 to 2015, the Millbrook station recorded an average of 0.066 ppm, thus meeting the more stringent 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. 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).

Please refer to the Natural and Historic Resource maps at the end of each sub-area chapter for the locations of environmentally sensitive areas and historic properties.

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. 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.
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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. The county has experienced significant changes in its agricultural economy since the last Agricultural & 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 & 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 & 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)

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5 NYSDOT, *Local Highway Inventory (LHI)*, 2013.
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Chapter 6-1

Lower Hudson Overview

*Moving Dutchess 2* defines the Lower Hudson as the southwestern communities located along the Hudson River. The area includes the Towns of Poughkeepsie, Wappinger, and Fishkill; the Cities of Poughkeepsie and Beacon; and the Villages of Wappingers Falls and Fishkill – a total area of almost 95 square miles.

These communities share demographic, land use, and transportation characteristics that make them more likely to face similar challenges in the future. These include the most urban areas of the county, relatively large minority populations, high rates of out-of-county commuting, concentrations of low-income households and households without a vehicle, and above-average transit access. These shared characteristics also make it more likely that the communities will require similar transportation investments and planning to meet their challenges.

Demographics

Based on the 2010 Census, the Lower Hudson communities had a combined population of 140,773, which represented 47 percent of the county’s total population. Since 2000, the area’s population grew by 5.9 percent, or about 0.6 percent annually. The Lower Hudson’s growth was slightly less than the county’s overall growth of 6.2 percent over the ten year period. Growth in the area has increased slightly compared to the previous decade, in which the population grew by 5.7 percent.

The Village and Town of Fishkill and Village of Wappingers Falls had the highest rates of growth in the area, while the Towns of Wappinger and Poughkeepsie had the lowest rates of growth. Table 6-1-1 shows population change from 2000-2010 for the Lower Hudson communities.

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

<table>
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<th>2000</th>
<th>2010</th>
<th>Percent Change</th>
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<td>City of Beacon</td>
<td>14,180</td>
<td>15,541</td>
<td>4.9</td>
</tr>
<tr>
<td>City of Poughkeepsie</td>
<td>29,871</td>
<td>32,736</td>
<td>9.6</td>
</tr>
<tr>
<td>Town of Fishkill</td>
<td>17,521</td>
<td>19,936</td>
<td>13.8</td>
</tr>
<tr>
<td>Town of Poughkeepsie</td>
<td>41,800</td>
<td>42,399</td>
<td>1.4</td>
</tr>
<tr>
<td>Town of Wappinger</td>
<td>22,322</td>
<td>22,468</td>
<td>0.7</td>
</tr>
<tr>
<td>Village of Fishkill</td>
<td>1,735</td>
<td>2,171</td>
<td>25.1</td>
</tr>
<tr>
<td>V. of Wappingers Falls</td>
<td>4,929</td>
<td>5,522</td>
<td>12.0</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2010 Census

In 2010 the Lower Hudson had a population density of 1,486 people per square mile, which was almost four times higher than the county’s overall density of 374 per square mile. The City of Poughkeepsie had the highest population density in the area (and in the county), with 6,364 persons per square mile, while the Town of Fishkill had the lowest at 809 persons per square mile. Population density information is shown on the Lower Hudson Population Density map. Potential future population density patterns are shown in the Lower Hudson...
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2040 Buildout Analysis: Existing Zoning Scenario and Centers and Greenspaces Scenario maps at the end of this chapter.

In terms of race and ethnicity for the area as a whole, over 70 percent of residents classified themselves as White, 16 percent as Black, 5.2 percent as other, 4.6 percent as Asian, 3.5 percent as two or more races, and 0.4 percent as American Indian or Alaska Native; 14.5 percent classified themselves as of Hispanic or Latino origin. Racial makeup varied substantially by municipality. The White population ranged from 81 percent in the Town of Wappinger to 51 percent in the City of Poughkeepsie; the Black population ranged from 33.5 percent in the City of Poughkeepsie to 5.5 percent in the Village of Fishkill. Residents of Hispanic or Latino origin made up over 26 percent of the Village of Wappingers Falls population and less than 10 percent of the Town of Poughkeepsie population.

Table 6-1-2. Total Housing Units-Lower Hudson (2000-2010)

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Beacon</td>
<td>5,410</td>
<td>5,715</td>
<td>5.6</td>
</tr>
<tr>
<td>City of Poughkeepsie</td>
<td>13,153</td>
<td>13,984</td>
<td>6.3</td>
</tr>
<tr>
<td>Town of Fishkill</td>
<td>7,036</td>
<td>9,246</td>
<td>31.4</td>
</tr>
<tr>
<td>Town of Poughkeepsie</td>
<td>15,132</td>
<td>16,116</td>
<td>6.5</td>
</tr>
<tr>
<td>Town of Wappinger</td>
<td>10,144</td>
<td>10,908</td>
<td>7.5</td>
</tr>
<tr>
<td>Village of Fishkill</td>
<td>1,011</td>
<td>1,138</td>
<td>12.6</td>
</tr>
<tr>
<td>V. of Wappingers Falls</td>
<td>2,119</td>
<td>2,443</td>
<td>15.3</td>
</tr>
</tbody>
</table>

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

The Lower Hudson contained 59,550 housing units in 2010, a 10.3 percent increase from 2000. The area averaged over 555 new housing units per year from 2000-2010. The Town of Fishkill had the highest growth, in large part due to the Merritt Park development. Table 6-1-2 shows housing unit totals for the Lower Hudson communities.

The Lower Hudson contained 55,272 households in 2010, with an average household size of 2.5 persons, which was slightly lower than the 2.6 persons per household reported in 2000.

Age

Young people and older people have different transportation needs than others: they are less likely to drive, and therefore more likely to walk (both young and old), bicycle (young people), or use transit for transportation. The City of Poughkeepsie, Town of Wappinger, and Village of Wappingers Falls have slightly higher percentages of young residents (aged 16 and under) than the county average, while the Town and Village of Fishkill have slightly higher percentages of older residents (aged 65 and over). The Village of Wappingers Falls has a higher than average percentage of these young and older groups combined.

Table 6-1-3. Percent Young and Elderly-Lower Hudson (2010)

<table>
<thead>
<tr>
<th></th>
<th>% 16 and Under</th>
<th>% 65 and Over</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Beacon</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>City of Poughkeepsie</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>Town of Fishkill</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>Village of Fishkill</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td>Total % Under 16 and 65+</td>
<td>29</td>
<td>33</td>
</tr>
</tbody>
</table>
Moving Dutchess 2

<table>
<thead>
<tr>
<th>Town of Poughkeepsie</th>
<th>18</th>
<th>14</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Wappinger</td>
<td>20</td>
<td>13</td>
<td>33</td>
</tr>
<tr>
<td>Village of Fishkill</td>
<td>16</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>V. of Wappingers Falls</td>
<td>20</td>
<td>14</td>
<td>34</td>
</tr>
<tr>
<td>Dutchess County</td>
<td>19</td>
<td>14</td>
<td>33</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2010 Census

### Centers & Destinations

The Lower Hudson is characterized by a mix of urban and suburban land use patterns, with some semi-rural areas. Land use is mainly residential and commercial, with some industrial uses and open space areas. The Lower Hudson Overview map at the end of this chapter shows key centers and destinations in the area.

### Centers

The Dutchess County Planning Department’s Centers and Greenspaces Guide identifies existing and emerging centers in the Lower Hudson, based on concentrations of residential and commercial activity. The key existing centers are listed below. They are mostly tied to the area’s two cities, two villages, and historic hamlets, and tend to be located along State highways.

1. **City of Poughkeepsie:** The City of Poughkeepsie is the major center in the area and in the county. It includes the downtown business district, with County and City offices, the Bardavon Theater, Civic Center, Adriance Library, and shops and restaurants; the waterfront, including the Poughkeepsie train station; Vassar Brothers Medical Center; the Walkway Over the Hudson State Historic Park and WRS Dutchess Rail Trail; schools, parks, and residential neighborhoods.

2. **Arlington (Town of Poughkeepsie):** Arlington includes Vassar College; the Arlington business district, with offices, shops and restaurants; and residential areas.

### Income

Lower-income households are also more likely to walk, bicycle and use transit for everyday needs. Based on data from the U.S. Census Bureau’s 2009-2013 5-year American Community Survey, the Cities of Beacon (at $48,440-$64,520) and Poughkeepsie (at $36,631-$42,331) had median household incomes below the county average of $71,192-$73,858; the City of Poughkeepsie had the lowest average income of all 30 municipalities in the county. In addition, the Cities of Beacon and Poughkeepsie had the highest percentage of families living in poverty across the county.

### Vehicle Ownership

Households without a motor vehicle are much more likely to seek alternative transportation. Based on data from the U.S. Census Bureau’s 2009-2013 5-year American Community Survey, the Cities of Beacon (at 9.8-16.4 percent) and Poughkeepsie (at 24.4-29.6 percent) had the highest percentages of zero-vehicle households in the county, with Poughkeepsie well above the county average of 7.9-8.9 percent.
4. Village of Wappingers Falls: the Village center includes the Village business district, with shops, restaurants, and cultural facilities; Route 9 commercial plazas; Mesier Park; and residential areas.
5. Village of Fishkill: the Village center includes the Village business district, with Village offices, shops and restaurants; industrial businesses along the railroad tracks; commercial plazas along Route 9 and Route 52; and residential areas.
6. City of Beacon: The Beacon center includes the downtown business district, with City and County offices, shops, galleries, restaurants, and cultural facilities; the train station, waterfront, Long Dock Beacon, and DIA: Beacon; and residential areas.

Destinations

Outside of the centers, destinations that generate significant travel in the Lower Hudson include commercial plazas, colleges, hospitals, industrial and employment sites, large residential communities, and regional recreational areas, as outlined below:

1. Dutchess Community College in the Town of Poughkeepsie
2. Marist College in the Town of Poughkeepsie
3. Saint Francis Hospital in the Town of Poughkeepsie
4. Route 44 commercial plazas, including Stop & Shop and Adams in the Town of Poughkeepsie
5. Poughkeepsie Galleria, South Hills Mall, and Route 9 commercial plazas
6. IBM in the Town of Poughkeepsie
7. Castle Point VA Hospital in the Town of Fishkill
8. Dutchess Stadium in the Town of Fishkill (seasonal)
9. Downstate Correctional Facility and Fishkill Correctional Facility in the Town of Fishkill
10. Wal-Mart Supercenter and Sam’s Club in the Town of Fishkill
11. Westage Business Center in the Town of Fishkill
12. Gap Inc. distribution center in the Village of Fishkill
13. Merritt Park development in the Village of Fishkill

Major Projects

The Transportation Council’s 2013 Major Projects Report, which tracks large development projects in the county, identified over 3,000 new residential units and over 1.1 million square feet of non-residential space in the planning stages or under construction in the Lower Hudson. Major planned projects are listed below by municipality. The project details were updated based on the latest information available. However, all projects are subject to change.

City of Poughkeepsie
1. Highridge Gardens: 74 affordable residential units on Hudson Ave.
2. Highview at Falkill Creek: 120 condo/townhouse units on Milton St.
3. One Dutchess Ave.: 384 residential units and 13,800 sq. ft. retail on Dutchess Ave.
4. South Waterfront Development/Poughkeepsie Landing: 92,000 sq. ft. office, 32,000 sq. ft. retail, and hotel on Rinaldi Blvd.

**Town of Poughkeepsie**
2. Emeritus at Poughkeepsie: 68,000 sq. ft. assisted living facility on Route 113 (Spackenkill Rd.).
4. Vassar College Science Building: 82,000 sq. ft. public/institutional on Route 376 (Raymond Ave.).

**City of Beacon**
1. Beacon 248 Development: 100 condo/townhouse units on Tioranda Ave.
2. Beacon Hip Lofts: 131 residential units and 12 affordable residential units on Front St.
4. Highland Meadows: 68 senior units on Delavan Ave.
5. Roundhouse at Beacon Falls: 78 residential units and 35,800 sq. ft. hotel on East Main St.

**Town of Fishkill**
2. Dutchess Marketplace: 100,000 sq. ft. retail on Route 9.
4. Marriott Residence Inn & Spring Hill Suites: 135,877 sq. ft. hotel on Westage Park Dr.

**Town of Wappinger**
1. DCH Toyota Service Center: 37,747 sq. ft. retail on Old Route 9.
2. La Fonda Del Sol: 37,800 sq. ft. office on CR 28 (Old Hopewell Rd.).
3. Regency at Wappinger: 225 senior residential units on CR 94 (All Angels Hill Rd.).

**Transportation System**

**Roads**

The Lower Hudson’s roadway system consists of Interstate 84; major highways including Routes 9, 9D, 44, and 55; smaller State highways including Routes 9G, 52, 82, 113 (Spackenkill Rd.), 115 (Salt Point Turnpike), and 376; and major County roads including CR 28 (Old Hopewell Rd.), CR 77 (Vassar Rd.), CR 93 (Myers Corners Rd.), CR 94 (All Angels Hill Rd.); and CR 104 (New Hackensack Rd.).

According to the NYSDOT 2013 Highway Mileage Report, the Lower Hudson communities hosted 539 miles of State, County, and local roads. Table 6-1-4 shows the distribution of centerline mileage in the Lower Hudson communities.

**Table 6-1-4. Centerline Mileage-Lower Hudson**

<table>
<thead>
<tr>
<th>Community</th>
<th>Total Centerline Mileage</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Beacon</td>
<td>52</td>
</tr>
<tr>
<td>City of Poughkeepsie</td>
<td>72</td>
</tr>
<tr>
<td>Town of Fishkill</td>
<td>86</td>
</tr>
<tr>
<td>Town of Poughkeepsie</td>
<td>177</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Town of Wappinger</th>
<th>130</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village of Fishkill</td>
<td>8</td>
</tr>
<tr>
<td>V. of Wappinger Falls</td>
<td>14</td>
</tr>
</tbody>
</table>

Each year, NYSDOT measures the pavement condition of State highways on a scale of 1 to 10, with 1 being the worst and 10 the best. A rating of 5 or less is classified as poor. Based on NYSDOT’s 2014 Pavement Data Report, State-owned roadways in the Lower Hudson had an average surface rating of 7.3. Based on 2014 pavement data, the following State highway segment in the Lower Hudson had poor pavement surfaces (score of 5 or less): Route 115 (Salt Point Turnpike) from Hudson Ave. to Innis Ave. in the Town of Poughkeepsie (0.3 miles).

The Dutchess County Department of Public Works also collects pavement quality data for County and local federal-aid roads. Based on 2014 data, none of the County roads in the Lower Hudson exhibited poor pavement conditions. However, a number of local federal-aid roads were in poor condition:

1. Academy St. between Cannon St. and Main St. in the City of Poughkeepsie (0.07 miles).
2. Market St. between Route 44 (Church St.) (eastbound) and Main St. in the City of Poughkeepsie (0.18 miles).
3. Reservoir Square between S. Clinton St. and S. Clinton St. in the City of Poughkeepsie (1.12 miles).
4. S. Grand Ave. between Fountain Brook Ave. and Town of Poughkeepsie line in the City of Poughkeepsie (0.40 miles).
5. De Laval Pl. between Innis Ave. and N. Grand Ave. in the City of Poughkeepsie (0.12 miles).
6. Van Wagner Rd. between Hornebeck Rd. and bridge PO-4 in the Town of Poughkeepsie (0.87 miles).
7. Market St. between the Town of Wappinger line and Fulton Ave. in the Village of Wappingers Falls (0.35 miles).

The Lower Hudson Bridge and Pavement Conditions map at the end of this chapter shows pavement conditions for State and County roads.

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

1. I-84 in the Town of Fishkill: 67,800
2. Route 9 in Poughkeepsie (Town): 63,800
3. Route 9 in Poughkeepsie (City): 49,300
4. Route 9 in Wappinger: 44,600
5. Route 44 in Poughkeepsie (Town): 42,300
6. Route 44/55 in Poughkeepsie (City): 36,600
7. Route 9 in Fishkill (Town): 35,100
8. Route 9 in Wappingers Falls: 35,400
9. Route 9 in Fishkill (Village): 32,600
10. Route 55 in Poughkeepsie (Town): 23,700
11. Route 9D in Beacon: 23,400
12. Route 113 in Poughkeepsie (Town): 22,800
13. Route 52 in Fishkill (Village): 17,700
14. Route 9D in Fishkill (Town): 17,500
15. Route 9D in Wappinger: 17,200
16. CR 77 (Vassar Rd.) in Poughkeepsie (Town): 17,000
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17. CR 93 (Myers Corners Rd.) in Wappinger: 15,400
18. Route 52 in Fishkill (Town): 15,300

Traffic volumes in the Lower Hudson are shown on the Traffic Volume Analysis maps at the end of this chapter.

Congestion Management Process (CMP)

The Transportation Council completed a CMP Step 2 report in 2006, which identified roadway segments with severe, heavy, and moderate peak hour congestion. Severe congestion was defined as locations where volume exceeds capacity in the weekday peak hour (4:00-5:00 p.m.), based on the Council’s Travel Demand Model. Of the top five most congested road segments, the following three are in the Lower Hudson:

1. Vassar Rd. between Spring Rd. and Jackson Rd., Town of Poughkeepsie
2. Route 376 - between Degarmo Hills Rd. and New Hackensack Rd., Town of Poughkeepsie
3. Spring Rd. between Route 9 and Kerr Rd., Town of Poughkeepsie

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

a) Route 9 between I-84 and Route 55/44:
   - Northbound: Mid-day, PM, and Saturday
   - Southbound: PM and Saturday
b) Route 9 between Route 55/44 and Route 9G
   - Northbound: Saturday
   - Southbound: Saturday
c) Route 52 between I-84 and the Taconic State Parkway
   - Eastbound: PM
   - Westbound: PM
d) Route 9D between I-84 and Route 9
   - Northbound: AM and PM
   - Southbound: AM and PM

The Transportation System Performance maps in Chapter 5 show travel time data by roadway segment.

Bridges

The Lower Hudson has two major bridges that connect Dutchess and Ulster Counties: the Mid-Hudson Bridge, which connects Poughkeepsie to Highland, and the Newburgh-Beacon Bridge, which is part of I-84. Average daily traffic on the Mid-Hudson Bridge is about 37,500 vehicles; average daily traffic on the Newburgh-Beacon Bridge is about 68,000 vehicles. In addition, the area has a total of 100 road bridges, defined as a bridge structure with a span of more than 20 feet in length.

NYSDOT rates bridges from 1 to 7, with 7 being new condition and a rating of less than 5 being “deficient.” A deficient rating indicates deterioration to a level that requires corrective maintenance or rehabilitation to restore the bridge; it does
not imply that the bridge is unsafe. Bridges in the Lower Hudson have an average 2014 rating of 5.1. The Lower Hudson has 42 bridges that are classified as deficient under the NYSDOT rating system. Table 6-1-5 lists the number of bridges by municipality and their average State rating.

Table 6-1-5. Average Bridge Ratings-Lower Hudson

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Number of Bridges</th>
<th>Average NYSDOT Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Beacon</td>
<td>8</td>
<td>5.4</td>
</tr>
<tr>
<td>City of Poughkeepsie</td>
<td>35</td>
<td>5.0</td>
</tr>
<tr>
<td>Town of Fishkill</td>
<td>21</td>
<td>5.0</td>
</tr>
<tr>
<td>Town of Poughkeepsie</td>
<td>21</td>
<td>5.3</td>
</tr>
<tr>
<td>Town of Wappinger</td>
<td>15</td>
<td>5.4</td>
</tr>
<tr>
<td>Village of Fishkill</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>V. of Wappingers Falls</td>
<td>3</td>
<td>5.2</td>
</tr>
</tbody>
</table>

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

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

“Functionally obsolete” refers to a bridge’s inability to meet current standards for managing the volume of traffic it carries, not its structural integrity. A bridge may be “functionally obsolete” if it has narrow lanes, no shoulders, or low clearances.

The Lower Hudson has six bridges classified by FHWA as structurally deficient and 39 classified as functionally obsolete. The number of each by municipality is listed in Table 6-1-6.

Table 6-1-6. Structurally Deficient & Functionally Obsolete Bridges- Lower Hudson

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Structurally Deficient Bridges</th>
<th>Functionally Obsolete Bridges</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Beacon</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>City of Poughkeepsie</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Town of Fishkill</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Town of Poughkeepsie</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Town of Wappinger</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Village of Fishkill</td>
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<td>0</td>
</tr>
<tr>
<td>V. of Wappingers Falls</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

The Lower Hudson Bridge and Pavement Conditions map identifies bridges rated as structurally deficient and functionally obsolete based on federal standards, as well as those classified as deficient by NYSDOT.
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Transit

The Lower Hudson has the highest concentration of transit service in Dutchess County. Rail service includes the Poughkeepsie, New Hamburg, and Beacon train stations, with Metro-North service to New York City (about 31 trains per day between 4:00 am and 11:00 pm) and Amtrak service from Poughkeepsie to Albany and other points north. Metro-North’s average weekday inbound boardings in 2014 were about 2,500 at Beacon, 1,800 at Poughkeepsie, and 1,000 at New Hamburg. Average weekend inbound boardings in 2014 were about 3,300 at Poughkeepsie, 2,900 at Beacon, and 1,000 at New Hamburg.

The Dutchess County Public Transit (DCPT) bus system operates four fixed bus routes and three RailLink routes that serve the Lower Hudson area:

1. Route A between Poughkeepsie and Fishkill (via Route 9): Monday-Friday service from 6:00 a.m. to 10:45 p.m., with 12 daily round trips between Poughkeepsie and Fishkill, plus four daily express buses (one morning, two afternoon, and one evening); Saturday service operates from 6:15 a.m. to 10:45 p.m., with 11 round trips between Poughkeepsie and Fishkill. Route A includes stops at IBM-Poughkeepsie, the Galleria Mall in Poughkeepsie, and Wal-Mart in Fishkill.
2. Route B between Poughkeepsie and Beacon (via Routes 9 and 9D): Monday-Saturday service from 5:30 a.m. to 10:03 p.m., with 12 daily round trips between Poughkeepsie and Beacon. Route B includes stops at IBM-Poughkeepsie, the Galleria Mall in Poughkeepsie, and downtown Beacon.
3. Route F between Poughkeepsie and East Fishkill (Hopewell Junction) (via Route 9 and 52): Monday-Saturday service from 6:00 a.m. to 9:40 p.m. with two daily round trips between Poughkeepsie and Hopewell Junction and five daily round trips between Beacon and Hopewell Junction; Saturday service operates from 8:00 a.m. to 4:45 p.m. with three daily round trips between Beacon and Fishkill.
4. Route G in the City of Beacon (via Route 9D and Main St.): Monday-Saturday service from 11:10 a.m. to 7:21 p.m. with 11 daily round trips in Beacon.
5. Beacon RailLink: Monday-Friday service to the Beacon train station from 5:30 a.m. to 8:05 a.m. (four morning buses) and 5:38 p.m. to 8:24 p.m. (six evening buses).
6. New Hamburg RailLink: Monday-Friday service, with 3 morning buses to the station and 3 evening buses from the station.
7. Poughkeepsie RailLink: Monday-Friday service, with 5 morning buses to the station and 7 evening buses from the station.

DCPT’s three other fixed routes all leave from Market St. in Poughkeepsie: Route C between Poughkeepsie and Tivoli, Route D between Poughkeepsie and Dover, and Route E between Poughkeepsie and Pawling.

The City of Poughkeepsie bus system operates six fixed routes that serve the City and surrounding communities:

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Effective April 1, 2016
1. Main St. (Poughkeepsie train station to Route 44 Stop & Shop): hourly service Monday-Friday from 6:30 am to 5:30 pm and Saturday from 6:30 am to 2:30 pm.

2. Southside (Downtown to southside, Vassar Brothers Medical Center, and Route 9 Price Chopper and Stop & Shop): service Monday-Friday from 6:30 am to 6:00 pm and Saturday from 6:30 am to 3:00 pm. Service is every half-hour until 8:00 am and then hourly.

3. Northside (Downtown to DCC, Marist College, St. Francis Medical Center and Hyde Park Stop & Shop): service Monday-Friday from 6:30 am to 6:00 pm and Saturday from 6:30 am to 3:00 pm. Service is every 45 minutes until 8:00 am and then hourly.

4. Galleria (Downtown to Route 9 Price Chopper, Stop & Shop, and Galleria): hourly service Monday-Friday from 8:30 am to 3:30 pm and Saturday from 8:30 am to 2:30 pm.

5. Special (Poughkeepsie train station to Poughkeepsie Middle and High Schools): Monday-Friday service only, with two buses in the morning and one in the afternoon.

6. Shoppers Special (Downtown to Route 44 Stop & Shop and Adams): service Monday-Friday only, hourly from 9:30 am to 4:30 pm.

Ulster County Area Transit (UCAT) operates the Ulster-Poughkeepsie LINK bus, which provides weekday and weekend service between Rosendale, New Paltz, Highland and the Poughkeepsie train station. In addition, several private transit companies operate in the area. These include:

1. Leprechaun Lines: weekday commuter service between Beacon, Poughkeepsie, and Stewart Airport and between Poughkeepsie, Wappingers Falls, Fishkill, and White Plains (Westchester County). It also provides weekend service between Stewart Airport, Beacon, and New York City.

2. Coach USA/ShortLine: service between Rhinebeck, Poughkeepsie, Fishkill and New York City (via Newburgh and northern New Jersey), and between Poughkeepsie and Binghamton.


A variety of human service organizations also provide transportation services to the elderly, disabled, and low income populations the Lower Hudson:

1. Dutchess County Department of Mental Hygiene: transportation service is provided free of charge to low-income adults, seniors, general public and those pursuing counseling/substance abuse. The agency uses agency owned vehicles for appointments, job trips and educational trips.

2. Dutchess County Office for the Aging: transportation service to eight friendship centers throughout Dutchess County is provided free of charge using agency vehicles.

3. Castle Point Veterans Medical Center: the U.S. Department of Veterans Affairs at Castle Point is the transportation hub of this region’s transportation service for injured and ill veterans.
4. Friends of Seniors: transportation is provided by volunteers who use their personal vehicles to bring elderly individuals to medical appointments and food shopping. Trips are coordinated by agency staff.
5. Gateway Community Industries: transportation is provided to clients for a variety of trip types.
6. PEOPLE, Inc.: transportation is provided to those who are disabled, low-income adults, seniors, veterans, those seeking employment or education, re-entry parolees, and those pursuing counseling for those on Medicaid.
7. Martin Luther King Cultural Center: transportation for seniors and disabled persons in Beacon, parts of Fishkill, and Wappingers Falls through their Dial-A-Van program.
8. Devereux New York: transportation for Dutchess County residents who have developmental disabilities.

Pedestrian & Bicycle Transportation

Sidewalk Systems

The Lower Hudson has approximately 330 miles of sidewalks, which represents over 75 percent of the sidewalks in the county. The majority are in the City and Town of Poughkeepsie and the City of Beacon. When considered on a per-resident basis, the Village of Fishkill has the most sidewalks per resident, followed by the City of Poughkeepsie, City of Beacon, and Village of Wappingers Falls. Sidewalk mileage by municipality and per resident is shown in Table 6-1-7 below.

<table>
<thead>
<tr>
<th>Sidewalks (miles)*</th>
<th>Sidewalk Feet per Resident</th>
<th>County-wide Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Beacon</td>
<td>54.6</td>
<td>19.8</td>
</tr>
<tr>
<td>City of Poughkeepsie</td>
<td>117.2</td>
<td>19.9</td>
</tr>
<tr>
<td>Town of Fishkill</td>
<td>26.5</td>
<td>6.7</td>
</tr>
<tr>
<td>Town of Poughkeepsie</td>
<td>92.9</td>
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<tr>
<td>Town of Wappinger</td>
<td>10.0</td>
<td>2.4</td>
</tr>
<tr>
<td>Village of Fishkill</td>
<td>8.8</td>
<td>21.4</td>
</tr>
<tr>
<td>V. of Wappingers Falls</td>
<td>19.0</td>
<td>18.2</td>
</tr>
</tbody>
</table>

Trail Systems

The Lower Hudson boasts over 52 miles of trails. Major recreational trails in the Lower Hudson include:

1. Hudson Highlands Trails, Town of Fishkill: 12.3 miles
2. Wappinger Greenway Trail, Towns of Poughkeepsie and Wappinger and Village of Wappingers Falls: 8.0 miles (includes portions on sidewalks)
3. Stony Kill Farm trails, Town of Fishkill: 5.2 miles
4. Vassar College and Farm trails, Town of Poughkeepsie: 4.8 miles
5. Bowdoin Park trails, Town of Poughkeepsie: 4.4 miles
6. Locust Grove trails, Town of Poughkeepsie: 3.7 miles

Shared-Use Paths

Two of the county’s major shared use paths are in the Lower Hudson: the WRS Dutchess Rail Trail in the Towns of
Poughkeepsie and Wappinger (13 miles), and the Walkway Over the Hudson in the City of Poughkeepsie (1.3 miles, partly in Ulster County). There is also a 1.2-mile long path along Wilbur Boulevard in the Town of Poughkeepsie.

Bicycling Facilities

The only on-street bicycle facilities in the Lower Hudson are shared-lane markings (sharrows) in the City of Beacon on Main St. from Route 9D to E. Main St., which were the first sharrows in the county.

Two of NYSDOT’s signed State Bicycle Routes (SBR) pass through the Lower Hudson. SBR 9 passes through Fishkill, Wappinger, and the Town and City of Poughkeepsie using portions of Route 9, Middlebush Rd., Route 9D, Vassar Rd., Route 376, and local streets and continues north to Hyde Park, Rhinebeck, and Red Hook. SBR 17 connects with Bicycle Route 9 at the intersection on Route 9D and Middlebush Rd. in the Town of Wappinger, and follows Route 9D to the Newburgh-Beacon Bridge, which it crosses into Orange County.

NYSDOT also has several proposed State Bicycle Routes which connect to the area:

1. Proposed SBR 44, along Route 44 between SBR 9 in the City of Poughkeepsie and a proposed SBR 22 in the Town of Amenia.
2. Proposed SBR 55, along Route 55 between the proposed SBR 44 in the Town of Poughkeepsie and a proposed SBR 22 in the Town of Pawling.
3. Proposed SBR 52, along Route 52 between Route 9D in Beacon and Putnam County.
4. Proposed SBR 82, along Route 82 between a proposed SBR 199 in Pine Plains and the proposed SBR 52 in Fishkill.

Bicycle parking is provided at several of the area’s key destinations, including the three colleges, the Poughkeepsie and Beacon train stations, Beacon’s Main St., the Walkway Over the Hudson, Poughkeepsie’s Adriance Library, and several schools, parks, restaurants and retail stores. A searchable online bicycle parking map includes more information for each location.

Accessibility

In 2010, NYSDOT identified a number of intersections and sidewalk segments on State roads that were not fully accessible under the Americans with Disabilities Act of 1990 (ADA). These include the following roads in the Lower Hudson:

1. Route 9: one intersection and one sidewalk segment in the Town of Poughkeepsie, and one intersection (at Scenic Dr) in the Town of Wappinger
2. Route 9D: one intersection (at Clinton St.) and one sidewalk segment in the Village of Wappingers Falls, and one intersection (Wolcott Ave. at Beekman St.) in the City of Beacon
3. Route 44: 11 locations in the City of Poughkeepsie and 14 in the Town of Poughkeepsie.
4. Route 52: three sidewalk segments in the Village of Fishkill
5. Route 55: one sidewalk segment in the Town of Poughkeepsie
6. Route 113: two intersections and two sidewalk segments in the Town of Poughkeepsie
7. Route 376: four intersections and three sidewalk segments in the Town of Poughkeepsie

The City of Poughkeepsie’s 1992 ADA Transition Plan included an inventory of over 400 intersections and identified improvements needed to make curb ramps accessible. Since the 1992 plan, the City has incorporated many ramp improvements into street paving and repair projects. For additional data on walking and bicycling patterns, see Walk Bike Dutchess, Chapter 5.1 (Lower Hudson).

Park-and-Ride Facilities

There is one park and ride facility in the Lower Hudson: on Route 9D at the Dutchess Stadium Intermodal Center. It has capacity for 100 vehicles.

Other Transportation Facilities

The only County-owned airport, the Dutchess County Airport, is located in the Town of Wappinger. The Newburgh-Beacon Ferry, which docks adjacent to the Beacon train station, carries between 300 and 400 passengers per year across the Hudson River.

Transportation Safety

The Transportation Council analyzed vehicle crash data from the NYS Governor’s Traffic Safety Committee (GTSC), focusing on total crashes and crash rates based on road mileage. In 2013, the most recent data available, the GTSC reported that 1,039 crashes with fatalities or injuries occurred in the Lower Hudson; this was slightly lower than the 1,067 fatal and injury crashes reported in 2009 for Moving Dutchess. Compared to other communities in the county, the Town of Poughkeepsie continued to have the highest number of fatal/injury crashes in the county (321 in 2013). Table 6-1-8 shows the total number of reported crashes with fatalities or injuries by municipality for 2011-2013.


<table>
<thead>
<tr>
<th>Municipality</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>3-Year Average</th>
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<td>City of Poughkeepsie</td>
<td>252</td>
<td>265</td>
<td>277</td>
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<td>Town of Wappinger</td>
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<td>150</td>
<td>138</td>
<td>151</td>
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<td>Village of Fishkill</td>
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<td>41</td>
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</tr>
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<td>V. of Wappingers Falls</td>
<td>31</td>
<td>39</td>
<td>36</td>
<td>35</td>
</tr>
</tbody>
</table>

In 2013 the Lower Hudson communities had an average vehicle crash rate of 2.6 fatal and injury crashes per road mile, which was over three times higher than county’s overall rate of 0.8 crashes per mile. Each municipality in the area was above the county average. At 6.4 crashes per mile, the Village of Fishkill retained the highest crash rate in the county for 2013, followed by the City of Poughkeepsie at 3.8 crashes per mile. Table 6-1-9 shows crash rates per mile from 2011-2013 by municipality.
Table 6-1-9. Crash Rate per Mile-Lower Hudson (2011-2013)

<table>
<thead>
<tr>
<th>Location</th>
<th>Crash Rate Per Mile</th>
<th>3-Year Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Beacon</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>City of Poughkeepsie</td>
<td>3.5</td>
<td>3.7</td>
</tr>
<tr>
<td>Town of Fishkill</td>
<td>1.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Town of Poughkeepsie</td>
<td>1.7</td>
<td>1.7</td>
</tr>
<tr>
<td>Town of Wappinger</td>
<td>1.3</td>
<td>1.2</td>
</tr>
<tr>
<td>Village of Fishkill</td>
<td>6.7</td>
<td>6.4</td>
</tr>
<tr>
<td>V. of Wappingers Falls</td>
<td>2.2</td>
<td>2.6</td>
</tr>
</tbody>
</table>

NYSDOT, in conjunction with NYSDMV and the Office of Cyber Security & Critical Infrastructure Coordination (CSCIC), maintains an online database of motor vehicle crashes called the Accident Location Information System (ALIS). The Transportation Council conducted an analysis of 2010-2014 ALIS crash data to identify general crash trends in the Lower Hudson. Based on this 2010-2014 data, the Transportation Council identified high-crash intersections and roadway segments in the Lower Hudson. The following Lower Hudson locations experienced some of the highest number of crashes/crash rates over the five-year period:

**Intersections (Total Crashes)**

1. Route 44 (Church St.) and Route 9 ramps in the City of Poughkeepsie (368 crashes).
2. Route 9 and CR 104 (New Hackensack Rd.) in the Village of Wappingers Falls (113 crashes).
3. Route 9 and Main St. in the Village of Wappingers Falls (98 crashes).
4. Route 9 and CR 93 (Myers Corners Rd.) in the Town of Wappinger (78 crashes).
5. Route 9 and CR 28 (Old Hopewell Rd.) in the Town of Wappinger (97 crashes).
6. Route 9 and Route 52 (Main St.) in the Village of Fishkill (113 crashes).
7. Route 9 and Elm St. in the Village of Fishkill (90 crashes).
8. Route 9 and Merritt Blvd. in the Town of Fishkill (156 crashes).
9. Route 44 (Columbus Dr.) and Main St. in the City of Poughkeepsie (103 crashes).
10. Route 44 (Church St.) and Jefferson Blvd. in the City of Poughkeepsie (101 crashes).
11. Route 44 (Church St.) (westbound) and Market St. in the City of Poughkeepsie (67 crashes).
12. Route 44 (Mill St.) (westbound) and Clinton St. in the City of Poughkeepsie (66 crashes).
13. Route 44 (Church St.) (eastbound) and S. Hamilton St. in the City of Poughkeepsie (61 crashes; one fatality in 2013).
14. Main St. and Innis/Worrall Ave. in the City of Poughkeepsie (67 crashes).
15. Columbus Dr. and Mill St. in the City of Poughkeepsie (69 crashes).

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

1. Route 44 (Church St.) between the Mid-Hudson Bridge and Route 9 in the City of Poughkeepsie (59 crashes; 188 crashes per mile).
2. Main St. between the Route 9 northbound and southbound ramps in the City of Poughkeepsie (47 crashes; 1,598 crashes per mile).

3. Main St. between Civic Center Plaza and Academy/Catherine St. in the City of Poughkeepsie (56 crashes; 171 crashes per mile).

4. Route 9 (northbound) between Old Post Rd. and CR 28 (Old Hopewell Rd.) in the Town of Wappinger (84 crashes; 277 crashes per mile).

5. Route 9 (northbound) between the Alpine Commons Shopping Plaza and CR 93 (Myers Corners Rd.) in the Town of Wappinger (81 crashes; 277 crashes per mile).

6. CR 93 (Myers Corners Rd.) between Route 9 and Marshall Rd. in the Town of Wappinger (64 crashes; 317 crashes per mile).

7. Route 9D between CR 28 (Old Hopewell Rd.) and Ketchamstown Rd. in the Town of Wappinger (65 crashes; 217 crashes per mile).

8. Route 9D between I-84 ramps in the Town of Fishkill (48 crashes; 995 crashes per mile).

9. I-84 (westbound) between Newburgh-Beacon Bridge toll booths and Orange County line and (86 crashes; 90 crashes per mile).

10. I-84 (eastbound) between Orange County line and Newburgh-Beacon Bridge toll booths (150 crashes; 369 crashes per mile).

11. I-84 (westbound) between I-84 connector road (near Westage Business Center) and Route 52 exit ramp in the Town of Fishkill (56 crashes; 64 crashes per mile; one fatality in 2010).

12. I-84 (westbound) between Route 9 (northbound) exit ramp and Route 9 (northbound) exit ramp in the Town of Fishkill (99 crashes; one fatality in 2012).

13. Route 9 (southbound) between Route 44/55 (overpass) to the Route 9 Laurel St exit ramp in the City of Poughkeepsie (42 crashes; 717 crashes per mile).

The Lower Hudson Crash Analysis Map at the end of this chapter shows the locations of high crash road segments and intersections.

NYSDOT’s 2014 HAL report includes one corridor in Dutchess County that is among the top five percent crash locations: the Route 44/55 corridor (eastbound arterial) through the City of Poughkeepsie from Market St. to Streit Ave. According to the HAL report, NYSDOT identified the following issues with the road:

1. Pattern of rear end accidents occurring on eastbound approaches to intersections possibly due to small 8-inch traffic signal faces and morning sun glare.
2. Pattern of right-angle accidents occurring at signalized intersections where eastbound vehicles ran the red light, possibly due to small 8-inch signal faces.
3. Pattern of overtaking accidents occurring on eastbound approaches to signalized intersections.
4. Patterns of pedestrian and bicyclist accidents, notably when vehicles are making turns at intersections.
5. Pedestrian ramps do not meet ADA standards.
The HAL report recommends traffic signal upgrades, ADA compliant ramps, pedestrian and bicycle warning signs, and advance street name signs along the City’s eastbound arterial.

**Pedestrian & Bicycle Safety**

The Transportation Council also analyzed the 2009-2013 crash data to determine pedestrian and bicycle crash rates per 1,000 people for each municipality. Based on this analysis, the Village of Fishkill and City of Poughkeepsie had the highest pedestrian crash rates in the county (1.11 and 1.04 respectively) and the only rates above one per 1,000 people. In addition, the Village of Wappingers Falls and Town of Poughkeepsie had pedestrian crash rates (0.43 and 0.34 respectively) above the county average of 0.29 crashes per 1,000 people.

For bicycle crashes, the Village of Wappingers Falls had the highest bicycle crash rate in the county at 0.68 crashes per 1,000 people. The City of Poughkeepsie and Village of Fishkill (0.42 and 0.37 respectively) also had bicycle crash rates above the county average of 0.15 crashes per 1,000 people (the Town of Poughkeepsie was slightly above average at 0.19 crashes per 1,000 people).

**Walk Bike Dutchess** also identified road segments with concentrations of bicycle and/or pedestrian crashes and a high crash rate per mile. For pedestrian crashes, nine of the top ten high-crash corridors were in the City of Poughkeepsie, and one was in both the City and Town of Poughkeepsie. Mansion St. in the City of Poughkeepsie experienced the highest crash rate in the county at almost 26 crashes per mile, while the highest number of pedestrian crashes (43 from 2007-2011) occurred on a 2.2-mile segment of Main St. in the City and Town of Poughkeepsie.

**High-Crash Corridors: Pedestrian Crashes**

1. Mansion St. from Columbus Dr. to Conklin St. in the City of Poughkeepsie (five crashes, 25.8 crashes per mile).
2. South Cherry St. from Main St. to Forbus St. in the City of Poughkeepsie (nine crashes, 23 crashes per mile).
3. South Clinton St. from Main St. to Route 44 (Church St.) in the City of Poughkeepsie (five crashes, 22.9 crashes per mile).
4. Montgomery St. from South Ave. to Hooker Ave. in the City of Poughkeepsie (seven crashes, 22.1 crashes per mile).
5. Worrall Ave./Route 115 from King St. to Mack Rd. in the City of Poughkeepsie (five crashes, 19.7 crashes per mile).
6. Main St. from N. Water St. to Fowler Ave. in the city and Town of Poughkeepsie (43 crashes, 19.4 crashes per mile).
7. Route 44 (Church St.) from Jefferson St. to Fountain Pl. in the City of Poughkeepsie (24 crashes, 19.2 crashes per mile).
8. Columbus Dr. from Mansion St. to Union St. in the City of Poughkeepsie (four crashes, 16.1 crashes per mile).
9. Academy St. from Main St. to Franklin St. in the City of Poughkeepsie (seven crashes, 15.7 crashes per mile).
10. North Clinton St. from Cottage St. to Route 44 (W. Maple St.) (westbound) in the City of Poughkeepsie (six crashes, 15.1 crashes per mile).

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For bicycle crashes, four of the top ten high-crash corridors were in the City of Poughkeepsie, three were in the Town of Poughkeepsie, and three were in both the City and Town. Hamilton St. in the City of Poughkeepsie experienced the highest crash rate at 17 crashes per mile, while the highest number of crashes (20 from 2007-2011) occurred on a 2.6-mile segment of Main St. in the City and Town of Poughkeepsie.

High-Crash Corridors: Bicycle Crashes

1. Hamilton St. from Thompson St. to Route 44 (Church St.) (eastbound) in the City of Poughkeepsie (six crashes, 17 crashes per mile).
2. Collegeview Ave. from Raymond Ave. to Fairmont Ave. in the Town of Poughkeepsie (three crashes, 16.1 crashes per mile).
3. Fairmont Ave. from Main St. to Collegeview Ave. in the Town of Poughkeepsie (five crashes, 15.7 crashes per mile).
4. Catherine St./Academy St. from Mansion St. to Franklin St. in the City of Poughkeepsie (seven crashes, 8.7 crashes per mile).
5. Route 44 (Maple St.) (westbound) from Flannery Ave. to Springside Ave. in the City and Town of Poughkeepsie (four crashes, 8.2 crashes per mile).
6. Main St. from Clover St. to Burnett Blvd. in the City and Town of Poughkeepsie (20 crashes, 7.7 crashes per mile).
7. Route 44 (Church St.) (eastbound) from Jefferson St. to S. Grand Ave. in the City and Town of Poughkeepsie (11 crashes, 7.1 crashes per mile).
8. Washington St./North Rd. from W. Cedar St. to Mill St. in the City of Poughkeepsie (five crashes, 5.4 crashes per mile).
9. Smith St. from Weed St. to Thompson St. in the City of Poughkeepsie (three crashes, 5.2 crashes per mile).
10. Route 9 from Field Ct. to Van Siclen Dr. in the Town of Poughkeepsie (four crashes, five crashes per mile).

Local Comprehensive Plans

The Transportation Council reviewed the content and recommendations in each municipal comprehensive plan to identify issues and challenges relevant to Moving Dutchess 2. In the Lower Hudson, common goals and themes include developing mixed-use centers; requiring interconnected street systems; implementing access management; traffic calming; adding sidewalks and trail systems; increasing and coordinating transit service; and streetscape improvements.

City of Poughkeepsie

The City of Poughkeepsie’s Comprehensive Plan was last updated in 1998. However, its goal for “User-Friendly Transportation Systems” and several recommendations are still relevant. These include the following:

Access:
1. Make the waterfront easily accessible by vehicles and pedestrians via the Main St. corridor.
2. Make the area in the vicinity of Main St. easily navigable for local traffic and visitors.
Moving Dutchess 2

**Streetscape:** Consider Business Improvement Districts (BIDs) to support streetscape improvements on Main St. and lower Main St./Water St.

**Transit:**
1. Simplify access to the train station.
2. Increase coordination to maximize transit resources and serve residents working in outlying areas.
3. Post transit routes and schedules at bus stops.
4. Enhance transit service between Main St., housing areas, and the waterfront and train station.

**Parking:**
1. Create permit parking districts in some residential areas.
2. Review and adjust minimum parking requirements.
In addition, the plan’s final recommendations and strategies include proposed land uses for three areas:

**Main St. and the Arterials:** Strengthen the Main St. retail core by locating offices and residential uses along the arterials.

**Cottage St. Business District:** Soften the edges of intensive businesses by providing commercial uses around the light manufacturing area and allowing residential uses on smaller lots.

**Waterfront Development Area:** Develop the Delaval property, the old sewage treatment plant, and the area along North Water St. as mixed-use, including tourism, entertainment, commercial, and residential uses. Provide additional public open space.

**Town of Poughkeepsie**

The Town of Poughkeepsie’s Comprehensive Plan was updated in 2007. Key transportation recommendations include the following:

**Land Use-Transportation Planning**

1. Focus development and community services in designated mixed-use centers and require all new development to reduce auto-dependence and accommodate pedestrians and bicyclists by providing sidewalks, walkways through parking lots, crosswalks, bike racks and other amenities.
2. Require interconnected roads within new subdivisions and avoid cul-de-sacs to provide more efficient traffic circulation and emergency response routes; require road connections between new adjacent subdivisions; and minimize vehicular access points to major roads.
3. Promote the use of traffic calming measures, such as street trees, curb extensions, center islands, crosswalks and on-street parking to control speeds on roads with pedestrian/bicycle traffic and where speeding has been identified as a problem.
4. Revise road and parking specifications to provide narrower street options for lower-volume or traffic calming situations, promote street tree buffers and sidewalks, and significantly reduce impervious asphalt coverage.
5. Manage access onto all roadways by strictly limiting access points to one per parcel, by limiting left turns, and by sharing and consolidating driveways and connecting commercial sites with access between rear parking lots.
6. Prevent the further commercialization of Routes 44 and 55, Salt Point Turnpike, Van Wagner Rd., Vassar Rd., Spackenkill Rd. and other primarily residential roadways outside of designated centers to maintain efficient traffic flow.

7. Consider an east-west connector across the northern section of the Town to help alleviate congestion and provide a more efficient connection between Route 9, Route 9G, Salt Point Turnpike and Van Wagner Rd.

**Pedestrian & Bicycle Infrastructure**

1. Wherever practicable, provide sidewalks and/or marked shoulders along roadways to facilitate and encourage safe pedestrian and bicycle travel, especially to centers and recreation areas.

2. Develop sidewalks or clearly marked shoulders for walkers and bikers along all collector or higher roads within the “no-busing” zones of schools to allow children to safely walk or bike to school, and require walkways/bikeways within these areas for all new development.

3. Establish an interconnected system of greenspaces and recreational sites through trails, paths, bicycle lanes, and sidewalks, including a trail along the Maybrook Corridor and greenway trails along the Town’s major creek systems.

4. Prioritize the establishment of a continuous Hudson River Greenway Trail.

5. Pursue development of a trail along the abandoned rail spur from Morgan Lake, past Peach Hill, into Hyde Park, to West Rd. School in Pleasant Valley.

6. Pursue a trail along the Central Hudson utility corridor from Marist College east to the Hudson River Psychiatric Center property, accessing Quiet Cove Park, Violet Ave. School, Dutchess Community College, the Fallkill Creek, Peach Hill, and the abandoned rail spur noted above.

7. Work with the County and State to improve pedestrian and bicycle access in Red Oaks Mill by constructing bike paths and/or sidewalks on Vassar Rd., Spackenkill Rd., and Route 376.

8. Work with NYSDOT to provide sidewalks, bike paths, and landscaping along Route 44 in Rochdale.

**Transit**

1. Promote employee-sponsored and privately arranged ride sharing and increased use of commuter bus service with direct connections to the train stations. Additional bus shelters should be added to stops to protect users during inclement weather and thus encourage more use.

2. Work with the County and City to ensure that their bus systems provide convenient, coordinated access to designated centers and major employers within the Town.

**Town of Wappinger**

The Town of Wappinger updated its Comprehensive Plan in 2010. It includes the following transportation-related goals and recommendations:

1. Improve traffic conditions on Routes 9 and 9D.
   - Encourage NYSDOT to provide a third southbound lane on Route 9 from Mesier Ave. to Myers Corners Rd.
   - Pursue a new roadway on the southeast side of Route 9D in Hughsonville to create a one-way couplet.

2. Require service roads, internal connections and combined parking lots, where appropriate.
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- Implement plans to create a north-south service road on the east side of Route 9 with east-west links to Mesier Ave., East Main St. and Old Route 9.

3. Minimize the number of access points on major and collector roads.
   - Change the Town’s Zoning Law to encourage coordinated use of vehicular access points along the major arterials of the Town.

3. Develop a sidewalk network and bikeway system connecting community facilities, centers and schools; review and expand requirements for the provision of sidewalks in conjunction with new commercial development.
   - Pursue sidewalks on Route 9 and Old Hopewell Rd.; consider bicycle paths or lanes on Old Hopewell Rd., Myers Corners Rd., Route 376, and portions of New Hackensack Rd. and Widmer Rd. near Route 9.

4. Improve the appearance and pedestrian safety of Route 9 through median landscaping, sidewalks, street trees, lighting, signage and underground utilities.

5. Improve regional transit services, and consider expanded service to regional nodes including the New Hamburg train station, the airport, and park and ride stations.

6. Improve street connectivity between neighborhoods as new areas are developed.

7. Pursue traffic calming improvements on local roadways.

8. Encourage higher commercial density and mixed land use in commercial areas to support transit, reduce traffic, improve local identity, provide opportunities for public spaces, and promote pedestrian activity.

Village of Wappingers Falls

The Village of Wappingers Falls updated its Comprehensive Plan in 2001. It includes the following transportation-related goals and recommendations:

1. Encourage alternatives to the automobile such as walking, bicycling, public transportation, carpooling, and telecommuting.

2. Install traffic calming devices throughout the Village, including enhanced crosswalks and streetscape designs, particularly along Route 9D.

3. Provide additional parking lots that are appropriately hidden and/or landscaped for residents, businesses and visitors in the Village core.

4. Enhance existing pedestrian facilities – crosswalks and sidewalks – and provide new facilities where necessary. Create off-street walking and bike paths to link neighborhoods with the downtown.

5. Review signs along Route 9D. Ensure “Yield to Pedestrians” signs and “Bikes Share the Road” signs are placed at all major intersections in the Village and along bike routes.

6. Require connectors between commercial properties and encourage shared access where possible on future commercial development along Route 9.

City of Beacon

The City of Beacon updated its Comprehensive Plan in 2007. Transportation-related goals and recommendations include the following:

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Moving Dutchess 2

Land Use-Transportation Planning
1. Develop an urban design plan for the Waterfront/Train Station area that encourages the development of high density housing along Beekman St., includes mixed uses near the train station, and incorporates design elements that connect the waterfront area with Main St.
2. Develop long-term plans for improving Route 9D between Beekman St. and the intersection with Interstate 84 to handle increased traffic. Include an analysis of potential improvements to the interchange configuration.
3. Install traffic calming features such as raised crosswalks on major roads and collector roads, including Beekman St. and West Main St.
4. Improve the connectivity of local and collector roads.

Transit
1. Improve public transportation service, particularly the connection between the City’s business district and the intermodal train/bus/ferry station and Waterfront/Train Station area (including Dia:Beacon).
2. Work closely with the County to identify new bus routes to Main St., the waterfront, and the prison for employee commuting, and identify opportunities to increase the frequency of bus service along Main St.
3. Work with Dutchess County to establish funding mechanisms that would enable a free or low-cost trolley to be available at frequent intervals between points along Main St. and the train/bus/ferry station.
4. Explore the potential feasibility of establishing passenger service from the Beacon train station at the waterfront to

the east end of Main St. via the Fishkill Creek railroad, using vehicles that can travel on both rail and road.
5. Advocate for the development and improvement of satellite commuter parking with bus service to the Beacon station.

Bikeways
1. Develop a bikeway system connecting greenways, community facilities, recreation, schools and Main St.
2. Determine the feasibility of using the easement area of the railroad tracks along Fishkill Creek for a bicycle and pedestrian path.
3. Consider developing bike lanes on Route 9D (I-84 to South Ave.), South Ave. (Route 9D to Tioranda Bridge to Grandview Ave. to Route 9D), Beekman St., Teller Ave., Fishkill Ave., and Verplank Ave.

Town of Fishkill

The Town of Fishkill updated its Comprehensive Plan in 2009. It included the following transportation-related goals and recommendations:

Connectivity
1. In new subdivisions, require roadway connections to existing streets and adjacent neighborhoods wherever feasible, discourage cul-de-sacs and dead-ends, create connections between existing cul-de-sac streets and adjacent areas in the community, and discourage the creation of gated communities.
2. Require that developers create internal service roads and interior access to connect parking lots on all future
commercial development and redevelopment along Routes 9, 9D, 52, and 82.
3. Consolidate commercial entrances on roads where possible and use internal service streets as an alternative access.

Pedestrian & Bicycle Infrastructure
1. Create off-street walking and bicycling paths to link residential neighborhoods with each other and to nearby commercial sites; create pedestrian networks and crosswalks for all commercial development and redevelopment; and require that all new site plan and subdivision applications include provisions for “complete streets” with sidewalks, pedestrian paths and, where appropriate, bicycle lanes.
2. Request that DOT install sidewalks on both sides of Route 52 from the Town Hall to the Village of Fishkill, and from the Village of Fishkill to the former A&P Plaza; and request that DOT install raised crosswalks and crosswalk signals along Route 52 where traffic lights are located and in areas where there are significant destinations.
3. Encourage the provision of on-street bike lanes and marked bike routes on collector roads and State and County highways consistent with applicable NYSDOT standards; and require bike racks for commercial sites, parks, schools, and public facilities.
4. Create a greenway trail along the Fishkill Creek to connect parks, neighborhoods and other important sites in the Town; work with the City of Beacon to extend the Fishkill Creek Trail to the Hudson River; work with the Village of Fishkill to extend a trail along the portion of the Creek that runs through the Village on the east side of Route 9; and connect the Fishkill Creek Trail with the Greenway Trail along the Hudson River and the County Rail Trail in East Fishkill.
5. Connect the community with a town-wide network of hiking trails and bicycle paths that link residential neighborhoods, parks, shopping areas, and regional trails. Ensure that new trails connect with existing trails on Stony Kill Farm, Mount Gulian, Scenic Hudson Land Trust lands, and other properties, and with regional trails including the Greenway and Blueway Trails and the County Rail Trail.

Traffic Calming
1. Consider traffic calming techniques on streets in the commercial districts, such as curb extensions, neck downs, on-street parking, and textured or raised crosswalks.
2. Consider narrowing overly-wide existing residential streets by providing sidewalks, bicycle lanes, and/or planting strips and street trees.
3. Consider the use of on-street parking in new residential subdivisions to slow traffic, provide a buffer between traffic on the road and pedestrians on the sidewalk, and reduce impervious surfaces.

Transit
1. Address the potential for public transit during Planning Board review of proposed residential and nonresidential development.
2. Create additional park-and-ride lots.
Village of Fishkill

The Village of Fishkill updated its Comprehensive Plan in 2009. Transportation-related goals and recommendations include:

**Pedestrian & Bicycle Infrastructure**
1. Continue to maintain, extend and complete linkages in the existing sidewalk system to facilitate safe pedestrian access.
2. Consider additional pedestrian connections to Sarah Taylor Park and the Westage Business Center, including safe pedestrian access from the west side of Route 9 to Sarah Taylor Park; from Sarah Taylor Park to Merritt Park Condominiums; a footbridge across Fishkill Creek; bicycle access from Jackson St. south into Westage Business Center; and sidewalks on the east side of Route 9.
3. Continue to provide pedestrian amenities such as benches, sidewalks, crosswalks, and bus shelters to encourage pedestrians to walk.

**Access Management:** Implement access management principles at every opportunity, including the consolidation of driveways, distribution of traffic to controlled intersections, provision of rear parcel access such as service alleys, elimination of multiple driveways, and provision of shared parking behind buildings.

Previous Transportation Council Studies

The Transportation Council has performed a number of planning studies in the Lower Hudson. A summary of each is included below. Complete documents are available on the Transportation Council’s website.

**Poughkeepsie Transportation Strategy (1997)**

The Poughkeepsie Transportation Strategy was a cooperative effort of the Transportation Council, Dutchess County Planning Department, and the City of Poughkeepsie. In addition to addressing city-wide issues, the Transportation Strategy focused on three areas: the waterfront, city center, and northside. The following key goals were developed:

**City-Wide**
1. Develop a positive identity for Poughkeepsie as a destination and regional center.
2. Celebrate the city approaches and design a comprehensive sign program.
3. Direct industrial traffic around the city center, residential neighborhoods, and waterfront.
4. Learn from historic precedents to build on Poughkeepsie’s unique qualities.

**City Center**
1. Redesign the Arterials from higher-speed barriers between the City Center and surrounding neighborhoods to more walkable boulevards.
2. Rebuild the Washington-Mill St. merging lanes as a more traditional intersection.
3. Restore two-way circulation with on-street parking on Main, Market, Catherine/Academy, and Hamilton Sts.*
4. Return Main Mall to Main St. with generous room for sidewalk activities and walkway connections to adjacent blocks and parking areas.*
5. Encourage mixed use development opportunities to break up large parking lots.

Northside
1. Expand the neighborhood commercial center along Smith and Cottage Streets.
2. Protect adjacent residential streets from through traffic by narrowing side street entrances.
3. Improve truck access to and within the industrial area, while maintaining rail service.
4. Redesign the Smith-Clinton-Arterial intersection to direct truck traffic away from Smith St. and create a new Clinton Square.
5. Improve the sidewalks, crosswalks, and landscaping along Smith and Cottage Streets.

Waterfront
1. Extend the park and promenade north to the Fallkill Creek with a centerpiece plaza/rink/performance space and continuous Greenway linkages north and south.*
2. Build a direct, prominent path between the railroad station and the waterfront.
3. Create a mixed use development district along Water St.
4. Adopt a phasing and parking program that provides a coordinated development framework, yet allows the district to grow incrementally.
5. Stress convenient connections to Mt. Carmel, lower Main St., and the bridges, creating a waterfront walking district within a 5-10 minute walk of the train station.

* These items have been partially implemented: Main St., Catherine St./Academy St., and Hamilton St. serve two-way traffic; the Main Mall was re-opened to vehicles; and the Waryas Park path extends to the Fallkill Creek. In addition, replacement of the Hoffman St. bridge, which was also recommended in the Strategy, was completed in 2013.

Wappingers Falls Transportation Plan (2001)

The Wappingers Falls Transportation Plan was a joint project of the Transportation Council, NYSDOT-Region 8, and the Village of Wappingers Falls. The team studied traffic volumes and speeds, truck traffic, and the pedestrian environment on Route 9D and on Route 9 from CR 28 (Old Hopewell Rd.) to Route 9D. The Plan included the following recommendations:

Short-term
1. Add high-visibility crosswalks at the following intersections:
   - South Ave. (Route 9D)/East Main St.
   - East Main St./Remsen Ave.
   - West Main St. (Route 9D)/Convent Ave.
   - West Main St. (Route 9D)/West St.
   - West Main St. (Route 9D)/School St.
Moving Dutchess 2

- West Main St. (Route 9D)/Church St.
- Route 9 at 9 Plaza

2. Stripe parking spaces along West and East Main Streets.

Medium Term

1. Install distinctive markings or textured crosswalks at the following intersections:
   - East Main St./Market St./Mill St.
   - East Main St./West Main St.
2. Construct new sidewalks at the following locations:
   - Route 9 (east side) between shopping plazas and CR 77 (Vassar Rd.)
   - Route 9 (west side) between Mesier Ave. and 9 Plaza
   - Route 9D between the Village line and South Hills Mall
   - Mesier Ave. between Route 9 and Liss Rd.
3. Construct bulbouts at the following intersections:
   - East Main St./Market St./Mill St.
   - East Main St./West Main St.
4. Construct a right turn lane from East Main St. onto South Ave. (Route 9D).
5. Include a pocket park in front of the Grinnell Library as part of any design changes at the East Main St./Saterlee Place/Spring St. intersection.
6. Consider improving the intersection of Route 9 and Mesier Ave. to facilitate turns from southbound Route 9 onto Mesier Ave.
7. Add landscaping on Main St., including planting strips between the roadway and sidewalks, street trees, and a planted median on Route 9.
8. Conduct a parking survey of the business district to evaluate the need for new municipal parking.
9. Consider restricting access at the municipal lot behind the library to right-in/right-out only, and investigate an exit onto High St.

I-84 Commercial Vehicle Parking/Rest Area Study (2003)

The I-84 Rest Area Study was initiated by the Transportation Council at the request of NYSDOT. The project team developed planning-level criteria for a possible rest area location and analyzed potential locations for new commercial vehicle parking and/or rest areas along the I-84 corridor between the Hudson River and the New York/Connecticut border. Six potential sites in the Town of Fishkill were discussed, but none of were selected for further analysis.


The Transportation Council undertook the Fishkill Traffic Analysis at the request of NYSDOT and the Town and Village of Fishkill. The analysis focused on congestion in and around Route 52, including the use of local streets to avoid congested areas, speeding on residential streets, and safety. The project developed recommendations for six areas.

1. Cedar Hill Rd.: Provide separate turn lanes on Cedar Hill Rd. to facilitate right turns onto Route 52.
2. Colonial Ave./Shirley Ave. at Route 52: The project team recommended installing a traffic signal and turn pocket at one of the intersections and limiting the other to right-in right-out only to improve access to and from the neighborhood. However, based on concerns about
increased traffic and property takings, residents preferred to make no changes.

3. Rapalje Rd.: Restrict left turns from Route 52 eastbound onto Rapalje Rd., and enhance Rapalje Rd. with sidewalks, lighting and other streetscape improvements, reduced lane widths, and a speed table to reduce speeds.

4. Broad St.-Smith St.-Elm St.: Reduce speeds and cut-through traffic by restricting the Route 52/Cary Ave. intersection to right-in/right-out only, installing speed tables on Broad St., and making the Smith St./Elm St. and Broad St./Jackson St. intersections all-way stop controlled. Define the Smith St./Elm St. intersection with striping and install pavement markings on Broad St., Smith St., and Elm St. to improve visibility.

5. Luyster Place-Cary Ave.-Weston Ave.: Reduce cut-through traffic by implementing half closures at the Wood Place/Luyster Pl. and Cary Ave./Weston Ave. intersections. Reduce speeds by installing speed humps along Florence Ave. and Weston Ave.

6. Route 52 between Jackson St. and I-84: Coordinate traffic signal timing to reduce congestion on Route 52 and allow gaps for turning traffic.

Fishkill Route 52 Alternatives Analysis (2007)

The Fishkill Route 52 Alternatives Analysis was the second phase of the Fishkill Traffic Analysis. It evaluated the feasibility of extending West Merritt Boulevard to Route 52, between I-84 and Jackson St. This new road would create an alternative route around the Village. The analysis indicated that a connection via Jackson St. would meet the goals of relieving congestion, reducing cut-through traffic, increasing accessibility to the Village Center, and improving overall safety. However, this connection had little public support, and therefore the recommendation not pursued.

Route 9 Land Use & Transportation Study (2007)

The Route 9 Land Use and Transportation Study grew from concerns by the Town of Poughkeepsie, Marist College, and NYSDOT about pedestrian safety, traffic growth, and future development around Route 9 near Marist College. The study resulted in a final concept plan and recommendations matrix including the following:

Fairview Center
1. Establish a direct connection between the Mid-Hudson Plaza and Hudson Heritage east of the Winslow Gate traffic signal.
2. Develop and implement appropriate traffic calming measures that reinforce posted speed limits or reduce operating speeds on Route 9 between the Hyde Park Town line and Marist Drive, including a gateway treatment and speed limit reduction (to 30 mph) near Quiet Cove Park.
3. Require new uses and site development to be consistent with the Fairview Center concept in terms of location, use, scale, and design. The reuse of existing vacant buildings and potential development of the Fulton St. frontage are particularly important.

Future Land Development
1. Enact and enforce land use regulations through zoning and site plan reviews that are sensitive to the relative impact
of different types of land uses on traffic, with particular attention to impacts at the Route 9/Fulton St. intersection.
2. Coordinate with the Town of Hyde Park, City of Poughkeepsie, and others to identify and address cumulative impacts of development through coordinated mitigation strategies.

Transit and Road Projects
1. Design and construct a new public road between Route 9 and Route 9G through the former Hudson River Psychiatric Center.
2. Establish a new local road along the CSX East Branch between Hudson Heritage and West Cedar St. (or Parker Ave.). The road profile must accommodate pedestrians and bicyclists.
3. Expand public transit service between Fairview and nearby activity centers in the City of Poughkeepsie.

Pedestrian Improvements
1. Design and construct a pedestrian bridge over Route 9 between Fulton St. and Beck Pl. to link Marist College west and east campus complexes. Remove the Donnelly Hall pedestrian crossing and maintain at-grade crossings at other signalized intersections. Note: A pedestrian underpass (rather than a bridge) and the main gate reconfiguration were completed in 2011.
2. Construct a sidewalk on the west side of Route 9 from the Marist north gate to Quiet Cove Park.
3. Construct a multi-use trail on the CSX West Branch.
4. Build a continuous Hudson River Greenway trail along the waterfront in Poughkeepsie and Hyde Park.
5. Use the main CSX right-of-way for a non-motorized, multiuse trail connection to the Dutchess Rail Trail at Morgan Lake and to the Walkway Over the Hudson.
6. Extend sidewalks on the north side of Fulton St. east to Route 9G.
7. Maintain pedestrian safety and enforcement activities.

Access Management and Operational Improvements
1. Realign the Marist north gate intersection to the Winslow Gate traffic signal at the entrance to Hudson Heritage and the Mid-Hudson Plaza; maintain right-in/right-out movements at the existing Mid-Hudson Plaza driveway.
2. Align a new entrance to Hudson Heritage and Quiet Cove Park.
3. Reconfigure the Marist main gate to eliminate outbound traffic and reduce vehicle volumes at the Route 9/Fulton St. intersection.
4. Redesign access to the Mid-Hudson Plaza from Fulton St. to prohibit eastbound left-turns entering the plaza until main access can be constructed further east.
5. Examine potential use of a portion of the CSX West Branch for Route 9 access to the former Dutton Lumber site in the City of Poughkeepsie.
6. Deploy Emergency Vehicle Signal Preemption technology at major intersections along the Route 9 corridor, with Route 9/Fulton St. as the first priority.

Transit Development Plan (2009)

The Dutchess County Transit Development Plan (TDP) was a cooperative effort of the Transportation Council, Dutchess
County Public Transit (DCPT), the City of Poughkeepsie, and NYSDOT. The TDP sought to improve the efficiency and operations of the two local bus systems (DCPT and City of Poughkeepsie) and improve connections to regional and inter-county services. The TDP included a passenger survey, extensive public outreach, and a detailed analysis of existing bus operations.

The service proposals identified in the TDP were developed under the premise that transit service should match the type of development it serves. The proposals supported the following goals: eliminating duplication between the two bus systems, creating seamless transit policies (e.g. parallel fare structures), promoting more frequent service on major corridors, increasing user friendliness, improving efficiency, and improving service for specialty markets (e.g. colleges and tourist sites). The TDP included the following key recommendations related to the Lower Hudson:

1. Provide fixed route service every 30 minutes or less in the City and Town of Poughkeepsie.
2. Provide fixed route service every 60 minutes or less in the Towns of Wappinger and Fishkill (including the City of Beacon, Village of Wappingers Falls and Village of Fishkill).
3. Develop an integrated fare system and coordinated marketing between DCPT and City of Poughkeepsie.
4. Provide additional weekday evening, Saturday evening, and Sunday service (especially to the Galleria).
5. Establish timed transfers in downtown Poughkeepsie.
6. Improve transit service for college students and tourists.
7. Make the system more user-friendly.
8. Make capital improvements to both bus systems to include installing bus stop signs and shelters.
9. Improve marketing by creating an umbrella brand for both systems and redesign web related content.

**Village of Wappingers Route 9 Planning Study (2011)**

The Village of Wappingers Falls requested the Transportation Council and Dutchess County Planning Department to identify land use and transportation strategies to improve pedestrian access and safety along Route 9 and to integrate the Route 9 corridor with the Village center. Staff prepared design concepts for three areas: the Route 9 Corridor, the E. Main St./Route 9 intersection, and the E. Main St./S. Ave. (Route 9D) intersection. Key recommendations for each area are listed below.

**Route 9 Secondary Street System**

1. Create a secondary street system including a north-south street east of Route 9 to connect CR 104 (New Hackensack Rd.) to CR 93 (Myers Corners Rd.), east-west connections to E. Main St. and Old Route 9, and a northern connection from CR 104 (New Hackensack Rd.) to N. Mesier Ave. These streets would displace traffic on Route 9 and improve access to buildings east of Route 9.
2. Remove traffic signals, left turn lanes, and driveways on Route 9 to reduce conflict points from turning vehicles, improve traffic flow, and improve walkability. Install a planted median and street trees along Route 9.
3. Establish internal connections between businesses to reduce the need for individual driveways, reduce traffic on
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Route 9, and create additional frontage for new businesses.

4. Promote walkable, mixed-use development east of Route 9 and work with developers to help fund the secondary street system.

East Main St. Gateway
1. Create a four-way intersection at Route 9 and E. Main St. by providing a new connection on the eastern leg from Imperial Blvd. to E. Main St. Move the existing parking access on the northeast corner further from the intersection to reduce conflicts with turning vehicles.

2. Make the intersection more pedestrian-friendly by striping high-visibility crosswalks on all legs of the intersection, narrowing the travel lanes to allow for a planted median and pedestrian refuge islands, adding street trees, removing the right turn slip lane at the north-west corner and extending the curb to shorten the crossing and reduce conflicts between vehicles and pedestrians.

Design and install a sign on the northwest corner of the intersection to announce the entrance to the Village Center from Route 9.

Village Center Gateway
1. Improve pedestrian safety and calm traffic by narrowing the intersection along the northern edge. Add on-street parking on one side of E. Main St. to further calm traffic and provide parking for nearby businesses.

2. Consider one of the following options for the Zion Park property:

- Mixed-use buildings with outdoor dining on E. Main St., a shared parking lot for residential units, commercial uses, and the church, and single-family housing on Andrews Pl. This option would provide economic benefits to Zion Church, which owns the property, and the Village, by making the land taxable.

- Retain the existing park and parking area under the control of Zion Church.

- Purchase the property or its development rights from Zion Church to allow the park to be maintained under Village control, and consider sharing the parking with commercial uses.

The design concepts and recommendations were incorporated into the Village’s Downtown and Waterfront Revitalization Strategy that was adopted in 2011.

CR 93 Corridor Management Plan (2011)

The Town of Wappinger requested that the Dutchess County Department of Public Works and Transportation Council develop a Corridor Management Plan (CMP) for CR 93 (Myers Corners Rd.). The CMP’s objective was to identify and recommend policies and projects to improve vehicular and non-vehicular travel along CR 93. The key recommendations are listed below:

Land Use & Zoning
1. Preserve the Meadowbrook Farm and open space and agricultural portions of the Reese property.
2. Pursue redevelopment opportunities at the Wappinger Plaza and adjacent areas, on the Reese property, and along the Route 9 corridor.

3. Implement access management along CR 93 by limiting the number of driveways, providing connections between sites, and encouraging shared parking.

4. Move buildings closer to the street and provide parking to the rear of buildings wherever possible.

5. Modify the Town’s Zoning Law to require consideration of access management strategies and sidewalks and other pedestrian infrastructure in site plans.

6. Consider incorporating maximum parking requirements, reduced minimum parking requirements, and shared parking requirements into the Town Zoning Law.

7. Incorporate *Greenway Connections* principles into the Town Zoning Law where applicable and appropriate.

Short-Term Travel Improvements

1. Install turn pockets at key locations:
   - Left turn pocket on Route 9D southbound, right turn pocket on Route 9D northbound, and separate turn lanes on CR 93 at Route 9D.
   - Right turn pocket on CR 93 westbound at Major MacDonald Way.
   - Left turn pocket on Old Route 9 northbound.
   - Left turn pocket on Losee Rd. and right turn pocket on CR 93 eastbound at Losee Rd.
   - Left turn pocket on Spook Hill Rd. and left turn pocket on CR 93 westbound at Spook Hill Rd.
   - Left turn pocket on CR 93 westbound at Myers Corners Elementary School driveway.

   - Left turn pocket on CR 93 eastbound at DeGarmo Hills Rd.
   - Left turn pocket on Route 376 northbound and right turn pocket on CR 93 at Route 376.

2. Signal changes:
   - Signal phasing changes on CR 93 at Route 9D and Route 9.
   - Signal timing improvements on CR 93 at Route 9D, Route 9, Marshall Rd., Ketcham High School driveway, Laerdal Driveway East, and CR 94.
   - Signal equipment upgrades at Old Route 9, Ketcham High School driveway, and Laerdal Driveway East.
   - New traffic signal at Spook Hill Rd.

3. Access Management at Wappinger Plaza driveway (right-in/right-out), Blackthorn Loop West (right-in/right-out), and Laerdal Driveway West (right-in/right-out).

4. Advance school signage and “No Turn on Red” sign at Route 9D.


6. Improve intersection sight distance at Major MacDonald Way and Ervin Dr.

7. Improve pavement condition on CR 93 at Old Route 9.

Long-Term Travel Improvements

1. Install a roundabout at the CR 93/CR 94 intersection.

2. Intersection realignment at:
   - Route 9D and Randolph School driveway

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*Chapter 6-1: Lower Hudson Overview*  
Effective April 1, 2016
- Blackthorn Loop East and Ketcham High School driveway
- Kent Rd. and Quaker Hill Rd.

3. Install new traffic signals at Route 9D/Randolph School driveway, Blackthorn Loop East/Ketcham High School driveway, Kent Rd./Quaker Hill Rd., Losee Rd., and DeGarmo Hills Rd.

4. Provide sidewalks between Route 9D and Ketcham High School on the north side of CR 93, and between Ketcham High School and Route 376 on the south side of CR 93.

5. Provide crosswalks on CR 93 at Route 9D, Major McDonald Way, Old Route 9, Route 9, Losee Rd., Spook Hill Rd., Blackthorn Loop West, Ketcham High School driveway, Kent Rd., Laerdal Driveway East, and DeGarmo Hills Rd.

6. Provide five-foot shoulders along CR 93 for bicycle use.

7. Transit:
   - Improve existing service by increasing frequencies
   - Consider a new fixed route on CR 93
   - Consider connections to Wappinger Plaza and the Laerdal property
   - Promote paratransit services

8. Transportation Demand Management:
   - Promote transit, carpooling, vanpooling, bicycling, and walking with the help of employers, schools, and shopping areas within the corridor.
   - Target large employers, educational institutions, and large shopping centers to encourage use of regional strategies.

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**Dutchess County Bus Service Expansion Feasibility Study (2013)**

The Dutchess County Bus Service Expansion Feasibility Study was completed to determine the feasibility of expanding Dutchess County bus services within the City of Poughkeepsie, without adding additional costs to Dutchess County. The Bus Study also sought to determine the feasibility for Dutchess County to realize a positive financial return if it became the sole public bus operator in the City. The Study was administered by Dutchess County, through the Transportation Council and included a financial and operational review of the City of Poughkeepsie bus system. This review addressed topics such as staffing, capital equipment, and compliance with federal and State requirements. It also included a service analysis of the City of Poughkeepsie bus system, comparing it to services already provided by the County and recommending timetable and route adjustments to existing DCPT bus routes that would serve City residents without adding additional costs to Dutchess County.

The Bus Study proposed the creation of four new DCPT routes that would significantly expand its service in the Poughkeepsie area, while also replacing existing City routes:

1. **Route H:** providing service from the transit hub to Vassar College, Adams, Stop-and-Shop, and Kmart, using Main St., Fulton St., Collegeview Ave., Fairmont St., and Route 44.
2. **Route I:** providing service from the transit hub to Saint Francis Hospital, DCC, and the Poughkeepsie Housing
Authority, using Washington Ave., E. Cedar St., Pendell Rd.,
Creek Rd., and Smith St.
3. Route J: providing service from the transit hub to Vassar
Brothers Medical Center, Saint Simeon/Fox Hill housing
developments, and Vassar College, using Jefferson St.,
South Ave., Montgomery St., Hooker Ave., and Raymond
Ave.
4. Route K: providing service on lower Main St. from the
transit hub to the Poughkeepsie train station, using
Mansion St., Donegan Pl., and Main St.

Based on the operational estimates associated with the
proposed new routes and the marginal operating costs for
DCPT, the Bus Study determined that the County could expand
its service in the City without adding costs – however, this
could only occur under a set of prearranged conditions, the
most notable being the transfer of capital equipment at no
cost to the County and the use of the City’s share of federal
transit funding.

Beacon Main Street Parking Analysis (2014)

Funded through the Transportation Council, the Dutchess
County Planning Department completed an analysis of parking
conditions in the area in and around the Main St. corridor in
the City of Beacon. The Parking Analysis included an inventory
of existing parking capacity and utilization, and an assessment
of future needs based on planned development in the City.

The Parking Analysis indicated that, outside of specific street
segments or lots at specific time periods, overall parking
utilization rates did not exceed 85 percent. This indicated that
capacity was sufficient to meet demand. However, the east
and west ends of Main St. contained areas exceeding 85
percent utilization. In the east (the area east of Fishkill Ave.),
the highest rates occurred on Saturday evenings. In the west
(the area west of Elm St.), the highest rates occurred during
weekday afternoons. The parking counts also indicated that
there was underutilized capacity on side streets and lots
around activity centers in the east and west ends of Main St.
Most side streets, portions of Main St., and numerous lots
remained well below the 85 percent rate.

The Parking Analysis recommended a variety of strategies to
improve parking capacity and vehicle turn-over:

1. Increase shared use of private parking lots.
2. Develop additional on-street capacity along the Van
Nydeck St. corridor in the eastern section of Main St.
3. Add parking at the Madam Brett House.
4. Encourage better parking utilization by striping parking
spaces, closing defunct curb cuts, and adjusting access to
and from Main St. (one-way/two-way streets).
5. Charge for parking and enforce parking regulations.
6. Develop a Center City Benefit Fund to implement parking
and other center city transportation improvements.
8. Install consistent wayfinding signs to public parking.
9. Improve the biking and walking environment of Main St.
10. Enhance Main St. bus service.
Natural & Historic Resources

The Transportation Council reviewed natural and historic resource information from the State and County to identify potential constraints relevant to transportation planning in the Lower Hudson area. This process started with an inventory of 100-year and 500-year floodplains, NYSDEC wetlands, federal, State, and locally designated parklands, agricultural lands, critical environmental areas, and designated historic districts. These resources are shown on the Lower Hudson Natural & Historic Resources map.

Waterbodies & Watersheds

Major waterbodies in the area include the Hudson River; Wappinger Lake in the Towns of Poughkeepsie and Wappinger and the Village of Wappingers Falls; Cobalt Lake in the Town of Poughkeepsie; Wappinger Creek; Fishkill Creek; Casperkill Creek; Fallkill Creek; Clove Creek; Oniad Lake in the Town of Wappinger; and Lake Valhalla in the Town of Fishkill. The northern and western-most portion of the area, including the City of Poughkeepsie, most of the Town of Poughkeepsie, and the western half of the City of Beacon is part of the Hudson River watershed. The central portion of the area, including the Village of Wappingers Falls and most of the Town of Wappinger is part of the Wappinger Creek watershed. The southeastern portion of the area, including the Village of Fishkill, most of the Town of Fishkill, and the eastern half of the City of Beacon is part of the Fishkill Creek watershed.

Floodplains

Floodplains make up a large percentage of some Lower Hudson communities, as shown in Table 6-1-10. The Town of Fishkill has the highest percentage of land area within 100-year and 500-year floodplains of all municipalities in the county, and ranks first in the county based on acreage of land in 100-year and 500-year floodplains.

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<th>Area</th>
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<td>V. of Wappingers Falls</td>
<td>88</td>
<td>12</td>
</tr>
</tbody>
</table>

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

1. Winnikee Ave., Pershing Ave., Mansion St., a portion of Mill St., and other areas adjacent to the Fallkill Creek in the City of Poughkeepsie.
2. Salt Point Turnpike in the Town of Poughkeepsie.
3. Tucker Dr. in the Town of Poughkeepsie.
4. Old Manchester Rd. in the Town of Poughkeepsie.
5. Old Hopewell Rd. between Route 9D and Route 9 in the Town of Wappinger.
6. Elm St. near Route 9 in the Village of Fishkill.
7. Route 9D in the Town of Wappinger.
8. Creek Rd. in the Village of Wappingers Falls.

**Agriculture & Open Space**

The Dutchess County Planning Department’s Centers and Greenspaces Guide identifies suburban development and areas susceptible to suburban development, defined as parcels under five acres that are outside of centers. These areas are concentrated in the eastern and southern portions of the Town of Poughkeepsie, much of the Town of Wappinger, and the northern portion of the Town of Fishkill. The guide also identifies protected and agricultural lands, which are concentrated in the southern portion of the Town of Fishkill, northeast corner and eastern boundary of the Town of Wappinger, and southwestern corner of the Town of Poughkeepsie.

The Lower Hudson contains 1,449 acres of land that received agricultural value assessments in 2014. These assessments identify properties with active farms, nurseries, stables, or other agricultural operations. The agricultural assessed lands represent 2 percent of the area’s total acreage. Table 6-1-11 shows the total acreage of agricultural assessed lands by municipality and its share of each municipality’s land area.

**Table 6-1-11. Agricultural Assessed Land-Lower Hudson**

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Total Agricultural Assessed Acreage</th>
<th>Percent of Land Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Beacon</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>City of Poughkeepsie</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Town of Fishkill</td>
<td>48</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Town of Poughkeepsie</td>
<td>226</td>
<td>1</td>
</tr>
<tr>
<td>Town of Wappinger</td>
<td>1,174</td>
<td>7</td>
</tr>
<tr>
<td>Village of Fishkill</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>V. of Wappingers Falls</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The Lower Hudson also contains 2,688 acres of land certified by the NYS Department of Agriculture & Markets as Agricultural Districts. These districts contain locally-designated parcels that currently serve or could serve agricultural purposes. Agricultural districts represent about 4 percent of the area’s total acreage and include most of the agriculturally assessed lands. Table 6-1-12 shows total agricultural district acreage by municipality and its share of land area.

**Table 6-1-12. Agricultural Districts-Lower Hudson**

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Total Agricultural District Acreage</th>
<th>Percent of Land Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Beacon</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>City of Poughkeepsie</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Town of Fishkill</td>
<td>423</td>
<td>2</td>
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<tr>
<td>Town of Poughkeepsie</td>
<td>588</td>
<td>3</td>
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<tr>
<td>Town of Wappinger</td>
<td>1,677</td>
<td>9</td>
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<td>Village of Fishkill</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>V. of Wappingers Falls</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Chapter 6-1: Lower Hudson Overview
Five open space areas in the Lower Hudson are protected under Dutchess County’s Partnership for Manageable Growth:

1. Carnwath Farm (95 acres) in the Town of Wappinger.
2. Forbus Butternut (0.5 acres) in the City of Poughkeepsie.
3. Hiddenbrooke (88 acres) in the City of Beacon.
4. Locust Grove (29 acres) in the Town of Poughkeepsie.
5. Peach Hill (158 acres) in the Town of Poughkeepsie.

The Lower Hudson hosts 4,688 acres of major federal, State, and local parkland. Key parks include:

1. Waryas Park (5 acres) in the City of Poughkeepsie.
2. Walkway Over the Hudson State Park (10 acres) in the City of Poughkeepsie.
3. College Hill Park (106 acres) in the City of Poughkeepsie.
4. Quiet Cove Riverfront Park (32 acres) in the Town of Poughkeepsie.
5. Bowdoin Park (319 acres) in the Town of Poughkeepsie.
6. Dutchess Rail Trail (77 acres) in the Towns of Poughkeepsie and Wappinger.
7. Stony Kill Farm Environmental Education Center (731 acres) in the Town of Wappinger.
8. Hudson Highlands State Park (1,305 acres) and Mount Beacon (239 acres) in the Town of Fishkill.

Critical Environmental Areas

The Lower Hudson includes five locally designated Critical Environmental Areas (CEAs), which are recognized by NYSDEC as having significant impacts on the natural environment:

1. Dutchess Airport Landfill Site and Dutchess Airport Balefill (inactive landfills; toxic pollutants present).
2. Town of Fishkill aquifer protection areas (various sites; to protect public water supply).
3. Page Industrial Park on Route 55 (inactive dump, toxic pollutants present).
4. Schatz Federal Bearing Closed Landfill Site and FICA Landfill Site on Van Wagner Rd. (inactive landfill; toxic pollutants present).
5. Wappinger Lake (protection of natural resource).

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

3. Hudson River Greenway Trail Links: Properties along the Hudson River that would establish a continuous trail from New York City to Saratoga County, including the Walkway Over the Hudson, the Dutchess County Greenway Trail, and the Hudson Fjord Trail.
4. Hudson Tributaries: Sites which protect habitat and provide access to stream banks of tributaries, including the...
Fishkill Creek, Wappinger Creek, Casperkill Creek, and Fallkill Creek.
5. Scenic Viewsheds: Sites which provide scenic vistas, including Scofield Ridge, Fishkill Ridge, Mt. Beacon, the Mid-Hudson Bridge, the Walkway Over the Hudson, and the Hudson River National Historic Landmark District.
6. Buffer, Access or Addition to Historic Sites, Conservation and Park Lands: Properties which protect the integrity of existing conservation lands or historic sites, including the Poughkeepsie Waterfront Trail, Stony Kill Farm Environmental Education Center, and Poughkeepsie Rural Cemetery lands.
7. Urban Waterfronts: Sites which implement a local plan for mixed use waterfront revitalization, including the Poughkeepsie Waterfront and Beacon Waterfront.

Historic Resources

The Lower Hudson includes a large number of designated Historic Districts:

1. Lower Main St. Historic District: several blocks of Main St. east of South Ave., in the City of Beacon (266 acres).
2. Academy St. Historic District: between Livingston and Montgomery streets in the City of Poughkeepsie (140 acres).
4. Dwight St.-Hooker Ave. Historic District: Dwight St and Hooker Ave. between Dwight St. and Circular Rd. in the City of Poughkeepsie (60 acres).
5. Garfield Place Historic District: between Franklin and Montgomery streets, including portions of Montgomery and Barclay streets, in the City of Poughkeepsie (200 acres).
6. Mill St.-N. Clover St. Historic District: Mill and N. Clover streets, as well as parts of Davies Pl., N. Bridge St., Mansion St., Vassar St., Lafayette Pl., and Main St., in the City of Poughkeepsie (270 acres).
7. Union St. Historic District: Delano St., most of Union and S. Clover streets, and parts of Grand St., S. Bridge St., S. Perry St., Jefferson St., and Bellevue Ave., in the City of Poughkeepsie (18 acres).
8. Upper Mill St. Historic District: Mill St., Garden St., and Catherine St. in the City of Poughkeepsie (60 acres).
9. Main St. Historic District (New Hamburg): between Bridge St. and Stone St. in the Town of Poughkeepsie (10 acres).
10. Stone St. Historic District: between Division St. and Bridge St. in the Town of Poughkeepsie (10 acres).
11. Wappingers Falls Historic District: includes properties on Andrews Pl., Dutchess Ave., Dutchess Terr., E. and W. Main St., Givens Ave., High St., Market St., Mill St., N. and S. Mesier Ave., Park St., South Ave., and Upper Henry St., as well as the Dutchess Bleachery and Mesier Park, in the Village of Wappingers Falls (900 acres).
13. Fishkill Village Historic District: includes Main St. and Broad St. and the roads connecting them in the Village of Fishkill (180 acres).
There are also many historic sites in the area, particularly in the cities of Beacon and Poughkeepsie, and villages of Fishkill and Wappingers Falls. The Lower Hudson Natural and Historic Resources map at the end of this chapter shows the locations of environmentally sensitive areas and historic properties.

Transportation Needs

Based on a review of local comprehensive plans, previous Transportation Council studies, and transportation system data, the Transportation Council identified a series of transportation needs in the Lower Hudson. These needs were reviewed at two Lower Hudson public workshops and revised based on feedback from the workshops and a public survey. The revised list of needs includes the following items:

Highway Maintenance (by municipality)

Multiple Municipalities
1. Inventory pavement conditions on local streets and repave based on condition ratings.

Reconstruct or repave the following road segments with poor surface scores based on NYSDOT and Dutchess County standards:

City of Poughkeepsie
1. Academy St. between Cannon St. and Main St. (0.07 miles).
2. Market St. between Route 44 (Church St.) (eastbound) and Main St. (0.18 miles).

Town of Poughkeepsie
1. Route 115 (Salt Point Turnpike) from Hudson Ave. to Innis Ave. (0.3 miles).
2. Van Wagner Rd. between Hornbeck Rd. and bridge PO-4 (0.87 miles).

Village of Wappingers Falls
1. Market St. between the Town of Wappinger line and Fulton St. in the Village of Wappingers Falls (0.35 miles).

Bridge Maintenance

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

1. I-84 over Metro-North Railroad Beacon Line (BIN 1032481) in the Town of Fishkill.
2. Route 9D over I-84 (BIN 1006360) in the Town of Fishkill.
3. Route 9D over the Fishkill Creek (BIN 1006340) in the City of Beacon.
4. Route 9 over Railroad Plaza (BIN 1005319) in the City of Poughkeepsie.
5. Route 44 over Route 9 (BIN 1005290) in the City of Poughkeepsie.
6. High St. over Fall Kill Creek (BIN 2262690) in the City of Poughkeepsie.
7. Mansion St. over Fall Kill Creek (BIN 2262750) in the City of Poughkeepsie.
8. Washington St. over Fall Kill Creek (BIN 2262670) in the City of Poughkeepsie.
9. CR 43 (Degarmo Rd.) over Wappinger Creek (BIN 3358440) in the Town of Poughkeepsie.

If funding becomes available, the following low-volume, NYSDOT deficient bridge could be repaired:


**Highway Capacity**

1. As part of redevelopment of the former Hudson River Psychiatric Center, improve the existing street system to include multi-modal public streets between Route 9 and Route 9G and consider developing a secondary street and/or trail along the CSX East Branch to connect the property to Fulton St. and Parker Ave., as recommended in the [Route 9 Land Use and Transportation Study](#) (Town of Poughkeepsie).

2. Add a slow-speed pedestrian- and bicycle-friendly street (such as a bicycle boulevard with sidewalks) east of Route 9 between Myers Corners Rd. and New Hackensack Rd., using Imperial Boulevard and the area behind Hannaford, west of Marshall Rd., consistent with the [CR 93 (Myers Corners Road/Middlebush Road) Corridor Management Plan](#), the [Village of Wappingers Falls Route 9 Study](#), and the Town of Wappinger’s [Comprehensive Plan](#). Include east-west connections to East Main St. and Old Route 9, and a northern connection from New Hackensack Rd. to North Mesier Ave. (Town of Wappinger/Village of Wappingers Falls).

3. Pursue innovative ways to increase capacity and reduce congestion at the Route 9D/CR 28 (New Hamburg Rd) intersection in the Hughsonville hamlet (Town of Wappinger).

4. Reduce congestion on the following State highways:

   a) Route 9 between I-84 and Route 55/44:
      - Northbound: Mid-day, PM, and Saturday
      - Southbound: PM and Saturday
      In particular, examine signal timing along Route 9 and identify ways to reduce congestion on the two-lane southbound segment south of Mesier Ave.

   b) Route 52 between I-84 and the Taconic State Parkway
      - Eastbound: PM
      - Westbound: PM
      In particular, examine signal timing or other changes to improve traffic flow on Route 52 through the Village of Fishkill.

   c) Route 9D between I-84 and Route 9:
      - Northbound: AM and PM
Moving Dutchess 2

- Southbound: AM and PM

Traffic Operations (by municipality)

Multiple Municipalities
1. Limit the number of access points on State and County roads and require new commercial developments to share driveways and to internally link circulation or service roads between adjacent parcels. In new development, limit dead-ends and cul-de-sacs. Instead, ensure connected streets and several sources of egress, to distribute traffic and improve access for emergency service vehicles.

City of Beacon
1. Improve parking as detailed in the Beacon Main Street Parking Analysis (2014), specifically:
   - Increase shared use of private parking lots.
   - Develop additional on-street parking along the Van Nydeck St. corridor in the eastern section of Main St.
   - Add parking at the Madam Brett House.
   - Encourage better parking utilization by striping parking spaces, closing defunct curb cuts, and adjusting access to and from Main St. (one-way/two-way streets).
   - Charge for parking based on demand and enforce parking regulations.
   - Develop a Center City Benefit Fund to implement parking and other center city transportation improvements.
   - Adjust parking regulations in the Zoning Code.
   - Install consistent wayfinding signs to public parking.

2. Improve the biking and walking environment of Main St.
3. Enhance Main St. bus service.

City of Poughkeepsie
1. Redesign the Route 9/44/55 interchange to improve traffic safety and operations.
2. Redesign Market St. to allow two-way traffic between Church St. and Mill St, as outlined in the Main Street Economic Development Strategy. Incorporate pedestrian crossing improvements, including marking a crosswalk across the west leg of Route 44/55 westbound (Mill St.). Consider a ‘road diet’ to reduce the number of lanes and add on-street parking and bicycle facilities.
3. Redesign Route 44/55 eastbound and westbound arterials between the City Center and surrounding neighborhoods to be walkable boulevards, as outlined in the Main Street Economic Development Strategy. Consider changing from three one-way lanes to either two one-way lanes and one lane the opposite direction, or two lanes with a median, bike lanes, or on-street parking on both sides.
4. Reconfigure the Washington-Mill St. merging lanes as a more traditional intersection to eliminate the curve behind the Civic Center, slow traffic and shorten the crossing distance at Main St, as shown in the Poughkeepsie Waterfront Redevelopment Strategy.
5. Replace or install traffic signals at the following intersections:
   - Washington St. and Parker Ave. (new signal)
   - Academy St. and Cannon St. (replace signal)
   - Mill St./N. Clover St./Donegan Pl. (replace signal)
6. Reconstruct the Creek Rd./Smith St./Little George St. intersection into a roundabout to improve safety and reduce congestion. Incorporate sidewalks and crosswalks across all legs of the roundabout.

7. Redesign the Route 44/55-Smith St.-Clinton St. intersection to improve safety, direct truck traffic away from Smith St., and create a new Clinton Square, as described in the City of Poughkeepsie Transportation Strategy.

8. Open Liberty St. (between Main St. and Cannon St.) to slow-speed, one-way traffic with a pedestrian walkway.

9. Improve Water St. to include on-street parking on one side, as shown in the Poughkeepsie Waterfront Redevelopment Strategy.

10. Add a southbound entrance to Route 9 south of the Hoffman Street Bridge.

Town of Poughkeepsie
1. As part of redevelopment of the former Hudson River Psychiatric Center, establish a direct connection to the Mid-Hudson Plaza, and align the former Psychiatric Center entrance with Quiet Cove Park.

2. Improve operations and safety at the Main St/Grand Ave intersection: realign Grand Ave to form a traditional four-legged intersection; adjust signal timing; and evaluate crash patterns and make improvements to address safety issues.

Town and Village of Fishkill
1. Reconstruct the I-84/Route 9D interchange to reduce delays and improve safety. In the short-term, adjust the signal at I-84/Route 9D to provide more time for left turns out of the Beacon train station between 3-7 p.m., and/or add a second left turn pocket on Route 9D northbound onto the I-84 bridge.

2. Coordinate traffic signal timing on Route 52 between I-84 and CR 34 (Jackson St).

3. Provide separate turn lanes on Cedar Hill Rd. to facilitate right turns onto Route 52.

4. Reduce cut-through traffic on Florence Ave. by re-timing the signal at Route 52/Jackson St. to accommodate church traffic on Saturday evenings and Sunday mornings.

5. Reduce speeds and cut-through traffic by restricting the Route 52/Cary Ave. intersection to right-in/right-out only, installing speed tables on Broad St., and making the Smith St./Elm St. and Broad St./Jackson St. intersections all-way stop controlled.

6. Consider traffic calming on Route 9D near Dogwood Ln. and Chiappardi Pl.

Town of Wappinger
1. Reconstruct the intersection at CR 28 (Old Hopewell Rd.) at CR 94 (All Angels Hill Rd.) to accommodate turn lanes and improved shoulders to improve sight distance and correct safety deficiencies.

2. Implement access management on Route 9 by removing traffic signals where feasible, providing left turn lanes, consolidating driveways to reduce conflict points, and providing access between commercial parking areas.

3. Improve operations along CR 93 (Myers Corners Rd.) as detailed in the CR 93 (Myers Corners Rd/Middlebush Rd) Corridor Management Plan (2011), specifically:
i. Provide left turn pockets at various intersections on Route 9D, CR 93, and Route 376.

ii. Provide right turn pockets at various intersections on Route 9D and CR 93.

iii. Improve traffic signal timing at intersections on CR 93 including Route 9D, Route 9, Marshall Rd., Ketcham High School Driveway, Laerdal Driveway East, and CR 94 (All Angels Hill Rd.).

iv. Upgrade signal equipment on CR 93 at Old Route 9, Ketcham High School Driveway, and Laerdal Driveway East.

v. Install a traffic signal on CR 93 at Spook Hill Rd.

vi. Implement access management on CR 93 at Blackthorn Loop West, Laerdal Driveway West, and at DeGarmo Hills Rd.

vii. Consider construction of a roundabout at the CR 93 (Myers Corners Rd.)/CR 94 (All Angels Hill Rd.) intersection.

viii. Realign and signalize intersections on CR 93 at Route 9D and the Randolph School driveway; Blackthorn Loop East and the Ketcham High School driveway; and Kent Rd. and Quaker Rd. (if development occurs).

Village of Wappingers Falls

1. Create a four-way intersection at Route 9 and E. Main St. by providing a new connection on the eastern leg from Imperial Blvd. to E. Main St. Move the existing commercial parking access on the northeast corner further from the intersection, stripe high-visibility crosswalks on all four legs of the intersection, narrow the travel lanes to allow for a planted median and pedestrian refuge islands, and remove the right turn slip lane at the northwest corner and extend the curb to shorten the crossing and reduce pedestrian-vehicle conflicts. Add a high-visibility crosswalk with a pedestrian refuge island across Route 9 on the north side of E. Main St.

Safety (by municipality)

Multiple Municipalities

1. Improve roadway safety at high-crash locations identified in the Moving Dutchess 2 crash analysis.

2. Improve pedestrian and bicycle safety on high-crash corridors identified in Walk Bike Dutchess.

3. Deploy Emergency Vehicle Signal Preemption technology at major intersections along the Route 9 corridor, with Route 9/Fulton St. in the Town of Poughkeepsie as a top priority.

City of Beacon

1. Install traffic calming elements, such as raised crosswalks, on Beekman St. and West Main St.

City of Poughkeepsie

1. Conduct a comprehensive safety assessment focused on walking and bicycling on Main St. and implement changes to improve safety.

2. Improve safety for people traveling by car or bicycle between the Dutchess Rail Trail at Morgan Lake and Creek Rd. In particular, improve sight distance for left turns onto Creek Rd and from Creek Rd to the rail trail.
Town of Poughkeepsie
1. Work with the Arlington School District and Town of Poughkeepsie to develop a Safe Routes to School Plan for Arthur S. May Elementary School (at the former Arlington Middle School site), defining recommended walking and bicycling routes to the school. Implement sidewalk and crossing improvements, as well as signage and signal timing adjustments along the designated routes as needed. Incorporate education, enforcement and encouragement strategies to improve safety for students walking or bicycling to school.

Town of Wappinger
1. Improve horizontal alignment, sight distance and safety on CR 28 (Old Hopewell Rd.) from Route 9 to CR 94 (All Angels Hill Rd.).
2. Improve horizontal alignment, sight distance and safety on CR 93 (Myers Corners Rd.) from CR 94 (All Angels Hill Rd.) to Route 376.
3. Improve intersection sight distance on CR 93 at Major MacDonald Way and Ervin Dr.
4. Increase safety for bicyclists and pedestrians on Route 9D.

Town & Village of Fishkill
1. Consider safety improvements on Merritt Blvd. to reduce crashes on this corridor.
2. Improve pedestrian safety and crosswalks at Route 9/Route 52 and at Route 9/Church St. (Shop Rite plaza).

Village of Wappingers Falls
1. Install curb extensions on Main St. at the Market St. corners (two); Mill St. corners (two); in front of the Knights of Columbus building (just west of Wheel & Heel bike shop); at Church Street; and just north of Givans Ave. while accommodating turning vehicles. Stripe new shorter crosswalks across Main St. on both sides of Mill St. and Market St., across Mill St., and across Market St., and continue enforcement and education efforts to improve pedestrian safety on E. Main St.
2. Consider high-visibility crosswalks, signage, and other pedestrian crossing improvements at the following locations: Route 9/CR 104 (New Hackensack Rd.), Route 9 at E. Main St., Route 9 at Old Route 9, Route 9 at McDonalds/Planet Fitness (between E. Main St. and Wenliss Terr.), W. Main St. (Route 9D)/School St., W. Main St. (Route 9D)/Convent Ave., and E. Main St./W. Main St.

Transit
1. Provide fixed route service every 15-30 minutes in the City and Town of Poughkeepsie, Towns of Fishkill and Wappinger, City of Beacon, and Villages of Fishkill and Wappingers Falls. In particular, establish frequent (every 15 minutes) transit service along Main St. in the City of Poughkeepsie to connect the waterfront and train station with businesses, neighborhoods, and Vassar College, as outlined in the Main Street Economic Development Strategy.
2. In coordination with the City of Poughkeepsie, consider expanding Dutchess County Public Transit service to
improve access to destinations and increase frequency and hours of service in the City of Poughkeepsie.

3. Develop an integrated fare system and coordinated marketing between Dutchess County Public Transit and the City of Poughkeepsie transit system.

4. Establish timed transfers between Dutchess County Public Transit and City of Poughkeepsie buses.

5. Provide additional bus service to train stations and improve coordination with Metro-North schedules.

6. Add signs, bus stop shelters, route maps, timetables, and lighting to bus stops.

7. Provide better information about the bus routes and schedules, including making maps and schedules easier to use.

8. Develop real-time location/arrival information.

9. Improve transit access to local colleges.

10. Improve transit service to tourist destinations.

11. Consider expanded evening service, Sunday service, and holiday service, as well as express service on key corridors like Route 9.

12. Consider a new fixed bus route on CR 93 (Myers Corners Rd.), with stops at the Hannaford Plaza and Laerdal property in the Town of Wappinger.

13. Provide a centralized, multi-floor parking facility for the Beacon Train Station.

14. Improve access to the New Hamburg Train Station from the Village of Wappingers Falls by bus.

15. Improve pedestrian access to County bus service for Village of Wappingers Falls residents on the east side of Route 9.

**Sidewalks/Pedestrian Facilities, including ADA projects (by municipality)**

**Multiple Municipalities**

1. Provide consistent sidewalks on Route 9 south of Kingwood Park/IBM Road, particularly between IBM Rd. and Mesier Ave., and between CR 93 (Middlebush Rd./Myers Corners Rd.) and CR 28 (Old Hopewell Rd.) in the Town of Wappinger.

2. Set specific opening and closing hours on the Newburgh-Beacon Bridge walkway/bikeway and Mid-Hudson Bridge walkway, which could vary by season. Longer-term, extend the walkway/bikeway hours, ideally to 24 hours. Install lighting or other measures as needed for security.

3. Improve yielding for pedestrians at crosswalks through signage and education.

4. Improve sidewalks and intersections on State Roads to meet ADA standards, based on NYS DOT’s inventory:
   - Route 9: one intersection and one sidewalk segment in the Town of Poughkeepsie, and one intersection (at Scenic Dr.) in the Town of Wappinger.
   - Route 9D: one intersection (at Clinton St.) and one sidewalk segment in the Village of Wappingers Falls, and one intersection (Wolcott Ave. at Beekman St.) in the City of Beacon.
   - Route 44: 11 locations in the City of Poughkeepsie and 14 in the Town of Poughkeepsie.
   - Route 52: three sidewalk segments in the Village of Fishkill.
   - Route 55: one sidewalk segment in the Town of Poughkeepsie.
Moving Dutchess 2

- Route 113: two intersections and two sidewalk segments in the Town of Poughkeepsie.
- Route 376: four intersections and three sidewalk segments in the Town of Poughkeepsie.

City of Beacon
1. Improve visibility at the I-84/Route 9D intersection by clearing vegetation near the intersection and relocating the fence at the northwest corner of the intersection. Consider supplemental signage to encourage turning drivers to yield to people in the crosswalk, and add a leading pedestrian interval to allow people on foot to start crossing before vehicles get a green signal.
2. Improve pedestrian access to the Beacon Train Station: provide a sidewalk on the northwest side of Beekman St. to complete the gap between West Main St. and the existing sidewalk south of River St. Create a new sidewalk or path south of City Hall between Beekman St. and Wolcott Ave./Route 9D to connect the train station and Main St. Consider a formal path or sidewalk connection between Ferry St. and Wolcott Ave./Route 9D, complete with stairs, handrails, and signage. Create a sidewalk or path along Red Flynn Dr. between the Beacon ferry dock and Riverfront Park.
3. Install a sidewalk on the east side of Route 9D from Hillside Rd. to the University Settlement Camp near Craig House Ln. Alternatively, mark crosswalks at appropriate crossing locations across 9D.
4. Improve pedestrian access to Madam Brett Park: Mark a crosswalk on the east side of the Tioronda Ave./Wolcott Ave. intersection, and install a sidewalk or path on one side of Tioronda Ave. between Wolcott Ave. and South Ave. A path could continue south on South Ave. under the rail line and west to Madam Brett Park.

City of Poughkeepsie
1. Improve pedestrian access to Dutchess Community College: Install a sidewalk along Creek Rd. from Smith St. to the DCC entrance (at the crosswalk between the parking lot and Hudson Hall), including an extension of the sidewalk on the north side of Smith St. to Creek Rd., and possibly extending on Creek Rd. to Cottage Rd. Install crosswalks, pedestrian-activated signals, and other improvements to help people safely cross Smith St. and Creek Rd.
2. Mark shoulders or edge lines on Beechwood Ave. to slow vehicles and provide some space for walking. Consider other traffic calming improvements to reduce speeds and improve safety for people walking. Longer-term, extend the sidewalk at least on one side of the street to Route 9.
3. Install a crosswalk across Hooker Ave. on the west side of Wilbur Blvd. Include curb ramps, signage, and other elements as needed. Extend the existing sidewalk on the south side of Hooker Ave. from east of Austin Court to the crosswalk on the east side of Raymond Ave. Long-term, extend the existing sidewalk on the north side of Hooker Ave. from Wilbur Blvd. east to the crosswalk at Raymond Ave.
4. Improve the walkways through Waryas Park to connect Main St. and the Poughkeepsie train station with the Walkway elevator, and install crosswalks across North Water St. to improve access for people walking between
the train station and Waryas Park, Upper Landing Park, and the Walkway elevator.

5. Improve the sidewalks, crosswalks, and landscaping along Smith and Cottage streets.

6. Increase awareness of pedestrian access to the Mid-Hudson Bridge walkway via the ramp at Gerald Drive. Add Walkway Loop Trail signage. Remove the sidewalk between the Route 9 ramps on the south side of the bridge. Add signage, high-visibility crosswalks, and other pedestrian safety improvements at the Route 9 ramps on the north-side of the bridge, or remove the north sidewalk and install signs directing people to the Gerald Dr. ramp instead.

7. Redesign the Washington St./Brookside Ave./Verazzano Boulevard/North Bridge St. intersection to extend the curb at the northwest corner, narrowing the intersection and reducing the crossing distance. Mark high-visibility crosswalks and stop bars on all legs of the intersection, and install pedestrian signals.

8. Redesign the Mill St./Verazzano Boulevard/Mt. Carmel Pl. intersection to extend the curb at the southwest corner, reducing the crossing distance and removing the non-standard crosswalk, and install high-visibility crosswalks and pedestrian signals for all legs of the intersection.

9. Improve access by foot to the Walkway Over the Hudson. Improve pedestrian crossings with high-visibility crosswalks, signage, curb ramps (where needed), and stop bars (where applicable) at key intersections (particularly Washington St. at Parker Ave, Bain St/Orchard Ave, Taylor Ave, and Clark St; Parker Ave at Fairview Ave/N Hamilton St, the Walkway entrance near Garden St, and Washington St; and Garden St. at Brookside Ave). Consider a sidewalk ‘bus bulb’ (curb extension) or widened sidewalk with a bus stop shelter on Washington St. near Parker Ave. Install a bicycle rack near the stairs to the Walkway on Washington St. and consider adding a bicycle ramp or ‘stair channel’ to enable people to roll their bicycles up the stairs to the Walkway. Install pedestrian-scale lighting along Parker Ave.

10. Improve sidewalks on Main St, including replacing broken sections, improving lighting (particularly under the Route 9 overpass), providing benches, and planting more street trees.

**Town of Poughkeepsie**

1. Extend the sidewalk on Route 113 (Spackenkill Rd.) from Croft Rd. to Boardman Rd. to provide access between destinations on Route 9 and Spackenkill High School, Oakwood Friends School, and schools on Boardman Rd., and provide consistent four foot minimum shoulders on Route 113 (Spackenkill Rd.), particularly near Wilbur Blvd. Mark crosswalks and add pedestrian signals at crossings.

2. Extend the sidewalk on one or both sides of Fulton St. from the Mid-Hudson shopping center (across from Beck Place) east to Children’s Way to connect to the sidewalk to Violet Avenue Elementary School. Extend the sidewalk on the north side of Fulton St. from the elementary school entrance to Route 9G, and provide a crosswalk to connect to the sidewalk on the east side of Route 9G.

3. Fill sidewalk gaps along Innis Ave. north of Arnold Rd. to create a continuous network and extend sidewalks from Jackman Dr. north to Salt Point Turnpike. Extend the
sidewalk on the south side of Salt Point Turnpike (Route 115) from Hudson Ave. to Innis Ave., mark high-visibility crosswalks to connect sidewalks on opposite sides of the street, and provide other crossing improvements as needed.

4. Provide consistent sidewalks on both sides of Route 44 between Raymond Ave. and Overlook Rd., particularly between Longview Rd. and Overlook Rd., and possibly extend to CR 43 (DeGarmo Rd.). Provide crosswalks and pedestrian signals on all legs of the Route 44/Cherry Hill Dr. intersection and the Route 44/Burnett Blvd. intersection. Adjust signal timing as needed to allow sufficient time for people to cross intersections, and provide consistent four foot minimum shoulders for bicycling on Route 44.

5. Improve pedestrian access in Red Oaks Mill: add sidewalks along New Hackensack Rd. (Route 376) between Hogan Drive and Old Mill Rd., at least on the east side; provide sidewalks on CR 77 (Vassar Rd.) from Route 113 (Spackenkill Rd.) through the commercial area; consider a sidewalk on Route 113 (Spackenkill Rd.) between Boardman Rd. and CR 77 (Vassar Rd.); and add crosswalks and pedestrian signals at the Route 376/Route 113/CR 77 intersection.

6. Construct a sidewalk or separated path on the west side of Route 9 between Marist’s north gate and Quiet Cove Park, and connect with the Greenway Trail as well as future sidewalks along Route 9 in Hyde Park.

7. Provide a sidewalk on Sheafe Rd. between the elementary school (Delavergne Ave.) and the baseball park just north of Cottam Hill Rd. As a second phase, extend the sidewalk south to Bowdoin Park. Longer-term, consider access to the New Hamburg train station.

8. Mark a high-visibility crosswalk across Fairmont Ave. at Collegeview Ave., and consider an all-way stop at the intersection. Install in-street pedestal style "Yield to Pedestrians" signs at uncontrolled crosswalks.

**Town & Village of Fishkill**

1. Install a sidewalk on the north side of Route 52 from near Jeannette Dr., under I-84, to the existing sidewalk west of Blodgett Rd., and install a sidewalk on Geering Way and Central Hudson Way from Route 52 to Geering Park. Add crosswalks and pedestrian signals as appropriate.

2. Create pedestrian connections to Sarah Taylor Park and the Westage Business Center, including safe pedestrian access from the west side of Route 9 to Sarah Taylor Park; from Sarah Taylor Park to Merritt Park Condominiums; a footbridge across Fishkill Creek; and bicycle access from Jackson St. south into Westage Business Center.

3. Extend the sidewalk on Route 9D north from I-84 to Dutchess Stadium, connecting to the sidewalk on the northwest side of 9D at Brockway Rd. Provide a sidewalk connecting the ramp at the southeast corner of the Route 9D/stadium entrance intersection to the stadium entrance, and add crosswalks where needed to connect sidewalk segments.

4. Create a safe crossing for pedestrians and bicyclists on the I-84 overpass on Route 9D.
Town of Wappinger & Village of Wappingers Falls

1. Pursue a sidewalk, path, or wider shoulders along CR 28 (Old Hopewell/New Hamburg Rd.), particularly from Route 9 or Route 9D to the New Hamburg train station, and add appropriate signs to increase driver awareness of people walking and bicycling.

2. Install a sidewalk with a landscaped buffer on CR 93 (Myers Corners Rd.): on the north side between Route 9D and the Ketcham High School driveway, and on the south side between the high school driveway and Route 376. Incorporate a sidewalk and/or shoulders as part of the replacement of the culvert over the Lake Oniad Stream.

3. Create a connection between CR 93 (Myers Corners Rd.) and the Dutchess Rail Trail via a sidewalk and/or wider shoulders on Route 376 and on the bridge over Sprout Creek.

4. Mark crosswalks at key intersections along CR 93 such as Route 9D, Major McDonald Way, Old Route 9, Route 9, Losee Rd., Spook Hill Rd., Blackthorn Loop West, Ketcham High School driveway, Kent Rd., Laerdal Driveway East, and DeGarmo Hills Rd., in coordination with other improvements.

5. Evaluate the feasibility of installing a sidewalk on Route 9D between Middlebush Rd. and the existing sidewalks on Route 9D in the Village of Wappingers Falls.

6. Construct sidewalks on Route 9D between the northern Wappingers Falls Village line and Route 9, and on N. Mesier Ave. between Liss Rd. and Route 9.

7. Pursue sidewalks on CR 104 (New Hackensack Rd).

Multi-Use Trails & Bicycle Facilities (by municipality)

City of Beacon

1. Install bike parking at destinations including City Hall, the Beacon Visitor’s Center, Post Office, Library, Dutchess County Building, DIA-Beacon, Beacon High School, and along Main St., as well as recreational areas such as the park at the base of Mount Beacon, University Settlement Camp, Madam Brett Park, and Riverfront Park. Work with MTA to provide bicycle lockers at the Beacon train station.

2. Mark sharrows on Beekman St. and Red Flynn Drive between Route 9D and the Beacon train station and ferry dock; as well as on South Ave. between Main St. and Dennings Ave., and on Dennings Ave. to the rail line. Consider sharrows on Verplank Ave and sharrows or a bike lane on Route 52 (Teller Ave/Fishkill Ave).

3. Create wider shoulders for bicycling along Route 9D, including between Beacon and the Bear Mountain Bridge.

4. Create the Beacon Hudson Trail, a shared-use Greenway Trail along the waterfront from the Beacon train station to the Newburgh-Beacon Bridge access road and north into the Town of Fishkill.

5. Create the Fishkill Creek Greenway & Heritage Trail along the Fishkill Creek, either immediately adjacent to the Creek or as a ‘rail with trail’ using part of the Beacon rail line right of way, or some combination. Extend the trail through the City of Beacon to the Hudson River and connect to the Greenway Trail along the Hudson River. Extend the trail into the Town and Village of Fishkill, including to Jackson St., Sarah Taylor Park, Merritt Blvd., and Westage Business Center.
Moving Dutchess 2

6. Work with Dia:Beacon to develop a walking trail or path from Dennings Ave. to Dia:Beacon for visitors coming from Dennings Point. A loop could be created between the Beacon train station, along the Klara Sauer Trail to Dennings Point, and DIA.

7. Reconstruct the South Ave. Bridge across the Fishkill Creek to allow access by people walking and bicycling, as well as driving. This could provide a connection to the Hudson Highlands Fjord Trail via the Slocum Rd. subdivision to Route 9D.

8. Create a rail trail on the old Beacon rail line.

City of Poughkeepsie

1. Work with property owners to complete the Hudson River Greenway Trail from Quiet Cove Park at the Hyde Park Town line south to the Locust Grove Historic Site. Include connections to the Walkway elevator and around Kaal Rock Point (including paving trail gaps in Kaal Rock Park).

2. Implement the city’s nine bicycle routes in coordination with street repaving and other planned projects. Mark streets as bicycle boulevards, with bicycle lanes or sharrows, or maintain as shared lanes, as appropriate. Identify the routes with wayfinding signs, and install bicycle racks at destinations along the routes, including racks and lockers at the Poughkeepsie train station.

3. Improve conditions for bicycling along Main St, including repairing pavement and removing recessed manholes.

4. Provide bike parking at destinations throughout the city, including long-term protected bike parking at the train station.

5. Widen shoulders along Route 376 between Cedar Valley Rd. and Red Oaks Mill Rd. (CR 44) where feasible, and improve shoulder maintenance, including pavement repair and brush clearing, particularly between Route 113 (Spackenkill Rd.) and CR 93 (Myers Corners Rd.).

6. Widen the Wilbur Blvd. path to at least 12 feet and upgrade the path to meet ADA standards to the extent practicable. Improve driveway and intersection crossings based on current design standards, and provide a transition between the southern end of the path and Wilbur Blvd. for access to Spackenkill Rd. Consider signage, pavement markings, and other elements to direct people on bicycles between the street and the path and to alert drivers of their presence. Provide a crossing and signage at Croft Rd. to direct bicyclists to Todd Middle School. Consider a pedestrian/bicycle-activated flashing light at

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Effective April 1, 2016
the crossing, similar to one installed on N. Grand Ave. in the Town of Poughkeepsie at the Dutchess Rail Trail crossing.

7. Create a shared-use path along the west side of Zack’s Way/Boardman Rd. between Hooker Ave./New Hackensack Rd. and Spackenkill Rd., connecting Vassar College, the Arlington neighborhood, and the Vassar Farm with the Boardman Road library, Our Lady of Lourdes High School, Poughkeepsie Day School, and destinations on Spackenkill Rd. Connect the path to walking and bicycling facilities on Hooker Ave., and improve the traffic signal at Zack’s Way/New Hackensack Rd. to detect bicycles.

8. Install a sidewalk or shared-use path along the north side of Overocker Rd. between Burnett Blvd. and the Dutchess Rail Trail, and install a sidewalk or shared-use path along the east side of Burnett Blvd. from Overocker Rd. to Route 44. Mark a crosswalk across Overocker Rd. at Burnett Blvd. to connect to new sidewalks on Overocker Rd. and Burnett Blvd. Designate a bicycle route from Fairmont Ave. to the Rail Trail using Manchester Rd., the path and crossing at Burnett Boulevard, and Overocker Rd. Connect to State Bike Route 9 at Hooker Ave. via Collegeview Ave. and Raymond Ave., or Collegeview Ave., Raymond Ave., College Ave. and DeGarmo Place. Review the signal detection (southbound) and timing at the Route 55/Burnett Blvd. intersection and make improvements to better accommodate people on bicycles. Add wayfinding signage to assist people bicycling along the route.

9. Maintain 4 foot minimum shoulders (5 feet preferred) or construct bike lanes on common bicycling routes, including CR 77 (Vassar Rd.) and Route 376.

10. Provide facilities for bicycling along the Route 9 corridor south of IBM Road.

Town and Village of Fishkill
1. Construct the Hudson Highlands Fjord Trail, a nine-mile separated path or trail along Route 9D or the Hudson River shore connecting the Beacon train station to the Village of Cold Spring train station in Putnam County and providing access to Hudson Highlands State Park, Little Stony Point, and Mount Beacon.

2. Ensure that new trails connect with existing trails on Stony Kill Farm, Mount Gulian, Scenic Hudson Land Trust lands, and other properties, and with regional trails including the Greenway Trail and the Dutchess Rail Trail.

3. Develop a trail to connect the Beacon Hudson Trail from the Newburgh-Beacon Bridge north along the Hudson River to the Wappinger Greenway trail.

4. Create a bicycle path or bike lanes on Route 52 west of I-84 to Beacon.

Town of Wappinger and Village of Wappingers Falls
1. Continue development of the Wappinger Greenway Trail, including a pedestrian walkway or bridge along the west side of Route 9 crossing Wappinger Lake.

2. Pursue a connection between the Greenway Trail and the Dutchess Rail Trail to link the Village of Wappingers Falls to the Dutchess Rail Trail.

3. Evaluate the feasibility of converting CR 91 (Creek Rd.) to one way southbound with a shared-use, two-way walking/bicycling path on the creek side. The path could be part of the Wappinger Greenway Trail.
4. Evaluate the feasibility of adding wider shoulders (four foot minimum) along CR 104 (New Hackensack Rd.) and Widmer Rd. and implement where feasible.

5. Add paved shoulders (5 feet if possible) on CR 93 (Middlebush Rd.) between Route 9D and Route 9 and improve pavement; and on CR 93 (Myers Corners Rd.) between Degarmo Hills Rd. and Route 376.

Travel Demand Management

1. Promote employee-sponsored and privately arranged ride sharing in the Lower Hudson area.
2. Promote commuter bus service to train stations through 511NY and other venues.
3. Evaluate needs for additional park-and-ride lots in the Lower Hudson area.

Planning Studies/Other

1. Complete sidewalk inventories and sidewalk improvement strategies for the City of Beacon, City of Poughkeepsie, Village of Fishkill, Village of Wappingers Falls, and Town centers in the Lower Hudson.
2. Conduct a parking study of the Village of Wappingers Falls business district to evaluate the need for new municipal parking and identify parking management strategies.
3. Conduct a parking study and develop a parking strategy for downtown Poughkeepsie, particularly Main St. and the waterfront, addressing on-street parking, surface lots, and structured parking.

4. Analyze speed patterns on County and local roads, using speed data from the PDTC’s traffic count program. Identify corridors with high percentages of ‘high-end’ speeders (e.g., 10 mph or more over the posted speed limit) and develop engineering, enforcement, and educational approaches to reduce speeding.

5. Develop a reasonable strategy to manage commercial truck traffic on Route 9D in the Village of Wappingers Falls.
6. Create a Route 9D intermunicipal Task Force. Consider a Corridor Management Plan for Route 9D to determine the appropriate character and use of the road.
7. Address truck traffic on Route 52.
8. Improve communication and coordination between NYSDOT and local communities.
9. Investigate conversion of one-way streets in the City of Poughkeepsie to two-way.

Survey Summary

Of the more than 900 respondents to the Moving Dutchess 2 survey, 382 were residents of Lower Hudson communities. This section summarizes their responses to the survey.

In terms of making Dutchess County a great place to live, Lower Hudson residents prioritize protecting air and water quality, improving public transportation, and creating walkable communities.

Major issues identified by residents include the condition of roads; the lack of sidewalks and crosswalks; the lack of bicycle lanes and road shoulders; the frequency and schedule of...
buses, and lack of information about bus service. Of a list of potential problems, the lack of safe and accessible sidewalks was noted most frequently as a current problem, followed by road congestion, and the lack of safe bicycle paths/facilities. When asked how well the transportation system meets your needs, the most common response was ‘fair’ (41%), followed by ‘good’ (34%). When asked about the ease of getting places you usually have to go, the most common response was ‘good’ (40%) followed by ‘fair’ (37%).

Over 73% of respondents sometimes or often walk for transportation; 39% sometimes or often bicycle for transportation; 30% sometimes or often use the bus for transportation; and 91% sometimes or often use the train for transportation.

Major barriers for walking include distance to destinations (67%) and lack of sidewalks (56%); for bicycling, inadequate shoulders, bike lanes and paths (55%); for bus transit, lack of bus service where you need to go (41%); and for train transit, the high cost (44%).

Type of travel: the survey asked residents to recall their trips over the past week and categorize them based on their destination and mode (drive alone, carpool, walk, bike, bus or other). Based on this information, we estimate that about 66% of trips are drive-alone; 11% are walk; 10% are carpool; 6% are bus; 5% are bike; and 3% are other. Most drive-alone trips are for work or school, followed by shopping; most walk trips are for socializing or recreation, followed by work/school; most carpool trips are for socializing/recreation, followed by shopping; most bike trips are for work/school, followed by socializing/recreation; and most bus trips are for work/school, followed by shopping. To reduce congestion, residents expressed support for creating communities that are less reliant on driving and improving public transportation. 60% of residents said they would use buses more often if the stops and schedules were convenient.

Land use: Close to 90% of respondents thought that most development should be within cities, town centers and villages using vacant or underutilized land. There was similarly strong support (85%) for closely-spaced housing and buildings with sidewalks, even if that meant smaller homes and yards and less parking. 75% of respondents said that infrastructure and services should be expanded primarily in and around existing town and village centers.

Residents’ top three investment priorities for the next 5-10 years are improving public transportation, maintaining roads, and improving sidewalks. When asked what they would support with tax dollars, residents said walking and bicycling improvements (57%), followed by improved bus service (46%).

Demographics: Most respondents live in the City of Poughkeepsie (36%) or Town of Poughkeepsie (36%). Others live in Wappinger (10%), Beacon (8%), Fishkill (6%), Village of Fishkill (2%) or Village of Wappingers Falls (2%). About half were aged 45-64, with 26% aged 25-44, 8% under 24, and 17%
aged 65 and over. 60% of respondents were female, and 40% were male.

About 40% of households use 2 cars on a daily basis, while almost 37% use 1 car. About 9% of households don’t use a car regularly. Most residents who commute to work live within 5 miles of their job. About 30% of residents have a member of their household (age 16 and older) that doesn’t drive.

The top three issues cited in comments were transit concerns, walking-related issues, and bicycling facilities. Transit concerns included requests for Sunday service, more frequent service, later evening service, better information about the routes and schedules, and bus stops with signage and shelters.

Comments related to walking focused on the need for more sidewalks, with several comments about the need for sidewalk snow removal. Bicycle-related comments focused on the need for safe, dedicated bicycle facilities (such as bike paths and bike lanes) to enable people to bicycle for transportation. Several people also commented on the need for better signal timing along Route 9.

**Transportation Priorities**

Based on discussions of the above needs at the public workshops, feedback from the survey, and a review of feasibility, the following top priorities were identified:

**Highway Maintenance**

Reconstruct or repave the following road segments with poor surface scores based on NYSDOT and Dutchess County standards:

**City of Poughkeepsie**
1. Academy St. between Cannon St. and Main St. (0.07 miles).
2. Market St. between Route 44 (Church St.) (eastbound) and Main St. (0.18 miles).
3. Reservoir Square between S. Clinton St. and S. Clinton St. (1.12 miles).
4. S. Grand Ave. between Fountain Brook Ave. and Town of Poughkeepsie line (0.40 miles).
5. De Laval Pl. between Innis Ave. and N. Grand Ave. (0.12 miles).

**Town of Poughkeepsie**
1. Route 115 (Salt Point Turnpike) from Hudson Ave. to Innis Ave. (0.3 miles).
2. Van Wagner Rd. between Hornbeck Rd. and bridge PO-4 (0.87 miles).

**Village of Wappingers Falls**
1. Market St. between the Town of Wappinger line and Fulton St. in the Village of Wappingers Falls (0.35 miles).

**Bridge Maintenance**

Repair bridges rated as structurally deficient under FHWA standards or deficient under NYSDOT standards, with priority given to the following bridges:
1. I-84 over Metro-North Railroad Beacon Line (BIN 1032481) in the Town of Fishkill.
2. Route 9D over I-84 (BIN 1006360) in the Town of Fishkill.
3. Route 9D over the Fishkill Creek (BIN 1006340) in the City of Beacon.
4. Route 9 over Railroad Plaza (BIN 1005319) in the City of Poughkeepsie.
5. Route 44 over Route 9 (BIN 1005290) in the City of Poughkeepsie.
6. High St. over Fall Kill Creek (BIN 2262690) in the City of Poughkeepsie.
7. Mansion St. over Fall Kill Creek (BIN 2262750) in the City of Poughkeepsie.
8. Washington St. over Fall Kill Creek (BIN 2262670) in the City of Poughkeepsie.
9. CR 43 (Degarmo Rd.) over Wappinger Creek (BIN 3358440) in the Town of Poughkeepsie (LaGrange town line).

**Highway Capacity**

1. Add a slow-speed pedestrian- and bicycle-friendly street (such as a bicycle boulevard with sidewalks) east of Route 9 between Myers Corners Rd. and New Hackensack Rd., using Imperial Boulevard and the area behind Hannaford, west of Marshall Rd.

**Highway Operations**

1. Redesign the Route 9/44/55 interchange to improve traffic safety and operations.
2. Reconstruct the I-84/Route 9D interchange to reduce delays and improve safety. In the short-term, adjust the signal at I-84/Route 9D to provide more time for left turns out of the Beacon train station between 3-7 p.m., and/or add a second left turn pocket on Route 9D northbound onto the I-84 bridge.
3. Coordinate traffic signal timing on Route 52 between I-84 and Jackson St. and evaluate other opportunities to reduce congestion.
4. Redesign the Route 44/55 eastbound and westbound arterials between the Poughkeepsie City Center and surrounding neighborhoods to be walkable boulevards.
5. Reconfigure the Washington-Mill St. merging lanes as a more traditional intersection to eliminate the curve behind the Poughkeepsie Civic Center, slow traffic and shorten the crossing distance at Main St.
6. Redesign Market St. to allow two-way traffic between Church St. and Mill St. Incorporate pedestrian crossing improvements, including marking a crosswalk across the west leg of Route 44/55 westbound (Mill St.). Consider a ‘road diet’ to reduce the number of lanes and add on-street parking and bicycle facilities.
7. Reconstruct the Creek Rd./Smith St./Little George St. intersection into a roundabout to improve safety and reduce congestion. Incorporate sidewalks and crosswalks across all legs of the roundabout.
8. Implement access management on Route 9 by removing traffic signals where feasible, providing left turn lanes, consolidating driveways to reduce conflict points, and providing access between commercial parking areas.
9. Improve traffic signal timing along Route 9 to reduce congestion, particularly on the two-lane southbound segment south of Mesier Ave.

**Safety**

1. Conduct a comprehensive safety assessment focused on walking and bicycling on Main St. in the City of Poughkeepsie and implement changes to improve safety.
2. Improve roadway safety at high-crash locations identified in the *Moving Dutchess 2* crash analysis.
3. Improve pedestrian and bicycle safety at high-crash corridors identified in *Walk Bike Dutchess*.

**Transit**

1. Provide fixed route service every 15-30 minutes in the City and Town of Poughkeepsie, Towns of Fishkill and Wappinger, City of Beacon, and Villages of Fishkill and Wappingers Falls.
2. Establish frequent (every 15 minutes) transit service along Main St. in the City of Poughkeepsie to connect the waterfront and train station with businesses, neighborhoods, and Vassar College.
3. Add signs, bus stop shelters, route maps, timetables, and lighting to bus stops.
4. Provide better information about the bus routes and schedules, including making maps and schedules easier to use.
5. Evaluate adding Sunday service, later evening service, express service, and holiday service.
6. Establish timed transfers between Dutchess County Public Transit and City of Poughkeepsie buses.

**Sidewalks/Pedestrian Facilities**

1. Provide consistent sidewalks on Route 9 south of Kingwood Park/IBM Road, particularly between IBM Rd. and Mesier Ave., and between CR 93 (Middleburg Rd./Myers Corners Rd.) and CR 28 (Old Hopewell Rd.) in the Town of Wappinger.
2. Install a sidewalk on the north side of Route 52 from near Jeannette Dr., under I-84, to the existing sidewalk west of Blodgett Rd., and install a sidewalk on Geering Way and Central Hudson Way from Route 52 to Geering Park. Add crosswalks and pedestrian signals as appropriate.
3. Improve pedestrian access to Dutchess Community College: Install a sidewalk along Creek Rd. from Smith St. to the DCC entrance (at the crosswalk between the parking lot and Hudson Hall), including an extension of the sidewalk on the north side of Smith St. to Creek Rd., and possibly extending on Creek Rd. to Cottage Rd. Install crosswalks, pedestrian-activated signals, and other improvements to help people safely cross Smith St. and Creek Rd.
4. Extend the sidewalk on Route 113 (Spackenkill Rd.) from Croft Rd. to Boardman Rd. to provide access between destinations on Route 9 and Spackenkill High School, Oakwood Friends School, and schools on Boardman Rd., and provide consistent four foot minimum shoulders on Route 113 (Spackenkill Rd.), particularly near Wilbur Blvd.
5. Improve pedestrian access in Red Oaks Mill: add sidewalks along New Hackensack Rd. (Route 376) between Hogan Drive and Old Mill Rd., at least on the east side; provide sidewalks on CR 77 (Vassar Rd.) from Route 113 (Spackenkill Rd.) through the commercial area; consider a sidewalk on Route 113 (Spackenkill Rd.) between Boardman Rd. and CR 77 (Vassar Rd.); and add crosswalks and pedestrian signals at the Route 376/Route 113/CR 77 intersection.

Multi-Use Trails & Bicycle Facilities

1. Implement the City of Poughkeepsie’s nine bicycle routes in coordination with street repaving and other planned projects. Mark streets as bicycle boulevards, with bicycle lanes or sharrows, or maintain as shared lanes, as appropriate. Identify the routes with wayfinding signs, and install bicycle racks at destinations along the routes, including racks and lockers at the Poughkeepsie train station.

2. Create a shared-use path along the west side of Zack’s Way/Boardman Rd. between Hooker Ave./New Hackensack Rd. and Spackenkill Rd., connecting Vassar College, the Arlington neighborhood, and the Vassar Farm with the Boardman Road library, Our Lady of Lourdes High School, Poughkeepsie Day School, and destinations on Spackenkill Rd. Connect the path to walking and bicycling facilities on Hooker Ave., and improve the traffic signal at Zack’s Way/New Hackensack Rd. to detect bicycles.

3. Work with property owners to complete the Hudson River Greenway Trail from Quiet Cove Park at the Hyde Park Town line south to the Locust Grove Historic Site. Include connections to the Walkway elevator and around Kaal Rock Point.

4. Create the Beacon Hudson Trail, a shared-use Greenway Trail along the Hudson River from the Beacon train station to the Newburgh-Beacon Bridge access road and north into the Town of Fishkill, and connect to the Wappinger Greenway trail.

5. Construct the Hudson Highlands Fjord Trail.

Planning Studies

1. Complete sidewalk inventories and sidewalk improvement strategies for the City of Beacon, City of Poughkeepsie, Village of Fishkill, Village of Wappingers Falls, and Town centers in the Lower Hudson.

2. Conduct a parking study and develop a parking strategy for downtown Poughkeepsie, particularly Main St. and the waterfront, addressing on-street parking, surface lots, and structured parking.

3. Analyze speed patterns on County and local roads, using speed data from the PDCTC’s traffic count program. Identify corridors with high percentages of ‘high-end’ speeders (e.g., 10 mph or more over the posted speed limit) and develop engineering, enforcement, and educational approaches to reduce speeding.
Chapter 6-2

Upper Hudson Overview

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

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

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

Demographics

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

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

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<th>2000</th>
<th>2010</th>
<th>Percent Change</th>
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<td>Town of Hyde Park</td>
<td>20,851</td>
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<td>7,440</td>
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<td>4,685</td>
<td>4,891</td>
<td>4.4</td>
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<td>Village of Red Hook</td>
<td>1,805</td>
<td>1,961</td>
<td>8.6</td>
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<td>Village of Rhinebeck</td>
<td>3,077</td>
<td>2,657</td>
<td>-13.6</td>
</tr>
<tr>
<td>Village of Tivoli</td>
<td>1,163</td>
<td>1,118</td>
<td>-3.9</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2010 Census

In 2010 the Upper Hudson had an average population density of 371 people per square mile, which closely matched the County’s overall density of 374 per square mile. At almost 1,779 people per square mile, the Village of Red Hook had the highest population density in the area, while the Town of Rhinebeck had the lowest at 212. Population density information is shown on the Upper Hudson Population Density Map. Potential future population density patterns are shown...
in the Upper Hudson 2040 Buildout Analysis: Existing Zoning Scenario and Centers and Greenspaces Scenario maps at the end of this chapter.

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

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

<table>
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<th></th>
<th>2000</th>
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<td>7,704</td>
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<td>Town of Red Hook</td>
<td>3,840</td>
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<td>3,255</td>
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<tr>
<td>Village of Red Hook</td>
<td>798</td>
<td>947</td>
<td>18.7</td>
</tr>
<tr>
<td>Village of Rhinebeck</td>
<td>1,463</td>
<td>1,424</td>
<td>-2.7</td>
</tr>
<tr>
<td>Village of Tivoli</td>
<td>531</td>
<td>549</td>
<td>3.4</td>
</tr>
</tbody>
</table>

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

Age

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

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

<table>
<thead>
<tr>
<th></th>
<th>% 16 and Under</th>
<th>% 65 and Over</th>
<th>Total % Under 16 and 65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Hyde Park</td>
<td>17</td>
<td>15</td>
<td>32</td>
</tr>
<tr>
<td>Town of Red Hook</td>
<td>16</td>
<td>13</td>
<td>29</td>
</tr>
<tr>
<td>Town of Rhinebeck</td>
<td>14</td>
<td>26</td>
<td>40</td>
</tr>
<tr>
<td>Village of Red Hook</td>
<td>17</td>
<td>20</td>
<td>37</td>
</tr>
<tr>
<td>Village of Rhinebeck</td>
<td>15</td>
<td>27</td>
<td>42</td>
</tr>
<tr>
<td>Village of Tivoli</td>
<td>16</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td><strong>Dutchess County</strong></td>
<td><strong>19</strong></td>
<td><strong>14</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2010 Census

Income

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

Households without a motor vehicle are much more likely to seek alternative transportation. Based on data from the U.S. Census Bureau’s 2009-2013 5-year American Community Survey, none of the municipalities in the Upper Hudson had zero-vehicle household rates above the county average of 7.9-8.9 percent.

Centers & Destinations

Centers

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

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

1. Hyde Park town center on Route 9

2. Staatsburg hamlet in Hyde Park
3. Village of Rhinebeck
4. Rhinecliff hamlet in the Town of Rhinebeck
5. Village of Red Hook
6. Village of Tivoli
7. Town of Red Hook South Broadway center
8. Haviland hamlet

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

Destinations

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

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

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

**Major Projects**

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

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

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

**Transportation System**

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

**Roads**

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

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

<table>
<thead>
<tr>
<th>Town of Hyde Park</th>
<th>Total Centerline Mileage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>145</td>
</tr>
</tbody>
</table>
NYSDOT rates pavement condition on a scale of 1 to 10, with 1 being the worst and 10 the best. A rating of 5 or less is classified as poor. According to the 2014 NYSDOT Pavement Data Report, State-owned highways in the Upper Hudson had an average surface rating of 7. All State highways in the Upper Hudson were in good condition with none rated 5 or less, except for a very small section of Route 308 (Rhinecliff Rd.) in the Town of Rhinebeck, west of the Village of Rhinebeck.

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

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

<table>
<thead>
<tr>
<th>Town or Village</th>
<th>AADT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Red Hook</td>
<td>93</td>
</tr>
<tr>
<td>Town of Rhinebeck</td>
<td>93</td>
</tr>
<tr>
<td>Village of Red Hook</td>
<td>11</td>
</tr>
<tr>
<td>Village of Rhinebeck</td>
<td>13</td>
</tr>
<tr>
<td>Village of Tivoli</td>
<td>7</td>
</tr>
</tbody>
</table>

Traffic volumes in the Upper Hudson are shown on the Traffic Volume Analysis map at the end of this chapter.

### Congestion Management Process (CMP)

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

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

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

The Transportation System Performance Maps in Chapter 5 show travel time data by roadway segment.

**Bridges**

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

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

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

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

<table>
<thead>
<tr>
<th>Town of Hyde Park</th>
<th>Town of Red Hook</th>
<th>Town of Rhinebeck</th>
<th>Village of Red Hook</th>
<th>Village of Rhinebeck</th>
<th>Village of Tivoli</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>19</td>
<td>11</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5.5</td>
<td>4.9</td>
<td>5.0</td>
<td>NA</td>
<td>4.5</td>
<td>4.5</td>
</tr>
</tbody>
</table>

According to the FHWA, bridges are considered “structurally deficient” if significant load carrying elements are found to be in poor or worse condition due to deterioration and/or damage, the bridge has inadequate load capacity, or repeated bridge flooding causes traffic delays. A "structurally deficient" bridge does not imply that it is unsafe or likely to collapse. A "structurally deficient" bridge, when left open to traffic, typically requires significant maintenance and repair to remain in service and eventual rehabilitation or replacement to address deficiencies. In order to remain in service, structurally deficient bridges are often posted with weight limits.
“Functionally obsolete” refers to a bridge’s inability to meet current standards for managing the volume of traffic it carries, not its structural integrity. A bridge may be “functionally obsolete” if it has narrow lanes, no shoulders, or low clearances. The Upper Hudson has eight bridges classified as structurally deficient and seven classified as functionally obsolete. The number of each by municipality is listed in Table 6-2-6 below.

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

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Structurally Deficient</th>
<th>Functionally Obsolete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Hyde Park</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Town of Red Hook</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Town of Rhinebeck</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Village of Red Hook</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Village of Rhinebeck</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Village of Tivoli</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

The Upper Hudson Bridge and Pavement Conditions Map at the end of this chapter identifies bridges in the Upper Hudson rated as structurally deficient and functionally obsolete based on federal standards and deficient under State standards.

Transit

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

Amtrak operates a train station in the Rhinecliff hamlet in the Town of Rhinebeck. As of 2015 the station was served by two inter-state rail lines: the Adirondack and Empire Service. The Adirondack travels between New York City and Montreal, while the Empire Service travels between New York, Albany, Buffalo, and Toronto. The Empire Service provides the most frequent service at the Rhinecliff station, including six daily trains to Penn Station in New York City, and six daily trains to Albany-Rensselaer. Additional trains are available on weekdays or weekends only. A single train stops at Rhinecliff for the Adirondack. There is no Metro-North Railroad service in the Upper Hudson.

Pedestrian and Bicycle Transportation

Sidewalk Systems

The Upper Hudson has approximately 41 miles of public sidewalks. The majority are in the Town of Hyde Park and Village of Rhinebeck. When considered on a per-resident basis, the Village of Rhinebeck has the most sidewalks per resident (and ranks second county-wide), followed by the Village of Red Hook, which ranks ninth in the county. Sidewalk mileage by municipality and per resident is shown in Table 6-2-7 below.
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Table 6-2-7. Sidewalk Mileage & Population (2010)-Upper Hudson

| Town of Hyde Park | 11.2 | 2.7 | 17 |
| Town of Red Hook  | 7.8  | 5.0 | 15 |
| Town of Rhinebeck | 2.0  | 2.2 | 22 |
| Village of Red Hook | 6.0 | 16.2 | 9 |
| Village of Rhinebeck | 10.8 | 21.4 | 2 |
| Village of Tivoli   | 3.2  | 14.9 | 10 |

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

Trail Systems

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

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

Shared Use Paths

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

Bicycling Facilities

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

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

Bicycle parking is provided at some of the area’s key destinations, including the Hyde Park Town Hall, Red Hook Town and Village Hall, Starr Library in Rhinebeck, Bard College, and several commercial locations in the Village of Red Hook. A searchable online bicycle parking map includes more information for each location.

Chapter 6-2: Upper Hudson Overview
Accessibility

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

Route 9 in the Village of Rhinebeck
1. Intersection at Asher Rd.
2. Intersection at South St.
3. Sidewalk from Mill St. to Asher Rd. (0.11 miles).
4. Sidewalk from Asher Rd. to Rockefeller Ln. (0.10 miles).

Route 308 in the Village of Rhinebeck
1. Sidewalk from Mulberry St. to North Parsonage St. (0.09 miles).
2. Intersection at North Parsonage St.
3. Sidewalk from North Parsonage St. to Beech St. (0.11 miles).
4. Sidewalk from Beech St. to South St. (0.13 miles).
5. Sidewalk from Wall St. to Oak St. (0.18 miles).

Route 199 in the Village of Red Hook
1. Intersection at Benner Rd.
2. Sidewalk from Benner Rd. to Ludlow Ave. (0.08 miles).
3. Sidewalk from Ludlow to Phillips St. (0.12 miles).

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

Park-and-Ride Facilities

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

Other Transportation Facilities

The Upper Hudson hosts two public aviation facilities:

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

Transportation Safety

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


<table>
<thead>
<tr>
<th>Town of Hyde Park</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>3-Year Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>130</td>
<td>168</td>
<td>134</td>
<td>144</td>
</tr>
</tbody>
</table>
Based on this 2010-2014 data, the Transportation Council identified high-crash intersections and roadway segments in the Upper Hudson. These are shown in the Upper Hudson Crash Analysis Map. The following Upper Hudson locations experienced some of the highest number of crashes/crash rates over the five-year period:

**Intersections (Total Crashes)**
1. Route 9G (Violet Ave.) and CR 41 (E. Market St./Crum Elbow Rd.) in the Town of Hyde Park (57 crashes).
2. Route 9 (Albany Rd.) and Church St. in the Town of Hyde Park (57 crashes).
4. Route 9 (Albany Post Rd.) and Fuller Ln./Pine Woods Rd. in the Town of Hyde Park (40 crashes).
5. CR 16 (N. Quaker Ln.) and Forest Dr. in the Town of Hyde Park (32 crashes).
6. Route 9 (Broadway) and Route 199 (Market St.) in the Village of Red Hook (32 crashes).
7. Route 199 and CR 103 (River Rd.) in the Town of Rhinebeck (29 crashes).
8. Route 9 and Route 9G in the Town of Rhinebeck (28 crashes).

**Roadway Segments (Total Crashes and/or Crashes per Mile)**
1. Route 9 (Albany Post Rd.) between Rokeby Rd. and Old Farm Rd. in the Town of Red Hook (30 crashes; 103 crashes per mile).

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

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

<table>
<thead>
<tr>
<th></th>
<th>Crash Rate Per Mile</th>
<th>3-Year Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011</td>
<td>2012</td>
</tr>
<tr>
<td>Town of Hyde Park</td>
<td>1.0</td>
<td>1.3</td>
</tr>
<tr>
<td>Town of Red Hook</td>
<td>0.4</td>
<td>0.5</td>
</tr>
<tr>
<td>Town of Rhinebeck</td>
<td>0.7</td>
<td>0.5</td>
</tr>
<tr>
<td>Village of Red Hook</td>
<td>0.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Village of Rhinebeck</td>
<td>0.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Village of Tivoli</td>
<td>0.2</td>
<td>0.0</td>
</tr>
</tbody>
</table>

NYSDOT, in conjunction with NYSDMV and the Office of Cyber Security & Critical Infrastructure Coordination (CSCIC), maintains an online database of motor vehicle crashes called the Accident Location Information System (ALIS). The Transportation Council conducted an analysis of 2010-2014 ALIS crash data to identify general crash trends in the Upper Hudson.
2. Route 9 (Broadway) between Route 199 (Market St.) and Saint John St. in the Village of Red Hook (16 crashes; 186 crashes per mile).
3. Route 9 between Dutchess County Fairgrounds and Garden Homes Dr. in the Town of Rhinebeck (45 crashes; 44 crashes per mile).
4. Route 9 (Mill St./Montgomery St.) between South St. and Livingston St. in the Village of Rhinebeck (48 crashes; 247 crashes per mile).
5. Route 9 (Albany Post Rd.) between CR 40A (Saint Andrews Rd.) and Kessler Dr. in the Town of Hyde Park (79 crashes; 242 crashes per mile).
6. Route 9G between Route 199 (W. Market St.) and Kelly Rd. in the Town of Red Hook (35 crashes; 37 crashes per mile).
7. Route 9G between Middle Rd. and Old Post Rd. in the Town of Rhinebeck (33 crashes; 53 crashes per mile).
8. Route 9G between Route 9 and Karabell Ln. in the Town of Rhinebeck (49 crashes; 47 crashes per mile).
9. Route 9G between Vlei Rd. and CR 19 (Slate Quarry Rd.) in the Town of Rhinebeck (37 crashes; 29 crashes per mile).
10. Route 9G (Violet Ave.) between Cabin Loop and CR 41 (E. Market St./Crum Elbow Rd.) in the Town of Hyde Park (26 crashes; 249 crashes per mile).
11. Route 199 between Kingston-Rhinecliff Bridge and CR 103 (River Rd.) in the Town of Rhinebeck (61 crashes; 46 crashes per mile).
12. Route 199 between CR 103 (River Rd.) and Route 9G in the Town of Rhinebeck (39 crashes; 61 crashes per mile).
13. CR 19 (Slate Quarry Rd.) between Wurtemburg Rd. and White Schoolhouse Rd. in the Town of Rhinebeck (51 crashes; 50 crashes per mile).
14. CR 40A (Saint Andrews Rd.) between Route 9 and Route 9G (Violet Ave.) in the Town of Hyde Park (33 crashes; 30 crashes per mile).
15. Market St. between Route 9 and Center St. in the Village of Rhinebeck (27 crashes; 164 crashes per mile).

**Pedestrian & Bicycle Safety**

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

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

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

**Local Comprehensive Plans**

The Council reviewed each community’s comprehensive plan to identify land use and transportation recommendations that would be relevant for *Moving Dutchess*. Many communities’
Moving Dutchess 2

recommendations involve land use policies and projects that promote non-motorized travel, maintain community character, improve safety, and reduce congestion. Particular emphasis is placed on promoting pedestrian activity.

Town of Hyde Park

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

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

1. Transportation Corridors Program: working with NYSDOT, develop a bypass road between Routes 9 and 9G to reduce through traffic in the town center. The new road should accommodate pedestrians and bicyclists.
2. Grid Network Program: require that new residential developments use a grid pattern to spread traffic and provide multiple access points to major roads. The program also recommends a parallel service road to Route 9 for local traffic.
3. Scenic Roads Program: identify scenic roads that showcase the town’s cultural, historic, and natural resources. The following roads have been locally designated as scenic roads:
   - Route 9 from Vanderbilt National Historic Site north for 2.3 miles.
4. Pedestrian Walkways Program: create a system of pedestrian ways to connect existing core areas to business districts and recreation parks. It also recommends sidewalks, lighting, and tree plantings within the core areas. Pedestrian crossings are recommended for major road intersections in core areas. Signs and textured crosswalks are recommended to establish pedestrian rights-of-ways.

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

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

Town of Rhinebeck

The Town of Rhinebeck adopted its comprehensive plan in 2009. The plan’s vision identifies walking and bicycling as important elements of the town’s transportation system and
Moving Dutchess 2

states that new development should be more pedestrian-friendly and less auto-dependent.

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

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

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

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

The comprehensive plan also recommended that the following roads be designated as Critical Environmental Areas (CEAs), due to their scenic value:
Moving Dutchess 2

1. Route 9 from South Mill Rd. to Old Post Rd. in the Village of Rhinebeck
2. Grinnell St., Dutchess Terrace and Loftus St. in Rhinecliff.
3. Morton Rd. from South Mill Rd. to Rhinecliff Rd.
4. Rhinecliff Rd. from Morton Rd. to Ryan Rd. and River Rd.
5. River Rd. from Morton Rd. to the Rhinebeck/Red Hook town line.
6. Astor Dr from River Rd. to Old Post Rd. in the Village of Rhinebeck.
8. Hook Rd. (Upper and Lower) from River Rd. to Old Post Rd.
10. Route 199 from Route 9G to the Ulster County Line, via the Kingston-Rhinecliff Bridge.

Town of Red Hook

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

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

Village of Rhinebeck

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

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

**Village of Red Hook**

The Village of Red Hook adopted its comprehensive plan in 1968. The plan was a joint effort of the Town of Red Hook and Village of Tivoli, both of whom later adopted separate plans. The Village’s 40-year old plan recommended various improvements to intersections and streets.

**Village of Tivoli**

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

1. Develop streetscapes that calm traffic and protect and promote pedestrian traffic, with elements such as trees, sidewalks, crosswalks, and street benches.
2. Develop gateways that announce and encourage reduced auto traffic speeds, including welcome signs at all five village gateways. Explore the use of speed tables in residential areas.
3. Reduce posted speed limits where possible.
4. Promote the construction of sidewalks on one side of all residential streets.
5. Create tree-lined sidewalks in Tivoli Acres, on Woods Rd., and on Broadway to the riverfront on the west and to Route 9G on the east.

6. Develop a nature trail for walking and biking along Woods Road to Clermont State Historic Site.
7. Install pedestrian right-of-way signs and crosswalks at high traffic points in the business district.
8. Keep retail businesses within a 5-minute walking distance of off-street parking.
9. Locate all new public and private parking lots behind buildings, so that only their access is visible from the street.
10. Encourage alternative forms of transportation such as bikes, public buses, a Bard-Tivoli-Red Hook shuttle, and jitney services.
11. Promote Tivoli as a biking-friendly village by:
   - Designating bike paths through Tivoli Bays to Bard College
   - Installing bike racks in front of village buildings and businesses
   - Exploring other opportunities for bike paths

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

1. Purchase development rights to key open space properties along Route 9G and at the Broadway/9G gateway.
2. Develop a Corridor Management Plan for Route 9G (a precondition to apply for nomination as a State Scenic Byway).
3. Create a Local Scenic Road designation in the Zoning Code.
4. Apply for an official New York State Scenic Byway designation, in cooperation with the towns of Red Hook and Clermont.
5. Work with NYSDOT to maintain scenic features on the corridor.
6. Protect historic structures and features along the corridor.
7. Preserve westward scenic views towards the Hudson River.
9. Develop bike paths that link the village to Bard College.
10. Plant shade trees between structures and the highway.
11. Preserve agricultural space along the corridor.

**Previous Transportation Council Studies**

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

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

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

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

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

Recognizing the importance of access management tools to improve safety and operations:
1. Restrict the number of driveways along Route 9, while also increasing driveway spacing and interconnecting parking lots.
2. Use service roads and shared driveways to channel traffic.
3. Establish Town driveway standards.
4. Develop a contiguous sidewalk system on Route 9 through the town center.

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

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

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

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

1. Upgrade the pedestrian connection between FDR and Vanderbilt.

2. Provide a pedestrian bridge connecting Hackett Hill Park to Pinewoods Park.
3. Institute bikeway routes along roadways where feasible (consider colored lanes, signage and posted speed limits). Create rest stops with bike racks.
4. Create more pedestrian-friendly environments at high-traffic zones and intersections (e.g. crosswalks, bulb-outs, and traffic calming measures).
5. Construct sidewalks in the hamlet center business district along Route 9 and in residential neighborhoods within a half-mile of schools.

Dutchess County Transit Development Plan (2009)

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

Village of Rhinebeck Sidewalk Study (2011)

The Village of Rhinebeck Sidewalk Study included an inventory of existing sidewalks and recommendations to improve walking access within the Village center, to public facilities (library and schools), and to the Village center from the north and south. Recommendations included reconstructing deficient sidewalks on Route 9, Market St., and several local streets; redesigning the Four Corners intersection; adding crosswalks at several locations across Route 9 and Market St.; and adding sidewalks and crosswalks to Livingston Elementary
Moving Dutchess 2

School, Rhinebeck High School, the Starr Library, Town Park, Northern Dutchess Hospital, and the County Fairgrounds.

Hyde Park Town Center Pedestrian Study (2013)

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

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

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

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

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

Natural & Historic Resources

The Transportation Council reviewed natural and historic resource information from the State and County to identify potential constraints relevant to transportation planning in the Upper Hudson area. This process started with an inventory of 100-year and 500-year floodplains, NYSDEC wetlands,
Moving Dutchess 2

federal, State, and locally designated parklands, agricultural lands, critical environmental areas, and designated historic districts. These resources are shown on the Upper Hudson Natural & Historic Resources Map.

Waterbodies & Watersheds

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

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

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

Floodplains

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

Table 6-2-10. Floodplains-Upper Hudson

<table>
<thead>
<tr>
<th>Town</th>
<th>Total Floodplain Acreage</th>
<th>Percent of Land Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Hyde Park</td>
<td>2,974</td>
<td>12</td>
</tr>
<tr>
<td>Town of Red Hook</td>
<td>3,341</td>
<td>14</td>
</tr>
<tr>
<td>Town of Rhinebeck</td>
<td>3,302</td>
<td>14</td>
</tr>
<tr>
<td>Village of Red Hook</td>
<td>1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Village of Rhinebeck</td>
<td>53</td>
<td>5</td>
</tr>
<tr>
<td>Village of Tivoli</td>
<td>53</td>
<td>5</td>
</tr>
</tbody>
</table>

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

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

Agriculture & Open Space

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

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

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

<table>
<thead>
<tr>
<th>Town of Hyde Park</th>
<th>1,526</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Red Hook</td>
<td>7,094</td>
<td>30</td>
</tr>
<tr>
<td>Town of Rhinebeck</td>
<td>5,337</td>
<td>22</td>
</tr>
</tbody>
</table>

Village of Red Hook | 120 | 18 |
Village of Rhinebeck | 4 | <1 |
Village of Tivoli | 56 | 6 |

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

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

<table>
<thead>
<tr>
<th>Total Agricultural District Acreage</th>
<th>Percent of Land Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Hyde Park</td>
<td>2,890</td>
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<tr>
<td>Town of Red Hook</td>
<td>8,210</td>
</tr>
<tr>
<td>Town of Rhinebeck</td>
<td>7,854</td>
</tr>
<tr>
<td>Village of Red Hook</td>
<td>125</td>
</tr>
<tr>
<td>Village of Rhinebeck</td>
<td>2</td>
</tr>
<tr>
<td>Village of Tivoli</td>
<td>320</td>
</tr>
</tbody>
</table>

The Upper Hudson includes six farms, located in the Town of Red Hook and one park, located in the Town of Rhinebeck, that are protected through the Dutchess County Partnership for Manageable Growth:
1. Greig Farm (160 acres)
2. Linden Farms (234 acres)
3. Mead Orchards (100 acres)
The Upper Hudson hosts 5,127 acres of major federal, State, and local parkland. Key parks include:

1. Eleanor Roosevelt National Historic Site (529 acres) in Hyde Park.
2. Fallkill County Park (117 acres) in Hyde Park and Poughkeepsie.
3. FDR National Historic Site (343 acres) in Hyde Park.
4. Hackett Hill and Pinewood town parks (48 and 29 acres respectively) in Hyde Park.
7. Poet’s Walk Park (110 acres) in Red Hook.
8. Tivoli Bay Wildlife Management Area (1,666 acres) in Red Hook.

Critical Environmental Areas

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

1. Hogback Hill between Route 9 and 9G (protection of natural resource).
2. Hyde Park landfill site (inactive landfill; toxic pollutants present).
3. Indian Kill near Norrie Point on the Hudson River, west of Route 9 (protection of natural resource).
4. Jones Sanitation Sludge Disposal Site, east of Route 9G (inactive disposal area; toxic pollutants present).
5. Maritje Kill west of Route 9G (protection of natural resource).
6. Vanderburgh Cove on the Hudson River (west of Route 9; protection of natural resource).

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

2. Hudson River Greenway Trail Links: Properties along the Hudson River that would establish a continuous trail from New York City to Saratoga County, including the Dutchess County Greenway Trail.
3. Hudson Tributaries: Sites which protect habitat and provide access to stream banks of tributaries, including the Fallkill Creek, Saw Kill Creek, Landsman Kill, and Stony Creek.
4. Scenic Viewsheds: Sites which provide scenic vistas, including the Hudson River National Historic Landmark.
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District, the Franklin D. Roosevelt National Historic Site, and the Vanderbilt Mansion National Historic Site.

5. Buffer, Access or Addition to Historic Sites, Conservation and Park Lands: Properties which protect the integrity of existing conservation lands or historic sites, including the areas adjacent to Roosevelt/Vanderbilt National Historic sites, the Hudson River National Historic District, Tivoli Bays Buffer and inholding, and the Hudson River National Estuarine Research Reserve Sites.

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

Historic Resources

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

2. Sixteen Mile District (121,000 acres): includes parcels in the Town of Rhinebeck and Village of Tivoli.
3. Main St., Albeston St., and Park Pl. Historic District (68 acres) in Hyde Park.
4. Rhinebeck Village Historic District (1,670 acres).

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

Transportation Needs

Based on a review of local comprehensive plans, previous Transportation Council studies, and transportation system data, the Transportation Council identified a series of transportation needs in the Upper Hudson. These needs were reviewed at an Upper Hudson public workshop and revised based on feedback from the workshop and a public survey. The revised list of needs includes the following items:

Highway Maintenance

1. Inventory pavement conditions on local streets and repave based on condition ratings in the Upper Hudson area.

Bridge Maintenance

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

1. Route 199 over Sawkill Creek (BIN 1040020) in the Town of Red Hook.
2. Route 199 over Sawkill Creek (BIN 1040040) in the Town of Red Hook (Clinton Town line).
3. Sawkill Rd. over Sawkill Creek (BIN 2262850) in the Town of Red Hook.
4. Parsonage St. over Landsman Kill (BIN 2343770) in the Village of Rhinebeck.
5. Mill Rd. over Landsman Kill (BIN 3343780) in the Town of Rhinebeck.

If funding becomes available, the following low-volume, FHWA structurally deficient or NYSDOT deficient bridges could be repaired:


Although rated as deficient by NYSDOT, the following bridge could be considered for closure if funding is not available to repair it:

1. Dock St. over Crum Elbow Creek (BIN 3343190) in Hyde Park (2009 AADT of 20).

Highway Operations

1. Require new commercial developments to have interconnected parking lots, internal service roads, and shared access along State highways (e.g. Routes 9 and 9G) and county roads.
2. Encourage NYSDOT to develop a program to regularly review and update signal timings at major State Route intersections.

3. Improve key Route 9 intersections in Hyde Park, including E./W. Market St. and Rogers Pl./Park Plaza, by reducing corner radii and prohibiting right-turn-on-red.
4. Install stop signs or traffic calming devices in the Rhinecliff hamlet (Rhinebeck), especially along Kelly St. and Orchard St.
5. As detailed in the Village of Rhinebeck Sidewalk Study, improve traffic operations at the Route 9 (Montgomery/Mill St.)/Route 308 (E./W. Market St.) intersection in the Village of Rhinebeck by adding left-turn lanes on all approaches and removing on-street parking near the intersection. Consider changing the signal timing to allow standard pedestrian crossings, where people cross with parallel traffic, to reduce the wait time for people in vehicles and on foot.
6. Redesign the Route 308/South St. intersection in the Village of Rhinebeck so that it is more perpendicular.
7. As detailed in Walk-Bike Dutchess, evaluate changing the Route 9/Route 199 signal timing in the Village of Red Hook to incorporate a standard pedestrian crossing, where people cross with parallel traffic. A leading pedestrian interval could be added to the signal timing to give walkers a head start before other traffic, and right turns on red could be restricted to reduce conflicts between vehicles and people in the crosswalk. Also, evaluate the feasibility of adding curb extensions and removing some parking spaces to increase the visibility of people crossing, increase yielding, and shorten crossing distances on Route 9 at Route 199.
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Safety

1. Install pedestrian signals, a crosswalk, and pedestrian safety signs at the Route 9/Pinewoods Rd. intersection (in the Hyde Park Town center) to allow pedestrians to cross Route 9 on the north side of the intersection.

2. Reintroduce on-street parking on Route 9 and slow traffic speeds to 30 mph throughout Route 9 in the Hyde Park Town center (from St. Andrews Rd. to Market St.).

3. Analyze possible roadway safety improvements on North Quaker Ln. in Hyde Park, including widening shoulders, lowering vertical crests, and installing flashing Beacons on the warning sign assembly (southbound), as recommended in the CR16 (North Quaker Ln.) Safety Assessment.

4. Analyze the possibility of converting the Route 9/Fire House Ln./Amherst Rd. intersection in the Town of Red Hook to a standard four-way intersection by moving Fire House Ln. to the north, and install a traffic signal and pedestrian and bicycle safety improvements at the intersection.

5. Evaluate the feasibility of adding curb extensions and removing some parking spaces to increase the visibility of people crossing, increase yielding, and shorten crossing distances at Prince St., Fraleigh St., and Laura Ln./Morgans Way in the Village of Red Hook., while also maintaining truck access.

6. Install pedestrian right-of-way signs and crosswalks at major pedestrian crossings along Routes 9 and 308 in the Village of Rhinebeck.

7. As recommended in the CR19 (Slate Quarry Rd.) Safety Assessment, improve sight distance at the intersections of Wurtemburg Rd. and White Schoolhouse Rd. on Slate Quarry Rd. in the Town of Rhinebeck. Also, install a flashing beacon on Slate Quarry Rd approaching Route 9G.

Transit

1. Provide more transportation options for seniors and disabled persons: possibly a volunteer-driver system using private cars, or coordinating with non-profit agencies such as Friends of Seniors.

2. Explore the possibility of a new fixed bus route on Route 199 between the Villages of Tivoli and Millerton, with possible connecting service to the Kingston area in Ulster County.

3. Provide more frequent bus service in the Red Hook area and adjust the schedule to better serve workers and other riders’ schedules.

4. Add signs, bus stop shelters, route maps, timetables, and lighting to bus stops.

5. Provide better information about the bus routes and schedules, including making maps and schedules easier to use.

6. Evaluate adding Sunday service, later evening service, express service, and holiday service.

7. Improve transit service to tourist destinations.

8. Evaluate providing additional bus service to the train station.


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Sidewalks/Pedestrian Facilities, including ADA projects (by municipality)

Multiple Municipalities

1. Repair State-owned, non-ADA compliant sidewalks and ramps in the Upper Hudson.

Town of Hyde Park

1. Install a sidewalk on the east side of Route 9G between the Hyde Park trail (near Valkill Park Rd.) and Smith Court, and on Haviland Rd. between Route 9G and Haviland Middle School. Install pedestrian signals and signage as needed to help students safely walk to Ralph R. Smith Elementary and Haviland Middle School.

2. As detailed in the Hyde Park Town Center Pedestrian Study, repair sidewalks to key destinations, mark high-visibility crosswalks, create curb extensions, prohibit right turns on red at major intersections, and fill gaps in the sidewalk system. Provide pedestrian-scale street lighting, street trees, and streetscape enhancements in core areas on Route 9 in the Hyde Park Town Center and on Route 9G in the East Park Business District.

3. Evaluate the feasibility of installing a crosswalk and signage to cross CR 39 (Cream St.) to Greenfields Park. Coordinate the crossing with the proposed trail easement between Greenfields Park and Top Cottage as shown in Hyde Park’s Recreational Trails & Community Recreation Conceptual Master Plan.

4. Install sidewalks or paths on both sides of Route 9 from Calmer Pl. to CR 40A (St. Andrews Rd.), consistent with the Hyde Park Town Center Pedestrian Study.

5. Install sidewalks on Route 9 between Quiet Cove Park and CR 40A (St. Andrews Rd.). Connect to the recommended sidewalk or path between Marist College and Quiet Cove Park, and to the recommended sidewalk extension on Route 9 south to CR 40A (St. Andrews Rd).

6. Evaluate the feasibility of providing a sidewalk, path, or widened shoulders on CR 41 (W. Market St.) and River Rd. between Route 9 and the Riverfront Park.

7. Provide a pedestrian-bicycle bridge or other connection across East Market Street between Pinewoods Park and Hackett Hill Park.

Village & Town of Red Hook

1. Improve safety for pedestrians and bicyclists accessing Bard College from Route 9G, consistent with the recommendations of the Upper Route 9G Corridor Management Plan.

2. Provide a network of sidewalks and trails throughout the Town of Red Hook, as recommended in Red Hook Trail Plan.

3. Install sidewalks on the east side of Route 9 between the Red Hook Town Hall and the Hannaford supermarket, and mark a high-visibility crosswalk at Old Farm Rd. and install appropriate signage to encourage drivers to yield to people crossing.

Village & Town of Rhinebeck
1. Redesign the Route 9/308 “four corners” intersection in the Village of Rhinebeck: add curb extensions at each corner to shorten crossing distances and increase pedestrian safety and visibility; realign the crosswalk at the northern leg so that it is perpendicular to the near street curb; add diagonal parking on W. Main St. to calm traffic; provide additional shade trees, landscaping, and sitting places; and enhance the central green in front of the Beekman Arms hotel and add a patio and rear walkway at the Beekman Arms (see also Traffic Operations).
2. Require new residential development in the Town of Rhinebeck to have sidewalks. Install sidewalks and crosswalks near schools, parks and community gathering places.
3. Install crosswalks at key intersections on Routes 9 and 308 in the Village of Rhinebeck.
4. Improve pedestrian access to Livingston Elementary School, Rhinebeck High School, Starr Library & Recreation Park, Northern Dutchess Hospital, and the Dutchess County Fairgrounds in the Village of Rhinebeck, as detailed in the Village of Rhinebeck Sidewalk Study.
5. Complete repairs or replacement of deficient sidewalks and construct new sidewalks, as detailed in the Village of Rhinebeck Sidewalk Study.

Village of Tivoli
1. Repair existing sidewalks on Montgomery St., Spring St., Pine St. and North Rd. in the Village of Tivoli.
2. Repair the historic slate walk on Broadway (CR 78) in the Village of Tivoli and install a sidewalk down Broadway to Friendship St.
3. In coordination with the planned replacement of the bridge over the Stony Creek, repair the sidewalk on CR 78 (Broadway) east of Montgomery St./North Rd., and extend the sidewalk to connect to Route 9G in the Village of Tivoli.
4. Promote the construction of sidewalks in Tivoli Acres, on Woods Rd., and on other streets with high pedestrian activity in the Village of Tivoli.

Multi-use Trails & Bicycle Facilities (by municipality)

Multiple Municipalities
1. Provide bicycle lanes on State Bike Route 9 in the Upper Hudson centers. Outside Town and Village centers, provide consistent shoulders of at least six feet on Route 9. Install appropriate bicycle-related signage to encourage safe sharing of the road.
2. Create a rail trail on the former Hucklebush Rail Line between Rhinecliff and the Harlem Valley Rail Trail in Millerton passing through Rhinebeck, Red Hook, Milan, Columbia County, Pine Plains, and North East.
3. Create wider shoulders for bicyclists on River Rd. (CR 103) from Rhinecliff Rd. in Rhinebeck to Kelly Rd in Red Hook.
4. Evaluate the feasibility of constructing a walking and bicycling trail along Woods Rd. from CR 78 (Broadway) in Tivoli to the Clermont State Historic Site in Red Hook.
5. As per the Upper Route 9G Corridor Management Plan, widen the shoulders on Route 9G between Tivoli and Hyde Park to a consistent six foot minimum. Install appropriate bicycle-related signage to encourage safe sharing of the road and to identify Route 9G as part of the Village to Village (Tivoli to Red Hook) walk/bike trail.
Moving Dutchess 2

Town of Hyde Park

1. Complete the Greenway trail along the Hudson River, incorporating river access points into the trail. In Hyde Park, repair pedestrian bridges along Hudson River Greenway Trail routes at Crum Elbow Point, Dominican Camp, and Staatsburg and develop a pedestrian/bicycle bridge across the Maritje-kill between the Culinary Institute of America and the National Park Service FDR Site.

2. Create an unpaved trail along Route 9 between the Vanderbilt Mansion and Norrie-Mills State Park (at Old Post Rd. in Staatsburg), potentially crossing the existing Dutchess County Water and Wastewater Authority waterline.

3. Provide wider shoulders where feasible on CR 16 (South Quaker Ln.) between Salt Point Turnpike and CR 41 (Crum Elbow Rd./Netherwood Rd.), and add appropriate bicycle-related signage along the road.

4. Evaluate the feasibility of adding paved shoulders on Creek Rd. between Route 9G and Pendell Rd., and install where feasible. Add appropriate bicycle-related signage along the road.

5. Evaluate the feasibility of adding paved shoulders on East Dorsey Lane between CR 40 (Dutchess Hill Rd.) and CR 39 (Cream St.), and install where feasible. Add appropriate bicycle and pedestrian-related signage along the road.

6. Install sharrows and/or signage on Haviland Rd. from Route 9G to Cream St. to alert drivers to the presence of bicyclists in the lane.

7. Provide signage and a map at the Hyde Park Trail on Route 9 (at the FDR Estate) showing the trail connection to Route 9G.

Town and Village of Rhinebeck

1. Implement the bicycle routes outlined in the Red Hook/Rhinebeck Historic District Bike/Hike Trail map. Mark streets with bicycle lanes, sharrows, as bicycle boulevards, or maintain as shared lanes, as appropriate. Develop a demonstration project for a Bicycle Boulevard on one or more of the local streets on the route, such as Parsonage St., South St., or Mulberry St. in the Village of Rhinebeck.

Town of Red Hook

1. Provide an off-road path for bicycling from the Red Hook High School west on Route 199 to Meadow Dr. in the Town of Red Hook.

2. Widen the shoulders on Route 199 in the Town of Red Hook to at least four feet between Route 9G and Meadow Dr. (wider where feasible), and six feet between Meadow Dr. and the Village line. Install appropriate signage to increase drivers’ awareness of people on bicycles.

3. Provide shoulders for bicyclists and pedestrians on both sides of CR 79 (Linden Ave.) from the Red Hook Recreation Park Pool to Linden Acres. Alternatively, construct a shared-use path between the Recreation Park and Knox Rd. Install signs to identify Linden Ave. as part of the Village to Village (Tivoli to Red Hook) walking/bike trail. In the longer-term, consider extending the sidewalk on the east side of Linden Ave. from the Recreation Park to Knox Road and eventually to Rockefeller Lane/Whalesback Rd.
4. Develop bike paths that link the Village of Tivoli with Bard College. In particular, develop a bicycle connection using the Tivoli Bays Wildlife Management Area access road. Make surface and other improvements as needed for people to safely bicycle on the access road, and install signs to identify the access road as part of the Village to Village (Tivoli to Red Hook) walk/bike trail in the Town of Red Hook.

Travel Demand Management

1. Evaluate establishing new Park-and-Ride lots in Hyde Park (possibly at the Roosevelt Theater or drive-in site), in or near the Village of Rhinebeck, and in the Town of Red Hook.
2. Promote the 511NY Rideshare program at the Route 199 park-and-ride lot in the Town of Rhinebeck.
3. Re-establish ferry service from the Rhinecliff hamlet in Rhinebeck to the City of Kingston in Ulster County.

Planning Studies

1. Analyze speed patterns on County and local roads, using speed data from the PDCTC’s traffic count program. Identify corridors with high percentages of ‘high-end’ speeders (e.g., 10 mph or more over the posted speed limit) and develop engineering, enforcement, and educational approaches to reduce speeding.
2. Conduct sidewalk inventories and develop sidewalk improvement strategies for the Villages of Red Hook and Tivoli.
3. Revisit the possible extension of Metro-North Railroad service to Staatsburg and/or Rhinecliff.

Survey Summary

Of the more than 900 respondents to the Moving Dutchess 2 survey, 146 were residents of Upper Hudson communities. This section summarizes their responses to the survey.

In terms of making Dutchess County a great place to live, Upper Hudson residents prioritize preserving natural areas, habitats, and farmland, protecting air and water quality, and creating walkable communities.

Major issues identified by residents include the condition of roads; traffic flow on major streets; the condition of sidewalks and crosswalks; the feeling of safety while walking; the lack of bicycle lanes and road shoulders; the amount of bicycle paths and trails; the lack of information about bus service; and the availability of bus stops and shelters. Of a list of potential problems, the lack of safe and accessible sidewalks was noted most frequently as a current problem, followed by the lack of safe bicycle paths/facilities and the lack of transportation for elderly and disabled persons.

When asked how well the transportation system meets your needs, the most common response was ‘fair’ (42%), followed by ‘good’ (34%). When asked about the ease of getting places you usually have to go, the most common response was ‘good’ (50%) followed by ‘fair’ (26%).
Over 60% of respondents sometimes or often walk for transportation; 38% sometimes or often bicycle for transportation; 17% sometimes or often use the bus for transportation; and 87% sometimes or often use the train for transportation. Major barriers for walking include distance to destinations (69%) and lack of sidewalks (64%); for bicycling, inadequate shoulders, bike lanes and paths (58%) and too much traffic (41%); for bus transit, lack of bus service where you need to go (36%); and for train transit, the high cost (41%).

Type of travel: The survey asked residents to recall their trips over the past week and categorize them based on their destination and mode (drive alone, carpool, walk, bike, bus or other). Based on this information, we estimate that about 66% of trips are drive-alone; 11% are walk; 10% are carpool; 6% are bus; 5% are bike; and 3% are other. Most drive-alone trips are for work or school, followed by shopping; most walk trips are for socializing or recreation, followed by work/school; most carpool trips are for socializing/recreation, followed by shopping; most bike trips are for work/school, followed by socializing/recreation; and most bus trips are for work/school, followed by shopping.

To reduce congestion, residents expressed support for creating communities that are less reliant on driving and improving public transportation. Almost 60% of residents said they would use buses more often if the stops and schedules were convenient.

Land use: Close to 90% of respondents thought that most development should be within cities, town centers and villages using vacant or underutilized land. There was similarly strong support (85%) for closely-spaced housing and buildings with sidewalks, even if that meant smaller homes and yards and less parking. 75% of respondents said that infrastructure and services should be expanded primarily in and around existing town and village centers.

Residents’ top three investment priorities for the next 5-10 years are maintaining major roads and streets, improving sidewalks, and improving transportation for seniors and disabled persons. When asked what they would support with tax dollars, residents said walking and bicycling improvements (59%), followed by curb to curb service for seniors and disabled persons (47%).

Demographics: Most respondents live in the Town of Hyde Park (53%). Others live in Red Hook (14%), Rhinebeck (12%), Village of Red Hook (10%), Village of Rhinebeck (6%) or Village of Tivoli (5%). About 67% were aged 45-74, with 17% aged 25-44, 7% under 24, and 9% aged 75 and over. 68% of respondents were female, and 32% were male.

About 50% of households use 2 cars on a daily basis, while almost 27% use 1 car. About 4% of households don’t use a car regularly. Most residents who commute to work live within 5 miles of their job. About 22% of residents have a member of their household (age 16 and older) that doesn’t drive.
The top three issues cited in comments were transit concerns, walking-related issues, and bicycling facilities. Transit concerns included requests for Sunday service, more frequent service, expanded commuter service, later evening service, better information about the routes and schedules, and bus stops with signage and shelters.

Comments related to walking focused on the need for more sidewalks and wider shoulders. Bicycle-related comments focused on the need for safe, dedicated bicycle facilities (such as bike paths and bike lanes) to enable people to bicycle for transportation.

**Transportation Priorities**

Based on discussions of the above needs at the public workshops, feedback from the survey, and a review of feasibility, the following top priorities were identified:

**Bridge Maintenance**

Repair bridges rated as structurally deficient or functionally obsolete under FHWA standards or deficient under NYSDOT standards, with replacement priority given to the following bridges:

1. Route 199 over Sawkill Creek (BIN 1040020) in the Town of Red Hook.
2. Route 199 over Sawkill Creek (BIN 1040040) in the Town of Red Hook (Clinton Town line).
3. Sawkill Rd. over Sawkill Creek (BIN 2262850) in the Town of Red Hook.
4. Parsonage St. over Landsman Kill (BIN 2343770) in the Village of Rhinebeck.
5. Mill Rd. over Landsman Kill (BIN 3343780) in the Town of Rhinebeck.

**Highway Maintenance**

1. Inventory pavement conditions on local streets and repave based on condition ratings in the Upper Hudson area.

**Highway Operations**

1. As detailed in the Village of Rhinebeck Sidewalk Study, improve traffic operations at the Route 9 (Montgomery/Mill St.)/Route 308 (E./W. Market St.) intersection in the Village of Rhinebeck by adding left-turn lanes on all approaches and removing on-street parking near the intersection. Consider changing the signal timing to allow standard pedestrian crossings, where people cross with parallel traffic, to reduce the wait time for people in vehicles and on foot.
2. As detailed in Walk-Bike Dutchess, evaluate changing the Route 9/Route 199 signal timing in the Village of Red Hook to incorporate a standard pedestrian crossing, where people cross with parallel traffic. A leading pedestrian interval could be added to the signal timing to give walkers a head start before other traffic, and right turns on red could be restricted to reduce conflicts between vehicles and people in the crosswalk. Also, evaluate the feasibility
of adding curb extensions and removing some parking spaces to increase the visibility of people crossing, increase yielding, and shorten crossing distances on Route 9 at Route 199.

Safety

1. Reintroduce on-street parking on Route 9 and slow traffic speeds to 30 mph throughout Route 9 in the Hyde Park Town center (from St. Andrews Rd. to Market St.).
2. Analyze possible roadway safety improvements on North Quaker Ln. in Hyde Park, including: widening shoulders, lowering vertical crests, and installing flashing beacons on the warning sign assembly (southbound), as recommended in the CR16 (North Quaker Ln.) Safety Assessment.
3. Analyze the possibility of converting the Route 9/Fire House Ln./Amherst Rd. intersection in the Town of Red Hook to a standard four-way intersection by moving Fire House Ln. to the north, and install a traffic signal and pedestrian and bicycle safety improvements at the intersection.
4. As recommended in the CR19 (Slate Quarry Rd.) Safety Assessment, improve sight distance at the intersections of Wurtemburg Rd. and White Schoolhouse Rd. on Slate Quarry Rd. in the Town of Rhinebeck. Also, install a flashing beacon on Slate Quarry Rd. approaching Route 9G.

Transit

1. Explore the possibility of a new fixed bus route on Route 199 between the Villages of Tivoli and Millerton, with possible connecting service to the Kingston area in Ulster County.

2. Provide more frequent bus service in the Red Hook area and adjust the schedule to better serve workers and other riders’ schedules.
3. Add signs, bus stop shelters, route maps, timetables, and lighting to bus stops.
4. Provide better information about the bus routes and schedules, including making maps and schedules easier to use.
5. Evaluate adding Sunday service, later evening service, express service, and holiday service.
6. Improve transit service to tourist destinations.
7. Evaluate providing additional bus service to the train station.

Sidewalks/Pedestrian Facilities

1. Install a sidewalk on the east side of Route 9G between the Hyde Park trail (near Valkill Park Rd.) and Smith Court, and on Haviland Rd. between Route 9G and Haviland Middle School. Install pedestrian signals and signage as needed to help students safely walk to Ralph R. Smith Elementary and Haviland Middle School.
2. As detailed in the Hyde Park Town Center Pedestrian Study, repair sidewalks to key destinations, mark high-visibility crosswalks, create curb extensions, prohibit right turns on red at major intersections, and fill gaps in the sidewalk system. Provide pedestrian-scale street lighting, street trees, and streetscape enhancements in core areas.

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Effective April 1, 2016
on Route 9 in the Hyde Park Town Center and on Route 9G in the East Park Business District.

3. Install sidewalks on Route 9 between Quiet Cove Park and CR 40A (St. Andrews Rd.). Connect to the recommended sidewalk or path between Marist College and Quiet Cove Park, and to the recommended sidewalk extension on Route 9 south to CR 40A (St. Andrews Rd).

4. Improve safety for pedestrians and bicyclists accessing Bard College from Route 9G, consistent with the recommendations of the Upper Route 9G Corridor Management Plan.

5. Provide a network of sidewalks and trails throughout the Town of Red Hook, as recommended in the Red Hook Trail Plan.

6. Redesign the Route 9/308 “four corners” intersection in the Village of Rhinebeck: add curb extensions at each corner to shorten crossing distances and increase pedestrian safety and visibility; realign the crosswalk at the northern leg so that it is perpendicular to the near street curb; add diagonal parking on W. Main St. to calm traffic; provide additional shade trees, landscaping, and sitting places; and enhance the central green in front of the Beekman Arms hotel and add a patio and rear walkway at the Beekman Arms (see also Traffic Operations).

7. Complete repairs or replacement of deficient sidewalks and construct new sidewalks, as detailed in the Village of Rhinebeck Sidewalk Study.

8. Repair State-owned, non-ADA compliant sidewalks and ramps in the Upper Hudson.

## Multi-use Trails & Bicycle Facilities

1. Evaluate the feasibility of adding paved shoulders on Creek Rd. between Route 9G and Pendell Rd., and install where feasible. Add appropriate bicycle-related signage along the road.

2. Provide shoulders for bicyclists and pedestrians on both sides of CR 79 (Linden Ave.) from the Red Hook Recreation Park Pool to Linden Acres. Alternatively, construct a shared-use path between the Recreation Park and Knox Rd. Install signs to identify Linden Ave. as part of the Village to Village (Tivoli to Red Hook) walking/bike trail. In the longer-term, consider extending the sidewalk on the east side of Linden Ave. from the Recreation Park to Knox Road and eventually to Rockefeller Lane/Whalesback Rd.

3. As per the Upper Route 9G Corridor Management Plan, widen the shoulders on Route 9G between Tivoli and Hyde Park to a consistent six foot minimum. Install appropriate bicycle-related signage to encourage safe sharing of the road and to identify Route 9G as part of the Village to Village (Tivoli to Red Hook) walk/bike trail.

4. Create a rail trail on the former Hucklebush Rail Line between Rhinecliff and the Harlem Valley Rail Trail in Millerton passing through Rhinebeck, Red Hook, Milan, Columbia County, Pine Plains, and North East.

## Planning Studies

1. Analyze speed patterns on County and local roads, using speed data from the PDCTC’s traffic count program. Identify corridors with high percentages of ‘high-end’ speeders (e.g., 10 mph or more over the posted speed
Moving Dutchess 2

limit) and develop engineering, enforcement, and educational approaches to reduce speeding.

2. Conduct sidewalk inventories and develop sidewalk improvement strategies for the Villages of Red Hook and Tivoli.
Chapter 6-3

Lower Taconic Overview

Moving Dutchess 2 defines the Lower Taconic area as the south-central block of communities located along the Taconic State Parkway and Route 55 corridors. The area encompasses the towns of Beekman, East Fishkill, LaGrange, Pawling, and Union Vale, and the Village of Pawling. The Lower Taconic is characterized by a mix of suburban and rural land use patterns that are interspersed with concentrated development patterns in villages and hamlets such as Poughquag in the Town of Beekman, Lagrangeville in the Town of LaGrange, and Pawling village.

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

Demographics

The Lower Taconic communities had a 2010 population of 72,720. This was a 9.8 percent increase over 2000, representing an almost one percent annual growth rate from 2000-2010. The Lower Taconic’s level of growth was higher than Dutchess County’s overall 6.2 percent increase in total population. The towns of Pawling and East Fishkill had the highest rates of growth in the area. Table 6-3-1 shows population change from 2000-2010 for the Lower Taconic communities.

Table 6-3-1. Total Population-Lower Taconic (2000-2010)

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Beekman</td>
<td>13,655</td>
<td>14,621</td>
<td>7.1</td>
</tr>
<tr>
<td>Town of East Fishkill</td>
<td>25,589</td>
<td>29,029</td>
<td>13.4</td>
</tr>
<tr>
<td>Town of LaGrange</td>
<td>14,928</td>
<td>15,730</td>
<td>5.4</td>
</tr>
<tr>
<td>Town of Pawling</td>
<td>5,288</td>
<td>6,116</td>
<td>15.7</td>
</tr>
<tr>
<td>Town of Union Vale</td>
<td>4,546</td>
<td>4,877</td>
<td>7.3</td>
</tr>
<tr>
<td>Village of Pawling</td>
<td>2,233</td>
<td>2,347</td>
<td>5.1</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2010 Census

In 2010 the Lower Taconic had a population density of 344 people per square mile, which was slightly below the county’s overall density of 374 per square mile. At 1,175 per square mile, the Village of Pawling had the highest population density in the Lower Taconic area, while Union Vale had the lowest at 130. Population density information is shown on the Lower Taconic Population Density Map at the end of this chapter. Potential future population density patterns are shown in the Lower Taconic 2040 Buildout Analysis: Existing Zoning Scenario and Centers and Greenspaces Scenario maps.
Moving Dutchess 2

The Lower Taconic contained 27,004 housing units in 2010, a 15 percent increase from 2000. This equaled an average gain of over 358 housing units per year from 2000-2010. The area had 24,908 occupied housing units (households) in 2010, which was a 17 percent increase from 2000. The area also had an average household size of 2.9 persons, which was unchanged from 2000. Table 6-3-2 shows housing unit totals for the Lower Taconic communities.

Table 6-3-2. Total Housing Units-Lower Taconic (2000-2010)

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Beekman</td>
<td>4,180</td>
<td>4,797</td>
<td>14.8</td>
</tr>
<tr>
<td>Town of East Fishkill</td>
<td>8,495</td>
<td>10,039</td>
<td>18.2</td>
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<tr>
<td>Town of LaGrange</td>
<td>5,240</td>
<td>5,668</td>
<td>8.2</td>
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<tr>
<td>Town of Pawling</td>
<td>3,101</td>
<td>3,593</td>
<td>15.9</td>
</tr>
<tr>
<td>Town of Union Vale</td>
<td>1,464</td>
<td>1,911</td>
<td>30.5</td>
</tr>
<tr>
<td>Village of Pawling</td>
<td>945</td>
<td>996</td>
<td>5.4</td>
</tr>
</tbody>
</table>

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

Age

Young people and older people have different transportation needs than others: they are less likely to drive, and therefore more likely to walk (both young and old), bicycle (young people), or use transit for transportation. Except for the Village of Pawling, the Lower Taconic communities all have higher percentages of young people (aged 16 and under) than the county average, and except for Union Vale and the Town and Village of Pawling, have lower percentages of older people (aged 65 and over). Except for the Town of Beekman, all Lower Taconic municipalities have equal or higher than average percentages of these young and older groups combined.

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

<table>
<thead>
<tr>
<th></th>
<th>% 16 and Under</th>
<th>% 65 and Over</th>
<th>Total % Under 16 and 65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Beekman</td>
<td>21</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>Town of East Fishkill</td>
<td>23</td>
<td>11</td>
<td>34</td>
</tr>
<tr>
<td>Town of LaGrange</td>
<td>22</td>
<td>13</td>
<td>35</td>
</tr>
<tr>
<td>Town of Pawling</td>
<td>21</td>
<td>15</td>
<td>36</td>
</tr>
<tr>
<td>Town of Union Vale</td>
<td>22</td>
<td>13</td>
<td>35</td>
</tr>
<tr>
<td>Village of Pawling</td>
<td>19</td>
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<td>33</td>
</tr>
<tr>
<td></td>
<td>Dutchess County</td>
<td>19</td>
<td>14</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2010 Census

Income

Lower-income households are also more likely to walk, bicycle and use transit for everyday needs. Based on data from the U.S. Census Bureau’s 2009-2013 5-year American Community Survey, none of the Lower Taconic municipalities had median household incomes that were below the county average of $71,192-$73,858. Of note, the Towns of East Fishkill and LaGrange had the highest household incomes in the county.

Vehicle Ownership

Households without a motor vehicle are much more likely to seek alternative transportation. Based on data from the U.S.
Census Bureau’s 2009-2013 5-year American Community Survey, none of the municipalities in the Lower Taconic had zero-vehicle household rates above the county average of 7.9-8.9 percent.

**Centers & Destinations**

**Centers**

The Lower Taconic hosts a variety of activity centers and noteworthy destinations that are located near major transportation facilities, such as Interstate 84, Routes 55, 82, and 376, and the Taconic State Parkway. Depending on the nature of the land use and amount of development, these centers and destinations affect travel and the transportation system in varying degrees.

Activity centers are classified as those areas that support a concentrated mix of residential and commercial development, most typically a village or hamlet, which are human in scale and supported by adequate pedestrian infrastructure. Such centers provide travelers with the ability to make more non-motorized trips than auto-dependent land uses. The Lower Taconic includes the following activity centers:

2. Fishkill Plains hamlet in East Fishkill.
3. Poughquag hamlet in Beekman.
4. Freedom Plains/LaGrange town center (on Route 55) in LaGrange.
5. Pawling Village center.

The area also has an emerging center in Beekman on Route 55, southeast of CR 9 (Beekman Rd.). This emerging center has a variety of commercial parcels that could be retrofitted into a more pedestrian-oriented center.

**Destinations**

Major destinations include transportation hubs, large employment and commercial sites, and schools that place unique or significant demand on the transportation system. These locations can generate significant traffic volumes, especially during peak hours. The Lower Taconic includes the following major destinations:

1. Commercial plazas on Routes 22, 52, 55, 82, and 376.
2. IBM Semiconductor Research and Development Center in East Fishkill.
3. Hudson Valley Research/Corporate Park in East Fishkill.
5. Arlington High School in LaGrange.
6. Manchester Center in Poughkeepsie.
7. Green Haven Correctional Facility in Beekman.
8. Pawling train station.
11. Appalachian Trail and Appalachian Trail Metro-North train station.

The Lower Taconic Overview Map at the end of this chapter shows key centers and destinations in the area.
Major Projects

The Transportation Council’s 2013 Major Projects Report, which tracks large development projects in the county, identified over 4,200 new residential units in the planning stages or under construction in the area’s six communities. In addition, over 3.7 million square feet of non-residential space was also being planned for the area. Some of the larger projects in the area include the following:

1. Springs at Beekman: 199 residential units on CR 8 (Greenhaven Rd.).
2. Hopewell Glen in East Fishkill: 290 residential units on Route 376 (Fishkill Rd.).
4. Linuo Solar in East Fishkill: 900,000 sq. ft. industrial on Route 52.
5. Meadow Creek Corporate Park in East Fishkill: 998,000 sq. ft. industrial, 270,880 sq. ft. office, and 2,200 sq. ft. retail on CR 27 (Lime Kiln Rd.).
6. H.G. Page in LaGrange: 791 residential units and commercial space on CR 49 (Titusville Rd.).
7. LaGrange town center: 623 residential units and commercial space on Route 55.
8. Titusville Corporate Park in LaGrange: 126,000 sq. ft. industrial on CR 49 (Titusville Rd.).
9. Castagna Development in the Town of Pawling: approximately 400 senior residential units and 350,000 square feet medical/retail on Aikendale Rd.

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

Transportation System

The Lower Taconic transportation system is road based. Two of the area’s major road corridors are served by public bus and commuter rail is available in the area. Some locations are served by pedestrian or bicycle facilities.

Roads

The Lower Taconic’s road system consists of Interstate 84; major State highways including the Taconic State Parkway and Routes 22, 52, 55, 82, and 376; smaller State highways including Routes 216 and 292; and major County roads including CR 7 (Beekman-Poughquag Rd.), CR 8 (Greenhaven Rd.), CR 9 (Beekman Rd.), CR 21 (Noxon Rd.), CR 27 (Lime Kiln Rd.), CR 29 (Carpenter Rd.), CR 31 (Palen Rd.), CR 47 (Freedom Rd.), and CR 49 (Titusville Rd.).

According to the NYSDOT 2013 Highway Mileage Report, the Lower Taconic communities contained 704 miles of State, County, and local roads. Table 6-3-4 shows the distribution of centerline mileage across the Lower Taconic communities.

Table 6-3-4. Centerline Mileage-Lower Taconic

<table>
<thead>
<tr>
<th>Town</th>
<th>Total Centerline Mileage</th>
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</thead>
<tbody>
<tr>
<td>Town of Beekman</td>
<td>96</td>
</tr>
<tr>
<td>Town of East Fishkill</td>
<td>260</td>
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</tbody>
</table>
The Transportation Council collects traffic count data for County and local roads and receives count data from NYSDOT for State highways. Based on a review of data from 2010-2014, the following roads had the highest Average Annual Daily Traffic (AADT) volumes in the Lower Taconic:

1. I-84 in East Fishkill: 51,700
2. Taconic State Parkway (TSP) in East Fishkill: 32,900
3. Route 82 in East Fishkill: 19,000
4. Route 55 in LaGrange: 18,600
5. Route 22 in Pawling: 18,100
6. CR 44 (Red Oaks Mill Rd.) in LaGrange: 16,000
7. CR 21 (Noxon Rd.) in LaGrange: 14,800
8. Taconic State Parkway (TSP) in LaGrange: 13,900
9. CR 49 (Titusville Rd.) in LaGrange: 13,300
10. Route 376 in East Fishkill: 11,500
11. Route 55 in Union Vale: 9,800
12. CR 9 (Beekman Rd.) in East Fishkill: 8,700
13. CR 9 (Beekman Rd.) in Beekman: 8,200
14. Route 82 in LaGrange: 7,400
15. Route 55 in Beekman: 6,300

Traffic volumes in the Lower Taconic are shown on the Traffic Volume Analysis map at the end of this chapter.

### Congestion Management Process (CMP)

The Transportation Council completed a CMP progress report in 2006, which identified locations with severe, heavy, and moderate peak hour congestion, based on vehicle-to-capacity ratios for evening peak hour. The following Lower Taconic

---

<table>
<thead>
<tr>
<th>Town</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of LaGrange</td>
<td>164</td>
</tr>
<tr>
<td>Town of Pawling</td>
<td>91</td>
</tr>
<tr>
<td>Town of Union Vale</td>
<td>78</td>
</tr>
<tr>
<td>Village of Pawling</td>
<td>15</td>
</tr>
</tbody>
</table>

The NYSDOT rating system measures pavement condition on a scale of 1 to 10, with 1 being the worst and 10 the best. A rating of 5 or less is classified as poor. According to the 2014 NYSDOT Pavement Data Report, State-owned highways in the Lower Taconic had an average surface rating of 7.0. A total of 5.1 miles of State roads were rated in poor condition. The following State route segments in the Lower Taconic were identified as being in poor condition (score of 5 or less):

1. Route 52 in East Fishkill: Corporate Park Rd. to Fishkill Town Line (0.4 miles).
2. Route 55 in LaGrange: TSP to Freedom Rd. (0.7 miles).
3. Route 82 in LaGrange: Route 55 to Sunset Hill Rd. (2.6 miles).
4. Route 82 in Union Vale: O’Brien Hill Rd. to CR 9 (Clove Rd.) (1 mile).
5. Route 376 in East Fishkill: Route 82 overlap in Hopewell Junction (0.2 miles).

In addition, DCDPW rates the condition of County-owned roads each year. According to 2014 data, no County roads in the Upper Taconic were in poor condition. The Lower Taconic Bridge and Pavement Conditions Map at the end of this chapter shows pavement conditions in the Lower Taconic.
road segments were classified as severely congested during peak periods.

1. Route 55 in LaGrange: Taconic State Parkway to CR 47 (Freedom Rd.), and Mandalay Dr to CR 49 (Titusville Rd.).
2. CR 49 (Titusville Rd.) in LaGrange: Daley Rd. to CR 44 (Red Oaks Mill Rd.).

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

1. Route 55 between CR 49 (Titusville Rd.) and CR 21 (Noxon Rd.):
   - Westbound: AM, Mid-day, Saturday
   - Eastbound: AM, PM
2. Route 55 between CR 46 (Freedom Rd.) and the Taconic State Parkway:
   - Westbound: AM, Mid-day, PM, Saturday
   - Eastbound: Mid-day, Saturday
3. Route 52 CR 31 (Palen Rd.) and the Taconic State Parkway:
   - Eastbound: AM, Mid-day, PM
   - Westbound: AM, Mid-day, PM
4. Route 22 approaching CR 67 (Quaker Hill Rd.):
   - Northbound: PM

The Transportation System Performance Maps in Chapter 5 show travel time data by roadway segment.

**Bridges**

The Lower Taconic transportation system includes 103 road bridges, defined as a bridge structure with a span more than 20 feet in length. The NYSDOT condition rating scale ranges from 1 to 7, with 7 being in new condition and a rating of 5 or greater considered as good condition. In 2010 the bridges collectively had an average NYSDOT condition rating of 5.0.

NYSDOT defines a deficient bridge as one with a State condition rating of less than 5. A deficient condition rating indicates deterioration to a level that requires corrective maintenance or rehabilitation to restore the bridge to a fully functional, non-deficient condition; it does not imply that the bridge is unsafe. The Lower Taconic has 40 bridges that are classified as deficient under the NYSDOT rating system. Table 6-3-5 lists the number of bridges by municipality and their average State rating.

<table>
<thead>
<tr>
<th>Town</th>
<th>Number of Bridges</th>
<th>Average NYSDOT Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Beekman</td>
<td>11</td>
<td>5.2</td>
</tr>
<tr>
<td>Town of East Fishkill</td>
<td>48</td>
<td>4.9</td>
</tr>
<tr>
<td>Town of LaGrange</td>
<td>26</td>
<td>4.9</td>
</tr>
<tr>
<td>Town of Pawling</td>
<td>7</td>
<td>5.6</td>
</tr>
<tr>
<td>Town of Union Vale</td>
<td>8</td>
<td>4.9</td>
</tr>
<tr>
<td>Village of Pawling</td>
<td>3</td>
<td>5.3</td>
</tr>
</tbody>
</table>

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

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

“Functionally obsolete” refers to a bridge’s inability to meet current standards for managing the volume of traffic it carries, not its structural integrity. A bridge may be “functionally obsolete” if it has narrow lanes, no shoulders, or low clearances.

The Lower Taconic has 11 bridges classified by FHWA as structurally deficient and 42 classified as functionally obsolete. The distribution by community is listed in Table 6-3-6 below. The Lower Taconic Bridge and Pavement Conditions Map identifies bridges rated as structurally deficient and functionally obsolete based on federal standards.

<table>
<thead>
<tr>
<th>Town</th>
<th>Structurally Deficient</th>
<th>Functionally Obsolete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Beekman</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Town of East Fishkill</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>Town of LaGrange</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Town of Pawling</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Town of Union Vale</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Village of Pawling</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

### Transit

The Dutchess County Public Transit bus system operates two fixed routes in the Lower Taconic:

1. Route E between Poughkeepsie and Pawling: Monday-Saturday service from 5:30 a.m. to 12:07 p.m., with up to 20 buses per day including six daily round trips between Poughkeepsie and Pawling. This route primarily serves the Route 55 corridor and a portion of the Route 22 corridor.
2. Route F between Beacon and Hopewell Junction: Monday-Friday service from 6:55 a.m. to 9:30 p.m., with up to seven buses per day. Though Route F operates on Saturdays, it does not stop in the Lower Taconic on that day. Route D primarily serves the Route 52 corridor.

Metro North Railroad operates a train station on the Harlem Line in the Village of Pawling. As of 2015, the station supported 13 daily trains to Grand Central Station; four of these were through trains and the remainder required a transfer at the Southeast station in Putnam County.
Pawling station contains 211 parking spaces. The Harlem Line also stops at the Appalachian Trail in the Town of Pawling on certain weekends and holidays.

**Pedestrian and Bicycle Transportation**

**Sidewalk Systems**

The Lower Taconic has approximately 30 miles of sidewalks. The majority are in the Town of East Fishkill. Minor sidewalk systems are located in some of the hamlets and larger residential and commercial properties. When considered on a per-resident basis, the Village of Pawling has the most sidewalks per resident in the Lower Taconic, and ranks 8th out of the 30 municipalities in the county. Sidewalk mileage by municipality and per resident is shown in Table 6-3-7.

Table 6-3-7. Sidewalk Mileage & Population (2010)-Lower Taconic

<table>
<thead>
<tr>
<th>Sidewalks (miles)</th>
<th>Sidewalk Feet per Resident</th>
<th>County-wide Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Beekman</td>
<td>0.4</td>
<td>28</td>
</tr>
<tr>
<td>Town of East Fishkill</td>
<td>11.7</td>
<td>23</td>
</tr>
<tr>
<td>Town of LaGrange</td>
<td>6.7</td>
<td>21</td>
</tr>
<tr>
<td>Town of Pawling</td>
<td>2.6</td>
<td>20</td>
</tr>
<tr>
<td>Town of Union Vale</td>
<td>1.0</td>
<td>26</td>
</tr>
<tr>
<td>Village of Pawling</td>
<td>7.6</td>
<td>8</td>
</tr>
</tbody>
</table>

**Trail Systems**

The Lower Taconic has approximately 50 miles of unpaved trails. Major recreational trails in the area include:

1. Appalachian Trail: 22.5 miles through three towns:
   - Town of East Fishkill: 8.5 mile segment
   - Town of Beekman: 7.5 mile segment
   - Town of Pawling: 6.5 mile segment
2. Town of Pawling Nature Trails: 7.9 mile nature trail
3. Tymor Town Park in Union Vale: 7.5 mile trail network
4. James Baird State Park in LaGrange: 6.2 mile trail network
5. Lakeside Park and Murrow Park in Pawling: 6 miles
6. Red Wing Nature Trails in LaGrange: 4.2 mile nature trail

**Shared-Use Paths**

Portions of the Dutchess Rail Trail run through both the Town of LaGrange (approximately 3 miles) and the Town of East Fishkill (approximately 2.5 miles, from the Town line to Hopewell Junction).

**Bicycling Facilities**

There are two on-street bicycle facilities in the Lower Taconic, both shared-lane use markings (sharrows) in the Village of Pawling: on Charles Colman Boulevard between West Main St. and Union St., and on West and East Main St. between Dutcher Ave. and Coulter Ave.

In addition, NYSDOT has several proposed State Bicycle Routes (SBR) which connect to the area:
Moving Dutchess 2

1. An extension of SBR 22 south on Route 22 between Columbia County through Dutchess and Putnam counties.
2. Proposed SBR 55, along Route 55 between a proposed SBR 44 in the Town of Poughkeepsie and a proposed SBR 22 in the Town of Pawling.
3. Proposed SBR 52, along Route 52 between Route 9D in Beacon and Putnam County.
4. Proposed SBR 82, along Route 82 between a proposed SBR 199 in Pine Plains and the proposed SBR 52 in Fishkill.

Bicycle parking is provided at some destinations in the area, including the East Fishkill Depot Museum, the Pawling Metro-North station, and the Pawling library.

Accessibility

In 2010 NYSDOT conducted an ADA inventory of the State transportation system. The inventory identified intersections and sidewalk segments that required improvements to fully achieve ADA accessibility standards. Two locations were identified in the Lower Taconic, both located on Route 376 in Hopewell Junction (Town of East Fishkill): 1) Ramp at the Route 82 intersection, and 2) Sidewalk from Route 82 to Orchid Pl. For additional data on walking and bicycling patterns, see Walk Bike Dutchess, Chapter 5.3 (Lower Taconic).

Park-and-Ride Facilities

The Lower Taconic hosts five State-operated park-and-ride facilities:

1. Taconic State Parkway and Route 52 in East Fishkill (100 spaces).
2. Taconic State Parkway near Todd Hill Rd. in LaGrange (60 spaces).
3. Route 82 near the Taconic State Parkway in Arthursburg (East Fishkill) (51 spaces).
4. Lime Kiln Rd. near I-84 (eastbound) in East Fishkill (90 spaces).
5. Le Chambord Restaurant on Route 52 (near the Taconic State Parkway) in East Fishkill (30 spaces).

Other Transportation Facilities

The Lower Taconic hosts two small public airports: 1) Sky Acres Airport located on North Smith Rd. in the Town of Union Vale, and 2) Stormville Airport located on Route 216 in the Town of Beekman (not shown on the overview map).

Transportation Safety

The Transportation Council analyzed vehicle crash data from the NYS Governor’s Traffic Safety Committee (GTSC), focusing on total crashes and crash rates based on road mileage. In 2013, the most recent data available, the GTSC reported that 445 crashes with fatalities or injuries occurred in the Lower Taconic; this was slightly lower than the 468 fatal and injury crashes reported in 2009 for Moving Dutchess. Table 6-3-8 shows the total number of reported crashes with fatalities or injuries by municipality for 2011-2013.
Moving Dutchess 2

Table 6-3-8. Fatal & Injury Crashes-Lower Taconic (2011-2013)

<table>
<thead>
<tr>
<th></th>
<th>Fatal &amp; Injury Crashes</th>
<th>3-Year Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Beekman</td>
<td>46 40 44</td>
<td>43</td>
</tr>
<tr>
<td>Town of East Fishkill</td>
<td>182 176 169</td>
<td>176</td>
</tr>
<tr>
<td>Town of LaGrange</td>
<td>140 176 155</td>
<td>157</td>
</tr>
<tr>
<td>Town of Pawling</td>
<td>34 34 32</td>
<td>33</td>
</tr>
<tr>
<td>Town of Union Vale</td>
<td>22 27 32</td>
<td>27</td>
</tr>
<tr>
<td>Village of Pawling</td>
<td>9 9 13</td>
<td>10</td>
</tr>
</tbody>
</table>

Measured in terms of road mileage, the Lower Taconic communities had an average fatal/injury vehicle crash rate of 0.5 crashes per road mile in 2013, which was the same rate reported in 2009 for Moving Dutchess. The Lower Taconic’s 2013 fatal/injury crash rate remained below the county average of 0.8; though, the Town of LaGrange had an above average crash rate, with one fatal/injury crash occurring per mile. Table 6-3-9 shows crash rates per mile by community from 2011-2013.

Table 6-3-9. Crash Rate per Mile-Lower Taconic (2011-2013)

<table>
<thead>
<tr>
<th></th>
<th>Crash Rate Per Mile</th>
<th>3-Year Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Beekman</td>
<td>0.5 0.5 0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Town of East Fishkill</td>
<td>0.7 0.7 0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Town of LaGrange</td>
<td>0.9 1.1 1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Town of Pawling</td>
<td>0.4 0.4 0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Town of Union Vale</td>
<td>0.3 0.4 0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Village of Pawling</td>
<td>0.6 0.6 0.9</td>
<td>0.7</td>
</tr>
</tbody>
</table>

NYSDOT, in conjunction with NYSDMV and the Office of Cyber Security & Critical Infrastructure Coordination (CSCIC), maintains an online database of motor vehicle crashes called the Accident Location Information System (ALIS). The Transportation Council conducted an analysis of 2010-2014 ALIS crash data to identify general crash trends in the Lower Taconic. Based on this 2010-2014 data, the Transportation Council identified high-crash intersections and roadway segments in the Upper Taconic. These are shown in the Lower Taconic Crash Analysis Map at the end of this chapter. The following Lower Taconic locations experienced some of the highest number of crashes/crash rates over the five-year period:

**Intersections (Total Crashes)**

1. CR 21 (Noxon Rd.) and CR 49 (Titusville Rd.) in the Town of LaGrange (78 crashes).
2. Route 55 and Route 82 in the Town of LaGrange (50 crashes).
3. Route 55 (Manchester Rd.) and CR 46 (Overlook Rd.) in the Town of LaGrange (43 crashes).
4. Route 82 and Route 376 in the Town of East Fishkill (40 crashes).
5. Route 55 (Manchester Rd./Freedom Plains Rd.) and CR 21 (Noxon Rd.) in the Town of LaGrange (35 crashes).
6. Route 55 and CR 21 (Bruzgul Rd.) in the Town of Union Vale (31 crashes).
**Moving Dutchess 2**

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

1. Taconic State Parkway (northbound) between CR 21 (Noxon Rd.) and Todd Hill Rd. in the Town of LaGrange (36 crashes; 36 crashes per mile).
2. Taconic State Parkway (southbound) between Route 55 (westbound) exit ramp and Route 55 (eastbound) exit ramp in the Town of LaGrange (27 crashes; 328 crashes per mile).
3. Taconic State Parkway (northbound and southbound) between CR 9 (Beekman Rd.) and Route 82 in the Town of East Fishkill (141 crashes; 34 crashes per mile).
4. Taconic State Parkway (northbound) between CR 29 (Carpenter Rd.) and CR 9 (Beekman Rd.) in the Town of East Fishkill (48 crashes; 46 crashes per mile; one fatality in 2011).
5. Taconic State Parkway (northbound and southbound) between CR 29 (Carpenter Rd.) and Route 52 in the Town of East Fishkill (124 crashes; 38 crashes per mile).
6. Taconic State Parkway (northbound) between I-84 (westbound) and Route 52 in the Town of East Fishkill (42 crashes; 54 crashes per mile).
7. Taconic State Parkway (northbound and southbound) between Miller Hill Rd. and I-84 in the Town of East Fishkill (153 crashes; 48 crashes per mile).
8. Route 55 between CR 47 (Freedom Rd.) and Dr. Fink Rd. in the Town of LaGrange (75 crashes; 257 crashes per mile).
9. Route 55 between Velie Rd. and Route 82 in the Town of LaGrange (75 crashes; 78 crashes per mile).
10. CR 21 (Noxon Rd.) between Meier Rd. and Feller Rd. in the Town of LaGrange (44 crashes; 42 crashes per mile).
11. CR 21 (Noxon Rd.) between CR 49 (Titusville Rd.) and Scenic Hills Dr. in the Town of LaGrange (47 crashes; 188 crashes per mile).
12. CR 49 (Titusville Rd.) between Daley Rd. and Davis Rd. in the Town of LaGrange (49 crashes; 141 crashes per mile).

**Pedestrian & Bicycle Safety**

The Transportation Council also analyzed the 2009-2013 crash data to determine pedestrian and bicycle crash rates per 1,000 people for each municipality. Based on this analysis, the Village of Pawling was the only Lower Taconic community to have a pedestrian crash rate (0.63) above the county average of 0.29 crashes per 1,000 people. None of the Lower Taconic communities had bicycle crash rates above the county average of 0.15 bicycle crashes per 1,000 people.

**Walk Bike Dutchess** also identified one high-crash corridor for pedestrians and one for bicyclists in the Lower Taconic:

1. Pedestrian: Town of East Fishkill, Route 376 (Hillside Lake Rd.) between Robinson Ln. and Flanders Rd.: 1.5 miles; 4 crashes; 2.8 crashes/mile.
2. Bicycle: Town of East Fishkill, Route 82 between CR 28 (Old Hopewell Rd.) and CR 9 (Beekman Rd.): 2.4 miles; 5 crashes; 2.1 crashes/mile.

**Local Comprehensive Plans**

The Transportation Council reviewed each community’s comprehensive plan to identify land use and transportation...
recommendations relevant for *Moving Dutchess 2*. For many of the communities, the recommendations involve land use policies and projects that promote non-motorized travel, maintain community character, improve safety, and reduce congestion.

**Town of Beekman**

The Town of Beekman updated its comprehensive plan in 2011. The plan includes the following transportation related recommendations:

1. Support a multi-modal transportation system by exploring opportunities to improve public transportation in the town.
2. Work with the Dutchess County Division of Mass Transit to expand senior transportation services.
3. Partner with the Dutchess County Division of Mass Transit to expand bus service and include a route from the Town to the Poughkeepsie Bus Station.
4. Foster a safe and efficient transportation network throughout the town.
5. Slow traffic on Route 55 in the proposed town center through use of traffic calming devices such as roundabouts, bump-outs, signage, and textured sidewalks.
6. Address traffic issues on CR 7 (Beekman-Poughquag Rd.) and in the Sylvan Lake/Taconic Area.
7. Construct turning lanes on CR 9 (Beekman Rd.) through Greenhaven.
8. Improve and enhance the parking in the town’s commercial areas.
9. Enhance mobility and accessibility throughout the town via improvements or new infrastructure designed to accommodate a variety of transportation modes for the safety, convenience, and efficiency of drivers, cyclists, and pedestrians.
10. Promote and encourage a safe and contiguous system of sidewalks, bike trails and pathways throughout the town center and the Hamlets.
11. Develop a plan to ensure that any new sidewalk system is inviting and properly maintained, particularly in the town center area.
12. Improve and maintain the integrity and capacity of existing roads through access management.
13. Hire a consultant to work with the Town Highway Department to complete an Alternative Roadway Study to examine the need for new roads or extensions to provide additional access, convenience, and enhanced safety.
14. Evaluate the feasibility of constructing parallel roads in the town center to allow convenient and safe secondary access along Route 55.

**Town of East Fishkill**

East Fishkill adopted its comprehensive plan in 2002. The plan devotes a chapter to transportation issues, which is based on a traffic circulation plan completed by the town in 2001. The plan identifies the following transportation related issues and recommendations:

1. Expand parking at the Taconic State Parkway/Route 52 and Lime Kiln Rd. (near I-84) park-and-ride facilities.
Moving Dutchess 2

2. Develop grade separated intersections at Carpenter Rd. and Hosner Mountain Road on the Taconic State Parkway.
3. Explore ways to improve safety at the Route 52 and Route 82 interchanges on the Taconic State Parkway.
4. Realign Route 376 near Railroad Ave. to eliminate an unsafe, 90 degree turn.
5. Construct several bypass roads around the Hopewell Hamlet and a new road connecting CR 31 (Palen Rd.) to Route 376.
6. Construct a service road behind the commercial plazas along Route 82.
7. Implement access management design elements for new development on major roads.
8. Pursue a trail on the infrequently used Beacon rail line from Hopewell Junction to a planned trail in Putnam County.

Town of LaGrange

The Town of LaGrange adopted its comprehensive plan in 2005. The plan includes the following transportation related recommendations:

1. Realign the Arlington High School entrance with Stringham Rd. (completed in 2014).
2. Conduct a safety and operational study of Town roads to prioritize maintenance activities and future improvements.
3. Develop a network of multi-use trails throughout the Town.
4. Coordinate with NYSDOT and Dutchess County to designate new bicycle routes.
5. Install sidewalks, crosswalks, and bicycle facilities where feasible.
6. Develop access management standards to reduce vehicle traffic and promote pedestrian activity.

Town of Pawling

The Town of Pawling updated its comprehensive plan in 2012. The plan includes the following transportation related recommendations:

1. Construct a feeder road south of the Village to bypass high traffic areas on Route 22 and the Akindale Rd. intersection.
2. Improve capacity issues on Akindale Road and on Coulter Avenue/Pine Street.
3. Improve deficiencies in the capacity of the intersection of CR 67 (Quaker Hill Road) and East Main Street, through the provision of a through/left turn lane and a separate right turn lane for the eastbound movement.
4. Explore possible safety improvements at the Akindale Road/Route 22 and Dutcher Avenue/Route 55 intersections.
5. Modify the intersection at Lakeside Park and CR 20 (West Dover Rd.) to create a “T” intersection.
6. Explore the widening of Route 22 to two lanes in either direction from Pawling south to I-684.
7. Classify the following intersections as “key local intersections” necessitating further examination:
   - Route 292 at Holmes Rd.
   - Route 292 at Bundy Hill Rd.
   - Route 292 at South Rd.
8. Reduce the number of driveways and access points.
Moving Dutchess 2

9. Encourage shared access between adjacent properties.
10. Encourage the development of trails.

Village of Pawling

The Village of Pawling adopted its comprehensive plan in 1994. The plan includes the following transportation related recommendations:

1. Improve the safety and operations of the following intersections:
   - Route 22 at Coulter Ave.
   - Route 22 at East Main St
   - West Main St. at Lakeside Dr.
   - Main St. at Colman Blvd. and Memorial Ave.
   - East Main St. at Coulter Ave.
2. Complete the sidewalk system within the Village center.
3. Build new sidewalks along arterials and collectors outside the Village center.
4. Continue to work with Metro-North on the expansion of train service and improvements at the train stop.
5. Study where bicycle routes could be created.
6. Consider adoption of a scenic roads overlay.

Town of Union Vale

The Union Vale Comprehensive Plan, adopted in 2001, primarily focuses on local land use, particularly preserving the Town’s rural character. Transportation related recommendations include the following items:

1. Develop a vision for a town-wide trail system and incorporate it into the Open Space Plan.
2. Look for opportunities to develop recreational pathways, which separate conflicting users (pedestrians and bicyclists vs. motorized users).
3. Develop connections between large public open spaces using existing trail systems, utility or transportation right-of-ways, and corridors.
4. Review and revise commercial parking and roadway access requirements, and review and revise standards for new roads as necessary.

Previous Transportation Council Studies

The Transportation Council has performed a number of local planning studies in the Lower Taconic, including the Hopewell Hamlet Pedestrian Plan (2002), the Route 22 Corridor Management Plan Study (2002), the Village of Pawling Parking Study (2003), the LaGrange town center Plan (2005), and the Dutchess County Transit Development Plan (2009). The Transportation Council has also worked with the Dutchess County Planning Department on a town center plan for Beekman. A summary of each is included below. Complete documents are available on the Transportation Council’s website.

Hopewell Hamlet Pedestrian Plan (2002)

The Hopewell Hamlet Pedestrian Plan was a collaborative effort of the Transportation Council, NYS DOT, the Dutchess County Planning Department, and the Town of East Fishkill.
that sought to improve pedestrian safety and access in the Town’s principal commercial area. The Hopewell Pedestrian Plan included an analysis of existing conditions, focusing on pedestrian safety and access, community aesthetics, and facility maintenance. Specific recommendations included:

1. Install warning devices on Route 82 and 376 to alert approaching drivers to the presence of people walking.
2. Install crosswalks across Route 82 and 376 at major street intersections.
3. Redesign Route 376 into a boulevard.
4. Construct new or rebuilt sidewalks on Route 82 and Route 376.
5. Consider a roundabout at Route 82 and Trinka Lane.
6. Add a new pedestrian connection to the Dutchess Rail Trail, including a multi-use path between the Dutchess Rail Trail and Red Wing Park.

Route 22 Corridor Management Plan (2002)

The Transportation Council, in conjunction with the Harlem Valley Partnership, completed the Route 22 Corridor Management Plan (CMP) in 2002. The plan sought to assist communities and NYSDOT with making decisions about future development, road access, and transportation improvements. The study area covered six communities, including the Town and Village of Pawling, along the entire 40-mile length of Route 22 in Dutchess County, between Putnam and Columbia counties.

The CMP included an inventory of existing conditions related to the transportation system, land use and zoning, and traffic operations, and also a build-out analysis of projected development the potential impacts on travel. The CMP offered transportation and land use recommendations for each community. For the Pawling area, these included the following:

1. Designate greenbelts and use the transfer of development rights to preserve open space.
2. Create a cluster provision or overlay district in the Town to preserve open space.
3. Create a limited access overlay in the Village to limit the number of driveways.
4. Incorporate access management tools into site plan reviews and subdivision regulations.
5. Improve safety at the Route 22/Aikendale Rd. and Route 22/Coulter Ave./Pine St. intersections.
6. Add a pedestrian/bicycle connection via Main St., from Route 22 at CR 67 (Quaker Hill Rd.), to the Pawling Metro-North station.
7. Consider road capacity improvements on Aikendale Rd. and Coulter Ave./Pine St.

Village of Pawling Parking Study (2003)

This Parking Study originated from a request from the Village of Pawling to evaluate downtown parking conditions. The study supported preliminary design work on the federally funded Village Green project adjacent to the Metro-North train station.
The Parking Study determined that there was adequate parking capacity within the Village downtown to support demand. The study recommended that the Village consistently enforce parking laws, provide more information about available parking, and consider developing agreements with private property owners to make parking spaces available to the public. The study also noted that the Village would benefit from improved pedestrian infrastructure, which would encourage visitors to walk greater distances.

**LaGrange Town Center Plan (2005)**

The LaGrange Town Center Plan focused on the area along Route 55 between Freedom Road and Stringham Rd. It recommended redesigning Route 55 with roundabouts at Freedom Rd. and Stringham Rd., sidewalks, a landscaped median, bicycle lanes, on-street parking, street trees, and an interconnected street system south of Route 55, designed to allow people to park once and walk to civic and commercial destinations. The Illustrative Plan was included in the Town’s 2005 Comprehensive Plan.

In 2014 NYSDOT completed a redesign of Route 55 that included three new roundabouts at CR 47 (Freedom Rd.), the Freedom Business Center/LaGrange Town Square, and the Arlington High School entrance. The project included new sidewalks on the north side of Route 55 and the east side of Stringham Rd., and a new landscaped median on Route 55 itself.

**Dutchess County Transit Development Plan (2009)**

The 2009 Dutchess County Transit Development Plan (TDP) included a long term recommendation to create a new fixed bus route to serve the entire Route 22 corridor, from the Town of North East and Village of Millerton, through Amenia and Dover, to the Town and Village of Pawling. The new route would travel between the Pawling Railroad Station and the Village of Millerton along Route 22. The TDP also recommended service to Metro-North Harlem Line stations.

**CR 9 (Beekman Rd.) Safety Assessment (2013)**

In 2013 the Transportation Council completed a Safety Assessment (SA) of CR 9 (Beekman Rd.) from CR 7 (Beekman-Poughquag Rd.) to Route 55 in the Town of Beekman. The Transportation Council, relying on a Team that included representatives from DCDPW, the Dutchess County Sheriff’s Office, Town of Beekman, and NYSDOT, identified low-cost, high-impact improvements to address safety issues related to speeding, narrow lanes and shoulders, horizontal and vertical alignments, limited sight distances, and wet-weather crashes. The SA produced a menu of improvements that ranged from short-term solutions such as installing new warning signs, remarking pavement, and trimming trees to long-term items such as reconfiguring intersections and repaving curves.

**Natural & Historic Resources**

The Transportation Council reviewed natural and historic resource information from the State and County to identify potential constraints relevant to transportation planning in
the Lower Taconic area. This process started with an inventory of 100-year and 500-year floodplains, NYSDEC wetlands, federal, State, and locally designated parklands, agricultural lands, critical environmental areas, and designated historic districts. These resources are shown on the Lower Taconic Natural and Historic Resources Map at the end of this chapter.

**Waterbodies & Watersheds**

The Lower Taconic contains a number of large waterbodies that are 25 acres in size and larger:

1. Town of Beekman: Sylvan Lake (116 acres).
2. Town of East Fishkill: Black Pond (176 acres), Hillside Lake (26 acres), Lake Walton (42 acres).
3. Town of Pawling: Lake Dutchess (51 acres), Green Mountain Lake (35 acres), Little Whaley Lake (52 acres), Nuclear Lake (55 acres), Quaker Lake (64 acres), and Whaley Lake (287 acres).
4. Town of Union Vale: Abel’s Lake (59 acres).

The area also contains a number of major streams:

1. Town of Beekman: Whaley Lake Stream, Whortlekill Creek, Fishkill Creek, and Frog Hollow Brook.
2. Town of East Fishkill: Wiccopee Creek, Fishkill Creek, Sprout Creek, Whortlekill Creek, and Shenandoah Brook.
3. Town of LaGrange: Sprout Creek, Wappinger Creek, and Whortlekill Creek.

4. Town of Pawling: Whaley Lake Stream, Swamp River, Sawmill Brook, Quaker Brook, East Branch Croton River, Deuel Hollow Brook, Burton Brook, and Housatonic River.
5. Town of Union Vale: Fishkill Creek, Mill Brook, Sprout Creek, and Whaley Lake Stream.

Parts of four watersheds lie in the Lower Taconic: the Fishkill Creek watershed, which covers most of Beekman, East Fishkill, and Union Vale, and parts of LaGrange; the Sprout Creek watershed in LaGrange; the Whaley Lake watershed in southern Beekman and eastern Pawling; and the East Branch watershed in northern Pawling. Pawling also includes small sections of three other watersheds that reach into Connecticut.

**Floodplains**

Floodplains make up a moderate percentage of some Lower Taconic communities, as shown in Table 6-3-10. The Village of Pawling has the highest percentage of land area within 100-year and 500-year floodplains in this region, and the Town of East Fishkill ranks second in the county based on acreage of land in 100-year and 500-year floodplains.

Table 6-3-10. Floodplains-Lower Taconic

<table>
<thead>
<tr>
<th>Total Floodplain Acreage</th>
<th>Percent of Land Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Beekman</td>
<td>816</td>
</tr>
<tr>
<td>Town of East Fishkill</td>
<td>4,485</td>
</tr>
</tbody>
</table>
Moving Dutchess 2

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

1. Route 55 in LaGrange (Manchester Bridge area and east of the Taconic State Parkway intersection) and Pawling (near Route 292).
2. Route 82 near the Taconic State Parkway in LaGrange.
3. CR 21 (Noxon Rd.) near the CR 42 (Arthursburg Rd.) intersection in LaGrange.
4. In and around the Route 52 and 376 intersection in East Fishkill.
5. CR 31 (Palen Rd.) south of the Route 376 intersection in East Fishkill.
6. CR 8 (Greenhaven Rd.) south of the CR 9 (Beekman Rd.) intersection in Beekman.
7. CR 21 (Bruzgal Rd.) east of the CR 9 (Clove Rd.) traffic circle in Union Vale.
8. CR 69 (Dutcher Ave.) in the Village of Pawling.

Agriculture & Open Space

The Dutchess County Planning Department’s Centers and Greenspaces Guide identifies suburban development and areas susceptible to suburban development, classified as parcels under five acres that are outside of centers. These areas are concentrated along major road corridors including Route 52, 55, and 376. They are also present in large sections of Beekman, East Fishkill, and LaGrange. The guide also identifies protected and agricultural lands, which are concentrated in Pawling and Union Vale, as well as the eastern portion of Beekman.

The Lower Taconic contains 21,766 acres of land that received agricultural value assessments in 2014. These assessments identify properties that have active farms, nurseries, stables, or other agricultural operations, representing 16 percent of the area’s total land area. Table 6-3-11 shows the total acreage of agricultural assessed lands by municipality and its share of each municipality’s land area.

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Total Agricultural Assessed Acreage</th>
<th>Percent of Land Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Beekman</td>
<td>2,788</td>
<td>14</td>
</tr>
<tr>
<td>Town of East Fishkill</td>
<td>4,161</td>
<td>11</td>
</tr>
<tr>
<td>Town of LaGrange</td>
<td>4,431</td>
<td>17</td>
</tr>
<tr>
<td>Town of Pawling</td>
<td>5,826</td>
<td>21</td>
</tr>
<tr>
<td>Town of Union Vale</td>
<td>4,560</td>
<td>19</td>
</tr>
<tr>
<td>Village of Pawling</td>
<td>112</td>
<td>9</td>
</tr>
</tbody>
</table>

The Lower Taconic also contains almost 36,577 acres of land certified by the NYS Department of Agriculture & Markets designated as Agricultural Districts. These districts are locally designated parcels that currently serve or could serve agricultural purposes. These districts represent 27 percent of...
the area’s total area and include most of the agriculturally assessed lands. Table 6-3-12 shows total agricultural district acreage by municipality and its share of each municipality’s land area.

Table 6-3-12. Agricultural District Acreage-Lower Taconic

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Total Agricultural District Acreage</th>
<th>Percent of Land Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Beekman</td>
<td>4,590</td>
<td>23</td>
</tr>
<tr>
<td>Town of East Fishkill</td>
<td>6,751</td>
<td>18</td>
</tr>
<tr>
<td>Town of LaGrange</td>
<td>6,772</td>
<td>26</td>
</tr>
<tr>
<td>Town of Pawling</td>
<td>8,304</td>
<td>30</td>
</tr>
<tr>
<td>Village of Union Vale</td>
<td>10,160</td>
<td>43</td>
</tr>
<tr>
<td>Village of Pawling</td>
<td>119</td>
<td>9</td>
</tr>
</tbody>
</table>

The Lower Taconic includes five farms that have been protected through the Dutchess County Partnership for Manageable Growth:

1. Abel Tree Farm (188 acres) in Union Vale.
2. Bos Haven Farm (177 acres) in the Towns of Washington and Union Vale.
3. Fishkill Farm (266 acres) in East Fishkill.
4. McIntosh Farm (304 acres) in Beekman.
5. Silver Ledge Farm (402 acres) in East Fishkill.

The Lower Taconic includes five farms that have been protected through the Dutchess County Partnership for Manageable Growth:

1. Dutchess Rail Trail sections (77 acres) in the Towns of East Fishkill and LaGrange.
2. Freedom Park (91 acres) and Stringham Park (69 acres) in LaGrange.
4. Tymor Park (467 acres) in the Towns of Union Vale and Beekman.

**Critical Environmental Areas**

The Lower Taconic includes four locally designated Critical Environmental Areas (CEAs), which are recognized by NYSDEC as having significant impacts on the natural environment:

1. The Great Swamp (Dover, Pawling, and Village of Pawling), located west of Route 22 (benefit to human health).
2. Little Whaley Lake and watershed, east of Route 292 in the Town of Pawling (unpolluted drinking water source).
4. Hurd’s Corner east of Route 22, along Hurds Corner Rd. in the Town of Pawling (significant historical features).

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

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2. Hudson Tributaries: Sites which protect habitat and provide access to stream banks of tributaries, including the Fishkill Creek, Sawmill Creek, Wappinger Creek.
3. Dutchess County’s important agricultural areas: the Sprout Creek Area in the Towns of Washington, Union Vale, and LaGrange; the Clove Valley in the Towns of Union Vale and Beekman; and the Great Swamp area in the Town of Pawling.
4. Appalachian National Scenic Trail: A continuous 2,100-mile trail spanning from Maine to Georgia, including parts in New York State in the towns of Pawling and Dover.

Historic Resources

The Lower Taconic contains the following historic sites:

1. Storm-Adriance-Brinkerhoff House on Beekman Rd. in East Fishkill.
2. Akin Free Library on Market St. in the Town of Pawling.
4. John Kane House on East Main St. in the Village of Pawling.
5. Beekman Meeting House on Emans Rd. in LaGrange.
6. Oswego Meeting House and Cemetery on Oswego Rd. in Union Vale.

Transportation Needs

Based on a review of local comprehensive plans, previous Transportation Council studies, and transportation system data, the Transportation Council identified a series of transportation needs in the Lower Taconic. These needs were reviewed and revised at a Lower Taconic public workshop. The revised list of needs includes the following items:

Highway Maintenance

Multiple Municipalities
1. Inventory pavement conditions on local streets and repave based on condition ratings.

Reconstruct the following road segments rated as poor under NYSDOT standards:

1. Route 52 from Corporate Park Rd. to Fishkill town line in East Fishkill (0.4 miles).
2. Route 216 in the Town of Beekman (six miles).
3. Route 376/Route 82 overlap in Hopewell Junction (East Fishkill) (0.1 miles).
4. Taconic State Parkway from CR 9 (Beekman Rd.) to north of CR 52 (Carpenter Hill Rd.) in East Fishkill (1.5 miles both directions).
5. Repave Route 292 from Route 55 to CR 30 (Holmes Rd.) in Pawling (6 miles).
6. Old Route 55 in the Town of Pawling from Route 55 to the Village of Pawling line.

Bridge Maintenance

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

1. Route 52 over Wicopee Creek (BIN 1026850) in East Fishkill.
2. Route 82 over the Metro-North Railroad Maybrook Line (BIN 1032300) in Hopewell Junction (East Fishkill).
3. CR 21 (Noxon Rd.) over Jackson Creek (BIN 3343270) in LaGrange.
4. CR 21 (E. Noxon Rd.) over Jackson Creek (BIN 3370340) in LaGrange.
5. CR 21 (Bruzgal Rd.) over Fishkill Creek (BIN 3343920) in Union Vale.
6. CR 21 (Bruzgal Rd.) over Fishkill Creek (BIN 3343930) in Union Vale.
7. CR 43 (Degarmo Rd.) over Wappinger Creek (BIN 3358440) in LaGrange (Poughkeepsie town line).
8. Lime Kiln Rd. over I-84 (BIN 1032550) in East Fishkill.
9. Phillips Rd. over Fishkill Creek (BIN 3343110) in East Fishkill.
10. West Main St. over Pawling Creek (BIN 2223040) in the Village of Pawling.

Based on available funding, the following low-volume, structurally deficient or NYSDOT deficient bridges should be repaired or closed:

1. Stormville Rd. over Fishkill Creek (BIN 3343100) in East Fishkill (rated as rated structurally deficient, with a 2014 AADT of 200)
2. Freedom Park Entrance Rd. over Sprout Creek (BIN 2262870) in LaGrange (NYSDOT rating of 3.6, with a 2009 AADT of 80).

**Highway Operations**

**Multiple Municipalities**

1. Limit the number of access points on State and County roads and require new commercial developments to share driveways and to internally link circulation or service roads between adjacent parcels.

**Town of Beekman**

1. Add left turn lanes on Route 55 at CR 9 (Beekman Rd.), both eastbound and westbound, to improve traffic operations.
2. In conjunction with implementation of the Beekman Town-Center District Official Map, and future mixed-use/commercial developments, explore the feasibility of a roundabout on Route 55 at CR 9 (Beekman Rd.).
3. Address traffic issues on CR 7 (Beekman-Poughquag Rd.) during special events.

**Town of East Fishkill**

1. Redesign Route 82 in Hopewell Junction into a boulevard, to include possible roundabouts at the Route 82/376, Route 82/Unity Plaza and Route 82/Trinka Ln. intersections. In the interim, better coordinate traffic signal timings on Route 82/376 in Hopewell Junction.
2. Reconstruc the intersection of Route 376/Robinson Ln./Lake Walton Rd., to include consideration of a new roundabout along with pedestrian improvements.

3. Install a right-turn lane on Route 52 westbound at the Route 376 intersection.

Town & Village of Pawling

Safety

Town of Beekman
1. Add turn lanes on Route 55 at the Gardner Hollow Rd. intersection.

2. Vertically and horizontally realign CR 9 (Beekman Rd.) from Route 55 to the Taconic State Parkway to improve safety. In the interim, implement the following short-range recommendations from the CR 9 (Beekman Rd.) Safety Assessment:
   - Increase speed enforcement by the Dutchess County Sheriff’s Office.
   - Install shoulder backup material, and where possible, widen shoulders to four feet.
   - Improve drainage at the CR 7 (Beekman-Poughquag Rd.) by removing existing ditch and redirecting run-off to adjacent drainage facilities. Replace ditch with a shallower asphalt swale or concrete gutter.

3. Increase enforcement of the “no left turn” restriction from Route 55 northbound into the Stop & Shop supermarket.

Town of East Fishkill
1. Install warning devices on Routes 82, Lake Walton Rd. and Route 376 to alert drivers of pedestrians. Also install warning devices at WRS Dutchess Rail Trail crossings.

2. Install deceleration and acceleration lanes from Carpenter Rd. onto the Taconic State Parkway (northbound and southbound).

3. Reconfigure the Route 376/Clove Branch Rd./Hillside Lake Rd. intersection to improve sight distances.

4. Realign Route 376 in Hopewell Junction to eliminate the two 90-degree curves at Railroad Ave. and near Oak St.
**Moving Dutchess 2**

**Town of LaGrange**
1. Install left turning lanes on Route 82 at the Route 55 intersection.

**Town & Village of Pawling**
1. Evaluate ways to improve safety at the Route 22/Route 55 interchange; possibly lengthening acceleration lanes, improving sight distance, and adding signage.
2. Explore ways to improve safety at key intersections, including Route 22 at Coulter Ave. and at Quaker Hill Rd., along West and East Main St., and Route 55 at Aikendale Rd. and Dutcher Ave.

**Town of Union Vale**
1. Evaluate the possibility of extending the 45 mile per hour speed limit on Route 82 (currently between North Clove Rd. and Camby Rd.) through the hamlet of Verbank to Milewood Rd./Verbank Village Rd. or further south.
2. Realign the Route 55/CR 21 (Bruzgul Rd.)/South Parliman Rd. intersection to improve safety and operations.

**Transit**
1. Promote demand response transit service to the Lower Taconic communities, especially for the elderly and disabled.
2. Expand DCPT fixed route service throughout Lower Taconic communities, including possibly Sunday service.
3. Provide bus shelters at scheduled DCPT time-stops.
4. Promote tourism through special DCPT bus routes.

**Sidewalks/Pedestrian Facilities (including ADA projects)**

**Town of Beekman**
1. Promote and encourage a safe and contiguous system of sidewalks, bike trails and pathways throughout the Beekman Town center, and connect the Town center to the Town Recreation Center.
2. Improve pedestrian crossings at intersections, especially at the Route 55/CR 9 (Beekman Rd.) intersection.
3. Consider adding a pedestrian warning sign on CR 9 (Beekman Rd.) by St. Denis Church to slow approaching traffic.

**Town of East Fishkill**
1. Repair State-owned, non-ADA compliant sidewalks and ramps on Route 376 in Hopewell Junction.
2. In Hopewell Junction, install sidewalks and fill sidewalk gaps on Route 376 between the Dutchess Rail Trail and the Hopewell recreation center, Town library and Town Hall.
3. Install sidewalks on the south side of Route 82 from Route 376 west to Trinka Ln.; install crosswalks across Route 82 and 376 at major intersections, along with signage, flashing beacons, or other warning devices as needed; provide a paved path between the Unity Plaza shopping center and the Hopewell Glen housing development on Fishkill Rd., using the existing trail behind the plaza.
4. Evaluate the feasibility of installing a sidewalk and crosswalks on Route 376 between the Dutchess Rail Trail and Van Wyck Junior H.S.
5. Incorporate sidewalks and pedestrian crossings into planned improvements at the Route 376/Lake Walton Rd./Robinson Ln. intersection.
6. Provide a wider shoulder (four foot minimum) and consider a sidewalk on Lake Walton Rd. between the Dutchess Rail Trail and Route 376. Extend wider shoulders south of the rail trail on Lake Walton Rd. where feasible.

Town of LaGrange
1. In the LaGrange Town center, fill in sidewalk gaps on the south side of Route 55 to connect the businesses around Freedom Rd. to Stringham Rd.; install sidewalks on Regnault Ln. (in front of Arlington High School) between the school entrance and Dr. Fink Rd., and on Dr. Fink Rd. between Regnault Ln. and Freedom Rd.; extend the sidewalk on Stringham Rd. south to connect the Hannaford supermarket to LaGrange M.S. and Stringham Park.

Town of Pawling
1. Evaluate the feasibility of installing sidewalks or walking paths along Route 292 and CR 30 (Holmes Rd.) within about a half-mile of the Route 292/CR 30 intersection, and increase shoulder widths where possible.
2. Provide pedestrian access to the Pawling Middle and High schools: install a sidewalk on Reservoir Rd. between Route 22 and the schools at Wagner Dr.; extend the sidewalk along Wagner Dr. to connect to the existing sidewalks at the schools’ entrances; mark a crosswalk across Wagner Dr. at Reservoir Rd. and across driveways on Wagner Dr. as needed; extend the existing sidewalk on the west side of Route 22 (which ends at the north boundary of the cemetery north of Coulter Ave.) to the pedestrian overpass and then to Reservoir Rd. along the east side of Route 22, or create a sidewalk on the east side of Route 22 between Coulter Ave. and Reservoir Rd.; and mark crosswalks at the Route 22/Reservoir Rd. intersection as needed to connect the sidewalks on Route 22 and Reservoir Rd.

In conjunction with a planned sewer extension project, construct sidewalks or a shared-use path along Route 22 between Quaker Hill Rd./East Main St. and the Hannaford grocery store at Akindale Rd., connecting to the senior housing at the Castagna development on Route 22, and designate crossings on Route 22 at East Main St./CR 67 (Quaker Hill Rd.) with marked crosswalks and pedestrian signals.

Town of Union Vale
1. Mark a crosswalk across Flint Rd. to The Fountains senior living residence and provide appropriate pedestrian-related signage.
2. Consider a high-visibility crosswalk and/or other improvements to increase safety for people crossing Route 82 to Godfrey Park.

Village of Pawling
1. Add a pedestrian/bicycle connection from Route 22 at Quaker Hill Rd. to the Pawling Train Station via Main St.
2. Install a sidewalk on Lakeside Dr., connecting the Pawling Village Center with Town parks and ballfields.
Multi-use Trails & Bicycle Facilities

1. Widen shoulders on Route 82 east of Hopewell Junction in East Fishkill, LaGrange, and Union Vale to a consistent four foot minimum, improve shoulder pavement quality, and consider signage and other bicycle safety improvements, particularly in Hopewell Junction.
2. Provide consistent wide shoulders (six feet where feasible) along Route 55 between Poughkeepsie and Pawling.
3. Widen shoulders on Route 376 in East Fishkill, between CR 29 (Hillside Lake Rd.) and Secor Ln., to a consistent four foot minimum, and improve road and shoulder maintenance, including pavement repair and brush clearing.
4. Widen shoulders on Route 22 in Pawling to provide safe access for bicycling, and install appropriate signage to encourage safe sharing of the road.
5. Add paved shoulders (four foot minimum) on CR 20 (West Dover Rd.) between the apartments off of Kings Way and the Pawling Village line.
6. Evaluate the feasibility of constructing a shared-use path (such as an elevated boardwalk) along CR 69 (Dutcher Ave.) between W. Main St. in the Village of Pawling and Route 55 in the Town of Pawling, and construct if feasible.
7. Work with MTA/Metro-North to create a rail trail along the Beacon rail line from Hopewell Junction through Beekman and Pawling to Putnam County, connecting the Dutchess Rail Trail to the Putnam County Trailway and the North County Trailway in Westchester.
8. Work with Putnam County to create a bicycle connection between the Putnam Trailway in Carmel/Brewster and the Harlem Valley Rail Trail via the Beacon rail line and/or Route 312 and Route 22. Alternatively, create an on-road signed bicycle connection using Old Route 6, John Simpson Rd., Fair St., and Route 311 to Route 22.

Travel Demand Management

1. Promote employee-sponsored and privately arranged ride sharing opportunities in the Lower Taconic area.
2. Renovate and expand existing park-and-ride lots on CR 27 (Lime Kiln Rd.) near I-84, and Route 52 near the Taconic State Parkway. In addition, establish a second park-and-ride lot near the existing lot at the Taconic State Parkway and Route 52 in East Fishkill.

Planning Studies

1. Complete a sidewalk inventory and sidewalk improvement strategy for the Village of Pawling.
2. Analyze speed patterns on County and local roads, using speed data from the PDCTC’s traffic count program. Identify corridors with high percentages of ‘high-end’ speeders (e.g., 10 mph or more over the posted speed limit) and develop engineering, enforcement, and educational approaches to reduce speeding.

Survey Summary

Of the more than 900 respondents to the Moving Dutchess 2 survey, 114 were residents of Lower Taconic communities. This section summarizes their responses to the survey.
In terms of making Dutchess County a great place to live, Upper Taconic residents prioritized the protection of air and water quality, and preservation of natural areas, habitats, and farmland as the most important issues. Major issues related to driving identified by residents included the poor condition of roads and bridges; the lack of sidewalks and crosswalks; the poor condition of existing sidewalks, the lack of bicycle lanes and road shoulders, and the limited frequency of bus service.

When asked how well the transportation system meets your needs, the most common response was ‘fair’ (38 percent), followed by ‘good’ (28 percent and ‘not good’ (16 percent). When asked about the ease of getting places you usually have to go, the most common response was ‘good’ (42 percent), followed by ‘fair’ (29 percent) and ‘not good’ (12 percent).

Over 96 percent of respondents sometimes or often walked for transportation; 81% sometimes or often used the train for transportation; 29 percent sometimes or often bicycled for transportation; and 21 percent sometimes or often used the bus for transportation.

Major barriers for walking included the distance to destinations (78 percent) and lack of sidewalks (63 percent); for bicycling, inadequate shoulders, bike lanes and paths (68 percent) and distance to destination (48 percent); for bus transit, the inability of the bus to go where they wanted (50 percent); and for train transit, the high cost (41 percent). The survey also indicated that 21 percent of Lower Taconic households had members who depended on transit or rides from others.

With regard to travel modes, the survey asked residents to recall their trips over the past week and categorize them based on their destination and mode (drive alone, carpool, walk, bike, bus or other). Based on responses from residents in the Lower Taconic, about 82 percent of trips were driven-alone; nine percent were by carpool; three percent were made by walking; three percent by bus; and two percent by biking. Most drive-alone trips were for work or school, followed by shopping, making appointments, and socializing/recreation; most walk trips were for socializing or recreation, followed by work/school; most carpool trips were for socializing or recreation; most bus trips were for work or school; and most bike trips were for socializing or recreation.

Only 35 percent of respondents from the Lower Taconic indicated that they had not travelled outside Dutchess County in the preceding month. Of those that had, the majority travelled to either Putnam or Westchester County (65 and 64 percent respectively), or Connecticut (61 percent). To reduce congestion, 39 percent of residents recommended improving public transportation followed by 30 percent in support of more highway capacity and 20 percent for creating communities that were less reliant on driving. 96 percent of residents felt that highway congestion was a current or emerging problem in the Lower Taconic, closely matched by 93 percent who felt that the condition of roads was also a current or emerging problem.

Reference future land use, 81 percent of respondents thought that most development should be within cities, town centers,
and villages using vacant or underutilized land. There was similarly strong support (77 percent) for closely-spaced housing and buildings with sidewalks, even if that meant smaller homes and yards and less parking. Over 65 percent of respondents said that infrastructure and services should be expanded primarily in and around existing town and village centers.

Residents’ top three investment priorities for the next 5-10 years were maintaining roads, improving roads, and transportation services for seniors and disabled persons. When asked what they would support with tax dollars, residents said walking and bicycling improvements (48 percent), followed by curb-to-curb bus services for seniors and disabled persons (40 percent). 89 percent of respondents opposed or strongly opposed any property tax increase to fund transportation improvements; however, 45 percent supported increasing vehicle registration fees or increased tolls as possible funding mechanisms.

About 78 percent of Lower Taconic households used two or more cars on a daily basis, while 22 percent used one car. None of the respondents reported not using a car on a daily basis. Most residents (59 percent) who commuted to work lived within 6-20 miles of their job.

Demographics: Most respondents lived in the Town of LaGrange (34 percent) and Town of East Fishkill (31 percent). Others lived the towns of Beekman (12 percent), Pawling (12 percent), and Union Vale (eight percent). 48 percent were aged 45-64, 27 percent aged 65 and over, 19 percent aged 25-44, and six percent under 24. 53 percent of respondents were female, and 47 percent male.

A number of respondents provided direct comments about transportation conditions and issues. Many of these comments related to the need to identify another funding mechanism besides taxes to maintain the system. Some noted the benefits of roundabouts at congested intersections, the need for better shoulders for bicycling, new sidewalks to promote walking, and more regular bus service.

**Transportation Priorities**

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

**Highway Maintenance**

Multiple Municipalities
1. Inventory pavement conditions on local streets and repave based on condition ratings.

Reconstruct the following road segments rated as poor under NYSDOT standards:

1. Route 52 from Corporate Park Rd. to Fishkill town line in East Fishkill (0.4 miles).
2. Route 216 in the Town of Beekman (six miles).
3. Route 376/Route 82 overlap in Hopewell Junction (East Fishkill) (0.1 miles).
Moving Dutchess 2

4. Taconic State Parkway from CR 9 (Beekman Rd.) to north of CR 52 (Carpenter Hill Rd.) in East Fishkill (1.5 miles both directions).
5. Repave Route 292 from Route 55 to CR 30 (Holmes Rd.) in Pawling (6 miles).
6. Old Route 55 in the Town of Pawling from Route 55 to the Village of Pawling line.

Inventory pavement conditions on local streets and repave based on condition ratings.

Bridge Maintenance

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

1. Route 52 over Wicopee Creek (BIN 1026850) in East Fishkill.
2. Route 82 over the Metro-North Railroad Maybrook Line (BIN 1032300) in Hopewell Junction (East Fishkill).
3. CR 21 (Noxon Rd.) over Jackson Creek (BIN 3343270) in LaGrange.
4. CR 21 (E. Noxon Rd.) over Jackson Creek (BIN 3370340) in LaGrange.
5. CR 21 (Bruzgal Rd.) over Fishkill Creek (BIN 3343920) in Union Vale.
6. CR 21 (Bruzgal Rd.) over Fishkill Creek (BIN 3343930) in Union Vale.
7. CR 43 (Degarmo Rd.) over Wappinger Creek (BIN 3358440) in LaGrange (Poughkeepsie town line).
8. Lime Kiln Rd. over I-84 (BIN 1032550) in East Fishkill.
9. Philips Rd. over Fishkill Creek (BIN 3343110) in East Fishkill.
10. West Main St. over Pawling Creek (BIN 2223040) in the Village of Pawling.

Highway Operations

1. Limit the number of access points on State and County roads and require new commercial developments to share driveways and to internally link circulation or service roads between adjacent parcels.
2. Implement the Beekman Town Center District Official Map, which identifies new roads and access roads with crossroad connections. Also consider installing sidewalks and traffic calming measures such as bump-outs, and signage, along with mixed-use development and community space, as described in the Town’s Comprehensive Plan.
3. Redesign Route 82 in Hopewell Junction (East Fishkill) into a boulevard and explore the possibility of installing roundabouts at the Route 82/376 intersection, Route 82/Unity Plaza entrance, and Route 82/Trinka Ln. intersections. In the meantime, better coordinate traffic signal timings on Route 82 to reduce traffic congestion in Hopewell Junction.
4. Reconstruct the intersection of Route 376/Robinson Ln./Lake Walton Rd. in East Fishkill as a roundabout with pedestrian crossings and other improvements.
5. Install a right-turn lane on Route 52 westbound at the Route 376 intersection in East Fishkill.

Chapter 6-3: Lower Taconic Overview
6. Add left turn lanes on Route 55 at CR 9 (Beekman Rd.), both eastbound and westbound, to improve through capacity and safety. Also explore the possibility of a roundabout.

**Sidewalks/Pedestrian Facilities (including ADA projects)**

1. Repair State-owned, non-ADA compliant sidewalks and ramps on Route 376 in Hopewell Junction.
2. In Hopewell Junction (East Fishkill), install sidewalks and fill sidewalk gaps on Route 376 between the Dutchess Rail Trail and the Hopewell recreation center, Town library, and Town Hall, and extend to the Hopewell Garden apartments and Gayhead Elementary School entrance; install sidewalks on the east side of Route 82 from Route 376 west to Trinka Ln.; install crosswalks across Route 82 and 376 at major intersections, along with signage, flashing beacons, or other warning devices as needed; provide a paved path between the Unity Plaza shopping center and the Hopewell Glen housing development on Fishkill Rd., using the existing trail behind the plaza.
3. In the LaGrange Town center, fill in sidewalk gaps on the south side of Route 55 to connect the businesses around Freedom Rd. to Stringham Rd.; install sidewalks on Regnault Ln. (in front of Arlington High School) between the school entrance and Dr. Fink Rd., and on Dr. Fink Rd. between Regnault Ln. and Freedom Rd.; extend the sidewalk on Stringham Rd. south to LaGrange Middle School.
4. In conjunction with a planned sewer extension project, construct sidewalks or a shared-use path along Route 22 between Quaker Hill Rd./East Main St. and the Hannaford grocery store at Akindale Rd. in the Town of Pawling, connecting to the senior housing at the Castagna development on Route 22, and designate crossings on...
Route 22 at East Main St./CR 67 (Quaker Hill Rd.) with marked crosswalks and pedestrian signals.

**Multi-use Trails & Bicycle Facilities**

1. Widen shoulders on Route 82 east of Hopewell Junction in East Fishkill, LaGrange, and Union Vale to a consistent four foot minimum, improve shoulder pavement quality, and consider signage and other bicycle safety improvements, particularly in Hopewell Junction.
2. Provide consistent wide shoulders (four feet) along Route 55 between Poughkeepsie and Pawling.
3. Widen shoulders on Route 376 in East Fishkill, between CR 29 (Hillside Lake Rd.) and Secor Ln., to a consistent four foot minimum, and improve road and shoulder maintenance, including pavement repair and brush clearing.
4. Widen shoulders on Route 22 in Pawling to provide safe access for bicycling, and install appropriate signage to encourage safe sharing of the road.
5. Add paved shoulders (four foot minimum) on CR 20 (West Dover Rd.) between the apartments off of Kings Way and the Pawling Village line.

**Travel Demand Management**

1. Establish a second park-and-ride lot near the existing lot at the Taconic State Parkway and Route 52.
2. Promote employee-sponsored and privately arranged ride sharing programs.

**Planning Studies**

1. Complete a sidewalk inventory and sidewalk improvement strategy for the Village of Pawling.
2. Analyze speed patterns on County and local roads, using speed data from the PDCTC’s traffic count program. Identify corridors with high percentages of ‘high-end’ speeders (e.g., 10 mph or more over the posted speed limit) and develop engineering, enforcement, and educational approaches to reduce speeding.
Chapter 6-4

Upper Taconic Overview

Moving Dutches 2 defines the Upper Taconic area as the north-central communities located along the Taconic State Parkway and Route 82 corridors, encompassing the Towns of Clinton, Milan, Pine Plains, Pleasant Valley, Stanford, and Washington, and the Village of Millbrook. The Upper Taconic represents about 247 square miles and 27,400 people: over 30 percent of the county’s land area, but only nine percent of the county’s total population.

The seven Upper Taconic communities share demographic, land use, and transportation characteristics that are similar in nature. They are the most rural of the five planning areas and have had the lowest rates of population change over the past two decades. The Upper Taconic communities share characteristics such as low population densities, above-average median household incomes, an above average number of estate and farm parcels, and long travel distances to regional shopping centers. These shared characteristics make it likely that the area will face similar transportation and land use challenges in the future.

Demographics

The Upper Taconic communities had a 2010 population of 23,079. This was a 4.2 percent increase over 2000, an approximate growth rate of 0.4 percent annually from 2000-2010. The Upper Taconic’s population growth was lower than Dutchess County’s overall 6.2 percent increase. The Towns of Stanford and Clinton had the highest rates of growth in the area, while the Towns of Pine Plains and Washington lost population. Table 6-4-1 shows population change from 2000-2010 for the Upper Taconic communities.

Table 6-4-1. Total Population—Upper Taconic (2000-2010)

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Clinton</td>
<td>4,010</td>
<td>4,312</td>
<td>7.5</td>
</tr>
<tr>
<td>Town of Milan</td>
<td>2,356</td>
<td>2,370</td>
<td>0.6</td>
</tr>
<tr>
<td>Town of Pine Plains</td>
<td>2,569</td>
<td>2,473</td>
<td>-3.7</td>
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<tr>
<td>Town of Pleasant Valley</td>
<td>9,066</td>
<td>9,672</td>
<td>6.7</td>
</tr>
<tr>
<td>Town of Stanford</td>
<td>3,544</td>
<td>3,823</td>
<td>7.9</td>
</tr>
<tr>
<td>Town of Washington</td>
<td>3,313</td>
<td>3,289</td>
<td>-0.7</td>
</tr>
<tr>
<td>Village of Millbrook</td>
<td>1,429</td>
<td>1,452</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2010 Census

In 2010 the Upper Taconic had a population density of approximately 110 persons per square mile, which was markedly less than the county’s overall density of 374 persons per square mile. The Town of Milan, with a density of 66 persons per square mile, had the lowest in the county. The Village of Millbrook was the most densely populated community in the Upper Taconic, with 752 people per square mile. Population density information is shown on the Upper Taconic Population Density Map at the end of this chapter. Potential future population density patterns are shown in the Upper Taconic 2040 Buildout Analysis: Existing Zoning Scenario and Centers and Greenspaces Scenario maps.

The Upper Taconic contained 11,782 housing units in 2010, a 12.1 percent increase from 2000. The area averaged a gain of
127 housing units each year from 2000-2010. The area had 11,481 households (occupied housing units) in 2010, with an average household size of two persons per household, which was lower than the 2.2 reported in 2000. Table 6-4-2 shows housing unit totals for the Upper Taconic communities.

Table 6-4-2. Total Housing Units-Upper Taconic (2000-2010)

<table>
<thead>
<tr>
<th>Town</th>
<th>2000</th>
<th>2010</th>
<th>Percent Change</th>
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<tbody>
<tr>
<td>Town of Clinton</td>
<td>1,734</td>
<td>1,915</td>
<td>10.4</td>
</tr>
<tr>
<td>Town of Milan</td>
<td>1,090</td>
<td>1,279</td>
<td>17.3</td>
</tr>
<tr>
<td>Town of Pine Plains</td>
<td>1,161</td>
<td>1,284</td>
<td>10.6</td>
</tr>
<tr>
<td>Town of Pleasant Valley</td>
<td>3,614</td>
<td>4,049</td>
<td>12.0</td>
</tr>
<tr>
<td>Town of Stanford</td>
<td>1,712</td>
<td>1,913</td>
<td>11.7</td>
</tr>
<tr>
<td>Town of Washington</td>
<td>2,192</td>
<td>2,459</td>
<td>12.2</td>
</tr>
<tr>
<td>Village of Millbrook</td>
<td>744</td>
<td>798</td>
<td>7.3</td>
</tr>
</tbody>
</table>

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

Table 6-4-3. Percent Young and Elderly-Upper Taconic (2010)

<table>
<thead>
<tr>
<th></th>
<th>% 16 and Under</th>
<th>% 65 and Over</th>
<th>Total % Under 16 and 65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Clinton</td>
<td>19</td>
<td>15</td>
<td>34</td>
</tr>
<tr>
<td>Town of Milan</td>
<td>19</td>
<td>15</td>
<td>34</td>
</tr>
<tr>
<td>Town of Pine Plains</td>
<td>18</td>
<td>17</td>
<td>35</td>
</tr>
<tr>
<td>Town of Pleasant Valley</td>
<td>20</td>
<td>12</td>
<td>32</td>
</tr>
<tr>
<td>Town of Stanford</td>
<td>18</td>
<td>14</td>
<td>32</td>
</tr>
<tr>
<td>Town of Washington</td>
<td>18</td>
<td>19</td>
<td>37</td>
</tr>
<tr>
<td>Village of Millbrook</td>
<td>17</td>
<td>23</td>
<td>40</td>
</tr>
<tr>
<td>Dutchess County</td>
<td>19</td>
<td>14</td>
<td>33</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2010 Census

**Income**

Lower-income households are also more likely to walk, bicycle and use transit for everyday needs. Based on data from the U.S. Census Bureau’s 2009-2013 5-year American Community Survey, the Town of Pine Plains (at $59,613-$69,733) was the only Upper Taconic community that had a median household income below the county average of $71,192-$73,858.

**Vehicle Ownership**

Households without a motor vehicle are much more likely to seek alternative transportation. Based on data from the U.S. Census Bureau’s 2009-2013 5-year American Community Survey, none of the municipalities in the Upper Taconic had zero-vehicle household rates above the county average of 7.9-8.9 percent.
Centers & Destinations

Land use in the Upper Taconic is mainly agricultural and residential with some industrial and commercial uses interdispersed among large areas of open space. Except for the Town of Pleasant Valley, many activity centers are located at historic crossroads. The Upper Taconic Overview Map at the end of this chapter shows key centers and destinations in the area.

Centers

The Dutchess County Centers and Greenspaces Guide has identified existing centers in the Upper Taconic area. These centers have a mix of residential and commercial uses that generally follow the county’s historic pattern of development. Most existing centers are located along State roads, with the exception of four centers in the Town of Clinton, which are located along County highways.

The Upper Taconic area includes the following activity centers:

1. Pleasant Valley Town center.
2. Salt Point hamlet in Pleasant Valley.
3. Millbrook Village center
4. Pine Plains hamlet (town center)

Destinations

Major travel destinations in the Upper Taconic primarily include educational facilities and government centers. These sites are specific points along the road network that generate vehicle trips, and, therefore, higher traffic volumes. Many are located outside of existing centers. The Upper Taconic includes the following major destinations:

1. Stissing Mountain Sr./Jr. High School
2. Millbrook High School
3. Cary Institute of Ecosystem Studies in Millbrook
4. Dutchess County Farm and Home Center in Washington
5. Eastern Dutchess Government Center in Washington
6. Commercial shopping plazas on Route 44
7. Dutchess Quarry & Supply on CR 72 (North Ave.) in Pleasant Valley

Major Projects

The Transportation Council’s 2013 Major Projects Report, which tracks large projects in the county, identified over 1,000 new residential units in the planning stages or under construction in the area’s seven communities. In addition, 48,000 square feet of non-residential space was also being planned for the area. Some of the larger projects in the area include the following:

1. Carvel Property Development in Pine Plains and part of Milan: 642 residential units and recreational space on 2,375 acres on Ferris Ln.
2. Stissing Farm Development in Pine Plains: 49 senior condo/townhouse units and 10,000 sq. ft. office/retail on 15 acres on Route 199.
3. Salt & Highway Equipment Storage in Pleasant Valley: 18,000 sq. ft. industrial on 8 acres on CR 73 (Sherow Rd.).
4. Taconic Homes in Pleasant Valley: 252 condo/townhouse units on 72 acres on Route 44.

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

**Transportation System**

The Upper Taconic’s transportation system is road based with limited access to public bus and train service. Some locations are served by pedestrian or bicycle facilities.

**Roads**

The Upper Taconic’s road system includes major State highways such as the Taconic State Parkway and Route 44, smaller State highways including Routes 82, 115, and 199, and County routes including CR 14 (Hollow Rd.), CR 16 (South Quaker Ln), CR 19 (Bulls Head Rd.), CR 47 (Freedom Rd.), CR 71 (West Rd.), CR 72 (North Ave.), and CR 73 (Sherow Rd.).

According to the NYSDOT 2013 Highway Mileage Report, the Upper Taconic communities contained 579 miles of State, County, and local roads. Table 6-4-4 shows the distribution of centerline mileage in the Upper Taconic communities.

<table>
<thead>
<tr>
<th>Town of Clinton</th>
<th>101</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Milan</td>
<td>89</td>
</tr>
<tr>
<td>Town of Pine Plains</td>
<td>63</td>
</tr>
<tr>
<td>Town of Pleasant Valley</td>
<td>104</td>
</tr>
<tr>
<td>Town of Stanford</td>
<td>103</td>
</tr>
<tr>
<td>Town of Washington</td>
<td>106</td>
</tr>
<tr>
<td>Village of Millbrook</td>
<td>13</td>
</tr>
</tbody>
</table>

NYSDOT measures pavement condition based on a scale of 1 to 10, with 1 being the worst and 10 the best. A rating of 5 or less is classified as poor. According to the NYSDOT 2014 Pavement Data Report, State-owned highways in the Upper Taconic had an average surface rating of 6.7.

The following State route segments in the Upper Taconic were identified as being in poor condition (score of 5 or less). Their combined length is approximately 6.4 miles:

1. Route 199 in Pine Plains: Mt. Ross Rd. to Cedar Knolls (0.75 miles) and Finkle Rd. to the North East Town line (1.0 mile).
2. Route 82 in Stanford: Carriage Way to Stissing Rd. (2.5 miles) and a 0.4 mile road segment north of Attlebury Hill Rd.
3. Route 44 in Washington: Deep Hollow Rd. to the North East Town line (1.7 miles).

In addition, DCDPW rates the condition of County-owned roads each year. According to 2014 data, no County roads in
the Upper Taconic were in poor condition. The Upper Taconic Bridge and Pavement Conditions Map at the end of this chapter shows pavement conditions in the Upper Taconic.

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

1. Route 44 in Pleasant Valley: 15,300
2. Route 44 in Washington: 10,100
3. Taconic State Parkway in Pleasant Valley: 9,700
4. Taconic State Parkway in Clinton: 9,100
5. Taconic State Parkway in Milan: 9,000
6. CR 71 (West Rd.) in Pleasant Valley: 8,200
7. Route 9G in Clinton: 7,600
8. Route 82 in Washington: 6,000
9. Route 199 in Milan: 6,000
10. Route 82 in Pleasant Valley: 5,900
11. CR 72 (North Ave.) in Pleasant Valley: 5,400
12. Franklin Ave. (Route 44) in Millbrook: 4,900

Traffic volumes in the Upper Taconic are shown on the Traffic Volume Analysis map.

**Congestion Management Process (CMP)**

The Transportation Council completed a CMP Step 2 report in 2006, which identified roadway locations with severe, heavy, and moderate peak hour congestion. Severe congestion was defined as locations where volume exceeds capacity in the weekday peak hour (4:00-5:00 p.m.), based on the Council’s Travel Demand Model. The Upper Taconic area does not contain any roads with a vehicle-to-capacity ratio of 0.8 or higher, and therefore no road segments were identified as having measurable congestion during peak periods.

The 2011 Travel Time Survey elaborated on the Step 2 report data by collecting travel time data on key routes during morning, mid-day, evening, and weekend periods. Based on the data collected, the following routes in the Upper Taconic experienced congestion:

1. Route 44 between CR 71 (West Rd.) and CR 47 (Freedom Rd.):
   - Westbound: AM, Mid-Day, PM, and Saturday
2. Route 44 between CR 71 (West Rd.) and CR 72 (North Ave.):
   - Westbound: AM, Mid-Day, PM, and Saturday

The survey also showed that during the mid-day peak, westbound traffic from the Taconic State Parkway to CR 46 (Freedom Rd.) was approaching congestion.

The Transportation System Performance Maps in Chapter 5 show travel time data by roadway segment.

**Bridges**

The Upper Taconic transportation system includes 73 road bridges, defined as a bridge structure with a span longer than 20 feet. NYSDOT rates bridge condition on a scale of 1 to 7, with 7 being “new” and a rating of 5 or greater considered...
“good.” In 2014 the Upper Taconic bridges collectively had an average NYSDOT condition rating of 5.0. NYSDOT defines a deficient bridge as one with a State condition rating of less than 5. A deficient condition rating indicates deterioration to a level that requires corrective maintenance or rehabilitation to restore the bridge to a fully functional, non-deficient condition; it does not imply that the bridge is unsafe. The Upper Taconic has 39 bridges that are classified as deficient under the NYSDOT rating system. Table 6-4-5 lists the number of bridges by municipality and their average State rating.

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

Table 6-4-5. Average Bridge Ratings-Upper Taconic

<table>
<thead>
<tr>
<th>Town of Clinton</th>
<th>18</th>
<th>5.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Milan</td>
<td>12</td>
<td>5.3</td>
</tr>
<tr>
<td>Town of Pine Plains</td>
<td>7</td>
<td>4.7</td>
</tr>
<tr>
<td>Town of Pleasant Valley</td>
<td>11</td>
<td>5.0</td>
</tr>
<tr>
<td>Town of Stanford</td>
<td>14</td>
<td>4.8</td>
</tr>
<tr>
<td>Town of Washington</td>
<td>9</td>
<td>5.0</td>
</tr>
<tr>
<td>Village of Millbrook</td>
<td>2</td>
<td>4.9</td>
</tr>
</tbody>
</table>

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

“Functionally obsolete” refers to a bridge’s inability to meet current standards for managing the volume of traffic it carries, not its structural integrity. A bridge may be “functionally obsolete” if it has narrow lanes, no shoulders, or low clearances.

The Upper Taconic has 19 bridges classified as structurally deficient and eight classified as functionally obsolete by FHWA. The number of each by municipality is listed in Table 6-4-6 below.

Table 6-4-6 Structurally Deficient & Functionally Obsolete Bridges-Upper Taconic

<table>
<thead>
<tr>
<th>Town of Clinton</th>
<th>4</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Milan</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Town of Pine Plains</td>
<td>5</td>
<td>0</td>
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<tr>
<td>Town of Pleasant Valley</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Town of Stanford</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Town of Washington</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Village of Millbrook</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
The Upper Taconic Bridge and Pavement Conditions Map at the end of this chapter identifies bridges rated as structurally deficient and functionally obsolete based on federal standards, as well as those classified as deficient by NYSDOT.

**Transit**

The Dutchess County Public Transit system operates one fixed route in the Upper Taconic: Route D provides service on Routes 44 and 343 between Poughkeepsie, Pleasant Valley, Millbrook, Amenia, and Dover. Route D operates Monday to Saturday, from 5:45 a.m. to 10:56 p.m., with nine daily round trips between Poughkeepsie and Pleasant Valley, and eight daily round trips between Poughkeepsie and Millbrook. The Upper Taconic does not have train service. Residents wishing to travel by train must use stations in Amenia, Poughkeepsie, or Rhinecliff (Rhinebeck).

**Pedestrian and Bicycle Transportation**

**Sidewalk Systems**

The Upper Taconic has approximately 18 miles of sidewalks, primarily in the Village of Millbrook and the hamlets of Pine Plains and Pleasant Valley. Minor sidewalk systems are also present in Washington Hollow hamlet in Pleasant Valley and the Millbrook School in the Town of Stanford. When considered on a per-resident basis, the Village of Millbrook has the most sidewalks per resident, and ranks fourth in the county. Sidewalk mileage by municipality and per resident is shown in Table 6-4-7 below.

### Table 6-4-7. Sidewalk Mileage & Population (2010)-Upper Taconic

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Sidewalks (miles)</th>
<th>Sidewalk Feet per Resident</th>
<th>County-wide Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Clinton</td>
<td>0.0</td>
<td>0.1</td>
<td>30</td>
</tr>
<tr>
<td>Town of Milan</td>
<td>0.0</td>
<td>0.1</td>
<td>29</td>
</tr>
<tr>
<td>Town of Pine Plains</td>
<td>4.8</td>
<td>10.2</td>
<td>12</td>
</tr>
<tr>
<td>Town of Pleasant Valley</td>
<td>5.5</td>
<td>3.0</td>
<td>16</td>
</tr>
<tr>
<td>Town of Stanford</td>
<td>1.0</td>
<td>1.4</td>
<td>25</td>
</tr>
<tr>
<td>Town of Washington</td>
<td>0.6</td>
<td>0.9</td>
<td>27</td>
</tr>
<tr>
<td>Village of Millbrook</td>
<td>5.5</td>
<td>20.1</td>
<td>4</td>
</tr>
</tbody>
</table>

**Trail Systems**

The Upper Taconic has approximately 39 miles of trails. Major recreational trails in the area include:

1. Cary Institute of Ecosystem Studies & Campus Trails in Washington: 8.0 miles.
2. Taconic Hereford Multiple Use Area in Pleasant Valley: 6.8 miles.
4. Buttercup Sanctuary Trails in Stanford: 5.0 miles
5. Stissing Mountain Trails (through the Towns of Pine Plains and Stanford): 4.2 miles.
6. Thompson Pond Preserve Trails in Pine Plains: 3.4 miles.
7. Innisfree Trails (through the Towns of Pleasant Valley and Washington): 2.6 miles.
8. Lafayetteville Trails in Milan: 1.5 miles
9. Whitlock Preserve Trails in Stanford: 1.0 mile
Bicycling Facilities

There are currently no on-street bicycle facilities in the Upper Taconic. However, two of NYSDOT’s signed State Bicycle Routes (SBR) connect to the area: SBR 199 connects to SBR 308 at the intersection of Route 199 and Route 308 on the western border of Milan. Both SBR 199 and 308 connect to SBR 9 (in Red Hook and Rhinebeck, respectively). In addition, NYSDOT has several proposed State Bicycle Routes in the area:

1. An extension of SBR 199 along Route 199, between Route 308 on the western border of Milan and a proposed SBR 22 in the Town of Northeast.
2. Proposed SBR 82, along Route 82 between the proposed SBR 199 in Pine Plains and a proposed SBR 52 in Fishkill.
3. Proposed SBR 44, along Route 44 between SBR 9 in the City of Poughkeepsie and a proposed SBR 22 in the Town of Amenia.

Bicycle parking is provided at locations including the Seymour Smith Elementary and Stissing Mountain Middle and High schools in Pine Plains and the Millbrook Free Library and Marona’s Market in the Village of Millbrook.

Accessibility

In 2010 NYSDOT conducted an Americans with Disabilities Act inventory of State roads. The inventory identified intersections and sidewalk segments that require improvements to fully achieve ADA accessibility standards:

Route 44 (Franklin Ave.) in Millbrook
1. Sidewalk from Millbrook Carroll Dr to East Farm Dr.
2. Sidewalk from Millbrook East Farm Dr to Harts Village Rd.

Route 44 in Pleasant Valley
1. Sidewalk segments from west of Niagara Rd. to Niagara Rd.
2. Sidewalk from Church St. to unnamed street.
3. Sidewalk from Traver Rd. to unnamed street.
4. Intersection of Route 44 & Quaker Hill Rd.
5. Intersection of Route 44 & Traver Rd.
6. Intersection of Route 44 & Traver Rd.

Route 82 in Pine Plains
1. Sidewalk from Myrtle Ave. to Smith St.
2. Intersection of NYS Route 82 & Church St.

Route 199 in Pine Plains
1. Sidewalk from Pioneer Dr to North Main St.
2. Intersection of Route 199 & North Main St.

For additional data on walking and bicycling patterns, see Walk Bike Dutchess, Chapter 5.4 (Upper Taconic).

Park-and-Ride Facilities

The Upper Taconic contains one State-operated park-and-ride facility near the intersection of the Taconic State Parkway and CR19 (Bulls Head Rd.) on Willow Brook Rd. (Town of Stanford). This facility has a capacity for 25 vehicles.
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Transportation Safety

The Transportation Council analyzed vehicle crash data from the NYS Governor’s Traffic Safety Committee (GTSC), focusing on total crashes and crash rates based on road mileage. In 2013, the most recent data available, the GTSC reported that 184 crashes with fatalities or injuries occurred in the Upper Taconic; this was slightly lower than the 214 fatal and injury crashes reported in 2009 for Moving Dutchess. Table 6-4-8 shows the total number of reported crashes with fatalities or injuries by municipality for 2011-2013.

Table 6-4-8. Fatal & Injury Crashes-Upper Taconic (2011-2013)

<table>
<thead>
<tr>
<th>Town</th>
<th>Fatal &amp; Injury Crashes</th>
<th>3-Year Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Clinton</td>
<td>30 30 27 29</td>
<td></td>
</tr>
<tr>
<td>Town of Milan</td>
<td>14 14 19 16</td>
<td></td>
</tr>
<tr>
<td>Town of Pine Plains</td>
<td>15 8 17 13</td>
<td></td>
</tr>
<tr>
<td>Town of Pleasant Valley</td>
<td>53 77 60 63</td>
<td></td>
</tr>
<tr>
<td>Town of Stanford</td>
<td>24 20 19 21</td>
<td></td>
</tr>
<tr>
<td>Town of Washington</td>
<td>26 25 34 28</td>
<td></td>
</tr>
<tr>
<td>Village of Millbrook</td>
<td>12 4 8 8</td>
<td></td>
</tr>
</tbody>
</table>

Measured in terms of road mileage, the Upper Taconic communities had an average fatal/injury vehicle crash rate of 0.4 crashes per road mile in 2013, which was lower than the 0.6 rate reported in 2009 for Moving Dutchess. The Upper Taconic’s 2013 crash rate remained well below the overall county rate of 0.8 crashes per mile. Within the Upper Taconic, the Village of Millbrook had the highest number of fatal/injury vehicle crashes per road mile, with a three-year average of 0.8. Table 6-4-9 shows crash rates per mile from 2011-2012 for the Upper Taconic communities.

Table 6-4-9. Crash Rate per Mile-Upper Taconic (2011-2013)

<table>
<thead>
<tr>
<th></th>
<th>Crash Rate Per Mile</th>
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<tr>
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<tr>
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<td>0.2</td>
</tr>
<tr>
<td>Town of Pine Plains</td>
<td>0.2 0.1 0.3 0.2</td>
<td>0.2</td>
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<tr>
<td>Town of Pleasant Valley</td>
<td>0.5 0.8 0.6 0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Town of Stanford</td>
<td>0.2 0.2 0.2 0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Town of Washington</td>
<td>0.2 0.2 0.3 0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Village of Millbrook</td>
<td>1.2 0.4 0.8 0.8</td>
<td>0.8</td>
</tr>
</tbody>
</table>

NYSDOT, in conjunction with NYSDMV and the Office of Cyber Security & Critical Infrastructure Coordination (CSCIC), maintains an online database of motor vehicle crashes called the Accident Location Information System (ALIS). The Transportation Council conducted an analysis of 2010-2014 ALIS crash data to identify general crash trends in the Upper Taconic. Based on this 2010-2014 data, the Transportation Council identified high-crash intersections and roadway segments in the Upper Taconic. These are shown in the Upper Taconic Crash Analysis Map at the end of this chapter. The following Upper Taconic locations experienced some of the highest number of crashes/crash rates over the five-year period:

Intersections (Total Crashes)

1. Route 44 (Main St.) and CR 72 (North Ave.) in the Town of Pleasant Valley (50 crashes).
Moving Dutchess 2

2. Route 44 (Main St.) and CR 71 (West Rd.) in the Town of Pleasant Valley (36 crashes).
3. Route 44 and CR 47 (South Ave.) in the Town of Pleasant Valley (25 crashes).
4. Route 115 (Salt Pt Turnpike) and CR 71 (West Rd.) in the Town of Pleasant Valley (15 crashes).
5. Route 44 and Route 82 in the Town of Pleasant Valley (14 crashes).
6. Route 343 and Franklin Ave. in the Town of Washington/Village of Millbrook (14 crashes).
7. Route 44 between Mill Ln. and Pleasant View Rd. in the Town of Pleasant Valley (25 crashes; 76 crashes per mile).
8. Route 44 (Main St.) between CR 72 (North Ave.) and Quaker Hill Rd. in the Town of Pleasant Valley (29 crashes; 162 crashes per mile).
9. Route 44 (Main St.) between CR 71 (West Rd.) and CR 72 (North Ave.) in the Town of Pleasant Valley (12 crashes; 114 crashes per mile).

Pedestrian & Bicycle Safety

The Transportation Council also analyzed the 2009-2013 crash data to determine pedestrian and bicycle crash rates per 1,000 people for each municipality. Based on this analysis, none of the Upper Taconic communities had pedestrian or bicycle crash rates above the county average of 0.29 pedestrian crashes per 1,000 people and 0.15 bicycle crashes per 1,000 people. However, Walk Bike Dutchess identified one high-crash corridor for bicyclists in Pleasant Valley: Route 44 between Timothy Heights and Pine Hill Rd./Lake Shore Dr. (2.2 miles; four crashes; 1.8 crashes/mile).

Chapter 6-4: Upper Taconic Overview

Local Comprehensive Plans

The Transportation Council reviewed the content and recommendations identified in each municipal master plan to identify county-level issues and challenges relevant to Moving Dutchess 2.

Town of Clinton

The Town of Clinton’s Master Plan, adopted in 1991, includes a goal to provide a safe and efficient transportation system while preserving the town’s scenic and historic roadside...
features. The Plan includes the following transportation-related recommendations:

1. Narrow the width of Town intersections to promote lower speeds and careful turning movements (Town Highway Department).
2. Facilitate a new bypass route south of the Frost Mills-Pleasant Plains area, as well as improvements at several major intersections.
3. Investigate standards that would permit Town roads to be built to reduced specifications, but with legal safeguards for quality construction.
4. Encourage ride sharing and increased use of commuter bus service with direct connections to the train stations.
5. Evaluate the need for Dial-A-Ride service.

The Town of Clinton also cited several locations for intersection improvements:

1. Realign and widen the bridge at Clinton Hollow.
2. Jamieson Hill Rd. should be extended west to intersect with Salt Point Turnpike. Clinton Corners Rd. could then be dead-ended north of Jamieson Hill Rd. to eliminate through traffic to the hazardous Y-intersection in the center of Clinton Corners.
3. Hollow Rd. should be narrowed at its intersection with Salt Point Turnpike to promote careful turning movements and put the stop sign within visible range at night.
4. Fiddlers Bridge Rd. at the intersection with Hollow Rd. in the heart of Pleasant Plains needs to be narrowed to a T-configuration to encourage slower speeds and full stops.
5. Improve sight distances at the intersection of Lake Dr with CR 19.
6. Consider widening Route 9G to add center turning lanes and a traffic signal which may be necessary at Hollow Rd. or at a future bypass to the south.

**Town of Milan**

The Town of Milan adopted its Comprehensive Plan in 2007. Transportation related recommendations include the following items:

1. Encourage NYSDOT to close the median crossings on the Taconic State Parkway at Ferris Ln and Wilbur Flats Rd., while maintaining emergency vehicle access.
2. Establish a linear park from the Roeliff-Jansen trail through the Lafayette Multiple Use Area for biking and walking and eventually connect to Lafayetteville, Wilcox Park, and Stissing Mountain recreation areas, as well as other trails.
3. Encourage the County to establish bike paths on County roads throughout town and link bike paths on County roads to trails.

**Village of Millbrook**

The Village adopted a Village Master Plan in 1985. Transportation related recommendations include the following items:

1. Consider a 3-way stop near the gatehouse at the intersection of Route 44 and Franklin Ave.
2. Develop bicycle paths – particularly between the Bennett complex and the Village center.
3. Encourage a wide, paved shoulder for biking between the Village center and nearby Town of Washington Park on Route 44.
4. Make downtown circulation and parking improvements as proposed in Chapter X:
   - Study the feasibility of making Front St. one-way and the addition of a connector street from Merritt Ave. to North Ave., resulting in a new intersection. This connector street might allow Front St. to be used as a one way street (northbound) to alleviate potential traffic hazards at the intersection of Front St. and Franklin Ave.
   - Study the need for a yield or stop sign at the intersection of North Ave. and Franklin Ave. and add lane markings to direct drivers to proper turning positions and proper stop/yield position.
   - Add sidewalks, curbing, trees, and green areas along Front St., especially opposite the firehouse.
   - Consider new sidewalks and curbing on Washington Ave., both sides of Merritt Ave., and on Church St. between Franklin Ave. and Reservoir Dr.
   - Study existing parking arrangements and make provisions for better cooperation between landowners.

**Town of Pine Plains**

The Town of Pine Plains adopted its Comprehensive Plan in 2004. Transportation related recommendations include the following items:

1. Hamlet of Pine Plains:
   - New development should provide sidewalks.
   - Work with NYSDOT to implement traffic calming techniques on Main St.
   - Create a parking plan that addresses current and future parking needs.

2. Develop a recreation plan that considers the needs of all age groups and evaluate the inclusion of bike paths, hiking trails, enhanced public access to preserved open lands, and on-going maintenance of Stissing Mountain trails.

3. Consider reassessing and revising local highway specifications so that new potentially public roads have road widths and posted speed limits that are consistent with rural road standards.

4. Work with the Hudson River Valley Greenway, New York State Department of Transportation, and the County Highway Department to develop alternative transportation opportunities such as shared roadways and bike paths.

5. Develop a town road improvement plan that is incorporated in a five-year capital improvement plan.

6. Support the further development of public transportation in the Town.

**Town of Pleasant Valley**

The Town of Pleasant Valley adopted its Comprehensive Plan in 2009. Transportation related recommendations center on including the Comprehensive Plan’s hamlet design as part of the review for all development and re-development proposals.
in the Pleasant Valley, Washington Hollow, and Salt Point hamlets:

1. \textit{Pleasant Valley Hamlet}
   - Improve sidewalks, including a buffer strip and additional street trees.
   - Install sidewalks on West Rd. to the elementary school, on North Ave. to the apartments, and on South Rd. as development occurs.
   - Add high-visibility crosswalks on Main St. (Route 44) at North Ave. and other key crossing locations.
   - Add center medians to channelize left-turn movements and extend curbs at intersections.
   - Construct a rear lot access road connecting Quaker Hill and North Ave.; connect to new shared parking lots.
   - Investigate a future Wappinger Creek walkway connection between Town parks.
   - Continue to evaluate a potential Maggiacomo Ln. connection to South Ave. via a new bridge over the Wappinger Creek.
   - Improve roadway shoulders for bicycling.

2. \textit{Washington Hollow Hamlet}
   - Add Infill development at the Route 44/82 intersection.
   - Add sidewalks, street trees, and on-street parking along Route 44 with curb extensions and crosswalks.
   - Add a central green area for pedestrian safety and to channelize Route 82 traffic.

3. \textit{Salt Point Hamlet}
   - Add sidewalks along Salt Point Turnpike.
   - Narrow the intersection of Salt Point Turnpike and Hibernia Rd. to reduce speeds.
   - Consider a trail along the Little Wappinger Creek.

The Pleasant Valley plan includes a recommendation to work with NYSDOT to provide medians in the town center. Another long-term transportation recommendation points to the need to periodically review public transportation needs in the Town and encourage alternatives to individual vehicles.

\textbf{Town of Stanford}

The Town of Stanford adopted its Comprehensive Plan in 2015. The plan includes two transportation related recommendations:

1. Designate the Stanford-Bangall area on Route 82 as the Town center; Route 82 should not run through its middle and should be pedestrian-friendly.
2. Consider opportunities for public transportation in concert with regional public transportation providers.

\textbf{Town of Washington}

The Town of Washington adopted its Comprehensive Plan in 2015. Transportation related recommendations include the following items:

1. Improve hazardous intersections on State or County highways by a) posting warning signs, b) having speed limits lowered, c) clearing sight lines, or d) having those intersections reconstructed by joint effort.
Moving Dutchess 2

2. Develop a long-term program for maintenance and improvement of Town roads and associated drainage facilities.
3. Establish road capacity limits relative to width, surface, grade, alignment, and bridge limits.
4. Develop a transportation plan so that the road systems of new developments may be efficiently incorporated into the larger road network.

The sub-committee report from the Town’s Master Plan Committee (available on the Town website) recommended a 10-year schedule of maintenance and improvement for town roads.

Previous Transportation Council Studies

The Transportation Council has performed a number of local planning studies in the Upper Taconic, including the Pleasant Valley Hamlet Traffic Analysis (2007), Dutchess County Transit Development Plan (2009), CR 71 (West Road) Sidewalk Feasibility Study (2010), and Pine Plains Pedestrian Plan (2015). A summary of each is included below. Complete documents are available on the Transportation Council’s website.

Pleasant Valley Hamlet Traffic Analysis (2007)

The Traffic Analysis included various traffic engineering evaluations for the Pleasant Valley hamlet and provided an analysis of two transportation alternatives:

1. Access management improvements including driveway modifications and shared parking to improve traffic flow.
2. The extension of Maggiacomo Ln. from Route 44 to CR 47 (Freedom Rd.) across the Wappinger Creek (this option was previously analyzed by NYSDOT in 1996 as part of their US Route 44 Corridor Study).

The Traffic Analysis included an analysis of origins and destinations, existing conditions, conflict points, alternative conditions, traffic simulation modeling, and a travel speed and delay study in order to quantify the benefits of both alternatives. The following intersections were analyzed:

1. Route 44/CR 71 (West Rd.)
2. Route 44/CR 72 (North Ave.)/Maggiacomo Ln.
3. Route 44/CR 47 (South Ave.)
4. Route 44/Quaker Hill Rd.
5. CR 72 (North Ave.)/Quaker Hill Rd.
6. CR 72 (North Ave.)/Milestone Plaza

The Traffic Analysis concluded that both plans would reduce delays experienced by those traveling on Route 44. Existing conditions showed, however, that the intersections were operating at a good level of service with acceptable delays. Lower-cost access management improvements were recommended to improve safety and optimize the existing network. The Traffic Analysis also concluded that the Maggiacomo Ln. extension project was not necessary, but could benefit the Town in the future if traffic volumes increased.
Dutchess County Transit Development Plan (2009)

The 2009 Dutchess County Transit Development Plan included a long term recommendation to create a new fixed bus route that would serve the Route 199 corridor between the Village of Tivoli and Millerton, across Northern Dutchess.

CR 71 (West Rd.) Sidewalk Feasibility Study (2010)

The CR 71 (West Rd.) Sidewalk Feasibility Study (2010) analyzed the feasibility of constructing sidewalks along West Rd. in the Town of Pleasant Valley. The report separated the corridor into three segments and identified constraints such as right-of-way, slopes, wetlands, sight distance, and existing utilities. For each segment, three options were evaluated: a shared-use path, sidewalks, or shoulder improvements. Crosswalks, signage, speed reduction strategies, unit cost estimates, and potential funding sources were also discussed.

The Feasibility Study concluded that sidewalks were most appropriate for the segment from Main St. (Route 44) to Brookside Rd., with a wide outside travel lane or widened shoulders for bicycling; a sidewalk and widened shoulders or a shared-use path should be considered for the segment from Brookside Rd. to Robert Ln.; and improvements on the segment from Robert Ln. to Route 115 (Salt Point Turnpike) should be coordinated with the others to provide a continuous network.

Pine Plains Pedestrian Plan (2015)

Completed in 2015, the Pine Plains Pedestrian Plan created a sidewalk improvement strategy to help the Town in setting priorities for future sidewalk infrastructure investments, and to better enable it to seek funding to promote walking and biking in Pine Plains. The Transportation Council and Dutchess County Planning Department developed the strategy through a study of existing conditions, feedback from the Town’s Walks Initiative Task Force, and comments from a survey and public workshop. The sidewalk improvement strategy included four main objectives:

1. Repair sidewalks and crosswalks in poor or unusable condition within the Pine Plains town center.
2. Improve pedestrian access to public facilities such as Stissing Middle/High School, Seymour Smith Intermediate Learning Center, and Community Center.
3. Improve pedestrian/bicycle safety and access to Stissing Lake Park.
4. Promote economic development through better access to local businesses, including improvements to the Route 82/199 (Main/Church St.) intersection to create a signature focal point for the town center.

The Pedestrian Plan recommended a “build when ready” strategy that would provide the Town with flexibility in carrying out individual recommendations. Under this approach, each recommendation can be implemented as local conditions and funding opportunities permit. This approach will allow the Town to capitalize on various funding programs, changes in property ownership, or redevelopment.
opportunities that would be conducive to implementing one or more recommendations.

The Pedestrian Plan organized recommendations into three priority levels (Phase 1, 2, and 3), with each phase addressing the Plan’s four objectives. In general, the phases relate to the complexity and cost of each recommendation, with the most viable proposals listed as Phase 1 work items, whereas the more ambitious and costly items are listed as Phase 2 and 3 recommendations. The recommendations include the following highlights:

**Phase One**

1. Rehabilitate the Academy/Smith St. intersection, including the eastern section of sidewalk on Smith St., in front of the Seymour Smith Intermediate Learning Center, to include drainage improvements, new crosswalks or a pedestrian box, and high-visibility pedestrian crossing/warning signs.
2. Repair sections of the east-side sidewalk on Academy St. from Route 199 (Church St.) south to Factory Ln., and the south-side sidewalk on Route 199 (Church St.), just east of the Route 82 (Main St.) intersection, to Academy St.
3. Construct a new sidewalk on the east-side of CR 83A (North Main St.) from Evergreen Cemetery to Jackson Rd.
4. Install new crosswalks on streets that intersect with existing sidewalks, to include all side streets that intersect with sections of Route 82 (South Main St.) and 199 (Church St.), and CR 83A (N. Main St.) that have existing sidewalks.
5. Install a new mid-block crosswalk across Route 199 (Church Street) at Peck’s Market.

6. Add center and shoulder lane markings on Fairview Ave. from Route 199 (Church St.) to Stissing Ave. This should include an evaluation of the feasibility of marking nine foot vehicle travel lanes and increasing shoulder widths to 4-5 feet.
7. Add center and shoulder lane markings on Stissing Ave. from Poplar Ave. to Lake Shore Dr.
8. Install advance pedestrian and bicycle warning signs on Stissing Ave. for both east and west bound directions.
9. Work with the Dutchess County Planning Department to develop one or more conceptual design alternatives for the area in and around the Route 82/199 intersection

**Phase Two**

1. Construct a new sidewalk on the north-side of Route 199 (Church St.) from the High School entrance to the Birch Dr. intersection.
2. Construct a new sidewalk on the west-side of CR 83A (N. Main St.) between Pioneer Dr. and Route 199 (Church St.).
3. Add a crosswalk across Route 199 (Church St.) at the Birch Dr. intersection and across the Middle/High School entrance, connecting the new sidewalk with the existing north-side sidewalk on Route 199 (Church St.).
4. Add a crosswalk across CR 83A (N. Main St.) at the Pioneer Dr. intersection, connecting the two sidewalks on both sides of CR 83A.
5. Construct a new sidewalk into the main entrance of the Middle/High School, which would connect to the existing sidewalk on the north-side of Route 199 (Church St.).
6. Add center and shoulder lane markings on Lake Rd., from Route 82 (S. Main St.) to Poplar Ave., to include an
evaluation of the feasibility of reducing vehicle travel lanes to nine feet and increasing shoulder widths to 4-5 feet.

7. Add center and shoulder lane markings on Poplar Ave. from Route 199 (Church St.) to Lake Rd., and on Stissing Ave. from Fairview Ave. to Poplar Ave.

8. Install advance pedestrian and bicycle warning signs on Lake Rd. and Poplar Ave. in both directions.

**Phase Three**

1. Construct a new sidewalk on the south-side of Route 199 (Church St.) from Fairview Ave. to Route 82 (S. Main St.).

2. Construct a new sidewalk on the west-side of Route 82 (S. Main St.) from Route 199 (Church St.) to Railroad Ave., across from the Post Office.

3. Construct a new sidewalk on one-side of Fairview Ave. from Route 199 (Church St.) to Stissing Ave. and a new sidewalk on one-side of Stissing Ave. from Fairview Ave. to Lake Shore Dr. and the entrance to Stissing Lake Park. These improvements should include appropriate crosswalks at all intersections, coupled with pedestrian warning signs.

4. Construct a new sidewalk on the west-side of CR 83A (N. Main St.) between Pioneer Dr. and Jackson Rd. This would provide an additional connection between the densely populated residential areas just north of the Middle/High School into the town center.

5. Construct a new sidewalk, using the existing service road alignment, from the Middle/High School to Jackson Rd.

6. Construct a new sidewalk, along the locally known "Kilmer Rd." alignment, from the Middle/High School east to Pioneer Dr.

7. Add a crosswalks across CR83A (North Main St.) at the Jackson Rd. intersection, Route 82 (S. Main St.) at the Smith St. intersection, Route 82 (S. Main St.) at the Lake Rd. intersection, and Route 199 (Church St.) at the Fairview Ave. intersection.

8. Explore the possibility of constructing a multi-use walking and bicycling trail through the two vacant parcels currently owned by St. Anthony’s Church, south of Route 199 (Church St.) and west of Route 82 (S. Main St.).

**Natural & Historic Resources**

The Transportation Council reviewed natural and historic resource information from the State and County to identify potential constraints relevant to transportation planning in the Upper Taconic area. This process started with an inventory of 100-year and 500-year floodplains, NYSDEC wetlands, federal, State, and locally designated parklands, agricultural lands, critical environmental areas, and designated historic districts. These resources are shown on the Upper Taconic Natural & Historic Resources Map at the end of this chapter.

**Waterbodies & Watersheds**

The Upper Taconic contains a number of large waterbodies that are 25 acres in size and larger:

1. Town of Clinton: Long Pond (66 acres) and Silver Lake (115 acres). Town of Milan: Round Pond (40 acres) and Spring Lake (26 acres).
2. Town of Pine Plains: Lake Carvel (38 acres), Halcyon Lake (26 acres), Stissing Lake (78 acres), Thompson Pond (68 acres), and Twin Island Lake (62 acres).
3. Town of Pleasant Valley: Tyrell Lake (45 acres).
4. Town of Stanford: Hunns Lake (68 acres) and Upton Lake (43 acres).
5. Town of Washington: Bontecou Lake (115 acres) and Shaw Pond (26 acres).

Major streams identified in the Upper Taconic include:

1. Town of Clinton: Wappinger Creek, Little Wappinger Creek, and Crum Elbow Creek.
2. Town of Milan: Saw Kill, Roeliff Jansen Kill, Landsman Kill, Cold Spring Creek, and Little Wappinger Creek.
3. Town of Pine Plains: Wappinger Creek, Shekomeko Creek, Punch Brook, Roeliff Jansen Kill, and Bean River.
4. Town of Pleasant Valley: Wappinger Creek, Little Wappinger Creek, Great Spring Creek, East Branch of the Wappinger Creek, and Drake Brook.
5. Town of Stanford: Willow Brook, Wappinger Creek, Shekomeko Creek, Hunns Lake Creek, Cold Spring Creek, Grist Mill Creek, and Turkey Hollow Brook.
6. Town of Washington: Wappinger Creek, Stone Church Brook, Sprout Creek, Mill Brook, East Branch of the Wappinger Creek, and Turkey Hollow Brook.
7. Village of Millbrook: East Branch of the Wappinger Creek.

The largest watershed in the Upper Taconic is the Wappinger Creek watershed. This watershed is centrally located among all Upper Taconic communities, with smaller portions of adjacent watersheds located along its outside edges. Additional watersheds include the Roeliff Jansen Kill watershed in the towns of Milan and Pine Plains; the Turkey Hollow Brook watershed in Stanford and Washington; the East Branch Wappinger Creek watershed in the towns of Washington and Pleasant Valley; and the Little Wappinger Creek watershed in the towns of Pleasant Valley, Clinton and Milan.

**Floodplains**

Floodplains make up a small percentage of some Upper Taconic communities, as shown in Table 6-4-10. The Town of Pleasant Valley and the Village of Millbrook have the highest percentage of land area within 100-year and 500-year floodplains of all municipalities in the area.

Table 6-4-10. Floodplains-Upper Taconic

<table>
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<tr>
<th></th>
<th>Total Floodplain Acreage</th>
<th>Percent of Land Area</th>
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<tbody>
<tr>
<td>Town of Clinton</td>
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</tr>
<tr>
<td>Village of Millbrook</td>
<td>77</td>
<td>6</td>
</tr>
</tbody>
</table>

A number of transportation facilities in the Upper Taconic are subject to periodic flooding due to their location within designated 100-year and 500-year floodplains, NYSDEC wetlands, or adjacent waterbodies. These include:
1. CR 13 (Clinton Corners Rd.) between CR 14 (Hollow Rd.) and Hibernia Rd. and just north of Route 82 in Clinton.
2. CR 19 (Bulls Head Rd.) in Clinton.
3. TSP south of CR 14 (Hollow Rd.) in Clinton.
4. Portions of CR 15 (Milan Hollow Rd.) between the Town line south and Route 199 in Milan.
5. CR 50 (Jackson Corners Rd.) north of its intersection with CR 56 (Turkey Hill Rd.) in Milan.
6. CR 51 (Academy Hill Rd.) south of its intersection with CR 50 (Jackson Corners Rd.) in Milan.
7. Route 199 at its intersection with Highway Blvd. in Pine Plains.
8. Route 199 approximately 2,100 feet east of the Route 199/Sunny Meadows Ln. intersection in Pine Plains.
9. Route 44 in Pleasant Valley from the Town line south to CR 71 (West Rd.).
10. CR 71 (West Rd.) west of the Brookside Road intersection in Pleasant Valley.
11. CR 72 (North Ave.) at the CR 73 (Sherow Rd.) intersection in Pleasant Valley.
12. CR 72 (North Ave.) just north of Slate Quarry Rd. in Pleasant Valley.
13. CR 17 (Salt Point Turnpike) east of its intersection with Route 82 in Stanford.

Agriculture & Open Space

The Dutchess County Planning Department’s Centers and Greenspaces Guide identifies suburban development and areas susceptible to suburban development, defined as parcels under five acres that are outside of centers. Most parcels under five acres in the Upper Taconic are located along State and County roads. The Town of Pleasant Valley has the largest portion of these areas of the Upper Taconic communities. In contrast, the Towns of Washington, Stanford, and Pine Plains contain large areas of protected lands, agricultural space, and undeveloped land, particularly along their eastern borders.

The Upper Taconic contains 52,208 acres of land that received agricultural use assessments in 2014, representing over 33 percent of the area’s total acreage. These assessments identify properties that have active farms, nurseries, stables, or other agricultural operations. The Towns of Pine Plains and Washington have the highest amount of agricultural assessed acreage as a percent of their total land area of the communities in the Upper Taconic. Table 6-4-11 shows the total acreage of agricultural assessed lands by municipality and its share of each municipality’s land area.

The Upper Taconic also contains 76,583 acres of land certified by the NYS Department of Agriculture & Markets as Agricultural Districts. These districts are locally designated parcels that currently serve or could serve agricultural purposes, representing 48 percent of the region’s total land area. They include many parcels with agricultural assessments. The towns of Washington, Stanford, and Pine Plains have the highest amount of agricultural district acreage as a percent of their total land area of the communities in the Upper Taconic. Table 6-4-12 shows agricultural district acreage by municipality and its share of each municipality’s land area.
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Table 6-4-11. Agricultural Assessed Land-Upper Taconic

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<td>Village of Millbrook</td>
<td>400</td>
<td>32</td>
</tr>
</tbody>
</table>

Table 6-4-12. Agricultural Districts-Upper Taconic

<table>
<thead>
<tr>
<th>Town of Clinton</th>
<th>8,516</th>
<th>34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Milan</td>
<td>5,529</td>
<td>24</td>
</tr>
<tr>
<td>Town of Pine Plains</td>
<td>12,303</td>
<td>62</td>
</tr>
<tr>
<td>Town of Pleasant Valley</td>
<td>5,923</td>
<td>28</td>
</tr>
<tr>
<td>Town of Stanford</td>
<td>20,401</td>
<td>64</td>
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<tr>
<td>Town of Washington</td>
<td>23,533</td>
<td>65</td>
</tr>
<tr>
<td>Village of Millbrook</td>
<td>376</td>
<td>30</td>
</tr>
</tbody>
</table>

The Upper Taconic includes three farms that have been protected through the Dutchess County Partnership for Manageable Growth.

1. Bos Haven Farm (177 acres) in both Washington and Union Vale.
2. Pulver Farm (159 acres) in Pine Plains.
3. A portion of Pleasant View Farm (34 acres) in Pine Plains (the balance of the farm is in the Town of North East).

The Upper Taconic hosts 4,340 acres of major federal, State, and parkland. Key parks include:

1. Taconic Hereford State Multiple Use Area (905 acres) in Pleasant Valley and LaGrange (partial).
2. Lafayetteville State Multiple Use Area (706 acres) in Milan.
3. Wilcox Memorial County Park (614 acres) in Milan.
4. Roeliff Jansen Kill State Multiple Use Area (119 acres) in Milan.

Critical Environmental Areas

The Upper Taconic includes 14 Critical Environmental Areas (CEA’s) that have been locally-designated. The State Department of Environmental Conservation maintains a list of these areas. To be designated as a CEA, an area must have exceptional or unique character with respect to human health; natural setting; agricultural, social, cultural, historic, archaeological, recreational, or educational values; or inherent ecological, geological or hydrological sensitivity to change or may be adversely affected by change. CEAs include:

1. Town of Clinton hamlets (for exceptional or unique character): Clinton Corners, Clinton Hollow, Frost Mills, Hibernia, Old Bulls Head, Pleasant Plains, and Schultzville.
2. Stissing Mountain (for exceptional or unique character) in Town of Pine Plains.
3. Town of Stanford:
   - Buttercup Farm Sanctuary: preserve farmland, wetland and mountain habitat.

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- Ryder Pond and Cagny Marsh: protect waterfowl.
- Bontecou Lake: migratory and nesting birds.
- Millbrook Meadow and Associated Wetlands: wetland protection.
- Snake Hill: rare plants and animal communities.
- Upper Wappinger: protect water quality and biological uniqueness.

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

1. Hudson Tributaries: Sites which protect habitat and provide access to stream banks of tributaries, including the Little Wappinger Creek, Saw Kill Creek, Roeliff Jansen Kill, and Landsman Kill.
2. Dutchess County’s important agricultural areas: the Sprout Creek Area in the Towns of Washington; Smithfield Valley in the towns of Stanford, Washington, and Amenia; and the Salt Point Prime Soils in the Towns of Stanford, Clinton, and Pleasant Valley.
3. Scenic Viewsheds: Sites which provide scenic vistas, including Stissing House/Thompson Pond in Pine Plains.

Historic Resources

The Upper Taconic contains a number of historic sites.

1. Clinton Corners Friends Church and Creek Meeting House and Cemetery on Salt Point Turnpike in Clinton.
2. House of Benjamin C. Trousey on the junction of Salt Point Turnpike and Schultzville Rd in Clinton.
3. Windswept Farm on Sunset Trail in Clinton.
4. Nine Partners Meeting House and Cemetery on Route 343 in Millbrook.
5. Graham-Brush Log House on Church St in Pine Plains.
7. Newcomb-Brown Estate on Route 44 in Pleasant Valley.
8. House of Dr. Cornelius Nase Campbell on Rt 82 in Stanford.

Transportation Needs

Based on a review of local comprehensive plans, previous Transportation studies, and transportation system data, the Transportation identified a series of transportation needs in the Upper Taconic. These needs were reviewed and revised at an Upper Taconic public workshop. The revised list of needs includes the following items:

Highway Maintenance

Multiple Municipalities

1. Inventory pavement conditions on local streets and repave based on condition ratings.
Reconstruct the following road segments rated as poor under NYSDOT standards:

1. Route 44 from Deep Hollow Rd. to Turkey Hollow Rd. (Amenia) in Washington (2.2 miles).
2. Route 82 from Church Rd. to ¾ mile south of the Stanford town line in Washington (2.7 miles).
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3. Route 199 from Stissing Mountain Rd. to Harrison Ln. in Pine Plains (0.4 miles).
4. Route 199 from 0.4 miles west of Prospect Hill Rd. to 0.1 miles west of Finkle Rd. in Pine Plains (1.3 miles).
5. Route 199 from Ressequie Rd. to the North East town line in Pine Plains (0.4 miles).

Bridge Maintenance

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

1. Route 115 (Salt Point Turnpike) over Little Wappinger Creek (BIN 3343530) in Pleasant Valley.
2. CR 17 (Salt Point Turnpike) over Willow Brook (BIN 3343870) in Stanford.
3. CR 19 (Bulls Head Rd.) over Wappinger Creek (BIN 3343850) in Stanford.
4. CR 72 (North Ave.) over Swallow Stream (BIN 3343580) in Pleasant Valley.
5. CR 83 over Shekomeko Creek (BIN 1032390) in Pine Plains.
6. CR 83A (North Main St.) over Shekomeko Creek (BIN 3343500) in Pine Plains.
7. CR 83A (North Main St.) over Shekomeko Creek (BIN 3365150) in Pine Plains.
8. Carpenter Hill Rd. over Shekomeko Creek (BIN 3343520) in Pine Plains.
9. Maple Ln. over Locust Creek (BIN 3342790) in Clinton.
10. Mill Ln. over unnamed creek near Drake Rd. (BIN 3343590) in Pleasant Valley.
11. Schultzville Rd. over Wappinger Creek Tributary (BIN 3365130) in Clinton.

If funding becomes available, the following low-volume, structurally deficient bridges should be repaired:

1. CR 14 (Hollow Rd.) over Wappinger Creek Tributary (BIN 3365130) in Clinton (rated as structurally deficient, with 2013 AADT of 116).
2. CR 51 (Academy Hill Rd.) over Roeliff Jansen Kill (BIN 3343330) in Milan (rated as rated structurally deficient, with a 2014 AADT of 141).
3. Salisbury Turnpike over Little Wappinger Creek (BIN 3343350) in Milan (rated as rated structurally deficient, with a 2012 AADT of 138).

Although rated as structurally deficient, the following bridges should be considered for closure if funding is not available to repair them:

1. Nardone Rd. over Wappinger Creek East Branch (BIN 3344040) in Washington (rated as structurally deficient, with 2012 AADT of 18).
2. Willowvale Rd. over Shekomeko Creek (BIN 3343510) in Pine Plains (rated as rated structurally deficient, with a 2014 AADT of 80).

Highway Operations (by municipality)

Multiple Municipalities
1. Limit the number of access points on State and County roads and require new commercial developments to share

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driveways and to internally link circulation or service roads between adjacent parcels.

Town of Clinton
1. Narrow CR 14 (Hollow Rd.) at its intersection with Route 115 (Salt Point Turnpike) to promote careful turning movements.
2. Realign Clinton Corners Rd. as it intersects with CR 17 (Salt Point Turnpike) to improve safety in Clinton Corners.

Town of Pleasant Valley
1. Consider redesigning Route 44 into a boulevard within the Pleasant Valley Town Center from CR 71 (West Rd.) and CR 72 (North Ave.) Add center medians on Route 44 to channelize left-turn movements and extend curbs at major intersections.
2. Investigate the need for a traffic signal at the Route 44/82 intersection in Washington Hollow (Pleasant Valley).
3. Investigate the need for a traffic signal, turning lanes, or other improvements at CR 71 (West Rd.) and Route 115 (Salt Point Turnpike).

Safety
1. Improve sight distances at the intersection of Lake Dr. and CR 19 (Slate Quarry Rd.) in Clinton.
2. Realign Clinton Corners Rd. as it intersects with CR 17 (Salt Point Turnpike) in Clinton Corners to improve sight distance.
3. Conduct a Safety Assessment of the Route 44/CR 71 (West Rd.) and Route 44/CR 72 (North Ave.) intersections in Pleasant Valley.
4. Encourage traffic calming measures on CR 71 (West Rd.) in Pleasant Valley to reduce vehicle speeds, such as narrowing travel lanes, adding signage, and possibly lowering the speed limit.
5. Consider re-aligning the Route 115 (Salt Point Turnpike)/Hibernia Rd. intersection in the Salt Point hamlet (Pleasant Valley) to improve safety and visibility.
6. Limit on-street/shoulder parking near the intersection of CR 65 ( Hunns Lake Rd.) and CR 86 (Bangall-Amenia Rd.) in the Bangall hamlet (Stanford).

Transit
1. Explore the possibility of a new fixed bus route on Route 199 between the Villages of Tivoli and Millerton, with possible connecting service to the Kingston area in Ulster County.
2. Install bus pull-offs on Route 44 in the Pleasant Valley Town Center.

Sidewalks/Pedestrian Facilities (including ADA projects) (by municipality)

Multiple Municipalities
1. Repair State-owned, non-ADA compliant sidewalks and ramps on Route 44 in Pleasant Valley, and Routes 82 and 199 in Pine Plains.

Town of Clinton
1. Construct a sidewalk or path along the south side of Route 115 (Salt Point Turnpike) between the Stewart’s shop and Park View Dr. in the Clinton Corners hamlet. Evaluate the
feasibility of constructing a sidewalk or path along Salt Point Turnpike from Park View Dr. to the post office.

**Town of Pleasant Valley**
1. Extend sidewalks on Main St. in Pleasant Valley to fill gaps, to include a landscaped buffer and street trees where possible. Improve intersection crossings and signage in the town center. In particular, construct curb extensions at key intersections including Route 44 (Main St.)/CR 72 (North Ave.), and improve the visibility of crosswalk warning signs on Main St. near the Post Office and at CR 71 (West Rd.).
2. Provide a sidewalk or path on CR 71 (West Rd.) in Pleasant Valley and incorporate crosswalks to connect destinations.
3. Provide a crosswalk across North Ave. at Martin Rd. or Ravine Rd. in Pleasant Valley to connect housing on the west side of North Ave. to the sidewalk on the east side.
4. Consider a sidewalk on CR 47 (South Ave.) in Pleasant Valley between Main St. and the ball fields at Cady Recreation Park as development occurs.
5. Create a walkable hamlet in Washington Hollow with sidewalks, curb extensions and high-visibility crosswalks, street trees, on-street parking, and a central green space.
6. Provide sidewalks along Route 115 (Salt Point Turnpike) in the Salt Point hamlet where feasible, and consider re-aligning the Salt Point Turnpike/Hibernia Rd. intersection to improve safety and visibility.

**Town of Pine Plains**
1. Rehabilitate the Academy/Smith St. intersection near Seymour Smith Intermediate Learning Center, to include drainage improvements, new crosswalks, and high-visibility pedestrian crossing/warning signs.
2. Construct a new sidewalk on the west side of CR 83A (N. Main St.) from Route 199 to Jackson Rd., and the east side of CR 83A from Evergreen Cemetery to Jackson Rd.
3. Install new crosswalks on streets that intersect with existing sidewalks, including all side streets that intersect with segments of Route 82 (S. Main St.) and 199 (Church St.), and CR 83A (N. Main St.) that have sidewalks.
4. Install a new mid-block crosswalk across Route 199 (Church Street) at Peck’s Market.
5. Install advance pedestrian warning signs on Route 82 (S. Main St.) and 199 (Church St.), CR 83A, Lake Rd., Poplar Ave., and Stissing Ave. in conjunction with new crosswalks.
6. Add center and shoulder lane markings on Fairview Ave., Lake Rd., Poplar Ave., and Stissing Ave. This should include an evaluation of the feasibility of marking nine foot vehicle travel lanes and increasing shoulder widths to 4-5 feet.
7. Construct a new sidewalk on the north side of Route 199 (Church St.) from the High School entrance to the Birch Dr. intersection, and a new sidewalk on the south side of Route 199 from Fairview Ave. to Route 82 (S. Main St.).
8. Construct a new sidewalk on the west side of Route 82 (S. Main St.) from Route 199 (Church St.) to Railroad Ave., across from the Post Office.
9. Construct a new sidewalk, using the existing service road alignment, from the Middle/High School to Jackson Rd.
10. Add crosswalks across Route 82 (S. Main St.) at the Smith St. intersection and Lake Rd. intersection, and also Route 199 (Church St.) at the Birch Dr. and Fairview Ave. intersections.
11. Add crosswalks across CR 83A (N. Main St.) at the Pioneer Dr. and Jackson Rd. intersections, in conjunction with new sidewalks.
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12. Construct a new sidewalk into the main entrance of the Middle/High School, which would connect to the existing sidewalk on the north side of Route 199 (Church St.).
13. Construct a new sidewalk, along the locally known “Kilmer Rd.” alignment, from the Middle/High School east to Pioneer Dr.
14. Construct a new sidewalk on one side of Fairview Ave. from Route 199 (Church St.) to Stissing Ave. and a new sidewalk on one side of Stissing Ave. from Fairview Ave. to Lake Shore Dr. and the entrance to Stissing Lake Park. These improvements should include appropriate crosswalks at all intersections, coupled with pedestrian warning signs.

Town of Stanford
1. Install sidewalks on Route 82 in the Stanford Town center in conjunction with future private development, to include appropriate traffic calming, signage, and lighting. Narrow lane widths on Route 82 in the Stanfordville hamlet (Stanford) to allow sidewalks and increase safety.

Multi-Use Trails & Bicycle Facilities
1. Evaluate, designate, and sign Routes 44 and 82 as State Bicycle Routes (NYSDOT).
2. Improve shoulder conditions on State highways – four foot minimum paved width where possible – especially on Salt Point Turnpike in the Towns of Clinton, Pleasant Valley, and Stanford, and on Route 44 through Pleasant Valley and Washington; also install signage to increase safe sharing of the road.
3. Widen shoulders to four feet on CR 72 (North Ave.) and Sherow Rd. in Pleasant Valley.
4. Establish a multi-use trail in Milan from the Roeliff-Jansen Kill through the State Lafayette Multiple Use Areas for biking and walking, and eventually connect to Lafayetteville, Wilcox Park, and Stissing Mountain recreation areas, as well as other trails.
5. Develop a bicycle path or on-street bicycle connection between the Bennett site and the Millbrook Village center, and evaluate other Village streets for potential bicycle boulevards, sharrows, or bicycle lanes to create a bicycle network.
6. Investigate a future Wappinger Creek walkway connection between various Pleasant Valley Town parks.
7. Explore the possibility of constructing a multi-use walking and bicycling trail in Pine Plains, south of Route 199 (Church St.) and west of Route 82 (S. Main St.), through vacant property currently owned by St. Anthony’s Church.
8. Explore the feasibility of constructing a rail trail between Stanford and Pine Plains using railroad right of ways.

Travel Demand Management
1. Promote privately arranged ride sharing opportunities in the Upper Taconic area.
2. Assess the need for additional park-and-ride lots.

Planning Studies
1. Promote and assist local pedestrian, trail, and bikeway plans in interested communities. Help coordinate local
pedestrian, trail and bikeway planning efforts with other regional efforts.
2. Conduct a sidewalk inventory and develop a sidewalk improvement strategy for the Pleasant Valley Town Center and Center.
3. Conduct a safety study of the North Ave. and Franklin Ave. intersection in Millbrook.
4. Analyze speed patterns on County and local roads, using speed data from the PDCTC’s traffic count program. Identify corridors with high percentages of ‘high-end’ speeding (e.g., 10 mph or more over the posted speed limit) and develop engineering, enforcement, and educational approaches to reduce speeding. Include a speed analysis of Route 199 between Battenfeld Rd. and Rock City Rd. in Milan.

**Survey Summary**

Of the more than 900 respondents to the *Moving Dutchess 2* survey, 67 were residents of Upper Taconic communities. This section summarizes their responses to the survey.

In terms of making Dutchess County a great place to live, Upper Taconic residents prioritized the protection of air and water quality, and preservation of natural areas, habitats, and farmland as the most important issues.

Major driving issues identified by residents included the fair condition of roads and bridges; the lack of sidewalks and crosswalks; the poor condition of existing sidewalks, and the lack of bicycle lanes and road shoulders. However, most respondents rated the transportation system as good or fair, and generally safe.

When asked how well the transportation system meets your needs, the most common response was ‘fair’ (44 percent), followed by ‘good’ (36 percent). When asked about the ease of getting places you usually have to go, the most common response was ‘good’ (54 percent) followed by ‘fair’ (29 percent).

Over 97 percent of respondents sometimes or often walk for transportation; 94 percent sometimes or often bicycle for transportation; 15 percent sometimes or often used the bus for transportation; and 91 percent sometimes or often use the train for transportation.

Major barriers for walking included the distance to destinations (77 percent) and lack of sidewalks (52 percent); for bicycling, inadequate shoulders, bike lanes and paths (54 percent) and distance to destination (49 percent); for bus transit, lack of bus service in the area (46 percent); and for train transit, the high cost (34 percent). The survey also indicated that 23 percent of Upper Taconic households had members who depended on transit or rides from others.

With regard to travel modes, the survey asked residents to recall their trips over the past week and categorize them based on their destination and mode (drive alone, carpool, walk, bike, bus or other). Based on responses from residents in the Upper Taconic, about 87 percent of trips were drive-alone; seven percent were by carpools; four percent were made by walking; two percent by biking, and one percent by bus. Most drive-alone trips were for work or school, followed
by appointments, shopping, and socializing/recreation; most walk trips are for socializing or recreation, followed by work/school; most carpool trips were for socializing or recreation, shopping, and church; and most bike trips were for socializing or recreation.

Almost half of respondents from the Upper Taconic indicated that they had not travelled outside Dutchess County in the preceding month. Of those that had, the majority travelled to Ulster County, followed by New York City.

To reduce congestion, 40 percent of residents expressed support for creating communities that were less reliant on driving and 29 percent recommended improving public transportation. 91 percent of residents also felt that the condition of roads was a current or emerging problem in the Upper Taconic, while 84 percent felt that the lack of sidewalks was a current or emerging problem.

Land use: 77 percent of respondents thought that most development should be within cities, town centers and villages using vacant or underutilized land. There was similarly strong support (82 percent) for closely-spaced housing and buildings with sidewalks, even if that meant smaller homes and yards and less parking. 72 percent of respondents said that infrastructure and services should be expanded primarily in and around existing town and village centers.

Residents’ top three investment priorities for the next 5-10 years were maintaining roads, improving roads, and improving sidewalks. When asked what they would support with tax dollars, residents said walking and bicycling improvements (53 percent), followed by curb-to-curb bus service for seniors and disabled persons (47 percent). 89 percent of respondents opposed or strongly opposed any property tax increase to fund transportation.

About 76 percent of Upper Taconic households used two or more cars on a daily basis, while almost 23 percent used one car. Only two percent of households did not use a car regularly. Most residents (64 percent) who commuted to work lived within 5-20 miles of their job.

Demographics: Most respondents lived in the Town of Pleasant Valley (42 percent). Others lived the Town of Clinton (18 percent), Stanford (13 percent), and Washington (ten percent). 61 percent were aged 45-64, with 17 percent aged 25-44, six under 24, and 15 percent aged 65 and over. 56 percent of respondents were female, and 44 percent male.

A number of respondents provided direct comments about transportation conditions and issues. Many of these comments related to the need to identify other funding mechanism besides taxes to maintain the system. Some noted the benefits of roundabouts at congested intersections, the need for better shoulders for bicycling, new sidewalks to promote walking, and more regular bus service.

**Transportation Priorities**

Based on an analysis of available data, feedback from the Upper Taconic public workshop, and responses from the public survey, the Transportation Council identified the following transportation priorities:
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Highway Maintenance

Multiple Municipalities
1. Inventory pavement conditions on local streets and repave based on condition ratings.

Reconstruct the following road segments rated as poor under NYSDOT standards:

1. Route 44 from Deep Hollow Rd. to Turkey Hollow Rd. (Amenia) in Washington (2.2 miles).
2. Route 82 from Church Rd. to ¼ mile south of the Stanford town line in Washington (2.7 miles).
3. Route 199 from Stissing Mountain Rd. to Harrison Ln. in Pine Plains (0.4 miles).
4. Route 199 from 0.4 miles west of Prospect Hill Rd. to 0.1 miles west of Finkle Rd. in Pine Plains (1.3 miles).
5. Route 199 from Resseque Rd. to the North East town line in Pine Plains (0.4 miles).

Inventory pavement conditions on local streets and repave based on condition ratings.

Bridge Maintenance

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

1. Route 115 (Salt Point Turnpike) over Little Wappinger Creek (BIN 3343530) in Pleasant Valley.
2. CR 17 (Salt Point Turnpike) over Willow Brook (BIN 3343870) in Stanford.
3. CR 19 (Bulls Head Rd.) over Wappinger Creek (BIN 3343850) in Stanford.
4. CR 72 (North Ave.) over Swallow Stream (BIN 3343580) in Pleasant Valley.
5. CR 83 over Shekomeko Creek (BIN 1032390) in Pine Plains.
6. CR 83A (North Main St.) over Shekomeko Creek (BIN 3343500) in Pine Plains.
7. CR 83A (North Main St.) over Shekomeko Creek (BIN 3365150) in Pine Plains.
8. Carpenter Hill Rd. over Shekomeko Creek (BIN 3343520) in Pine Plains.
9. Maple Ln. over Locust Creek (BIN 3342790) in Clinton.
10. Mill Ln. over unnamed creek near Drake Rd. (BIN 3343590) in Pleasant Valley.
11. Schultzville Rd. over Wappinger Creek Tributary (BIN 3365130) in Clinton.

Safety

1. Encourage traffic calming measures on CR 71 (West Rd.) in Pleasant Valley to reduce vehicle speeds, to include narrowing travel lanes, adding signage, and possibly lowering the speed limit.
2. Realign the Route 115 (Salt Point Turnpike)/Hibernia Rd. intersection in the Salt Point hamlet (Pleasant Valley) to improve safety and visibility.
3. Realign Clinton Corners Rd. at its intersects with CR 17 (Salt Point Turnpike) in Clinton Corners to improve sight distance.
Moving Dutchess 2

4. Improve sight distances at the intersection of CR 19 (Slate Quarry Rd.) and Lake Dr. in Clinton.

Highway Operations

1. In conjunction with redesigning Route 44 (Main St.) into a boulevard within the Pleasant Valley Town center, evaluate possible safety improvements at the CR 47 (South Ave.), CR 71 (West Rd.), and CR 72 (North Ave.) intersections to include improved signage, lane markings, and traffic calming measures. This could also include adding center medians to channelize left-turn movements and extending curbs at major intersections.
2. Limit the number of access points on State and County roads and require new commercial developments to share driveways and to internally link circulation or service roads between adjacent parcels.
3. Investigate the need for a traffic signal or turning lanes at the Route 115 (Salt Point Turnpike) and CR 71 (West Rd.) intersection in Pleasant Valley.
4. Investigate the need for a traffic signal at the Route 44/82 intersection in Washington Hollow (Pleasant Valley).

Sidewalks/Pedestrian Facilities

1. Repair State-owned, non-ADA compliant sidewalks and ramps on Route 44 in Pleasant Valley, and Routes 82 and 199 in Pine Plains.
2. Construct a sidewalk or path along the south side of Route 115 (Salt Point Turnpike) between the Stewart’s shop and Park View Dr. in the Clinton Corners hamlet. Evaluate the feasibility of constructing a sidewalk or path along Salt Point Turnpike from Park View Dr. to the post office.
3. Extend sidewalks on Route 44 (Main St.) in Pleasant Valley to fill gaps, to include a landscaped buffer and street trees where possible. Improve intersection crossings and signage in the town center. In particular, construct curb extensions at key intersections including Route 44 (Main St.) at CR 72 (North Ave.), and improve the visibility of crosswalk warning signs on Route 44 (Main St.) near the Post Office and at CR 71 (West Rd.).
4. Provide a sidewalk or path on CR 71 (West Rd.) in Pleasant Valley and incorporate crosswalks to connect destinations.
5. Provide a crosswalk across CR 72 (North Ave.) at Martin Rd. or Ravine Rd. in Pleasant Valley to connect housing on the west side of CR 72 (North Ave.) to the sidewalk on the east side.
6. Install new crosswalks and appropriate warning signs on streets that intersect with existing sidewalks in Pine Plains, including all side streets that intersect with sections of Route 82 (S. Main St.) and 199 (Church St.), and CR 83A (N. Main St.) that have sidewalks. Also install a new mid-block crosswalk along Route 199 (Church St.) at Peck’s Market.
7. Construct a new sidewalk on the west side of CR 83A (N. Main St.) from Route 199 to Jackson Rd., and the east side of CR 83A from Evergreen Cemetery to Jackson Rd.
8. Construct a new sidewalk on the north side of Route 199 (Church St.) from the High School entrance to the Birch Dr. intersection, and a new sidewalk on the south side of Route 199 from Fairview Ave. to Route 82 (S. Main St.).
9. Construct a new sidewalk on the west side of Route 82 (S. Main St.) from Route 199 (Church St.) to Railroad Ave., across from the Post Office.
Transit

1. Explore the possibility of a new fixed bus route on Route 199 between the Villages of Tivoli and Millerton, with possible connecting service to the Kingston area in Ulster County.

Multi-Use Trails and Bicycle Facilities

1. Evaluate, designate, and sign Routes 44 and 82 as State Bicycle Routes (NYSDOT).
2. Improve shoulder conditions on State highways – four foot minimum paved width where possible – especially on Route 115 (Salt Point Turnpike) in the towns of Clinton, Pleasant Valley, and Stanford, and Route 44 through Pleasant Valley and Washington; also install signage to increase safe sharing of the road.
3. Widen shoulders to four feet on CR 72 (North Ave.) and Sherow Rd. in Pleasant Valley.

Planning Studies

1. Promote and assist local pedestrian, trail, and bikeway plans in interested communities. Help coordinate local pedestrian, trail and bikeway planning efforts with other regional efforts.
2. Conduct a sidewalk inventory and develop a sidewalk improvement strategy for the Pleasant Valley Town Center and Village of Millbrook.
3. Analyze speed patterns on County and local roads, using speed data from the PDCTC’s traffic count program. Identify corridors with high percentages of ‘high-end’ speeding (e.g., 10 mph or more over the posted speed limit) and develop engineering, enforcement, and educational approaches to reduce speeding.
Chapter 6-5

Harlem Valley Overview

Moving Dutchess 2 defines the Harlem Valley area as the northeast block of communities located along the Connecticut State border and Route 22 corridor. The area encompasses the Towns of Amenia, Dover, and North East, and the Village of Millerton.

The four Harlem Valley communities share similar demographic, land use, and transportation characteristics. These include slow population growth during the past 20 years, low population densities, average median household incomes, a low share of out-of-county commuters, and high rates of auto usage. These similarities make it more likely that the communities will face similar land use and transportation challenges during the next 25 years, and accordingly, make it more likely that they will benefit from similar land use and transportation strategies to improve travel conditions and quality of life.

The Harlem Valley is mostly rural, with small, concentrated pockets of development in villages and hamlets such as the Village of Millerton, the Dover Plains, and Wingdale hamlets in Dover, and the Wassaic hamlet in Amenia.

Demographics

The Harlem Valley communities had a 2010 population of 16,166. This was a 3.5 percent increase over 2000, an approximate growth rate of 0.4 percent annually from 2000-2010. The Harlem Valley’s rate of growth was about half that of Dutchess County’s overall 6.2 percent increase in population. The Town of Amenia had the highest rate of growth in the area, while the Town of North East’s population remained stable (see Table 6-5-1).

Table 6-5-1. Total Population-Harlem Valley (2000-2010)

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<td>Town of Dover</td>
<td>8,565</td>
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<td>Town of North East</td>
<td>2,077</td>
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<tr>
<td>Village of Millerton</td>
<td>925</td>
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Source: U.S. Census Bureau, 2010 Census

In 2010 the Harlem Valley had a population density of 110 people per square mile, which was well below the county’s overall density of 374 people per square mile. The area had the lowest population density in the County. At 1,549 people per square mile, the Village of Millerton had the highest population density in the Harlem Valley, while the towns of Amenia and North East had the lowest, at 102 and 70 people per square mile respectively. Population density information is shown on the Harlem Valley Population Density Map at the end of this chapter. In addition, potential future population density patterns are shown in the Harlem Valley 2040 Buildout Analysis: Existing Zoning Scenario and Centers and Greenspaces Scenario maps.
The Harlem Valley contained 7,770 housing units in 2010, a 13.3 percent increase from 2000 (see Table 6-5-2). The area averaged a gain of 91 housing units per year from 2000-2010. All four municipalities experienced double-digit rates of growth in housing units over the decade, with the Town of North East leading with a 19 percent increase. The area had 6,655 occupied housing units (households) in 2010, with an average household size of 2.4.

**Table 6-5-2. Total Housing Units-Harlem Valley (2000-2010)**

<table>
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<td>Town of Amenia</td>
<td>1,814</td>
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<td>12.7</td>
</tr>
<tr>
<td>Town of Dover</td>
<td>3,266</td>
<td>3,637</td>
<td>11.4</td>
</tr>
<tr>
<td>Town of North East</td>
<td>1,366</td>
<td>1,627</td>
<td>19.1</td>
</tr>
<tr>
<td>Village of Millerton</td>
<td>412</td>
<td>461</td>
<td>11.9</td>
</tr>
</tbody>
</table>

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

**Age**

Young people and older people have different transportation needs than others: they are less likely to drive, and therefore more likely to walk (both young and old), bicycle (young people), or use transit for transportation. Compared to the county as a whole, the Harlem Valley communities support average percentages of young people (aged 16 and under), albeit the Town of Dover has a slightly higher average than the county. Inversely, the Towns of Amenia and North East have slightly higher percentages of older people (aged 65 and over) compared to the rest of the county (see Table 6-5-3).

**Table 6-5-3. Percent Young and Elderly-Harlem Valley (2010)**

<table>
<thead>
<tr>
<th>Municipalities</th>
<th>% 16 and Under</th>
<th>% 65 and Over</th>
<th>Total % Under 16 and 65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Amenia</td>
<td>18</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>Town of Dover</td>
<td>21</td>
<td>11</td>
<td>32</td>
</tr>
<tr>
<td>Town of North East</td>
<td>17</td>
<td>16</td>
<td>33</td>
</tr>
<tr>
<td>Village of Millerton</td>
<td>19</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td><strong>Dutchess County</strong></td>
<td><strong>19</strong></td>
<td><strong>14</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2010 Census

**Income**

Lower-income households are also more likely to walk, bicycle and use transit for everyday needs. Based on data from the U.S. Census Bureau’s 2009-2013 American Community Survey, the Towns of Amenia (at $49,107-$63,337) and Dover (at $64,114-$69,660) had median household incomes below the county average of $71,192-$73,858.

**Vehicle Ownership**

Households without a motor vehicle are much more likely to seek alternative transportation. Based on data from the U.S. Census Bureau’s 2009-2013 5-year American Community Survey, none of the municipalities in the Harlem Valley had zero-vehicle household rates above the county average of 7.9-8.9 percent.

**Centers & Destinations**

**Centers**
The Lower Taconic hosts a variety of activity centers and destinations. These are mainly located near major transportation facilities, such as Routes 44 and 22. Depending on the nature of the land use and amount of development, these centers and destinations affect travel and the transportation system to varying degrees.

Activity centers are those areas that support a concentrated mix of residential and commercial development, most typically a village or hamlet. They are human in scale and supported by adequate pedestrian infrastructure. Such centers provide travelers with the ability to make more non-motorized trips than auto-dependent land uses. The County’s Centers & Greenspaces Guide identifies existing centers with high levels of residential or commercial activity. In the Harlem Valley, these include the following centers:

1. Amenia hamlet in Amenia
2. Wassaic hamlet in Amenia
3. Wingdale hamlet in Dover
4. Dover Plains hamlet in Dover
5. Millerton village center

Destinations

Major destinations include transportation hubs, large commercial sites, and schools. These sites generate significant traffic volumes and can contribute to peak hour traffic congestion. The Harlem Valley includes the following major destinations:

1. Retail centers along Route 22.
2. Ten Mile Metro-North train station in Amenia.
3. Wassaic Metro-North train station in Amenia.
4. Webutuck High School and Elementary School in Amenia.
5. Dover Plains Metro-North train station in Dover.
6. Harlem Valley-Wingdale Metro-North train station in Dover.
7. Westchester Modular Homes (located near Reagans Mill Rd.) in Dover.
8. Dover High School and Wingdale Elementary School in Dover (Wingdale hamlet).
9. Dover Middle School and Elementary School.
10. Harlem Valley Rail Trail.

The Harlem Valley Overview Map at the end of this chapter shows key centers and destinations in the area.

Major Projects

The Transportation Council’s 2013 Major Projects Report, which tracks large projects in the county, identified almost 1,800 new residential units in the planning stages or under construction in the area’s four communities. In addition, over 460,000 square feet of non-residential space was being planned for the area. Some of the larger projects in the area include the following:

1. Silo Ridge in Amenia: 245 residential units, recreational space, and 4,000 sq. ft. retail on 691 acres on Route 22.
3. Knolls at Dover in Dover: 1,376 residential units and 238,500 sq. ft. retail on 921 acres on Route 22.
4. Millerton Supermarket in North East: 35,812 sq. ft. retail on 12 acres on Route 44.

If fully developed, the Knolls at Dover would be the largest residential development project in Dutchess County history. Located at the former Harlem Valley Psychiatric Center, this Transit Oriented Development (TOD) project is centered on the Harlem Valley/Wingdale Metro-North train station, with 68 percent of all residential units expected to be within walking distance of the train station. The entire project includes a mix of single family residences, apartments, and townhomes. Construction is expected to be phased in over the next decade.

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

**Transportation System**

The Harlem Valley population primarily relies on the private vehicle for most of their transportation needs, making the area’s transportation system based on the highway network. However, one of the area’s major road corridors is served by limited bus service, and intercity rail is available in the area. Village and hamlet locations are served by sidewalk systems.

**Roads**

The Harlem Valley’s road system consists of two major highways: Routes 22 and 44; smaller State highways including Route 199 and 343; and County roads including CR 6 (Old State Route 22), CR 21 (Pleasant Ridge Rd), CR 62 (South Maple Ave.), and CR 81 (Old Route 22).

According to the NYSDOT 2013 Highway Mileage Report, the Harlem Valley communities contained 271 miles of State, County, and local roads. Table 6-5-3 shows the distribution of centerline mileage across the Harlem Valley communities.

**Table 6-5-4. Centerline Mileage-Harlem Valley**

<table>
<thead>
<tr>
<th>Location</th>
<th>Total Centerline Mileage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Amenia</td>
<td>83</td>
</tr>
<tr>
<td>Town of Dover</td>
<td>101</td>
</tr>
<tr>
<td>Town of North East</td>
<td>80</td>
</tr>
<tr>
<td>Village of Millerton</td>
<td>7</td>
</tr>
</tbody>
</table>

NYSDOT rates pavement condition on a scale of 1 to 10, with 1 being the worst and 10 the best. A rating of 5 or lower is classified as poor. According to 2014 NYSDOT pavement condition data, State owned highways in the Harlem Valley had an average surface rating of 6.8. The following State highway segments in the Harlem Valley were identified as being in poor condition (score of 5 or lower):

1. Route 22 in Amenia: Route 44/343 to Broadway (0.4 miles).
2. Route 44 in Amenia: CR 86 (Bangall Amenia Rd.) to Turkey Hollow Rd. (0.6 miles).
3. Route 343 in Amenia: Washington Town Line to Cart Rd. (0.4 miles).
4. Route 55 in Dover: Old Route 22 to Connecticut State Line (2.3 miles).

In addition, DCDPW rates the condition of County-owned roads each year. According to 2014 data, no County roads in the Harlem Valley were in poor condition. The Harlem Valley Bridge and Pavement Conditions Map shows pavement conditions in the area.

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

1. Route 22 in Dover: 6,900
2. Route 55 in Dover: 6,200
3. Route 22 in Amenia: 5,700
4. Route 44 in Amenia: 5,600
5. Route 44 in Millerton: 5,500
6. Route 22/44 in North East: 4,900
7. CR 6 (Old State Route 22) in Dover: 4,300

Traffic volumes in the Harlem Valley are shown on the Traffic Volume Analysis map.

### Congestion Management Process (CMP)

The Transportation Council completed a CMP Step 2 report in 2006, which identified locations with severe, heavy, and moderate peak hour congestion. The Harlem Valley did not contain any facilities with measureable congestion. The 2011 Travel Time Survey elaborated on the Step 2 report data by collecting travel time data on key routes during morning, midday, evening, and weekend periods. Based on the data collected, the following Harlem Valley roads experienced congestion (defined as having a ratio of peak-period travel time to non-peak travel time greater than 1.3):

1. Route 22 approaching Route 343 in Dover:
   - Northbound: AM, PM, and Saturday
   - Southbound: AM, PM, and Saturday
2. Route 22 approaching CR 21 (Pleasant Ridge Rd.) in Dover:
   - Southbound: PM

The Transportation System Performance Maps in Chapter 5 show travel time data by roadway segment.

### Bridges

The Harlem Valley transportation system includes 50 road bridges, defined as a bridge structure with a span of 20 feet or longer. The NYSDOT condition rating scale ranges from 1 to 7, with 7 being in new condition and a rating of 5 or greater considered as good condition. In 2014 the bridges collectively had an average NYSDOT condition rating of 5.4.
NYSDOT defines a deficient bridge as one with a State condition rating of less than 5. A deficient condition rating indicates deterioration to a level that requires corrective maintenance or rehabilitation to restore the bridge to a fully functional, non-deficient condition; it does not imply that the bridge is unsafe. The Harlem Valley had 14 bridges that were classified as deficient under the NYSDOT rating system. Table 6-5-5 shows the number of bridges by municipality and their average State rating.

<table>
<thead>
<tr>
<th>Number of Bridges</th>
<th>Average NYSDOT Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Amenia</td>
<td>15</td>
</tr>
<tr>
<td>Town of Dover</td>
<td>19</td>
</tr>
<tr>
<td>Town of North East</td>
<td>13</td>
</tr>
<tr>
<td>Village of Millerton</td>
<td>3</td>
</tr>
</tbody>
</table>

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

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

“Functionally obsolete” refers to a bridge’s inability to meet current standards for managing the volume of traffic it carries, not its structural integrity. A bridge may be “functionally obsolete” if it has narrow lanes, no shoulders, or low clearances. The Harlem Valley has three bridges classified as structurally deficient and ten classified as functionally obsolete (see Table 6-5-6 below).

Table 6-5-6. Structurally Deficient & Functionally Obsolete Bridges-Harlem Valley

<table>
<thead>
<tr>
<th>Structural Deficient</th>
<th>Functionally Obsolete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Amenia</td>
<td>0</td>
</tr>
<tr>
<td>Town of Dover</td>
<td>3</td>
</tr>
<tr>
<td>Town of North East</td>
<td>0</td>
</tr>
<tr>
<td>Village of Millerton</td>
<td>0</td>
</tr>
</tbody>
</table>

The Harlem Valley Bridge and Pavement Conditions Map at the end of this chapter identifies bridges rated as structurally deficient and functionally obsolete based on federal standards, as well as those classified as deficient by NYSDOT.

Transit

Dutchess County Public Transit (DCPT) operates one fixed route in the Harlem Valley: Route D between Poughkeepsie,
Amenia (Wassaic), and Dover. The route runs Monday-Saturday from 5:45 a.m. to 10:56 p.m., with two bus runs between Poughkeepsie and Amenia per day. Route D primarily serves the Route 44 corridor and a portion of Routes 22 and 343.

Metro North Railroad operates four train stations in the Harlem Valley: two each in Amenia and Dover. The stations serve the Harlem Line, which provides commuter rail service to Grand Central Terminal in New York City. As of 2015, the four stations each supported four through trains to Grand Central Terminal and another nine trains that required transfers at the Southeast station in Putnam County. Metro-North maintains parking facilities at each train station in the Harlem Valley:


**Pedestrian & Bicycle Transportation**

**Sidewalk Systems**

The Harlem Valley has approximately 17 miles of sidewalks. The majority are in the Town of Amenia (see Table 6-5-7). When considered on a per-resident basis, the Village of Millerton has the most sidewalks per resident and ranks first in the county. Minor sidewalk systems are also located in some of the larger residential and commercial properties.

<table>
<thead>
<tr>
<th>Sidewalks (miles)</th>
<th>Sidewalk Feet per Population</th>
<th>County-wide Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Amenia</td>
<td>8.0</td>
<td>9.5</td>
</tr>
<tr>
<td>Town of Dover</td>
<td>4.2</td>
<td>2.5</td>
</tr>
<tr>
<td>Town of North East</td>
<td>0.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Village of Millerton</td>
<td>3.9</td>
<td>21.6</td>
</tr>
</tbody>
</table>

**Trail Systems**

The Harlem Valley has approximately 33 miles of unpaved trails. Major recreational trails in the area include:

2. Wassaic State Multiple Use Area trails in Amenia: 6.6 miles.
3. Appalachian Trail in Dover: 4.5 mile segment.

**Shared-Use Paths**

The Harlem Valley Rail Trail extends from Main Street in Millerton, south through Amenia to the Wassaic Metro-North station, a distance of 10.7 miles. The trail is planned to continue north to Chatham in Columbia County. An extension south into the hamlet of Wassaic is also planned.

The NYS Office of Parks, Recreation, and Historic Preservation completed a Statewide Trails Plan in 2010. The Trails Plan recommends the completion of the Harlem Valley Rail Trail from Amenia to Pawling, connecting south to the Putnam
County rail trail and from Millerton to Columbia County to the north.

**Bicycling Facilities**

The only on-street bicycle facilities in the Harlem Valley are shared-lane use markings (sharrows) in the Town of Amenia on Mechanic Street between the Harlem Valley Rail Trail and East Main Street.

NYSDOT has several proposed State Bicycle Routes (SBR) which connect to the area:

1. An extension of SBR 22 south on Route 22 between Columbia County through Dutchess and Putnam counties.
2. An extension of SBR 199 along Route 199, between Route 308 on the western border of Milan and the proposed SBR 22 in the Town of Northeast.
3. Proposed SBR 44, along Route 44 between SBR 9 in the City of Poughkeepsie and the proposed SBR 22 in the Town of Amenia.

Bicycle parking is provided at some of the area’s key destinations, including the Harlem Valley Rail Trail trailheads in Millerton and Amenia, the Wassaic Metro-North station, and the Dover Plains library. A searchable online bicycle parking map includes more information for each location.

**Accessibility**

In 2010 NYSDOT conducted an ADA inventory of the State transportation system. The inventory identified intersections and sidewalk segments that require improvements to fully achieve ADA accessibility standards. The following Harlem Valley locations require modifications to meet ADA standards:

**Route 44 in the Village of Millerton**
1. Intersection at John St.
2. Intersection at Central Ave.
3. Intersection at North/South Maple Ave.
4. Sidewalk from Dutchess Ave. to Park Ave. (0.10 miles).
5. Sidewalk from Central Ave. to North/South Maple Ave. (0.06 miles).

**Route 343 in the Town of Amenia**
1. Intersection at Mechanic St.

For additional data on walking and bicycling patterns, see *Walk Bike Dutchess*, Chapter 5.5 (Harlem Valley).

**Transportation Safety**

The Transportation Council analyzed vehicle crash data from the NYS Governor’s Traffic Safety Committee (GTSC), focusing on total crashes and crash rates based on road mileage. In 2013, the most recent data available, the GTSC reported that 80 crashes with fatalities or injuries occurred in the Harlem Valley. For the three year period of 2011-2013, the Harlem Valley averaged 90 fatal and injury crashes per year. Table 6-5-8 shows the total number of reported crashes with fatalities or injuries by municipality for 2011-2013.
Table 6-5-8. Fatal & Injury Crashes-Harlem Valley (2011-2013)

<table>
<thead>
<tr>
<th></th>
<th>Fatal &amp; Injury Crashes</th>
<th>3-Year Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Amenia</td>
<td>38 37 20</td>
<td>32</td>
</tr>
<tr>
<td>Town of Dover</td>
<td>40 41 43</td>
<td>41</td>
</tr>
<tr>
<td>Town of North East</td>
<td>11 16 13</td>
<td>13</td>
</tr>
<tr>
<td>Village of Millerton</td>
<td>4 3 4</td>
<td>4</td>
</tr>
</tbody>
</table>

Measured in terms of road mileage, the Harlem Valley communities had an average fatal/injury vehicle crash rate of 0.35 crashes per road mile in 2013; the same rate reported in 2009 for Moving Dutchess. The 2013 Harlem Valley crash rate remained well below the overall county rate of 0.9 crashes per mile. The Towns of Dover and North East had the lowest crash rates in the county. Table 6-5-9 shows crash rates per mile by municipality from 2011-2013.

Table 6-5-9. Crash Rate per Mile-Harlem Valley (2011-2013)

<table>
<thead>
<tr>
<th></th>
<th>Crash Rate Per Mile</th>
<th>3-Year Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Amenia</td>
<td>0.5 0.4 0.2</td>
<td>0.4</td>
</tr>
<tr>
<td>Town of Dover</td>
<td>0.4 0.4 0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Town of North East</td>
<td>0.1 0.2 0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Village of Millerton</td>
<td>0.6 0.4 0.6</td>
<td>0.5</td>
</tr>
</tbody>
</table>

NYSDOT, in conjunction with NYSDMV and the Office of Cyber Security & Critical Infrastructure Coordination (CSCIC), maintains an online database of motor vehicle crashes called the Accident Location Information System (ALIS). The Transportation Council conducted an analysis of 2010-2014 ALIS crash data to identify general crash trends in the Harlem Valley. Based on this 2010-2014 data, the Transportation Council identified high-crash intersections and roadway segments in the Harlem Valley. These are shown in the Harlem Valley Crash Analysis Map at the end of this chapter. The following Harlem Valley locations experienced some of the highest number of crashes/crash rates over the five-year period:

**Intersections (Total Crashes)**

1. Route 22 at CR 21 (Pleasant Ridge Rd.) in the Town of Dover (21 crashes).
2. Route 22 at Route 44/343 in the Town of Amenia (14 crashes).
3. Route 44 (Main St.) at Route 22/44 (Elm St.) in the Village of Millerton (12 crashes).
4. Route 22 at Cascade Rd. in the Town of Amenia (10 crashes).

**Roadway Segments (Total Crashes)**

1. CR 21 (Pleasant Ridge Rd.) between the Union Vale town line and Harry Hill Rd. in the Town of Dover (49 crashes).
2. Route 22 between CR 21 (Pleasant Ridge Rd.) and Rural Ave. in the Town of Dover (23 crashes).
3. Route 22 between Dover Village Plaza and Nellie Hill Rd. in the Town of Dover (22 crashes).
4. Route 22 between CR 105 (Sinpatch Rd.) and Wilcox Dr. in the Town of Amenia (21 crashes).
5. Route 22 between CR 81 (Old Route 22) and Nelson Hill Rd. in the Town of Amenia (24 crashes).
6. Route 22 between Furnace Bank Rd. and Dunn Rd. in the Town of Amenia (25 crashes).
7. Route 22 between Adams Dr. and CR 1 (Sharon Station Rd.) in the Town of Amenia (24 crashes).
8. Route 44 between CR 83 (Smithfield Valley Rd.) and W. Lake Amenia Rd. in the Town of Dover (20 crashes; one fatality in 2010).

Roadway Segments (Crashes per Mile)

1. Route 22 between Brady Ln. and Cart Rd. in the Town of Dover (13 crashes; 136 crashes per mile).
2. Route 44 (Main St.) between Route 22 (Elm St.) and Railroad Plz. in the Village of Millerton (six crashes; 117 crashes per mile).
3. Route 44 (Main St.) between Center St. and John St. in the Village of Millerton (five crashes; 96 crashes per mile).
4. Route 44 (Main St.) between Dutchess Ave. and Park Ave. in the Village of Millerton (five crashes; 78 crashes per mile).

Pedestrian & Bicycle Safety

The Transportation Council also analyzed the 2009-2013 crash data to determine pedestrian and bicycle crash rates per 1,000 people for each municipality. Based on this analysis, the Village of Millerton was the only Harlem Valley community to have a pedestrian crash rate (0.55) above the county average of 0.29 crashes per 1,000 people. None of the four municipalities had bicycle crash rates above the county average of 0.15. However, Walk Bike Dutchess did identify one high-crash corridor for bicyclists in the Town of Amenia: Route 22 between Lake Amenia Rd./Dunn Rd. and Cascade Rd. (1.2 miles; three crashes; 2.5 crashes/mile).

Local Comprehensive Plans

The Transportation Council reviewed each community’s comprehensive plan to identify land use and transportation recommendations that would be relevant for Moving Dutchess 2. For many communities, the recommendations involve land use policies and projects that promote non-motorized travel, maintain community character, improve safety, and reduce congestion.

Town of Amenia

The Town of Amenia adopted its comprehensive plan in 2007. The plan recommends a series of projects and programs to improve the local transportation system.

1. Explore future improvements to Routes 22, 44, and 343 in the hamlet of Amenia, so that they become pedestrian-friendly main streets as they pass through the NYS Route 22 corridor and the hamlet center.
2. Connect the Harlem Valley Rail Trail in the Amenia hamlet with neighborhoods and other amenities.
3. Recognize and improve the Wassaic hamlet with historically appropriate signage, lighting, sidewalks, and landscaping.
4. Request Metro-North trains slow down and/or have a “flag-stop” in Wassaic hamlet.
5. Continue the rail trail to connect to the sports field and town park in Wassaic.
7. Connect the rail station to local shuttle or bus systems.
9. All road design and reconstruction projects should be conducted with special attention to making them safe and attractive to pedestrians and bicyclists.
10. Provide sidewalks in the Amenia and Wassaic hamlets.
11. Improve truck access to Wassaic hamlet. The existing “jug handle” at the north end of Old Route 22 in Wassaic Hamlet should be retained.
12. Install traffic calming and sidewalks in the area of the hamlet center extending from Fudgy’s north to Freshtown plaza and Maplebrook School.
13. Make the Wassaic hamlet more pedestrian-oriented. Safety improvements are needed along Route 22 between Maplebrook School and Sharon Station Rd.
14. Development of the Harlem Valley Rail Trail from Wassaic station to the North East town line.
15. Possible extension of the Rail Trail into the Wassaic hamlet.
16. Possible Rail Trail extension to Silo Ridge via a Route 22 underpass.
17. Create a second mixed-use hamlet center in and around the Freshtown shopping plaza, on the east side of Route 22; additional streets south of the existing shopping plaza would need to be added, and at least one additional access point on Route 22.

Town of Dover

The Town of Dover adopted its comprehensive plan in 1993. The plan identified the following transportation related issues and recommendations:

1. Promote a town-wide trail network, including a loop trail linking Nellie Hill with the center of Dover Plains, a continuous trail along the Ten Mile River, and a trail from Boyce Park to the Appalachian Trail.
2. Provide shoulders along Route 22.
3. Promote employee-sponsored and privately arranged ride sharing and increased use of commuter bus service with direct connections to the train station.
4. Evaluate the need for Dial-A-Ride service for seniors.
5. A new road connecting Route 22 with the Metro-North property north of the Dover Plains train station should be built.
6. Investigate the potential to realign the intersection of Route 22 and Cricket Hill Rd.
7. Work with NYSDOT to reduce speeds along Route 22 through the hamlet center business district to 30 miles per hour.
8. Repair and extend the sidewalk system along primary connecting streets and integrate bicycle/walkways with a town-wide trail system.
**Moving Dutchess 2**

**Town of North East & Village of Millerton**

The Town of North East and the Village of Millerton adopted a consolidated comprehensive plan in 1994. The plan’s vision supports the Village as the center of the community and encourages the development of regional public transportation, adequate off-street parking, and pedestrian walkways and bikeways.

The comprehensive plan includes the following recommendations to improve the transportation system:

1. Provide wider shoulders on Route 22, in order to better accommodate both farm and non-farm traffic.
2. Plan for the needs of a growing elderly population in recreational facilities, emergency services, housing choices, public transit opportunities, and site plan designs.
3. Ensure the needs of the population should be reflected in development patterns and open space corridors that allow pedestrian access to shopping centers, the village center, local services, and recreation sites. A system of walkways serving a concentration of higher-density housing near the village could help accomplish this.
4. Encourage pedestrian walkways in both the town and village and in new residential development.
5. Support the development of the Rail Trail as an important economic and recreational resource and look for ways to link public lands with the Harlem Valley Rail Trail. Provide additional off-street parking near the Harlem Valley Rail Trail.
6. Provide service roads for major developments on the Route 22 corridor.
7. Establish the means by which Route 44 Corridor Planning Area property owners can carry out community projects of mutual benefit and cost sharing is recommended. Projects may include the central water supply system, street tree program, sidewalks, street lighting and utility relocation.
8. Reduce the speed limit through the hamlet.
9. Make the walkway/driveway between Main St. and Century Blvd part of a pedestrian network.
10. Future off-street parking areas could include areas near the Harlem Valley Rail Trail, south of Main St., and the area between South Center St. and Park Ave.
11. Add a bus station in the Planned Residential Business District.
12. Install sidewalks along Century Blvd to facilitate pedestrian movement and encourage people to park there and walk to Main St.

**Previous Transportation Council Studies**

The Transportation Council has completed one planning study specific to the Harlem Valley: the Route 22 Corridor Management Plan (CMP) in 2002. The Transportation Council also completed a Dutchess County Transit Development Plan in 2009, which included general recommendations for the Harlem Valley. A summary of each is included below. Complete documents are available on the Transportation Council’s website.
Route 22 Corridor Management Plan (2002)

The Transportation Council, in conjunction with the Harlem Valley Partnership, completed the Route 22 Corridor Management Plan in 2002. The CMP sought to assist communities and NYSDOT with decisions about future development, road access, and transportation improvements. The CMP addressed the entire 40 mile length of Route 22 in Dutchess County, from the Putnam County line north to the Columbia County line, covering six communities: Towns of Amenia, Dover, and North East, the Village of Millerton, and the Town and Village of Pawling.

The CMP included an inventory of existing conditions related to the transportation system, land use and zoning issues, and traffic operations, and also a build-out analysis of projected development and an assessment of potential impacts on travel. The CMP also offered a variety of transportation and land use recommendations for each community, to include the following:

1. Designate greenbelts and use the transfer of development rights to preserve open space.
2. Create a cluster by-law/overlay district in the towns to preserve open space.
3. Create a limited access overlay in the Village of Millerton to limit the number of driveways.
4. Incorporate access management tools into site plan reviews and subdivision regulations.
5. Improve safety at the following Route 22 intersections:
   - Dover High School
   - Food Town entrance in the Town of Dover
   - Haight Rd. in the Town of North East
   - Route 199 in Town of North East
   - Route 44/22 in the Village of Millerton
6. Add pedestrian/bicycle connections at the following locations:
   - Dover Plains to Tally Ho Mobile Home Park in the Town of Dover.
   - Amenia hamlet north to Maplebrook School in the Town of Amenia.
   - CR 4 (Poplar Hill Rd.) to Tenmile River Metro-North train station via CR 5 (Sinpatch Rd.) in Amenia.
   - Route 343 to the Harlem Valley Rail Trail along Mechanic Street in the Town of Amenia.
7. Consider road capacity improvements on Routes 44 and 343 in Amenia and CR 21 (Pleasant Ridge Rd.) and Mill St. in Dover.

Dutchess County Transit Development Plan (2009)

The 2009 Dutchess County Transit Development Plan (TDP) included a long term recommendation to create a new fixed bus route to serve the entire Route 22 corridor, from the Town of North East and Village of Millerton, through Amenia and Dover, to the Town and Village of Pawling. The new route would travel between the Pawling Railroad Station and the Village of Millerton along Route 22. The TDP also recommended service to the Metro-North Harlem Line Stations at Harlem Valley-Wingdale, Dover Plains, Tenmile River, and Wassaic.
Natural & Historic Resources

The Transportation Council reviewed natural and historic resource information from the State and County to identify potential constraints relevant to transportation planning in the Harlem Valley area. This process started with an inventory of 100-year and 500-year floodplains, NYSDEC wetlands, federal, State, and locally designated parklands, agricultural lands, critical environmental areas, and designated historic districts. These resources are shown on the Harlem Valley Natural and Historic Resources Map at the end of this chapter.

Waterbodies & Watersheds

The Harlem Valley contains a number of large waterbodies that are 25 acres in size and larger:

1. North East: Indian Lake (194 acres) and Rudd Pond (76 acres).
2. Amenia: Round Pond (49 acres) and Swift Pond (61 acres).
3. Dover: Crane Pond (38 acres), Ellis Pond (61 acres), and Lake Weil (34 acres).

Streams in the Harlem Valley include:

1. Town of North East: Noster Kill, Sawmill Brook, Shekomeko Creek, Wassaic Creek, and Webatuck Creek.
2. Town of Amenia: Turkey Hollow Brook, Indian Lake Creek, Mill Brook, Tenmile River, Wassaic Creek, Webatuck Creek, and the Housatonic River.
3. Town of Dover: Burton Brook, Deuel Hollow Brook, Mill River, Stone Church Brook, Stony Brook, Swamp River, Tenmile River, and the Housatonic River.
4. Village of Millerton: Kelsey Brook and Webatuck Creek.

Though parts of many watersheds lie in the Harlem Valley, the Webatuck Creek watershed is the largest, covering most of Amenia, North East, and some of Dover. The Ten Mile River watershed covers the rest of Dover. Smaller watersheds are located along the border with Connecticut.

Floodplains

Floodplains make up a small percentage of some Harlem Valley communities, as shown in Table 6-5-10. The Village of Millerton has the highest percentage of land area within 100-year and 500-year floodplains in this region.

<table>
<thead>
<tr>
<th>Town</th>
<th>Total Floodplain Acreage</th>
<th>Percent of Land Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Amenia</td>
<td>1,306</td>
<td>5</td>
</tr>
<tr>
<td>Town of Dover</td>
<td>2,307</td>
<td>6</td>
</tr>
<tr>
<td>Town of North East</td>
<td>1,204</td>
<td>4</td>
</tr>
<tr>
<td>Village of Millerton</td>
<td>26</td>
<td>7</td>
</tr>
</tbody>
</table>

A number of transportation facilities in the Harlem Valley are subject to periodic flooding due to their location within designated 100-year and 500-year floodplains, NYSDEC wetlands, and adjacent waterbodies. These include:
Moving Dutchess 2

1. CR 81 (Old Route 22) between Broadway St. and Railroad Ave. in Amenia.
2. Sinpatch Rd. near the Tenmile River train station in Amenia.
3. Route 22 between Duncan Hill Rd. and CR 26 (Dover Furnace Rd.) in Dover.
4. Route 55 east from Route 22 to Berkshire Rd. in Dover.
5. CR 6 (Old State Route 22) between Sherman Hill Rd. and Jordyn Ln. in Dover.
6. Lime Kiln Rd. from CR 6 (Old State Route 22) to Berkshire Rd. in Dover.
7. Maple Ln. in and around Benson Hill Rd. in Dover Plains (Dover).
8. Park Dr. south of Maple Ln. in Dover Plains (Dover).
9. Route 44 in North East, east of the Village of Millerton.
10. CR 61 (Indian Lake Rd.) east of Mill Rd. in North East.
11. CR 62 (Rudd Pond Rd.) between Route 22 and Kaye Rd. in North East.

Agriculture & Open Space

The Dutchess County Planning Department’s Centers and Greenspaces Guide identifies suburban development and areas susceptible to suburban development, classified as parcels under five acres that are outside of centers. In the Harlem Valley, these areas are primarily concentrated along Route 22 and the east-central portion of Dover. The guide also identifies protected and agricultural lands, which include most of Amenia and North East, and a large part of Dover.

The Harlem Valley contains 34,076 acres of land that received agricultural value assessments in 2014. These assessments identify properties that have active farms, nurseries, stables, or other agricultural operations. The agricultural assessed lands represent 37 percent of the area’s total land. The Town of North East stands out as having over half of its area assessed for agricultural use. Table 6-5-11 shows the total acreage of agricultural assessed lands by municipality and its share of each municipality’s land area.

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Total Agricultural Assessed Acreage</th>
<th>Percent of Land Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Amenia</td>
<td>10,514</td>
<td>38</td>
</tr>
<tr>
<td>Town of Dover</td>
<td>8,707</td>
<td>24</td>
</tr>
<tr>
<td>Town of North East</td>
<td>14,854</td>
<td>54</td>
</tr>
<tr>
<td>Village of Millerton</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The Harlem Valley also contains 54,630 acres of land certified by the NYS Department of Agriculture & Markets as Agricultural Districts. These districts are locally designated parcels that currently serve or could serve agricultural purposes. These districts represent 60 percent of the area’s total land and include most of the agriculturally assessed lands. Table 6-5-12 shows total agricultural district acreage by municipality and its share of each municipality’s land area.

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Total Agricultural District Acreage</th>
<th>Percent of Land Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Amenia</td>
<td>20,942</td>
<td>75</td>
</tr>
<tr>
<td>Town of Dover</td>
<td>14,983</td>
<td>42</td>
</tr>
<tr>
<td>Town of North East</td>
<td>22,264</td>
<td>81</td>
</tr>
</tbody>
</table>
The Harlem Valley includes two farms and one open space that are protected under the Dutchess County Partnership for Manageable Growth program:

1. Pleasant View Farm (257 acres) in North East.
2. Sunset Ridge Farm (180 acres) in North East.
3. Stone Church (59 acres) in Dover.

The Harlem Valley also hosts 3,677 acres of federal, State, and local parklands. Key parks include:

1. Wassaic State Multiple Use Area (513 acres) in Amenia.
2. Nellie Hill Preserve (144 acres) in Dover.
3. Thomas J. Boyce Park (208 acres) in Dover.
4. Harlem Valley Rail Trail (139 acres) in North East.
5. Taconic State Park (2,423 acres) in North East.

Critical Environmental Areas

The Harlem Valley includes four locally designated Critical Environmental Areas (CEAs), which are recognized by NYSDEC as having significant impacts on the natural environment.

1. The Sarney Site on Benson Hill Rd. in Amenia (inactive landfill and toxic pollutants present).
2. The Deuel Hollow CEA on Denuel Hollow Rd. in Dover (protection of the area in and around the Appalachian Trail).
3. The Mica Products Landfill CEA on Route 22 in Dover (inactive landfill; toxic pollutants present).
4. The Town of North East Landfill (inactive landfill; toxic pollutants present).

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

1. Taconic Ridge/Harlem Valley.
2. The Great Swamp – Among the three largest wetlands in New York State, located in the Towns of Dover and Pawling, and the Village of Pawling.
3. Hudson Tributaries – Sites which protect habitat and provide access to stream banks of tributaries, including the Sawmill Creek and the Stony Brook Creek.
4. Dutchess County’s important agricultural areas – the Panhandle Prime Soils in the Town of North East; Dutchess Dairy Heartland in the Towns of North East and Amenia; Smithfield Valley in the Towns of Stanford, Washington, and Amenia; and the Oblong Valley Prime Soils in the Towns of Amenia and Dover.
5. Appalachian National Scenic Trail – A continuous 2,100-mile trail spanning from Maine to Georgia, including parts in New York State in the Towns of Pawling and Dover.
6. Harlem Valley Rail Trail – This project, spanning through Dutchess and Columbia counties, centers on the Harlem Valley in the Towns of Amenia and North East.
Historic Resources

The Harlem Valley contains a number of historic sites including the Winegar House on CR 2 (Leedsville Rd.) in Amenia, the Tabor-Wing House near Cemetery Rd. in Dover, and the Ezra Clark House on Mill Rd. in North East.

Transportation Needs

Based on a review of local comprehensive plans, previous Transportation Council studies, and transportation system data, the Transportation Council identified a series of transportation needs in the Harlem Valley. These needs were reviewed at a Harlem Valley public workshop and revised based on feedback from the workshop and a public survey. The revised list of needs includes the following items:

Bridge Maintenance

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

1. CR 6 (Old State Route 22) over the Swamp River (BIN 3343070) in the Town of Dover.
2. Ridge Rd. over the Mill River (BIN 3342970) in the Town of Dover.

If funding becomes available, the following low-volume, structurally deficient bridge could be repaired:


Highway Maintenance

Multiple Municipalities

1. Inventory pavement conditions on local streets and repave based on condition ratings.

Reconstruct the following road segments rated as poor under State and County pavement standards (as of 2014):

1. Route 22 in Amenia from Route 343 to Broadway (0.4 miles).
2. Route 44 in Amenia from Washington town line to Turkey Hollow Rd. (0.6 miles).
3. Route 343 in Dover from Washington town line to Route 22 (0.4 miles).
4. CR 3 (Bog Hollow Rd.) from CR 4 (Sinpatch Rd.) to the Connecticut state line in the Town of Amenia.

In addition to the above repairs, additional street drains are needed to reduce flooding along Route 44 (Main St.) in the Village of Millerton and along the Route 44 business corridor in the Town of North East.
**Moving Dutchess 2**

**Highway Operations**

1. Require new commercial developments to have interconnected parking lots, internal service roads, and shared access along State highways (e.g. Route 22 from Four Brothers Pizza (Route 44/343 & Route 22) north to Cascade Rd. in Amenia).
2. Evaluate the addition of left-turn pockets and a left-turn signal phase at the Route 22/44/343 intersection in the Town of Amenia.
3. Evaluate the need for a northbound left turn and southbound right turn lane on Route 22 at Haight Rd. in North East, to assist school buses going to Webutuck High School on Haight Rd.
4. Provide a northbound right turn and southbound left turn pocket on Route 22 (Elm Ave.) at the Route 44 (Main St.) intersection in Millerton.
5. Explore ways to improve truck access into the Wassaic hamlet (Amenia).

**Safety**

1. Conduct Safety Assessments of the following locations on Route 22: Dover High School (just south of Woodside Dr.), Webutuck High School (Haight Rd.) in North East, and Route 44 (Main St.) in Millerton.
2. Improve sight distance on Route 343 near CR 2 (Leedsville Rd.) in Amenia, due to limited line of sight when turning from CR 2 onto Route 343.
3. Install a warning device on Route 44 in Amenia near DeLavergne Hill, alerting drivers to sharp curves and limited sight distance.

**Transit**

1. Explore the potential for a RailLink bus route to serve the Harlem Valley train stations, modeled after the Dutchess County Public Transit’s RailLink routes that serve the Metro-North Hudson Line stations.
2. Explore the potential for a fixed bus route serving the Route 22 corridor in the Harlem Valley, from North East/Millerton to Pawling.
3. Continue and expand Dutchess County Public Transit’s Flex Service bus operations in the Harlem Valley.
4. Explore the possibility of a new fixed bus route on Route 199 between the Villages of Tivoli and Millerton, with possible connecting service to the Kingston area in Ulster County.
5. Add signs, bus stop shelters, route maps, timetables, and lighting to bus stops.
6. Provide better information about the bus routes and schedules, including making maps and schedules easier to use.
7. Evaluate adding Sunday service, later evening service, express service, and holiday service.

**Sidewalks/Pedestrian Facilities (including ADA projects)**

1. Explore pedestrian-friendly improvements to Routes 22, 44, and 343, to include traffic calming measures, curb
extensions, signage, and other improvements in the Amenia hamlet, especially on Route 22 from Broadway north to Old North Rd., and Moore Dr. (Maplebrook School) in Amenia. These should include new sidewalks on Route 22 from the Amenia Town Hall north to Old North Rd. (near the Tractor Supply Co. shopping plaza). Also consider a future sidewalk extension on Route 22 to Maplebrook School.

2. Add pedestrian/bicycle connections at the following locations:
   - Dover Plains to Tally Ho Mobile Home Park in Amenia.
   - CR 4 (Poplar Hill Rd.) to Tenmile River Metro-North train station via CR 5 (Sinpatch Rd.) in Amenia.

3. In Dover Plains, extend the sidewalk on one side of Route 22 to the south and add a crosswalk across Route 22 between the CVS and the Post Office. Coordinate sidewalk and crossing improvements with any future development on the east side of Route 22 south of the post office.

**Multi-use Trails & Bicycle Facilities**

1. Create a rail trail on the former Hucklebush Rail Line between Rhinecliff and the Harlem Valley Rail Trail in Millerton passing through Rhinebeck, Red Hook, Milan, Columbia County, Pine Plains, and North East.
2. Provide wider shoulders on Route 22 and Old Route 22 where possible, and install appropriate signage along Route 22 and Old Route 22 to encourage safe sharing of the road (Dover, North East, and Millerton).
3. Complete the Harlem Valley Rail Trail (Stage IV) from Millerton to Columbia County.

4. As plans for development of Silo Ridge in Amenia are finalized, develop a connection between the property and the Harlem Valley Rail Trail across Route 22.
5. Explore potential trail connections between the Harlem Valley Rail Trail and Rudd Pond State Park (through Rudd Pond property) and the Taconic Ridge Trail (through the Henry Young Farm property).
6. Extend the Harlem Valley Rail Trail from the railroad station south to the Wassaic hamlet.
7. As plans for re-use of the Taconic DDSO facility are developed, integrate walking and bicycling connections between the DDSO and the Tenmile River train station, such as on Hillside Dr. and CR 105 (Sinpatch Rd.).
8. Create a trail network in Dover, including a loop trail linking Nellie Hill with the center of Dover Plains, a continuous trail along the Ten Mile River, and a trail between Boyce Park and the Appalachian Trail.
9. Provide signage to direct visitors to parking lots for the Harlem Valley Rail Trail in Millerton.
10. Reduce speeds and improve shoulders to accommodate bicycles along CR 62 (Rudd Pond Rd.) between the Taconic State Park entrance and the Village of Millerton (North East).

**Travel Demand Management**

1. Encourage transit-oriented development at the Ten Mile River and Harlem Valley-Wingdale Metro-North train stations (Amenia and Dover, respectively).
2. Explore the need to build a Park-and-Ride facility on or near Route 22, possibly at the Wassaic Metro-North train station in Amenia.
3. Promote employee-sponsored and privately arranged ride sharing services in the Harlem Valley.

Planning Studies

1. Conduct sidewalk inventories and develop sidewalk improvement strategies for the Village of Millerton and hamlets of Wassaic in Amenia, Dover Plains in Dover, and Wingdale in Dover.
2. Analyze speed patterns on County and local roads, using speed data from the PDCTC’s traffic count program. Identify corridors with high percentages of ‘high-end’ speeders (e.g., 10 mph or more over the posted speed limit) and develop engineering, enforcement, and educational approaches to reduce speeding.

Survey Summary

Of the more than 900 respondents to the Moving Dutchess 2 survey, 13 were residents of Harlem Valley communities. This section summarizes their responses to the survey.
In terms of making Dutchess County a great place to live, Harlem Valley residents prioritize preserving natural areas, habitats, and farmland, improving public transportation, and protecting our air and water quality.

Major issues identified by residents include the condition of roads; the lack of sidewalks and crosswalks; the condition of sidewalks and crosswalks; the lack of bicycle lanes and road shoulders; the condition of bicycle lanes and road shoulders; the frequency and schedule of buses; the condition of bus stops and shelters; and lack of information about bus service. Of a list of potential problems, the condition of roads was noted most frequently as a current problem, followed by the lack of safe and accessible sidewalks, and the lack of transportation options for elderly and disabled individuals.

When asked how well the transportation system meets your needs, both ‘fair’ (33%) and good (33%) were the most common responses. When asked about the ease of getting places you usually have to go, the most common response was ‘fair’ (55%) followed by ‘good’ (27%).

Over 63% of respondents sometimes or often walk for transportation; 42% sometimes or often bicycle for transportation; 17% sometimes or often use the bus for transportation; and 100% sometimes or often use the train for transportation.

Major barriers for walking include distance to destinations (67%) and lack of sidewalks (50%); for bicycling, distance to destination (58%) and inadequate shoulders, bike lanes, or paths (33%); for bus transit, lack of bus service where you need to go (42%) and bus service is not readily available in the area (50%); and for train transit, the high cost (36%) and the lack of train service where you need to go (36%).

Type of travel: the survey asked residents to recall their trips over the past week and categorize them based on their
destination and mode (drive alone, carpool, walk, bike, bus or other). Based on this information, we estimate that about 66% of trips are drive-alone; 11% are walk; 10% are carpool; 6% are bus; 5% are bike; and 3% are other. Most drive-alone trips are for work or school, followed by shopping; most walk trips are for socializing or recreation, followed by work/school; most carpool trips are for socializing/recreation, followed by shopping; most bike trips are for work/school, followed by socializing/recreation; and most bus trips are for work/school, followed by shopping.

To reduce congestion, residents expressed support for widening existing roads, creating communities that are less reliant on driving, and improving public transportation. 58% of residents said they would use buses more often if the stops and schedules were convenient.

Land use: 50% of respondents thought that most development should be within cities, town centers and villages using vacant or underutilized land and 42% of respondents thought that most development should be on open land at the edges of town centers and villages. There was also a strong support (67%) for closely-spaced housing and buildings with sidewalks, even if that meant smaller homes and yards and less parking. Almost 70% of respondents said that infrastructure and services should be expanded primarily in and around existing town and village centers.

Residents’ top three investment priorities for the next 5-10 years are maintaining roads, improving major roads and streets, and improving sidewalks. When asked what they would support with tax dollars, residents said improved bus service on fixed routes (55%), followed by curb to curb shuttle service for seniors and disabled persons (46%) and improved commuter train service (46%).

Demographics: Most respondents live in the Town of North East (54%). Others live in Amenia (15%), Dover (15%), or Village of Millerton (15%). About 67% were aged 55-84, with 25% aged 25-34, and 8% aged 45 to 54. 67% of respondents were female, and 33% were male.

About 60% of households use 2 cars on a daily basis, while almost 34% use 1 car. Most residents who commute to work live within 5 miles of their job. About 17% of residents have a member of their household (age 16 and older) that doesn’t drive.

The top three issues cited in comments were financial concerns, infrastructure issues, and affordable transportation for seniors. Financial concerns included spending government resources more wisely and increasing fiscal transparency.

Comments related to infrastructure issues focused on the need for more sidewalks, wider shoulders, bicycle lanes, and better road maintenance. Other comments focused on the need for safe, convenient public transportation services for seniors. Individuals also commented on the need for affordable housing in our area.
Transportation Priorities

Based on discussions of the above needs at the public workshops, feedback from the survey, and a review of feasibility, the following top priorities were identified:

Bridge Maintenance

Repair bridges rated as structurally deficient or functionally obsolete under FHWA standards or deficient under NYSDOT standards, with replacement priority given to the following bridges:

1. CR 6 (Old State Route 22) over the Swamp River (BIN 3343070) in the Town of Dover.
2. Ridge Rd. over the Mill River (BIN 3342970) in the Town of Dover.

Highway Maintenance

Multiple Municipalities

1. Inventory pavement conditions on local streets and repave based on condition ratings.

Reconstruct or repave road segments with poor surface scores based on NYSDOT and Dutchess County standards, with reconstruction priority given to the following road segments:

1. Route 22 in Amenia from Route 343 to Broadway (0.4 miles).
2. Route 44 in Amenia from Washington town line to Turkey Hollow Rd. (0.6 miles).
3. Route 343 in Dover from Washington town line to Route 22 (0.4 miles).
4. CR 3 (Bog Hollow Rd.) from CR 4 (Sinpatch Rd.) to the Connecticut state line in the Town of Amenia.

Highway Operations

1. Evaluate the addition of left-turn pockets and a left-turn phase at the Route 22/44/343 intersection in the Town of Amenia.

Transit

1. Explore the potential to operate a fixed bus route serving the Route 22 corridor in the Harlem Valley, from the North East/Millerton area to the Pawling area.
2. Explore the possibility of a new fixed bus route on Route 199 between the Villages of Tivoli and Millerton, with possible connecting service to the Kingston area in Ulster County.
3. Add signs, bus stop shelters, route maps, timetables, and lighting to bus stops.
4. Provide better information about the bus routes and schedules, including making maps and schedules easier to use.
5. Evaluate adding Sunday service, later evening service, express service, and holiday service.

Sidewalks/Pedestrian Facilities

1. Explore pedestrian-friendly improvements to Routes 22, 44, and 343, to include traffic calming measures, curb
extensions, signage, and other improvements in the
Amenia hamlet, especially on Route 22 from Broadway
north to Old North Rd. and Moore Dr. (Maplebrook
School) in Amenia. These should include new sidewalks on
Route 22 from the Amenia Town Hall north to Old North
Rd. (near the Tractor Supply Co. shopping plaza). Also
consider a future sidewalk extension on Route 22 to
Maplebrook School.

Multi-use Trails/Bicycle Facilities

1. Extend the Harlem Valley Rail Trail from the railroad
station south to the Wassaic hamlet.
2. Complete the Harlem Valley Rail Trail (Stage IV) from
Millerton to Columbia County.
3. Create a rail trail on the former Hucklebush Rail Line
between Rhinecliff and the Harlem Valley Rail Trail in
Millerton passing through Rhinebeck, Red Hook, Milan,
Columbia County, Pine Plains, and North East.

Planning Studies

1. Conduct sidewalk inventories and develop sidewalk
improvement strategies for the Village of Millerton and
hamlets of Wassaic in Amenia, Dover Plains in Dover, and
Wingdale in Dover.
2. Analyze speed patterns on County and local roads, using
speed data from the PDCTC’s traffic count program.
Identify corridors with high percentages of ‘high-end’
speeders (e.g. 10 mph or more over the posted speed
limit) and develop engineering, enforcement, and
educational approaches to reduce speeding.
Chapter 7

Performance Monitoring

The FHWA and FTA recommend the use of performance measures to gauge progress towards meeting specific goals. Implementing performance measures involves several steps: first, define objectives; second, define the measure and identify the data needed; and third, collect, maintain, and analyze the data. Some measures require qualitative rather than quantitative data.

Moving Dutchess 2 Goals

The goals for Moving Dutchess 2, as described in Chapter 2, are based on federal and State guidance and the Transportation Plan’s four guiding principles. These ten goals support the mission of the Transportation Council:

1. Maintain highways and bridges in a state of good repair.
2. Reduce traffic congestion to improve our quality of life and promote economic development.
3. Maintain the transit system in a state of good repair and increase ridership to reduce traffic and promote sustainable development.
4. Increase carpooling and vanpooling to reduce traffic, improve operations, and promote sustainable development.
5. Increase bicycling and walking to reduce traffic, improve operations, and promote sustainable development.
6. Improve safety to reduce transportation-related fatalities, injuries, and property damage.
7. Reduce transportation-related impacts to the environment and promote sustainable development and smart growth.
8. Increase public participation in the transportation planning process.
9. Improve the delivery of federally-funded transportation projects.
10. Improve transportation security.

The Transportation Council identified objectives for each of these goals, with each objective evaluated by specific performance measures. The measures were developed by staff after a review of best practices from other MPOs. The measures rely on readily available data. The measures fall under ten general categories:

1. Highway Performance
2. Bridge Performance
3. Transit Performance
4. Multiple Occupant Vehicle Use
5. Bicycle and Pedestrian Transportation
6. Transportation Safety
7. Natural Resources
8. Livability/Smart Growth
9. Public Participation
10. Project Delivery

Table 7.1 shows each objective and associated performance measure(s). For each measure, the table includes the data source, the 2011 status and 2015 goal (from Moving Dutchess 2).
Moving Dutchess 2

*Dutchess*, the actual 2015 data and a color-coded circle based on the current status, as well as targets for 2021 (the first year of the subsequent MTP) and 2040 (the Moving Dutchess 2 planning horizon). Each measure is also listed below.

The Transportation Council will provide a status report on progress towards meeting the performance measures in 2018, followed by updates every two years; all of which will be available to the public. As needed, the Transportation Council will also refine the measures based on federal rulemakings on performance monitoring.

**Highway Performance**

**H1. Objective: Reduce traffic congestion**

Measures:

1. Percentage of system miles with Volume to Capacity (V/C) ratio of 1.0 or greater (considered “severe” congestion) in the AM peak period.
2. Percentage of system miles with Volume to Capacity (V/C) ratio of 1.0 or greater (considered “severe” congestion) in the PM peak period.
3. Percentage of system miles with Volume to Capacity (V/C) ratio of 0.75 or greater (considered “congested”) in the AM peak period.
4. Percentage of system miles with Volume to Capacity (V/C) ratio of 0.75 or greater (considered “congested”) in the PM peak period.

Data required: V/C ratios for all system miles during AM and PM peak periods (from travel demand model); number of system miles.

**H2. Objective: Reduce Projected Vehicle Miles Travelled (VMT)**

Measure:

1. Total Adjusted Daily VMT in Dutchess County (measured in millions of miles).

Data required: Total county-wide VMT (from travel demand model).

**H3. Objective: Increase travel time reliability**

Measures:

1. Total surveyed miles with Travel Time Index (TTI) below 1.15 (considered “good” reliability) for the PM period.
2. Total surveyed miles with Travel Time Index (TTI) below 1.15 (considered “good” reliability) for the Saturday period.
3. Total surveyed miles with Travel Time Index (TTI) above 1.30 (considered “poor” reliability) for the PM period.
4. Total surveyed miles with Travel Time Index (TTI) above 1.30 (considered “poor” reliability) for the Saturday period.

Data required: TTI (ratio of peak-period travel time to free-flow travel time) for all miles surveyed in PM and Saturday periods, from the TMA Travel Time Survey or other source.
H4. Objective: Increase pavement quality

Measures:
1. Percentage of rated County road mileage with a Pavement Condition Index of 75 or higher ("good" and "excellent").
2. Percentage of rated local road mileage with a Pavement Condition Index of 75 or higher ("good" and "excellent").
3. Percentage of rated State system mileage with a Pavement Surface Score of 7.0 or higher ("good" and "excellent").
4. Percentage of rated State system mileage with a Roughness Index of 120 or lower ("smooth" and "very smooth").

Data required: Pavement scores for State, County and local roads (most recent year available); number of road miles with scoring data.

Bridge Performance

B1. Objective: Increase bridge safety

Measures:
1. Percentage of rated State, County, and other bridges with a NYSDOT rating of 5.0 or higher (considered "good" condition).
2. Percentage of State, County, and other rated bridges with an R-posting.

Data required: Bridge ratings; list of R-posted bridges; number of rated bridges.

Transit Performance

T1. Objective: Increase transit ridership

Measures:
1. DCPT fixed route average annual passengers per revenue mile (most recent three years).
2. DCPT RailLink average annual passengers per revenue mile (most recent three years).
3. City of Poughkeepsie bus system average annual passengers per revenue mile (most recent three years).
4. Percentage of person trips made on transit (most recent year).
5. Percentage of trips to work made on transit (most recent year).

Data required: Surveyed trip data from the National Household Travel Survey (NHTS), latest Census American Communities Survey (ACS) journey-to-work data, and passenger statistics from DCPT and the City of Poughkeepsie. Note: MTA/Metro-North Railroad is developing performance measures as part of their Transit Asset Management Plan (TAMP), which will be incorporated into Moving Dutchess 2 when ready.

T2. Objective: Increase transit reliability

Measures:
1. DCPT on-time performance (most recent three years).
2. City of Poughkeepsie bus system on-time performance (most recent three years).
Data required: Most recent three years of on-time performance data for Dutchess County DCPT and City of Poughkeepsie.

**T3. Objective: Increase transit passenger comfort**

Measures:
1. Percentage of DCPT scheduled time bus stops with functional bus stop shelters.
2. Percentage of City of Poughkeepsie bus system scheduled time bus stops with functional bus stop shelters.
3. Average age of DCPT bus fleet.
4. Average age of City of Poughkeepsie bus fleet.

Data required: Number of DCPT and City of Poughkeepsie Transit bus stop shelters at scheduled time stops and number of scheduled time stops; average age of DCPT and City of Poughkeepsie Transit fleet vehicles.

**T4. Objective: Increase environmental benefits of transit**

Measures:
1. Percentage of DCPT bus fleet using alternative fuels.
2. Percentage of City of Poughkeepsie bus fleet using alternative fuels.

Data required: Number of vehicles in DCPT and City of Poughkeepsie transit fleets; number of alternative fuel vehicles in each fleet.

**Multiple Occupant Vehicle Use**

**MOV1. Objective: Increase carpool/vanpool use**

Measures:
1. Average daily utilization of park and ride lots on commuter corridors.
2. Percentage of person trips made via carpool/vanpool (most recent year).
3. Percentage of trips to work made via carpool/vanpool (most recent year).

Data required: Park and ride lot utilization, surveyed trip data (NHTS or other), and journey to work data (ACS).

**Bicycle and Pedestrian Transportation**

**BP1. Objective: Build infrastructure for walking and bicycling**

Measures:
1. Miles of major paved shared-use paths.
2. Miles of sidewalk (each street side).
3. Miles of on-street bicycle facilities (bike lanes, sharrows, bicycle boulevards).
4. Number of bicycle parking rack locations.

Data required: Shared-use path, sidewalk, and bicycle facility mileage (from County GIS); bicycle parking locations (from Dutchess Bike Parking Finder online map)
BP2. Objective: Increase trips made by walking and bicycling

Measures:
1. Percentage of person trips made by walking (most recent year).
2. Percentage of trips to work made by walking (most recent 5-year estimate).
3. Percentage of person trips made by bicycle (most recent year).
4. Percentage of trips to work made by bicycle (most recent 5-year estimate).
5. Increase in pedestrian volumes at key count locations (median change since 2013).
6. Increase in bicycle volumes at key count locations (median change since 2013).

Data required: Surveyed trip data (NHTS) and journey to work data (ACS); pedestrian/bicycle count data (PDCTC).

BP3. Objective: Increase accessibility of pedestrian and bicycle infrastructure

Measures:
1. Number of non-ADA compliant sidewalk segments on State highways.
2. Number of non-ADA compliant intersections on State highways.
3. Percentage of DCPT bus fleet with bicycle racks.
4. Percentage of City of Poughkeepsie bus fleet with bicycle racks.
5. Number of municipalities with an ADA Transition Plan.

Data required: Non-ADA compliant sidewalk and intersection locations on State roads (from NYSDOT); number of vehicles in DCPT and City of Poughkeepsie Transit fleets and number of vehicles with bicycle racks in each fleet; ADA transition plans (municipal information).

BP4. Objective: Educate and Encourage People to Walk and Bicycle

Measures:
1. Annual number of bicycle and pedestrian safety training events.
2. Annual number of Walk to School Day and Bike to School Day events (or similar).

Data required: number of bicycle and pedestrian safety training events (from the County Traffic Safety Board); number of Walk or Bike to School Day events (from the walkbiketoschool.org registry).

BP5. Objective: Enforce Pedestrian, Bicycle, and Vehicle Laws

Measures:
1. Number of police agencies conducting targeted enforcement of pedestrian and/or bicycle safety laws.

Data required: Police agencies conducting targeted enforcement.

Transportation Safety

S1. Objective: Increase roadway safety
Chapter 7: Performance Monitoring

Moving Dutchess 2

Measures:
1. Countywide average vehicle crash rate (crashes per 10,000 licensed drivers) over past three years.
2. Average annual number of crashes (most recent three years).
3. Average annual injuries from crashes (most recent three years).
4. Average annual fatalities from crashes (most recent three years).
5. Average annual pedestrian-vehicle crashes (most recent three years).
6. Average annual bicycle-vehicle crashes (most recent three years).
7. Average annual motorcycle crashes (most recent three years).

Data required: Most recent three years of crash data, including total crashes, injuries, fatalities, pedestrian, bicycle, and motorcycle crashes, and number of licensed drivers (from ITSMR and NYSDOT).

S2. Objective: Increase transit safety

Measures:
1. Average annual injuries at the Rhinecliff Amtrak station (most recent three years).
2. Average annual crashes involving DCPT buses (most recent three years).
3. Average annual crashes involving City of Poughkeepsie buses (most recent three years).

Data required: Most recent three years of data on Rhinecliff station injuries, DCPT crashes, and City of Poughkeepsie bus crashes.

Natural Resources

E1. Objective: Reduce environmental impact of transportation

Measures:
1. Average county-wide per capita gasoline usage (most recent three years).
2. Average fourth-highest daily 8-hour ozone concentrations, in parts per million (most recent three years).
3. Average number of Air Quality Action Days issued for the Poughkeepsie area (most recent three years).

Data required: Per capita gasoline usage (from NYSERDA), measured ozone levels (from NYSDEC’s Millbrook monitoring station), and Air Quality Action Days (from Clean Air NY/NYSDOT).

Livability/Smart Growth

L1. Objective: Promote smart growth planning

Measures:
1. Number of residential properties within a half-mile of a rail transit station.
2. Percentage of residential properties within 1/4 mile of a trail or sidewalk (500 feet or longer).
3. Percentage of residential properties within a half-mile of an existing or emerging Center.
Moving Dutchess 2

4. Percentage of streets within a half mile of an existing or emerging Center that have sidewalks.

Data required: Location of all residential properties, rail stations, sidewalks and trails, and existing and emerging Centers (County GIS).

L2. Objective: Pass Complete Streets policies

Measure:
1. Number of municipalities with a Complete Streets Policy.

Data required: Dutchess County municipalities with a Complete Streets Policy.

Public Participation

PP1. Objective: Increase public participation in transportation planning

Measures:
1. Total number of participants at public meetings for the MTP.
2. Number of members on the Transportation Council’s public information contact list.
3. Annual number of hits on the Transportation Council’s website homepage (includes those from County computers).
4. Number of MTP survey respondents.

Data required: MTP public meeting records, Transportation Council contact list database, website hit counts from Dutchess County Office of Central & Information Services (OCIS), and MTP survey data.

Project Delivery

PD1. Objective: Increase obligation rate for Federal transportation funding

Measures:
1. Percentage of programmed Federal highway projects that were obligated (most recent Federal Fiscal Year).
2. Percentage of programmed Federal transit projects that were obligated (most recent Federal Fiscal Year).

Data required: Annual NYSDOT STIP performance reports.
Table 7.1 Moving Dutchess 2 Performance Measures

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Data Source</th>
<th>2011 Actual</th>
<th>2015 Goal</th>
<th>2015 Actual</th>
<th>Status</th>
<th>2020 Goal</th>
<th>2040 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Highway Performance</strong></td>
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<tr>
<td>H1 Reduce Traffic Congestion</td>
<td>Travel Demand Model</td>
<td>Not available</td>
<td>Not established</td>
<td>0.6%</td>
<td>Base on 2015 data</td>
<td>Base on 2015 data</td>
<td></td>
</tr>
<tr>
<td>Percentage of system miles with volume to capacity (v/c) ratio of 1.0 or greater (considered &quot;severe&quot; congestion) - AM peak</td>
<td>Travel Demand Model</td>
<td>Not available</td>
<td>Not established</td>
<td>0.4%</td>
<td>Base on 2015 data</td>
<td>Base on 2015 data</td>
<td></td>
</tr>
<tr>
<td>Percentage of system miles with volume to capacity (v/c) ratio of 1.0 or greater (considered &quot;severe&quot; congestion) - PM peak</td>
<td>Travel Demand Model</td>
<td>Not available</td>
<td>Not established</td>
<td>6.9%</td>
<td>Base on 2015 data</td>
<td>Base on 2015 data</td>
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</tr>
<tr>
<td>Percentage of system miles with volume to capacity (v/c) ratio of 0.75 or greater (considered congested) - AM peak</td>
<td>Travel Demand Model</td>
<td>Not available</td>
<td>Not established</td>
<td>1.3%</td>
<td>Base on 2015 data</td>
<td>Base on 2015 data</td>
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<tr>
<td>Percentage of system miles with volume to capacity (v/c) ratio of 0.75 or greater (considered congested) - PM peak</td>
<td>Travel Demand Model</td>
<td>Not available</td>
<td>Not established</td>
<td>1.2%</td>
<td>Base on 2015 data</td>
<td>Base on 2015 data</td>
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</tr>
<tr>
<td><strong>H2 Reduce Projected Vehicle Miles Travelled (VMT)</strong></td>
<td>Travel Demand Model</td>
<td>5,445,563</td>
<td>4,900,000</td>
<td>7,840,204</td>
<td>9,094,637</td>
<td>10,549,779</td>
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</tr>
<tr>
<td><strong>H3 Increase Travel Time Reliability</strong></td>
<td>Travel Demand Survey</td>
<td>277 miles (73% of total surveyed)</td>
<td>286 miles</td>
<td>Not available</td>
<td>343 miles</td>
<td>343 miles</td>
<td></td>
</tr>
<tr>
<td>Total surveyed miles with Travel Time Index (TTI) below 1.15 (considered &quot;good&quot; reliability) - AM peak</td>
<td>Travel Demand Survey</td>
<td>64 miles (89% of total surveyed)</td>
<td>69 miles</td>
<td>Not available</td>
<td>83 miles</td>
<td>83 miles</td>
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</tr>
<tr>
<td>Total surveyed miles with Travel Time Index (TTI) below 1.15 (considered &quot;good&quot; reliability) - PM peak</td>
<td>Travel Demand Survey</td>
<td>57 miles (55% of total surveyed)</td>
<td>46 miles</td>
<td>Not available</td>
<td>19 miles</td>
<td>19 miles</td>
<td></td>
</tr>
<tr>
<td>Total surveyed miles with Travel Time Index (TTI) above 1.30 (considered &quot;poor&quot; reliability) - AM peak</td>
<td>Travel Demand Survey</td>
<td>23 miles (25% of total surveyed)</td>
<td>20 miles</td>
<td>Not available</td>
<td>5 miles</td>
<td>5 miles</td>
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</tr>
<tr>
<td>Total surveyed miles with Travel Time Index (TTI) above 1.30 (considered &quot;poor&quot; reliability) - PM peak</td>
<td>Travel Demand Survey</td>
<td>19 miles (15% of total surveyed)</td>
<td>15 miles</td>
<td>Not available</td>
<td>6 miles</td>
<td>6 miles</td>
<td></td>
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<tr>
<td><strong>H4 Increase Pavement Quality</strong></td>
<td>Dutchess County DPW</td>
<td>85% or 333 miles (2009)</td>
<td>85%</td>
<td>74% or 293.9 miles (2014)</td>
<td>85%</td>
<td>85%</td>
<td></td>
</tr>
<tr>
<td>Percentage of rated County road mileage with Pavement Condition Index of 75 or higher (&quot;good&quot; and &quot;excellent&quot;), most recent year</td>
<td>Dutchess County DPW</td>
<td>63% or 50 miles (2010)</td>
<td>63%</td>
<td>71% or 55.5 miles (2014)</td>
<td>65%</td>
<td>65%</td>
<td></td>
</tr>
<tr>
<td>Percentage of rated local road mileage with Pavement Condition Index of 75 or higher (&quot;good&quot; and &quot;excellent&quot;), most recent year</td>
<td>Dutchess County DPW</td>
<td>66% or 285 centerline miles (2010)</td>
<td>66%</td>
<td>64% or 232 centerline miles (2014)</td>
<td>65%</td>
<td>65%</td>
<td></td>
</tr>
<tr>
<td>Percentage of rated State system mileage with Roughness Index of 120 or lower (&quot;smooth&quot; and &quot;very smooth&quot;), most recent year</td>
<td>Dutchess County DPW</td>
<td>67% or 293 centerline miles (2010)</td>
<td>67%</td>
<td>58% or 232 centerline miles (2013)</td>
<td>60%</td>
<td>60%</td>
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<tr>
<td><strong>Bridge Performance</strong></td>
<td></td>
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<tr>
<td>B1 Increase Bridge Safety</td>
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</tr>
<tr>
<td>Percentage of rated State, County and other bridges with rating of 5.0 or Higher (considered &quot;good&quot; condition)</td>
<td>NYSDOT</td>
<td>57%</td>
<td>60%</td>
<td>58% (2014)</td>
<td>90%</td>
<td>90%</td>
<td></td>
</tr>
<tr>
<td>Percentage of rated State, County and other bridges with B-posting</td>
<td>NYSDOT</td>
<td>3.1%</td>
<td>3.3%</td>
<td>2.7%</td>
<td>2.5%</td>
<td>1.2%</td>
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<tr>
<td><strong>Transit Performance</strong></td>
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<tr>
<td>T1 Increase Transit Ridership</td>
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<tr>
<td>DCPF fixed route average annual passengers per revenue mile (most recent three years)</td>
<td>Dutchess County</td>
<td>0.59 (2007-2009)</td>
<td>0.63</td>
<td>0.55 (2011-2013)</td>
<td>0.9</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>DCPF RailLink average annual passengers per revenue mile (most recent three years)</td>
<td>Dutchess County</td>
<td>0.3 (2008-2010)</td>
<td>0.34</td>
<td>0.31 (2011-2014)</td>
<td>0.6</td>
<td>0.6</td>
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</tr>
<tr>
<td>City of Poughkeepsie bus system average annual passengers per revenue mile (most recent three years)</td>
<td>City of Poughkeepsie</td>
<td>2.0 (2006, 2007, 2009)</td>
<td>2.3</td>
<td>2.1 (2011-2013)</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Percentage of person trips made on transit (most recent year)</td>
<td>NHTS/NYSDOT</td>
<td>0.5% (2009)</td>
<td>0.60%</td>
<td>N/A</td>
<td>3%</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Percentage of trips to work made on transit (most recent 5-year estimate)</td>
<td>Census ACS</td>
<td>4.7% (2005-2009 5-year estimate)</td>
<td>5%</td>
<td>4.9% (2010-2014 5-year estimate)</td>
<td>10%</td>
<td>10%</td>
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<tr>
<td><strong>T2 Increase Transit Reliability</strong></td>
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<tr>
<td>DCPF on-time performance (most recent three years)</td>
<td>Dutchess County</td>
<td>Data not available</td>
<td>Collected data</td>
<td>Not available</td>
<td>85%</td>
<td>85%</td>
<td></td>
</tr>
<tr>
<td>City of Poughkeepsie on-time performance (most recent three years)</td>
<td>City of Poughkeepsie</td>
<td>Data not available</td>
<td>Collected data</td>
<td>Not available</td>
<td>85%</td>
<td>85%</td>
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<tr>
<td><strong>T3 Increase Transit Passenger Comfort</strong></td>
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<tr>
<td>Percentage of DCPF scheduled time bus stops with functional bus stop shelters</td>
<td>Dutchess County</td>
<td>0%</td>
<td>10%</td>
<td>&lt;1%</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Percentage of City of Poughkeepsie scheduled time bus stops with functional bus stop shelters</td>
<td>City of Poughkeepsie</td>
<td>20%</td>
<td>22%</td>
<td>100%</td>
<td>100%</td>
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<tr>
<td>Average age of DCPF bus fleet</td>
<td>Dutchess County</td>
<td>4.25 years</td>
<td>4.5 years</td>
<td>3.8 years</td>
<td>4 years</td>
<td>4 years</td>
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<tr>
<td>Average age of City of Poughkeepsie bus fleet</td>
<td>City of Poughkeepsie</td>
<td>4.9 years</td>
<td>6.5 years</td>
<td>6.25 years</td>
<td>6 years</td>
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<tr>
<td><strong>T4 Increase Environmental Benefits of Transit</strong></td>
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<tr>
<td>Percentage of DCPF bus fleet using alternative fuels</td>
<td>Dutchess County</td>
<td>8%</td>
<td>20%</td>
<td>9%</td>
<td>20%</td>
<td>100%</td>
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</tbody>
</table>
### Table 7.1. Moving Dutchess 2 Performance Measures

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Data Source</th>
<th>2011 Actual</th>
<th>2015 Goal</th>
<th>2015 Actual</th>
<th>Status</th>
<th>2020 Goal</th>
<th>2040 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiple Occupant Vehicle Use</strong></td>
<td>MOV1</td>
<td>Increase carpool/vanpool use</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Average daily utilization of park and ride lots on commuter corridors</td>
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<td>Percentage of person trips made by carpool/vanpool (most recent year)</td>
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<td>Percentage of trips to work made via carpool/vanpool (most recent year)</td>
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<td>City of Poughkeepsie</td>
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<td></td>
<td></td>
<td>50% (2011)</td>
<td>55%</td>
<td>45% (2016)*</td>
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<td>75%</td>
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<td></td>
<td></td>
<td>41% (2009)</td>
<td>45%</td>
<td>n/a</td>
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<td>60%</td>
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<td></td>
<td></td>
<td>8.4% (2005-2009 5-year estimate)</td>
<td>8.5%</td>
<td>8.2% (2010-2014 5-year estimate)</td>
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<td>10%</td>
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<tr>
<td><strong>Bicycle and Pedestrian Transportation</strong></td>
<td>BP1</td>
<td>Build infrastructure for Walking and Bicycling</td>
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<tr>
<td></td>
<td></td>
<td>Miles of major paved shared-use paths</td>
<td>County GIS</td>
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<td>Miles of sidewalk</td>
<td>County GIS</td>
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<td>Miles of on-street bicycle facilities (bike lanes, sharrows, bicycle boulevards)</td>
<td>County GIS</td>
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<td></td>
<td>Number of bicycle parking rack locations</td>
<td>County GIS</td>
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<td></td>
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<td>1 (2013)</td>
<td>n/a (new measure)</td>
<td>1.5</td>
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<td>100 (2013)</td>
<td>n/a (new measure)</td>
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<tr>
<td><strong>BP2</strong></td>
<td>Increase Trips Made by Walking and Bicycling</td>
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<td>Percentage of person trips made by walking (most recent year)</td>
<td>NHTS/NYSDOT*</td>
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<td></td>
<td>Percentage of trips to work made by walking (most recent 5-year estimate)</td>
<td>Census ACS³</td>
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<td>Percentage of person trips made by bicycle (most recent year)</td>
<td>NHTS/NYSDOT*</td>
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<td>Percentage of trips to work made by bicycle (most recent 5-year estimate)</td>
<td>Census ACS³</td>
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<td>Increase in pedestrian volumes at key count locations (median change since 2013)</td>
<td>PDOT/COUNT data</td>
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<td>Increase in bicycle volumes at key count locations (median change since 2013)</td>
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<td>County of Poughkeepsie</td>
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<td>12 (2011)</td>
<td>n/a (new measure)</td>
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<td>4 (2011)</td>
<td>n/a (new measure)</td>
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<tr>
<td><strong>BP3</strong></td>
<td>Increase accessibility of pedestrian and bicycle infrastructure</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Number of non-ADA compliant sidewalk segments on State highways</td>
<td>NYSDOT*</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Number of non-ADA compliant intersections on State highways</td>
<td>NYSDOT*</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Percentage of DCPT bus fleet with bicycle racks</td>
<td>Dutchess County</td>
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<tr>
<td></td>
<td></td>
<td>Percentage of City of Poughkeepsie bus fleet with bicycle racks</td>
<td>City of Poughkeepsie</td>
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<td></td>
<td></td>
<td>Number of municipalities with an ADA Transition Plan</td>
<td>Municipal information</td>
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<td>City of Poughkeepsie</td>
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<td></td>
<td></td>
<td>75%</td>
<td>80%</td>
<td>75%</td>
<td></td>
<td></td>
<td>88%</td>
</tr>
<tr>
<td><strong>BP4</strong></td>
<td>Educate and Encourage People to Walk and Bicycle</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Annual number of bicycle and pedestrian safety training events</td>
<td>DC Traffic Safety Board</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Annual number of Walk to School Day and Bike to School Day events (or similar)</td>
<td>walkbiketoschoool.org registry</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td>City of Poughkeepsie</td>
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<td>12 (2011)</td>
<td>n/a (new measure)</td>
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<td>4 (2011)</td>
<td>n/a (new measure)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>BP5</strong></td>
<td>Enforce Pedestrian, Bicycle, and Vehicle Laws</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Number of police agencies conducting targeted enforcement of pedestrian and/or bicycle safety laws</td>
<td>Local police agencies</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td>City of Poughkeepsie</td>
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<td></td>
<td></td>
<td>0 (2011)</td>
<td>n/a (new measure)</td>
<td></td>
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<tr>
<td><strong>Transportation Safety</strong></td>
<td>S1</td>
<td>Increase roadway safety</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>Countywide average vehicle crash rate (crashes per 10,000 licensed drivers), over past three years</td>
<td>ITSMR³</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average annual number of crashes (most recent three years)</td>
<td>ITSMR³</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Average annual injuries from crashes (most recent three years)</td>
<td>ITSMR³</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average annual fatalities from crashes (most recent three years)</td>
<td>ITSMR³</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average annual pedestrian-vehicle crashes (most recent three years)</td>
<td>ITSMR/ITSC³</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Average annual bicycle-vehicle crashes (most recent three years)</td>
<td>ITSMR/ITSC³</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average annual motorcycle crashes (most recent three years)</td>
<td>ITSMR³</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance Measure</td>
<td>Data Source</td>
<td>2011 Actual</td>
<td>2015 Goal</td>
<td>2015 Actual</td>
<td>Status</td>
<td>2020 Goal</td>
<td>2040 Goal</td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>S2 Increase transit safety</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average annual injuries at Amtrak facilities (most recent three years)</td>
<td>FRA</td>
<td>3.6 (2008-10)</td>
<td>3</td>
<td>4.6 (2012-14)</td>
<td></td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Average annual crashes involving DCFT buses (most recent three years)</td>
<td>Dutchess County</td>
<td>21 (2008-2010)</td>
<td>20</td>
<td>17 (2012-2014)</td>
<td></td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Average annual crashes involving City of Poughkeepsie buses (most recent three years)</td>
<td>City of Poughkeepsie</td>
<td>6 (2008-2010)</td>
<td>5</td>
<td>6 (2012-2015)</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Natural Resources</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>E1 Reduce environmental impact of transportation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average county-wide per capita gasoline usage (most recent three years)</td>
<td>NYSDOT82</td>
<td>382 (2007-2009)</td>
<td>375</td>
<td>359 (2010-2012)</td>
<td></td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Average highest daily 8-hour ozone concentrations in ppm (most recent three years)</td>
<td>NYSDOC</td>
<td>0.075 ppm (2006-2010)</td>
<td>0.075 ppm</td>
<td>0.069 ppm (2012-2014)</td>
<td></td>
<td>0.020</td>
<td>0.020</td>
</tr>
<tr>
<td>Average number of Air Quality Action days issued for Poughkeepsie Area (most recent three years)</td>
<td>NYSDOT</td>
<td>13 (2008-2010)</td>
<td>12</td>
<td>9 (2012-2014)</td>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Livability/Smart Growth</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>L1 Promote smart growth planning</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of residential properties within a half-mile of a rail transit station</td>
<td>Dutchess County GIS</td>
<td>5,811 units</td>
<td>6,000</td>
<td>6,087 properties</td>
<td></td>
<td>12,000</td>
<td>12,000</td>
</tr>
<tr>
<td>Percentage of residential properties within 1/4 mile of a trail or sidewalk (SDOT or longer)</td>
<td>Dutchess County GIS</td>
<td>44%</td>
<td>45%</td>
<td>47%</td>
<td></td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>Percentage of residential properties within a half-mile of an existing or emerging Center</td>
<td>Dutchess County GIS</td>
<td>55%</td>
<td>57%</td>
<td>49%</td>
<td></td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>Percentage of streets within a half mile of an existing or emerging Center that have sidewalks</td>
<td>Dutchess County GIS</td>
<td>n/a</td>
<td>n/a (new measure)</td>
<td>51%</td>
<td></td>
<td>55%</td>
<td>75%</td>
</tr>
<tr>
<td><strong>L2 Pass Complete Streets Policies</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Number of municipalities with a Complete Streets Policy</td>
<td>Municipal information</td>
<td>1 (2013)</td>
<td>n/a (new measure)</td>
<td>1</td>
<td></td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td><strong>Public Participation</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>PP1 Increase public participation in transportation planning</strong></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Total number of participants at public meetings for the MTP</td>
<td>PDCTC</td>
<td>55</td>
<td>75</td>
<td>45</td>
<td></td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Number of members on the PDCTC public information contact list</td>
<td>PDCTC</td>
<td>256</td>
<td>300</td>
<td>304</td>
<td></td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Annual number of access hits on PDCTC website index page (most recent year)</td>
<td>PDCTC</td>
<td>7,587</td>
<td>7,800</td>
<td>10,845</td>
<td></td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Number of MTP survey respondents</td>
<td>PDCTC</td>
<td>408</td>
<td>500</td>
<td>913</td>
<td></td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td><strong>Project Delivery</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>PD1 Increase obligation rate for Federal transportation funding</strong></td>
<td></td>
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</tr>
<tr>
<td>Number of Federal Highway projects obligated for most recent Federal Fiscal Year</td>
<td>NYSDOT</td>
<td>38% (2014)12</td>
<td>100%</td>
<td>80% (2015)</td>
<td></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Number of Federal Transit projects obligated for most recent Federal Fiscal Year</td>
<td>NYSDOT</td>
<td>21% (2014)13</td>
<td>100%</td>
<td>70% (2015)</td>
<td></td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Notes:
1. Measures based on the Travel Demand Model only account for roads in the model (typically Interstate, State, and County roads). Current status is based on the most recent model-year.
2. Goals based on the 2011 Travel Time Survey assume that the same roadway mileage is surveyed in the future.
3. New York State Department of Transportation’s Roadway Inventory System.
4. NHTS is the National Household Travel Survey. NYSDOT summaries and publishes key tables from the NHTS data on their website ([https://www.nydot.gov/divisions/policy-and-strategy/dar/r/dar/dar/nhts/key-tables](https://www.nydot.gov/divisions/policy-and-strategy/dar/r/dar/dar/nhts/key-tables)).
5. The 5-year Census American Community Survey (ACS) estimates have a margin of error; the percentage stated is the midpoint of the estimate.
6. 2014 goals are based on industry standards for on-time performance: 85% of buses no more than 1 minute early and 5 minutes late.
7. Air Quality Action days are counted using the short-term goal of 100 or more days with concentrations of 0.08 ppm or more.
8. 2040 goals are based on the Federal Transit Administration’s (FTA) suggestion that the average age of a revenue fleet should not exceed one-half the average economic useful life of the fleet.
9. Goals are based on NYSDOT’s stated goal to repair all non-ADA compliant locations by 2019.
11. Note that 2008 data are comparable to 2007 data but not to earlier years due to changes in data collection and reporting that began during 2006. Short-term goals incorporate goals from NYSDOT’s Strategic Highway Safety Plan.
12. New York State Energy Research and Development Authority (NYSERDA) publishes an annual Patterns and Trends Energy Profiles report with data on gasoline sales by county.
13. Revised performance measure based on current NYSDOT practice.

Status Key:
- New measure or data unavailable.
- 2015 goal achieved.
- 2015 goal not achieved, but progress made.
- 2015 goal not achieved.
Chapter 8

Recommendations & Financial Plan

Dutchess County and the greater Mid-Hudson Valley face numerous challenges in the coming years, including population growth, aging infrastructure, and constrained funding resources at the federal, State, and local level. However, none of these prospects absolve the Transportation Council from its responsibility to plan for the future. The road ahead will be difficult, but it is one that has been travelled by others before us. And no matter how complex the challenges may seem, it is our responsibility to do the best we can with the resources we have. It is in this spirit that the recommendations in *Moving Dutchess 2* were developed.

*Moving Dutchess 2* provides a framework for addressing the transportation needs and priorities for Dutchess County. These were identified through a comprehensive planning process that encompassed four major elements:

1. A review of federal, State, and local guidance, including previous Transportation Council studies and local comprehensive plans.
2. An analysis of transportation system data, including road and bridge conditions, transit use, vehicle crashes, traffic volumes, and travel times (congestion).
3. Information gathered from various public outreach efforts, including six workshops held throughout the county, a public survey, and monthly meetings of the Transportation Council’s Planning Committee.
4. An assessment of where population and employment growth may occur.

As in the Transportation Council’s previous Metropolitan Transportation Plan, *Moving Dutchess 2* recommends specific projects to preserve and improve the transportation system. This was done to increase the value of the Transportation Plan to public agencies and local communities by providing them greater detail on where to target future investments. A key goal throughout the development of *Moving Dutchess 2* was to create a relevant and targeted Transportation Plan. Much of this was possible due to advances in mapping and the increased availability of system data. For example, instead of stating that our roads and bridges should be maintained, we are now able to identify which roads and bridges need to be repaired and when.

*Moving Dutchess 2* also recommends policies to better preserve and improve our transportation system. Not all solutions to our future challenges require constructing infrastructure. Adopting and implementing new policies and procedures, especially as they relate to land use decisions and project delivery, can influence the transportation system just as much as ‘brick and mortar’ projects.

By law, *Moving Dutchess 2* is required to have a Financial Plan that demonstrates how the recommendations will be funded. The Financial Plan uses planning-level cost estimates and forecasts of reasonably expected funding to ensure that the recommendations are financially constrained and not simply a wish list of projects. Project cost estimates are adjusted for
inflation based on the project’s Year of Expenditure (YOE), providing a more realistic estimate of funding needs. These projects represent the financially constrained list of project recommendations.

In order to account for worthy projects that do not have available funding, a financially unconstrained list of projects was also developed. Many of these projects go beyond preserving the existing transportation system, to improve quality of life through new trails, sidewalks, bicycle facilities, transit service, roadway connections and safety enhancements. Though funding is not currently available for these projects, they are included in the event that funding becomes available.

**Project-level Recommendations**

*Moving Dutchess 2* makes project recommendations for the 25-year period from 2016-2040. The recommendations are divided into short-range (2016-2020), mid-range (2021-2030), and long-range (2031-2040) time periods, which are related to each project’s relative priority and complexity, and the availability of funding.

In general, short-range projects have the highest priority and are already programmed on the Transportation Council’s FFY 2014-2018 Transportation Improvement Program (TIP) or will carry over to the future FFY 2017-2021 TIP. This time period is the most financially constrained, due to limited federal and state funding in the next five years. The mid- and long-range time periods include projects to preserve the transportation system, enhance transportation safety, and increase accessibility. Many of these projects are more complex than the short-range projects and will require more time to design and complete.

The recommended projects are categorized into eight project types, which relate to the general focus of the project:

1. Bridge Maintenance: replacement or rehabilitation of bridges that are currently in or are expected to be in poor condition.
2. Highway Maintenance: reconstruction or rehabilitation of roadway segments that are currently in or are expected to be in poor condition.
3. Highway Operations: intersection, turning lane, and traffic signal projects to improve traffic operations and reduce congestion.
4. Safety: intersection and road improvements to increase safety, as well as safety analyses.
5. Pedestrian/Bicycle: construction or rehabilitation of sidewalks, crosswalks, trails, and other non-motorized facilities to improve safety and accessibility.
6. Travel Demand Management (TDM): rideshare and vanpool activities to reduce the number of single-occupant vehicles on major corridors.
7. Transit: bus replacements, operating assistance, and preventive maintenance activities for transit providers, as well as facility upgrades and information technology projects for bus and commuter rail.
8. Planning: subjects or locations requiring specific transportation-related analysis, including corridor management plans and pedestrian/bicycle studies.
Categorizing the recommendations into project types assists with financial planning, since future funding assumptions are based on funding programs for three overall project types: highway/bridge, transit, and planning.

The location, estimated cost, federal-aid eligibility, and TIP status are provided for each recommended project. Projects that are already programmed on the 2014-2018 TIP or that will carry over to the 2017-2021 TIP are also identified. Although Moving Dutchess 2 recommends a variety of new projects, this does not mean that funding has been programmed for the project. In order to move forward, a project must first be added to the TIP; this requires approval by the Transportation Council, available funding, and a commitment by the project sponsor to progress the project in a timely manner.

Cost estimates were calculated using recent planning-level unit costs (by project type and scope) to estimate a total project cost, which was then inflated to reflect a YOE cost. The Transportation Council used a two percent annual inflation rate to estimate YOE costs in Moving Dutchess 2. This aligns with the annual inflation rate used by NYSDOT in its program guidance for the FFY 2017-2021 TIP. This inflation rate was based on an estimate of overall price trends for the transportation/public works sector in New York State.

The estimated costs for short-range projects were based on a 2016 YOE; if the project was programmed on the TIP, the cost on the TIP was used. The estimated costs for mid-range and long-range projects were based on the last year within the respective time period (e.g. 2030 and 2040). For example, a 100 ft. bridge recommended for rehabilitation during the long-range time period (2031-2040) was estimated to cost $1.6 million ($16,000 per linear foot) in 2016 dollars to repair and almost $2.2 million ($22,400 per foot) in 2040 dollars. See Figure 8.1 below.

Figure 8-1. YOE Inflation for $100,000 (2016-2040).

The Transportation Council emphasizes that the costs associated with the recommendations are planning-level estimates only; they should not be used as site specific construction cost estimates. This is especially true for highway and bridge maintenance projects, which require site specific analyses to determine their true cost. The cost estimates were simply calculated to determine the approximate level of investment needed to preserve the federal-aid transportation
**Moving Dutchess 2**

system, maintain safety and mobility, and protect quality of life.

*Moving Dutchess 2* recommends a variety of federal-aid eligible projects and studies over the 25-year planning period. The majority of these projects are maintenance-related, striving to maintain public safety and preserve the system as best as possible. Table 8-1, located at the end of this chapter, lists the recommendations for *Moving Dutchess 2*; this list includes non-federal aid eligible projects for information purposes only. Tables 8-2, 8-3, and 8-4 show recommended funding by each project type, overall project type, and time period. Figure 8-2 shows the percent of total recommended funding by project type. A summary of the recommendations for each project type is provided below.

*Figure 8-2. Percent of Total Recommended Funding by Project Type (2016-2040)*

**Bridge Maintenance**

The preservation of federal-aid eligible bridges represents an important focus area for *Moving Dutchess 2*. This is in recognition of the important role that bridges play in our transportation system: a closed bridge can delay response times for emergency responders, disrupt the movement of goods, and greatly diminish personal mobility. It is for these reasons that the Transportation Council has placed attention to the maintenance needs of State, County, and local bridges, recommending that 28 percent of projected highway funds support bridge maintenance and repairs.

The Transportation Council recommends that agencies pursue a preservation-based approach to maintaining bridges. This includes preventive maintenance work such as sealing or replacing a deck, cleaning and painting structures, replacing bearings, and rehabilitating piers, columns, and beams. To account for this type of work, the bridge maintenance category includes $5 million annually for State and County-owned bridges in Dutchess County. These include NYSDOT and DCDPW projects for ‘where and when’ preventive maintenance, bridge washing/deck sealing, bridge painting, and bridge inspections.

In some cases, the responsible agency may deem that a bridge replacement is needed to maintain public safety. This is especially true for bridges that have condition ratings below 4.0 and are considered Structurally Deficient or Deficient under FHWA or NYSODT standards. In order to quantify the number of bridges that might require replacement or reconstruction during the 2016-2040 planning period, the...
Transportation Council estimated the future condition of each bridge by first comparing its condition rating from 2011 (Moving Dutchess) with 2015 (Moving Dutchess 2), and then calculating an annual degradation factor (i.e. change over the four years from 2011 to 2015). This degradation factor, unique to each bridge, was then applied to the 2015 rating and extrapolated over the 25-year planning period. This simple model assumes that bridges will degrade at the same rate over time, which the Transportation Council realizes may not always be the case. Therefore, this bridge model should be viewed as a general attempt to quantify future bridge needs in the county, and not a specific forecast.

The initial list of deficient bridges with existing condition ratings below 4.0 or projected to be below 4.0 by 2040 was then compared to planned work activities by NYSDOT and DCDPW. Bridges already programmed on the FFY 2014-2018 TIP and future FFY 2017-2021 TIP (11 total), as well as those programmed on the DCDPW Capital Program (nine total), were assumed to have condition ratings of 7.0 and would therefore not require replacement during the planning period. Additionally, bridges with Annual Average Daily Traffic (AADT) of fewer than 200 vehicles (22 total) were removed from consideration due to limited funding, as were privately-owned bridges.

In total, the Transportation Council identified 134 publically-owned bridges (approximately 37 percent of all bridges in the county) that will require substantial repairs or replacement during the 25-year period. These priority bridges are either currently deficient or projected to be deficient. Table 8-5 shows the estimated number of deficient bridges by road type and time period.

Table 8-5. Number of Bridges Estimated to be Deficient by Facility Type and Time Period (2016-2040)

<table>
<thead>
<tr>
<th>Road Carried</th>
<th>Short-Range (2016-2020)</th>
<th>Mid-Range (2021-2030)</th>
<th>Long-Range (2031-2040)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total NHS</td>
<td>15</td>
<td>22</td>
<td>14</td>
<td>51</td>
</tr>
<tr>
<td>Total Non-NHS</td>
<td>16</td>
<td>43</td>
<td>24</td>
<td>83</td>
</tr>
<tr>
<td>Federal Aid</td>
<td>4</td>
<td>18</td>
<td>24</td>
<td>83</td>
</tr>
<tr>
<td>Non-Federal Aid</td>
<td>12</td>
<td>25</td>
<td>14</td>
<td>51</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31</strong></td>
<td><strong>65</strong></td>
<td><strong>38</strong></td>
<td><strong>134</strong></td>
</tr>
</tbody>
</table>

Of the 134 bridges estimated to be deficient, 51 bridges are located on the National Highway System (NHS), with an additional 32 located on a federal-aid road. The remaining 51 bridges are located on non-federal aid roads or ‘off-system.’ In order to maintain a general state of good repair across the entire system would require five to six major bridge repairs per year by NYSDOT, Dutchess County, and local municipalities combined. The time periods associated with the bridge repairs should be viewed as a general reference, rather than a binding timeframe. The ultimate responsibility for the timing of a bridge project rests with the responsible agency.

In order to estimate the funding needed to preserve priority bridges, a rehabilitation cost of $16,000 per linear foot was applied to the length of each bridge. This cost rate reflects the
average bridge repair cost per foot for all bridges repaired across the state from 2012-2014. The average cost rate was applied to the length of each bridge to calculate a cost estimate for its repair. Again, the Transportation Council recognizes that this method is general in nature.

The reconstruction of priority bridges in Dutchess County is estimated to cost almost $340 million during the planning period. This represents 28 percent of the highway and bridge funding assumed to be available during the 25-year planning period. This share may increase if it is determined that additional bridges require major rehabilitation or replacement, or if individual conditions worsen beyond projected levels. In addition to maintaining State, County, and local bridges, the continued maintenance of NYSBA-operated bridges is critical to the county’s transportation system.

Highway Maintenance

Moving Dutchess 2 recommends a variety of highway maintenance projects to maintain the county’s federal-aid eligible roads in a state of good repair. These projects include rehabilitation work to repair road segments that are currently rated in poor condition or expected to be in poor condition within the 25-year planning period.

Due to funding constraints, the Transportation Council recommends a preservation-based approach. This rehabilitation work primarily involves single or multi-course overlays, minor surface treatments, and crack/joint repairs. The reconstruction of a road is not recommended unless the responsible agency deems it necessary to ensure public safety.

The recommended highway maintenance projects include some non-federal aid eligible projects, which are shown for informational purposes only.

The recommendations under this project category also include other highway maintenance activities necessary to preserve the road network, including NYSDOT and DCDPW system-wide ‘where and when’ repairs and culvert/catch basin repairs. These repairs are estimated to cost $4 million annually for State highways in Dutchess County. Similar Dutchess County DPW highway maintenance activities are estimated to cost $1 million annually.

In order to estimate the funding needed to preserve federal-aid eligible highways, a rehabilitation cost of $150,000 per lane mile was applied to the length of each road project. This rate reflects the 2015 NYSDOT cost for a single-course, Hot Mix Asphalt (HMA) overlay.

The highway maintenance projects are prioritized based on pavement condition data collected by NYSDOT and DCDPW. During the short-range period, State roads with a NYSDOT rating of 5 or less and federal-aid eligible County or local roads with a Pavement Condition Index (PCI) rating of 55 or less are recommended for rehabilitation. In order to account for the deterioration of facilities over time, State roads with a NYSDOT condition rating of 6 and federal-aid eligible County roads with a PCI rating of 56 to 75 are recommended for rehabilitation during the mid-range period, while the remaining roads, currently rated in good or excellent condition, are recommended for long-range rehabilitation. For
planning purposes, this assumes that all roads will degrade at the same rate over time.

The rehabilitation and maintenance of federal-aid eligible roads in Dutchess County is estimated to cost over $286 million during the planning period. This represents over 23 percent of the highway and bridge funding assumed to be available over the next 25 years. This share may increase if some roads require major rehabilitation work or reconstruction. The rehabilitation of non-federal aid eligible County roads is estimated to cost an additional $46 million over the planning period, although this cost is not included in the Financial Plan.

**Highway Operations**

*Moving Dutchess 2* recommends 24 projects to improve highway operations in Dutchess County. These include projects that reduce traffic congestion and improve safety such as adding turn lanes, upgrading or retiming traffic signals and redesigning intersections and interchanges. Additionally, the recommendations include NYSDOT and DCDPW system-wide operational maintenance work such as traffic signal and sign repairs, and Intelligent Transportation System (ITS) upgrades.

In total, *Moving Dutchess 2* recommends over $208 million to improve highway operations in Dutchess County, which represents over 17 percent of the highway and bridge funding estimated to be available. The recommendations include redesigning State highways into boulevards within Town centers (e.g. Route 44 in Pleasant Valley; Route 82 in Hopewell Junction), redesigning Market St. in the City of Poughkeepsie from one-way to two-way traffic, and redesigning the Route 376 Route 376/Lake Walton Rd./Robinson Ln. intersection in East Fishkill. The Highway Operations category also includes two regionally significant, long-range transportation projects:

1. Redesigning the Route 9/44/55 interchange in the City of Poughkeepsie to improve traffic safety and operations, while also incorporating safe pedestrian and bicycle access (estimated total cost of over $81 million).
2. Redesigning the I-84/Route 9D interchange in the Town of Fishkill to improve traffic safety and operations, while also incorporating safe pedestrian and bicycle access (estimated total cost of almost $41 million).

Due to the scope of these two projects, additional federal and state funding above and beyond normal allocations will be needed. This could include a possible USDOT Transportation Investment Generating Economic Recovery (TIGER) grant and/or NYSDOT Beyond Preservation (BP) funding.

**Safety**

Although many of the recommendations in *Moving Dutchess 2* are not listed under the safety category per se, one could argue that all of the recommendations are safety projects: a repaired sidewalk removes a tripping hazard, a new turn lane prevents a rear-end collision, a fixed pothole keeps a vehicle in its travel lane, and a new bus makes it easier for a customer to climb aboard. All of the recommendations should therefore be viewed as having a safety component.
Moving Dutchess 2 recommends 22 specific safety projects to improve transportation safety on federal-aid eligible roads. These safety recommendations include a variety of projects such as realigning roads, installing traffic warning signs, improving sight distances, and installing traffic calming devices at various locations. The recommendations include three linear projects on major County highways:

1. Realigning CR 9 (Beekman Rd.) from CR 10 (Sylvan Lake Rd.) to Taconic State Parkway (TSP) in the Towns of Beekman and East Fishkill to improve sight distances and correct safety deficiencies (estimated total cost of $5 million).
2. Realigning CR 28 (Old Hopewell Rd.) from Route 9 to CR 94 (All Angels Hill Rd.) in the Town of Wappinger to improve sight distances and correct safety deficiencies (estimated total cost of $5.9 million).
3. Realigning CR 93 (Myers Corners Rd.) from Route 376 to CR 94 (All Angels Hill Rd.) in the Town of Wappinger to improve sight distances and correct safety deficiencies (estimated total cost of $6 million).

The safety recommendations also include the implementation of recommendations from the three Safety Assessments the Transportation Council has completed since the 2011 Transportation Plan (CR 9 – Beekman Rd., CR 16 – N. Quaker Ln., and CR 19 – Slate Quarry Rd.).

Moving Dutchess 2 also recommends system-wide safety activities such as sign replacements, special surface treatments, guiderail replacements, the installation of centerline rumble strips, pedestrian countdown timers, and HELP truck services. These activities are estimated to cost $1 million annually for Dutchess County only.

The Transportation Council estimates that these safety-specific recommendations will total almost $94 million during the planning period, representing eight percent of available highway and bridge funding. Some of this funding will require project sponsors to secure funding from FHWA’s Highway Safety Improvement Program (HSIP) funding.

Pedestrian/Bicycle

Ensuring the safety of people walking and bicycling by maintaining and improving non-motorized infrastructure is an essential component of Complete Streets and developing a complete transportation system. Accordingly, Moving Dutchess 2 recommends 32 pedestrian and bicycle projects that address the construction of new sidewalks and trails, the repair of existing sidewalks, and the addition of crosswalks and signs at key locations. Many of the recommendations stem from Walk Bike Dutchess, the County’s 2014 Pedestrian and Bicycle plan.

Highlights under this category include the following projects:

1. Implementing recommendations from the Transportation Council’s previous sidewalk studies for the Towns of Hyde Park and Pine Plains, and Village of Rhinebeck (estimated total cost of $4 million combined).
2. Signing and marking the City of Poughkeepsie’s nine bicycle routes, to include sharrows, bicycle lanes, bicycle boulevards, and other treatments as appropriate.

3. Creating a shared-use path along the west side of Zack’s Way/Boardman Rd. between Hooker Ave./New Hackensack Rd. and Spackenkill Rd. in the Town of Poughkeepsie (estimated total cost of $3 million).

4. Installing sidewalks on Route 9 from Mesier Ave. in the Village of Wappingers Falls north to IBM Rd. in the Town of Poughkeepsie, and constructing a new pedestrian bridge on Route 9 over the Wappinger Creek (estimated total cost of $5.3 million).

5. Installing a sidewalk on Route 113 (Spackenkill Rd.) in the Town of Poughkeepsie from Croft Rd. to Boardman Rd. (estimated total cost of $2.6 million).

6. Installing a sidewalk on one side of CR 93 (Myers Corners Rd./Middlebush Rd.) in the Town of Wappinger from Route 9D to Route 376 (estimated total cost of $6.7 million).

Moving Dutchess 2 also includes two major rail trail projects that build upon recent trail work done throughout the county:

1. Completing Phase IV of the Harlem Valley Rail Trail from the Village of Millerton to the Columbia County line (estimated total cost of over $8 million).

2. Constructing the Hudson Highlands Fjord Trail, a nine-mile separated path/trail along Route 9D or the Hudson River shore, connecting the Beacon train station to the Village of Cold Spring train station in Putnam County (approx. 3.8 miles in Dutchess County) (estimated total cost of over $17 million).

The pedestrian and bicycle recommendations are estimated to cost over $57 million during the planning period, which represents five percent of highway and bridge funding estimated to be available through 2040. These funding estimates assume that project sponsors will successfully secure funding from programs such as FHWA’s Surface Transportation Block Grant Program (STBGP) set-aside for pedestrian/bicycle projects (formerly the TAP-Transportation Alternatives Program), HUD’s Community Development Block Grants (CDBG), of other funding made available through the State’s Consolidated Funding Application (CFA) process.

Travel Demand Management (TDM)

Moving Dutchess 2 recommends continuing Travel Demand Management (TDM) activities aimed at reducing the number of single-occupant vehicles on major corridors. These activities include the promotion of carpools and vanpools through information technology and van leasing programs. The recommendations support the continuation of the 511NYRideshare program, which provides an information portal to match commuters who have similar origins and destinations. The TDM project category also includes a recommendation to construct a second park-and-ride lot near the Taconic State Parkway (TSP)/Route 52 interchange in East Fishkill to relieve parking congestion. In total the Transportation Council estimates that these TDM activities will total $7.5 million during the planning period.
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**Transit**

Bus and rail transit play a critical role in our transportation system, providing mobility to those who cannot or choose not to drive, and providing access to regional employment and commercial centers. The 34 federal-aid eligible transit recommendations support existing bus and rail operations in the area and the limited expansion of bus service in the county (e.g. Sunday service; express routes; increased demand-response services).

The transit recommendations include short-, mid-, and long-range projects to maintain and operate the two public bus systems (Dutchess County and City of Poughkeepsie). These projects cover preventive maintenance, operating assistance, and vehicle replacements for each operator during the three time periods. The recommendations were based on the estimated needs of each operator, including vehicle and equipment replacement schedules. The cost estimates for these projects were based on current annual costs adjusted by YOE and multiplied by the number of years in each time period.

Other recommended projects include the installation of bus stop shelters to improve passenger comfort and safety, and the installation of signs and deployment of information technology to increase the availability of transit information. Specific commuter rail recommendations include current TIP projects to expand Metro-North’s Wassaic rail yard and rehabilitate the Poughkeepsie train station.

As a subsidiary of the Metropolitan Transportation Authority (MTA), Metro-North Railroad projects are included in the MTA’s Capital Program. MTA’s 2015-2019 Capital Program identifies over $2.3 billion in projects to improve Metro-North service, including the purchase of new rolling stock (locomotives and cars), signal and power improvements to meet Positive Train Control requirements, the continued rehabilitation of stations, and track maintenance. The MTA’s 20-Year Capital Needs Assessment (2015-2034) identifies $8.9 billion in system-wide capital needs for Metro-North. These needs are required to maintain a state of good repair and support projects such as replacing rolling stock and maintaining track. Metro-North Railroad projects are not included in the project recommendations for Moving Dutchess 2 unless they are specific to Dutchess County.

The transit recommendations specific to Dutchess County are estimated to cost almost $221 million, which represents 18 percent of all funding estimated to be available over the planning period.

**Planning Studies**

In addition to updates of the Metropolitan Transportation Plan and the Pedestrian-Bicycle Plan, Moving Dutchess 2 recommends a variety of smaller planning studies to address specific transportation issues in municipalities and neighborhoods, and along major transportation corridors. These focused studies require detailed analyses beyond the system-level analysis done for a county-wide Transportation Plan.

Many of the recommended planning studies continue work already being done by the Transportation Council. This
Moving Dutchess 2 includes the Local Sidewalk Planning Initiative, where staff conducts a sidewalk inventory and recommends strategies to improve pedestrian connections in a community, and the Safety Assessment program, where staff, working with local agencies, conducts a crash analysis and field work to identify low cost improvements to improve safety on high-crash corridors. Moving Dutchess 2 further recommends the completion of a Corridor Management Plan (CMP) for Route 9D in the Lower Hudson and Route 9G in Hyde Park, similar to those done for Route 9G in Red Hook/Tivoli and CR 93 (Myers Corners Rd.) in Wappinger. Beyond local studies, Moving Dutchess 2 recommends two new county-wide planning initiatives:

1. An analysis of speed patterns on County and local roads, which will use speed data from the Transportation Council’s traffic count program to identify corridors with high percentages of 'high-end' speeders (e.g. 10 mph or more over the posted speed limit). The analysis will assist local agencies to develop engineering, enforcement, and educational approaches to reduce speeding.

2. A pavement monitoring program for local roads in Dutchess County that will provide municipalities with better baseline information to plan and program paving projects.

As discussed in Chapter 3, the Transportation Council will partner with OCTC and UCTC to develop a Regional Transit Plan and Regional Freight Plan for the TMA. In total the planning related recommendations are estimated to cost over $3.8 million, which is less than one percent of all recommended funding in Moving Dutchess 2. These planning studies would be programmed by the Transportation Council through its annual UPWP.

Unfunded Projects

During the development of Moving Dutchess 2, a variety of project concepts were identified from local comprehensive plans, previous studies, and suggestions by local officials and the public. Due to funding constraints, these concepts are not identified as recommendations, but are included for illustrative purposes only. Many require further study to determine their merit, while others require more defined scopes and purposes. This is especially true for highway capacity improvements, which cost considerably more than simple highway maintenance activities. Appendix E lists Unfunded Projects identified during the development of Moving Dutchess 2.

Financial Plan

The recently-passed Fixing America’s Surface Transportation (FAST) Act requires that the projects recommended in Moving Dutchess 2 be financially constrained. Financial constraint is demonstrated through a financial plan that shows how the projects can be funded based on estimates of current and reasonably available future revenues. The plan must also demonstrate that the federally-supported transportation system is being adequately operated and maintained. It is extremely difficult to predict future funding since there is still some debate about the role of the federal government in
supporting the local transportation system. There is equal uncertainty about the future of State and local funding. Despite these uncertainties, *Moving Dutchess 2* assumes that federal, State, and local entities will dedicate sufficient funds to preserve the transportation system to maintain safety and mobility.

The financial plan uses three funding scenarios, tied to the three time periods used to prioritize recommendations:

1. **Short-range (2016-2020):** This scenario assumes that annual federal, State, and local transportation funding will remain flat at 2016 levels for the five-year period, as per the most recent funding targets for the upcoming 2017-2021 TIP. However, additional transportation funding may be possible through the FAST Act.

2. **Mid-range (2021-2030):** This scenario assumes that federal, State, and local transportation funding will increase by one percent annually during the ten-year period, which is slightly below the current annual rate of inflation of two percent. This would raise the annual allocations to pre-2012 levels by 2030, and would rely on new multi-year federal transportation laws from Congress.

3. **Long-range (2031-2040):** This scenario assumes that federal, State, and local funding will increase at the same rate as inflation (two percent annually) during the ten-year period. Again, this would require new multi-year federal transportation laws from Congress.

**Available Funding**

The Transportation Council relied on current and historic funding allocations to estimate the amount of highway, transit, and planning funds available over the *Moving Dutchess 2* planning period. Though there are numerous federal funding programs, the financial plan focuses on the major surface programs. Based on recent federal transportation laws such as MAP-21 and the new FAST Act, the Transportation Council assumes that future federal surface transportation acts will continue to consolidate federal programs and provide agencies the flexibility needed to preserve the highway and transit systems.

For *Moving Dutchess 2*, the Transportation Council estimated future funding for three broad project categories: highway (including bridge and pedestrian/bicycle), transit (including bus and rail), and planning. Table 8-6 shows available funding by project type and source for each time period.

**Estimated Federal, State, & Local Highway Funds**

The federal Highway Trust Fund (HTF), supplemented by some general funds, provides the majority of federal highway and transit funding to states. The HTF was created in 1956 as a user-supported fund to build the Eisenhower Interstate System. HTF revenues come from user fees on gasoline, diesel, special fuels, tires, and large trucks. The current fees, last updated in 1993, include a gasoline tax of 18.4 cents per gallon and a diesel tax of 24.4 cents per gallon. Funding from the HTF is administered through FHWA by the states and used...
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to maintain federal-aid eligible highways and other transportation facilities.

To estimate available highway funding, the Transportation Council first used the highway funding targets established by NYSDOT in September 2015. Though primarily developed for the FFY 2017-2021 TIP update, these funding targets provide the best estimate of federal and State highway funding that will be available during the 2016-2020 time-period. Overall, these targets assume federal funding will remain flat at FFY 2016 levels. However, since these planning targets were established prior to the passage of the FAST Act, there is a slight possibility that available highway funding may increase in the short-term.

For the FFY 2017-2021 TIP update, NYSDOT-Region 8 received an annual funding target of approximately $138 million, or $690 million for the five-year period, for all core FHWA programs combined (e.g. NHPP – National Highway Performance Program, STP – Surface Transportation Program, and CMAQ – Congestion Mitigation and Air Quality improvement program). These funding targets represent the amount of funding likely to be available for eligible federal-aid projects in Region 8’s seven counties: Columbia, Dutchess, Orange, Putnam, Rockland, Ulster, and Westchester counties.

NYSDOT-Region 8 uses a fair-share formula based on population data and highway/bridge data to establish FHWA funding targets for each of the seven counties. Consistent with past practice, approximately 13 percent of the Region’s total is oriented towards the federal-aid highway system in Dutchess County. Based on the Region’s overall allocation, this equates to a five-year FHWA target of approximately $89.7 million for state and local federal-aid projects in Dutchess County, or $17.9 million annually. Note: of this annual target, only $3.2 million in FHWA funding is available to non-State (i.e. local) federal-aid projects.

Since FHWA funding requires a 20 percent local match, the estimated amount of total highway funding is increased to reflect State and local contributions. For local projects, the local share requirement is typically split between NYSDOT and the local project sponsor (75/25 percent respectively). Adding the 20 percent local match brings the amount of available highway funding to $22.4 million annually for the FFY 2017-2021 TIP ($17.9 million in FHWA funds, $4.1 million in State funds and $400,000 in local funds).

In addition to FHWA funds, NYSDOT-Region 8 is allocated State Dedicated Funds (SDF) to support the State highway system. These funds are typically used for routine system-wide preventive maintenance projects. For the 2017-2021 TIP update, Region 8 received a planning target of over $231 million in SDF funds, with $32.7 million allocated to State projects in Dutchess County. These additional State funds add $6.5 million to the annual highway funding target in Dutchess County. This raises the total amount of available federal-aid and State highway funding to approximately $29.3 million per year for the short-range period ($146.5 million total), which represents the amount of federal, State, and local highway funding assumed to be available to NYSDOT, Dutchess County,
and local municipalities to preserve the federal-aid highway system from 2016-2020.

The estimated amount of available highway funding during the mid-range period (2021-2030) assumes that the next federal transportation act will begin to increase funding by one percent annually. By 2030, the annual amount of highway funding estimated to be available is approximately $33 million ($19.4 million federal, $12.9 million State, and $500,000 local). A total of $313 million in highway funding is assumed to be available over the ten-year period from 2021-2030 (approximately $187 million federal, $121 million State, and $5 million local).

The estimated highway funding during the long-range period (2031-2040) assumes that annual highway funding will increase at the rate of inflation (currently two percent). By 2040, the annual amount of highway funding estimated to be available over this period is approximately $39.4 million ($23.6 million federal, $15.1 million State, and $700,000 local). A total of $363 million in highway funding is assumed to be available over the ten-year period ($216.5 million federal, $140.4 million State, and $6 million local). Figure 8-3 shows the annual amount of estimated highway funding by source.

Over the entire planning period (2016-2040), the Transportation Council estimates that approximately $823 million ($493 million federal, $317 million State, and $13 million local) in highway funding will be available for State and local federal-aid projects. For reference, this is 36 percent less than the amount of highway funding estimated in the 2011 Transportation Plan, which indicates the challenges facing federal, State, and local governments to maintain our transportation infrastructure.

Figure 8-3. Annual Amount of Estimated Highway Funding by Source

The estimated highway funding does not include sources such as the State’s Consolidated Local Street and Highway Improvement Program (CHIPS) or local general funds. The Transportation Council assumes that these funds will be used on the non-federal aid system. For DCDPW alone, CHIPS funding is estimated to provide approximately $75 million over the planning period (approximately $3 million per year) to maintain non-federal-aid eligible roads.
Effective Federal, State, & Local Transit Funds

Future transit funding was estimated by totaling the federal, State, and local funding available per year based on historic allocations and revenues, and extrapolating those amounts over the planning period.

Federal transit funds are administered by the FTA and apportioned to the entire Poughkeepsie-Newburgh Urbanized Area, based on statistics reported through the National Transit Database (NTD). The annual FTA apportionment does not directly allocate funding to transit operators; instead, this responsibility rests with the three MPOs of the Mid-Hudson Valley TMA, assisted by the NYSDOT-Public Transportation Bureau.

Each year the NYSDOT-Public Transportation Bureau provides transit funding allocations to the Mid-Hudson Valley TMA. The allocations cover three federal programs: the FTA Section 5307 (Urbanized Area), FTA Section 5340 (Growing States/High Density States), and FTA Section 5339 (Bus and Bus Facilities) formula programs. From 2013-2015, these allocations averaged $22.5 million per year for the Urbanized Area. Of this amount, the county’s two local public bus operators (Dutchess County and the City of Poughkeepsie) typically received a combined $2.8 million ($1.5 million and $500,000 respectively) per year. The TMA allocations also include funding for MTA/Metro-North Railroad for transit services provided in the urbanized area (approximately $2.5 million annually).

In addition to federal funding, the State provides operating assistance to public bus operators, referred to as STOA. This is a formula-based program that reimburses operators 40.5 cents per passenger and 0.69 cents per vehicle mile. Dutchess County and the City of Poughkeepsie receive approximately $2.4 million per year in STOA ($2 million and $400,000 respectively).

Besides federal and State funding, the two operators receive assistance through their local governments. These include local matches to federal funds (usually ten percent) and general funds from annual budgets. These total approximately $2.2 million per year. The operators also use fare revenue to help maintain their systems, which is an additional $1 million per year ($700,000 for Dutchess and $300,000 for Poughkeepsie).

Based on recent federal, State, and local funding and fare revenues, the Transportation Council estimates that $11.5 million will be available annually for the two local transit systems; this assumes that the recent trend of flat funding will continue. Based on this annual amount, over $43 million in transit funding would be available during the short-range period (2016-2020), $87 million during the mid-range period (2021-2030), and $87 million during the long-range period (2031-2040). This represents a total of over $217 million available to the public bus systems over the planning period. This does not include an estimated $62.5 million in FTA Section 5307/5340 funding that would be allocated to MTA/Metro-North Railroad during the planning period for services in the urbanized area.
Estimated Planning Funds

As with highway and transit funding, the Transportation Council estimated future planning funds by extrapolating recent annual allocations over the 25-year planning period. The Transportation Council receives federal planning funds that are matched by State and local funds. These funds are used to carry out the metropolitan transportation planning process, as prescribed by the FHWA and FTA. The funds are allocated on an annual basis and programmed through the Transportation Council’s UPWP, which identifies the federally-funded planning activities to be carried out by the Transportation Council in a given year. Federal funding used to support UPWP tasks comes from two sources: FHWA Planning (PL) funds and FTA Section 5303 Metropolitan Planning Program (MPP) funds. NYSDOT and Dutchess County provide matching funds (15 and five percent respectively).

The amount of federal funding authorized for transportation planning has remained constant in recent years. For the SFY 2016-2017 program year, New York State received $31.3 million in federal planning funds. These funds were allocated to the 14 MPOs in the State through a formula that accounts for the size of each MPO planning area.

The Transportation Council’s 2016-2017 federal funding allocation totaled over $661,200 ($541,600 in FHWA funding and $119,600 in FTA funding). The State and local match for these funds totaled over $165,000, making approximately $826,500 available for planning activities during the year. The Transportation Council does not anticipate that these annual allocations will change significantly over the planning period, since planning funds have remained relatively flat in recent years. Therefore, it is estimated that almost $20.7 million will be available for planning activities during the planning period.

In addition to the annual allocation of federal planning funds, the Transportation Council has unspent funds available from previous program budgets. These are funds that were apportioned to the Transportation Council, but not expended during a particular program year. As of March 2016, the estimated savings is approximately $642,000. This increases the estimated amount of available planning funds to $21.3 million.

Regional Transportation Authorities

MTA/Metro-North Railroad Funding

The MTA/Metro-North Railroad receives revenue from the FTA, MTA bonds, ticket sales, rents, and local subsidies. These are used to support capital and operating expenses. As mentioned earlier, the MTA has developed a 20-year Capital Needs Assessment (2015-2034) and a 2015-2019 Capital Program that identify investments and projects needed to maintain and improve passenger transportation services.

The MTA's 2015 Adopted Budget and 2015-2018 Financial Plan seek to maximize revenues and establish fiscal stability for the MTA. The 2015-2018 Financial Plan continues cost cutting initiatives begun in previous financial plans, which are projected to save $1.75 billion annually by 2019. The current Financial Plan achieves stability without reducing service. The
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MTA's 2015-2019 Capital Program, which invests in renewing MTA's infrastructure and expanding the transportation network to meet future demand, is integral to MTA's ability to deliver services. The Financial Plan presents a strategy to fully fund the MTA's 2015-2019 capital program.

New York State Bridge Authority

The New York State Bridge Authority (NYSBA) is a wholly self-supporting public benefit corporation that relies on toll revenues to meet its operational, maintenance, and capital improvement needs. In 2013 tolls accounted for 98 percent of all NYSBA revenues ($54.9 million). A standard passenger car toll is $1.50 (cash)/$1.25 (E-Z pass) per vehicle (paid at eastbound crossings). The NYSBA’s 2015 Budget & Financial Plan estimated that revenues would remain stable through 2017 at approximately $55 million annually, and then rise to over $75 million in 2018 (partly through a toll increase). The NYSBA further estimated that total expenses will fluctuate through 2018, from a high of $79 million in 2015 to a low of $52 million in 2016. Though a shortfall was expected for 2015, 2016-2018 shows funding surpluses based on debt proceeds and toll increases. The NYSBA 2015 budget includes an initial $25 million (out of a $75 million total project cost) towards re-decking the north span of the Newburgh-Beacon Bridge.

Private Funds

The funds estimated to be available over the planning period do not include potential funding from private entities. The Transportation Council has not identified specific private funds, but recommends that they be used to the maximum extent possible to fund transportation improvements, particularly those related to new development, such as intersection or signal improvements for large residential or commercial projects.

Fiscal Constraint Analysis

Moving Dutchess 2 recommends the investment of almost $1.2 billion in highway, transit, and planning projects to preserve, maintain, and improve Dutchess County’s transportation system over a 25-year planning period. The overall estimate of reasonably expected revenues totals over $967 million, which is insufficient to carry out all of the Transportation Plan’s recommendations (see Table 8-6). The largest shortfall exists between available and recommended funding for highway and bridge projects during the short- and long-range time periods. Therefore, fiscal constraint for Moving Dutchess 2 is predicated on several key assumptions:

1. Federal and State transportation funding will need to track, and eventually surpass, the rate of inflation in order for agencies to effectively preserve the transportation system, let alone maintain a state of good repair. If labor or material costs increase at a faster rate than funding, agencies will be forced to delay projects or even close non-strategic transportation facilities. The strategic divestment of facilities is the least preferred alternative, but may be required if the Transportation Council’s estimates of available funding prove too high.

2. Federal transportation funding programs will need to be consolidated into a smaller group of core programs,
Moving Dutchess 2

providing flexibility to the State and local agencies to program funds where needed. The Transportation Council supports the consolidation of programs that started with MAP-21 and continues with the FAST Act. The Transportation Council will revisit the recommendations in Moving Dutchess 2 as funding allocations are made under the FAST Act.

3. Moving Dutchess 2 outlines a preservation-based approach to maintain transportation safety and access. If a large number of facilities require major rehabilitation work or reconstruction, agencies may need to postpone lower-priority projects. To be clear, there is insufficient funding available to reconstruct the majority of the system or reach a true state of good repair. The Transportation Council will rely on individual agencies to identify which facilities require work beyond preservation.

4. Municipalities and agencies will need to apply for funding above and beyond the Transportation Council’s normal allocations in order to implement some of the recommendations in Moving Dutchess 2. This includes finding funds from the Highway Safety Improvement Program (HSIP), Surface Transportation Block Grant Set-aside Program (STBGP), Community Development Block Grant Program (CDBG), and the regional Consolidated Funding Application (CFA) process.

5. Although the current estimates of available funding are sufficient to preserve the transportation system, the number of recommended projects may prove challenging for agencies to process. In order to move projects forward, agencies will likely need to bundle maintenance activities into system-wide, cyclical maintenance projects that can be more easily reviewed and processed by federal and State reviewing agencies. These projects will need to be designed in a manner that reduces the need to acquire right-of-way, which is often a time consuming and expensive phase. Efforts to expedite project delivery should continue, especially through regular project coordination meetings between project sponsors and the NYSDOT-Region 8 Local Projects Unit.

Final Thoughts

Moving Dutchess 2 outlines a strategy to meet the transportation needs of Dutchess County. The Transportation Council developed this strategy through a review of existing guidance, input from State and local agencies, an analysis of transportation system data, and feedback from the public, which in turn, produced a series of project recommendations. The Transportation Council pursued this approach to increase the value of the Transportation Plan to decision-makers and the public, and to better position the Council to address emerging federal priorities related to performance-based planning and livability. The Transportation Council will update Moving Dutchess 2 in five years and revisit the recommendations to ensure that they are still valid and reflect the area’s priorities, the latest planning assumptions, and the most current funding estimates.
<table>
<thead>
<tr>
<th>MTP ID</th>
<th>Project Description/Recommendation</th>
<th>Project Type</th>
<th>Area</th>
<th>Location</th>
<th>Time Frames</th>
<th>Est. Cost (2014)</th>
<th>Fed-Aid Eligible</th>
<th>Project Sponsor</th>
<th>TIP Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>BM-1</td>
<td>Repair bridges located on the NYS that are currently rated Structurally Deficient/Deficient by FHWA/NYS DOT standards (15 bridges).</td>
<td>Bridge-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$48,200,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>Partial</td>
</tr>
<tr>
<td>BM-2</td>
<td>Repair non-NYS bridges located on the federal-aid system that are currently rated Structurally Deficient/Deficient by FHWA/NYS DOT standards (4 bridges).</td>
<td>Bridge-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$4,300,000</td>
<td>Yes</td>
<td>NYSDOT/DCDPW</td>
<td>Partial</td>
</tr>
<tr>
<td>BM-3</td>
<td>Repair bridges located off the federal-aid system that are currently rated Structurally Deficient/Deficient by FHWA/NYS DOT standards (12 bridges).</td>
<td>Bridge-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$10,380,000</td>
<td>Yes</td>
<td>DCDPW/Local</td>
<td>Partial</td>
</tr>
<tr>
<td>BM-4</td>
<td>System-wide bridge maintenance activities to include where and when preventive maintenance, bridge washing/deck sealing, bridge painting, and bridge inspections (estimated cost shows total cost for planning period based on an annual cost of $5 million for Dutchess County only).</td>
<td>Bridge-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$25,000,000</td>
<td>Yes</td>
<td>NYSDOT/DCDPW</td>
<td>Yes</td>
</tr>
<tr>
<td>BM-5</td>
<td>Repair bridges located on the NYS that are projected to be Structurally Deficient/Deficient by FHWA/NYS DOT standards in 2030 (22 bridges).</td>
<td>Bridge-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$38,200,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>BM-6</td>
<td>Repair non-NYS bridges located on the federal-aid system that are projected to be Structurally Deficient/Deficient by FHWA/NYS DOT standards in 2030 (28 bridges).</td>
<td>Bridge-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$11,800,000</td>
<td>Yes</td>
<td>NYSDOT/DCDPW</td>
<td>No</td>
</tr>
<tr>
<td>BM-7</td>
<td>Repair bridges located off the federal-aid system that are projected to be rated Structurally Deficient/Deficient by FHWA/NYS DOT standards in 2030 (25 bridges).</td>
<td>Bridge-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$24,300,000</td>
<td>Yes</td>
<td>DCDPW/Local</td>
<td>No</td>
</tr>
<tr>
<td>BM-8</td>
<td>System-wide bridge maintenance activities to include where and when preventive maintenance, bridge washing/deck sealing, bridge painting, and bridge inspections (estimated cost shows total cost for planning period based on an annual cost of $5 million for Dutchess County only).</td>
<td>Bridge-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$30,000,000</td>
<td>Yes</td>
<td>NYSDOT/DCDPW</td>
<td>No</td>
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<tr>
<td>BM-9</td>
<td>Repair bridges located on the NYS that are projected to be Structurally Deficient/Deficient by FHWA/NYS DOT standards in 2040 (14 bridges).</td>
<td>Bridge-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$11,500,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
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<tr>
<td>BM-10</td>
<td>Repair non-NYS bridges located on the federal-aid system that are projected to be Structurally Deficient/Deficient by FHWA/NYS DOT standards in 2040 (20 bridges).</td>
<td>Bridge-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$4,900,000</td>
<td>Yes</td>
<td>NYSDOT/DCDPW</td>
<td>No</td>
</tr>
<tr>
<td>BM-11</td>
<td>Repair bridges located off the federal-aid system that are projected to be rated Structurally Deficient/Deficient by FHWA/NYS DOT standards in 2040 (28 bridges).</td>
<td>Bridge-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$5,300,000</td>
<td>Yes</td>
<td>DCDPW/Local</td>
<td>No</td>
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<tr>
<td>BM-12</td>
<td>System-wide bridge maintenance activities to include where and when preventive maintenance, bridge washing/deck sealing, bridge painting, and bridge inspections (estimated cost shows total cost for planning period based on an annual cost of $5 million for Dutchess County only).</td>
<td>Bridge-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$70,000,000</td>
<td>Yes</td>
<td>NYSDOT/DCDPW</td>
<td>No</td>
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<tr>
<td>HM-1</td>
<td>Repair NYSDOT road segments currently rated in &quot;Fair&quot; condition (PCI below 51) (25 miles total).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$5,750,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>Yes</td>
</tr>
<tr>
<td>HM-2</td>
<td>Repair total federal-aid eligible road segments currently rated in &quot;Poor&quot; condition (PCI below 35) (63 miles).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$5,500,000</td>
<td>Yes</td>
<td>Local</td>
<td>No</td>
</tr>
<tr>
<td>HM-3</td>
<td>Replace Taconic State Parkway from Hortontown Hill Rd. (Putnam Co.) to Miller Hill Rd. (4 miles).</td>
<td>Highway-Maintenance</td>
<td>LT</td>
<td>East Fishkill</td>
<td>Short-Range</td>
<td>$22,800,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>Yes</td>
</tr>
<tr>
<td>HM-4</td>
<td>Reconstruct Fishkill/Elder Ave. from the Fishkill Town line to Woltz Ave. (2 miles).</td>
<td>Highway-Maintenance</td>
<td>LT</td>
<td>Fishkill</td>
<td>Short-Range</td>
<td>$2,200,000</td>
<td>Yes</td>
<td>Beacon</td>
<td>Yes</td>
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<tr>
<td>HM-5</td>
<td>Reconstruct Old State Route 35 from Route 89 to the Pooling Village line (3 miles).</td>
<td>Highway-Maintenance</td>
<td>LT</td>
<td>Pawling Town</td>
<td>Short-Range</td>
<td>$600,000</td>
<td>Partial</td>
<td>Pawling Town</td>
<td>Yes</td>
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<tr>
<td>HM-6</td>
<td>Route 216 from Route 52 to Route 55 (8.2 miles).</td>
<td>Highway-Maintenance</td>
<td>LT</td>
<td>Beekman/East Fishkill</td>
<td>Short-Range</td>
<td>$990,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>HM-7</td>
<td>Route 292 from Route 55 to CR 36 (Holmes Rd) (1 miles).</td>
<td>Highway-Maintenance</td>
<td>LT</td>
<td>Pawling Town</td>
<td>Short-Range</td>
<td>$900,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>HM-8</td>
<td>NYSDOT Region 8 highway maintenance activities to include preventive maintenance paving, crack sealing, pavement striping, &quot;where and when&quot; as needed repairs, and culvert/catch basin repairs (estimated cost shows total cost for planning period based on an annual cost of $4 million for Dutchess County).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$20,000,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
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<tr>
<td>HM-9</td>
<td>Dutchess County DPW highway maintenance activities to include repaving, guardrail replacements, and drainage/culvert repairs (estimated cost shows total cost for planning period based on an annual cost of $5 million).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$5,000,000</td>
<td>Yes</td>
<td>DCDPW</td>
<td>No</td>
</tr>
<tr>
<td>HM-10</td>
<td>Repair NYSDOT road segments currently rated in &quot;Fair&quot; condition (NYSDOT surface rating of 3) (estimated cost shows total cost for planning period based on an annual cost of $5 million).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$17,350,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
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<tr>
<td>HM-11</td>
<td>Replace Dutchess County federal-aid eligible road segments currently rated in &quot;Fair&quot; condition (PCI of 56-74) (66 miles total).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$9,900,000</td>
<td>Yes</td>
<td>DCDPW</td>
<td>No</td>
</tr>
<tr>
<td>HM-12</td>
<td>Replace local federal-aid eligible road segments currently rated in &quot;Fair&quot; condition (PCI of 56-74) (23 miles).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$1,410,000</td>
<td>Yes</td>
<td>Local</td>
<td>No</td>
</tr>
<tr>
<td>WTP IDI</td>
<td>Project Description/Recommendation(^1)</td>
<td>Project Type</td>
<td>Area(^2)</td>
<td>Location</td>
<td>Time Frames(^3)</td>
<td>Est. Cost (2016)(^4)</td>
<td>Est. Cost (FY06)(^5)</td>
<td>Fed-Aid Eligible(^6)</td>
<td>Project Sponsor</td>
</tr>
<tr>
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</tr>
<tr>
<td>HM-15</td>
<td>Repave Dutchess County non-federal aid eligible road segments currently rated in “Fair” condition (projected to be in “ Poor” condition by 2036) (64 miles total).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$9,600,000</td>
<td>$12,520,000</td>
<td>No</td>
<td>DCDPW</td>
</tr>
<tr>
<td>HM-14</td>
<td>Reconstruct Academy St. from Montgomery St. to South Ave. to include sidewalk and drainage repairs (0.7 mi).</td>
<td>Highway-Maintenance</td>
<td>LH</td>
<td>Poughkeepsie City</td>
<td>Mid-Range</td>
<td>$2,750,000</td>
<td>$3,240,000</td>
<td>Yes</td>
<td>Poughkeepsie City</td>
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<tr>
<td>HM-15</td>
<td>Reconstruct Grand Ave. from Main St. to Hooker Ave. to include sidewalk and drainage repairs (0.7 miles).</td>
<td>Highway-Maintenance</td>
<td>LH</td>
<td>Poughkeepsie City</td>
<td>Mid-Range</td>
<td>$2,100,000</td>
<td>$2,520,000</td>
<td>Yes</td>
<td>Poughkeepsie City</td>
</tr>
<tr>
<td>HM-16</td>
<td>NYSDOT Region 8 highway maintenance activities to include preventive maintenance paving, crack sealing, pavement stripping, “where and when” as needed repairs, and culvert/catch basin repairs (estimated cost shows total cost for planning period based on an annual cost of $4 million for Dutchess County).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$10,000,000</td>
<td>$12,000,000</td>
<td>Partial</td>
<td>DCDPW</td>
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<tr>
<td>HM-17</td>
<td>Dutchess County DPW highway maintenance activities to include repaving, guardrail replacements, and drainage/curb repairs (estimated cost shows total cost for planning period based on an annual cost of $1 million).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$15,000,000</td>
<td>$15,000,000</td>
<td>Yes</td>
<td>Local</td>
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<tr>
<td>HM-18</td>
<td>Repave NYSDOT road segments currently rated in “Excellent” or “Good” condition (NYSDOT surface rating of 7 or above), projected to be in “Poor” condition by 2040 (approx. 237 miles total).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$35,550,000</td>
<td>$49,770,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>HM-19</td>
<td>Repave Dutchess County federal-aid eligible road segments currently rated in “Excellent” or “Good” condition (projected to be in “ Poor” condition by 2040) (183 miles total).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$27,450,000</td>
<td>$38,430,000</td>
<td>Yes</td>
<td>DCDPW</td>
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<tr>
<td>HM-20</td>
<td>Repave local federal-aid eligible road segments currently rated in “ Fair” condition (PCI above 75) (55 miles).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$8,250,000</td>
<td>$11,550,000</td>
<td>Yes</td>
<td>Local</td>
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<tr>
<td>HM-21</td>
<td>Repave Dutchess County non-federal aid eligible road segments currently rated in “Excellent” or “ Good” condition (projected to be in “Poor” condition by 2040) (164 miles total).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$24,800,000</td>
<td>$34,440,000</td>
<td>No</td>
<td>DCDPW</td>
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<tr>
<td>HM-22</td>
<td>NYSDOT Region 8 highway maintenance activities to include preventive maintenance paving, crack sealing, pavement stripping, “where and when” as needed repairs, and culvert/catch basin repairs (estimated cost shows total cost for planning period based on an annual cost of $4 million for Dutchess County).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$40,000,000</td>
<td>$56,000,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>HM-23</td>
<td>Dutchess County DPW highway maintenance activities to include repaving, guardrail replacements, and drainage/curb repairs (estimated cost shows total cost for planning period based on an annual cost of $1 million).</td>
<td>Highway-Maintenance</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$10,000,000</td>
<td>$14,000,000</td>
<td>Partial</td>
<td>DCDPW</td>
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<tr>
<td>JP-1</td>
<td>Systems to traffic operation activities to include traffic signal and sign repairs and ITS upgrades (estimated cost shows total cost for planning period based on an annual cost of $1.5 million for Dutchess County only).</td>
<td>Highway-Operations</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$7,500,000</td>
<td>$7,500,000</td>
<td>Yes</td>
<td>NYSDOT/DCDPW</td>
</tr>
<tr>
<td>JP-2</td>
<td>Install ITS equipment on I-84 from Route 9 to the Taconic State Parkway (TSP).</td>
<td>Highway-Operations</td>
<td>LT/E</td>
<td>Fishkill/East Fishkill</td>
<td>Short-Range</td>
<td>$1,180,000</td>
<td>$1,180,000</td>
<td>Yes</td>
<td>NYSDOT</td>
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<tr>
<td>JP-3</td>
<td>Evaluate and coordinate traffic signal timings at the Route 30/84 intersection to improve traffic operations and safety, and evaluate the need to install a second left-turn lane on Route 90 (northbound) onto I-84 to reduce peak hour congestion.</td>
<td>Highway-Operations</td>
<td>LH</td>
<td>Fishkill Town</td>
<td>Short-Range</td>
<td>$10,000</td>
<td>$10,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>JP-4</td>
<td>Evaluate and coordinate traffic signal timings on Route 52 between I-84 and CR 34 (Jackson St.) in the Town of Fishkill, and Main St. through the Village of Fishkill to Route 9.</td>
<td>Highway-Operations</td>
<td>LH</td>
<td>Fishkill Village/Town</td>
<td>Short-Range</td>
<td>$10,000</td>
<td>$10,000</td>
<td>Yes</td>
<td>NYSDOT</td>
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<tr>
<td>JP-5</td>
<td>Evaluate and coordinate traffic signal timings on Route 30 between I-84 and Route 9.</td>
<td>Highway-Operations</td>
<td>LH</td>
<td>Multiple</td>
<td>Short-Range</td>
<td>$10,000</td>
<td>$10,000</td>
<td>Yes</td>
<td>NYSDOT</td>
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<tr>
<td>JP-6</td>
<td>Evaluate and coordinate traffic signal timings on Route 52 between I-84 and Route 44/55.</td>
<td>Highway-Operations</td>
<td>LT</td>
<td>East Fishkill</td>
<td>Short-Range</td>
<td>$2,180,000</td>
<td>$2,180,000</td>
<td>Yes</td>
<td>DCDPW</td>
</tr>
<tr>
<td>JP-7</td>
<td>Realign Route 82 at CR 51 (Palen Rd.) (Fishkill Rd.) to create a 4-leg intersection with upgraded traffic signals, new turning lanes, and a new railroad crossing.</td>
<td>Highway-Operations</td>
<td>LT</td>
<td>East Fishkill</td>
<td>Short-Range</td>
<td>$2,820,000</td>
<td>$2,820,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>JP-8</td>
<td>Evaluate and coordinate traffic signal timings on Routes 82 and 376 in Hopewell Junction to improve traffic operations.</td>
<td>Highway-Operations</td>
<td>LT</td>
<td>East Fishkill</td>
<td>Short-Range</td>
<td>$10,000</td>
<td>$10,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>JP-9</td>
<td>Evaluate the need for a right-turn lane on Route 52 (westbound) at the Route 376 intersection.</td>
<td>Highway-Operations</td>
<td>LT</td>
<td>East Fishkill</td>
<td>Short-Range</td>
<td>$10,000</td>
<td>$10,000</td>
<td>Yes</td>
<td>NYSDOT</td>
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<tr>
<td>NTP ID</td>
<td>Project Description/Recommendation</td>
<td>Project Type</td>
<td>Area</td>
<td>Location</td>
<td>Time Frames</td>
<td>Est. Cost (2016)</td>
<td>Est. Cost (FY06)</td>
<td>Fed-Ad Eligible</td>
<td>Project Sponsor</td>
</tr>
<tr>
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</tr>
<tr>
<td>P-9</td>
<td>For Walk-Bike Dutchess, evaluate changing the traffic signal timing at the Route 9 (Broadway)/Route 199 (Market St.) intersection to incorporate standard pedestrian crossings to reduce wait times for people walking and driving. Consider curb extensions to reduce crossing distances.</td>
<td>Highway-Operations</td>
<td>UT</td>
<td>Red Hook Village</td>
<td>Short-Range</td>
<td>$20,000</td>
<td>$20,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-20</td>
<td>Evaluate the need for a traffic signal, turning lanes, or other improvements at the CR 71 (West Rd.)/Route 15 intersection.</td>
<td>Highway-Operations</td>
<td>UT</td>
<td>Pleasant Valley</td>
<td>Short-Range</td>
<td>$10,000</td>
<td>$10,000</td>
<td>Yes</td>
<td>DCDPW</td>
</tr>
<tr>
<td>P-31</td>
<td>Conduct a traffic signal warrant analysis for the Route 44/82 intersection in Washington Hollow.</td>
<td>Highway-Operations</td>
<td>UT</td>
<td>Pleasant Valley</td>
<td>Short-Range</td>
<td>$30,000</td>
<td>$30,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-12</td>
<td>Improve pavement markings at the Route 22/44/345 intersection in the Amenia hamlet and evaluate the need for left-turn pockets and signal phases on Routes 22 and 44/345.</td>
<td>Highway-Operations</td>
<td>FY</td>
<td>Amenia</td>
<td>Short-Range</td>
<td>$10,000</td>
<td>$10,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-33</td>
<td>Evaluate the need for turning lanes on Route 22 at High Bridge to assist school buses turning onto High Bridge.</td>
<td>Highway-Operations</td>
<td>FY</td>
<td>North East</td>
<td>Short-Range</td>
<td>$10,000</td>
<td>$10,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-14</td>
<td>System-wide traffic operation activities to include traffic signal and sign repairs and ITS upgrades (estimated cost shows total cost for planning period based on an annual cost of $1.5 million for Dutchess County only).</td>
<td>Highway-Operations</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$15,000,000</td>
<td>$18,000,000</td>
<td>Yes</td>
<td>VFPD/T/DCDPW</td>
</tr>
<tr>
<td>P-15</td>
<td>Redeisgn Market St. from a three-lane, one-way street into a two-lane, two-way street with improved lane markings, signage, and pedestrian and bicycle improvements (0.25 miles).</td>
<td>Highway-Operations</td>
<td>LH</td>
<td>Poughkeepsie City</td>
<td>Mid-Range</td>
<td>$4,830,000</td>
<td>$5,796,000</td>
<td>Yes</td>
<td>Poughkeepsie City</td>
</tr>
<tr>
<td>P-16</td>
<td>Reconstruct the Route 55/CR 9 (Beekman Rd.) intersection, either by adding left turn lanes on Route 55 and upgrading traffic signals, or constructing a roundabout.</td>
<td>Highway-Operations</td>
<td>LT</td>
<td>Beekman</td>
<td>Mid-Range</td>
<td>$1,800,000</td>
<td>$2,160,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-17</td>
<td>Evaluate the need for right turn (northbound) and left turn (southbound) lanes on Route 22 (Em AVE.) at the Route 44 (Main St.) intersection.</td>
<td>Highway-Operations</td>
<td>FY</td>
<td>Milton Village</td>
<td>Mid-Range</td>
<td>$10,000</td>
<td>$12,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-18</td>
<td>System-wide traffic operation activities to include traffic signal and sign repairs and ITS upgrades (estimated cost shows total cost for planning period based on an annual cost of $1.5 million for Dutchess County only).</td>
<td>Highway-Operations</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$15,000,000</td>
<td>$21,000,000</td>
<td>Yes</td>
<td>VFPD/T/DCDPW</td>
</tr>
<tr>
<td>P-19</td>
<td>* Reconstruct the Route 9/44/55 interchange to improve traffic safety and operations, while incorporating safe pedestrian and bicycle access.</td>
<td>Highway-Operations</td>
<td>LH</td>
<td>Poughkeepsie City</td>
<td>Long-Range</td>
<td>$58,000,000</td>
<td>$81,200,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-20</td>
<td>Reconstruct the I-84/Route 9D interchange to improve traffic safety and operations, while incorporating safe pedestrian and bicycle access.</td>
<td>Highway-Operations</td>
<td>LH</td>
<td>Fitchill Town</td>
<td>Long-Range</td>
<td>$29,000,000</td>
<td>$40,000,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-21</td>
<td>Reconfigure the Washington Mall St. merge onto Route 44/55 into a traditional intersection to eliminate the need for the Mid-Hudson Civic Center.</td>
<td>Highway-Operations</td>
<td>LH</td>
<td>Poughkeepsie City</td>
<td>Long-Range</td>
<td>$5,500,000</td>
<td>$2,100,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-22</td>
<td>Redeisgn Route 82 in Hopewell Junction into a boulevard to include roundabouts at the Route 82/376 intersection, Route 82/Unity Plaza, and Route 82/Fritika Ln., and pedestrian-bicycle improvements such as crosswalks, curb extensions, and street trees.</td>
<td>Highway-Operations</td>
<td>LH</td>
<td>East Fitchill</td>
<td>Long-Range</td>
<td>$8,250,000</td>
<td>$11,550,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-23</td>
<td>Redeisgn the Route 9/66/Montgomery St./Route 308 (Market St.) intersection by adding left-turn lanes and making pedestrian improvements such as new crosswalks and curb extensions. Consider changing the signal timing to allow standard pedestrian crossings. Include amenities such as trees and plantings.</td>
<td>Highway-Operations</td>
<td>LH</td>
<td>Rinbeck Village</td>
<td>Long-Range</td>
<td>$500,000</td>
<td>$700,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-24</td>
<td>Redeisgn Route 44 (Main St.) in the Pleasant Valley Town Center into a boulevard, to include intersection improvements (new signage, lane markings, and traffic calming) at CR 47 (South Ave.), CR 71 (West Rd.), and CR 72 (North Ave.), and pedestrian improvements such as sidewalks to fill gaps, curbs, extensions, and street trees.</td>
<td>Highway-Operations</td>
<td>LT</td>
<td>Pleasant Valley</td>
<td>Long-Range</td>
<td>$8,250,000</td>
<td>$11,550,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-31</td>
<td>Repair State-owned, non-ADA compliant sidewalks and ramps throughout Dutchess County.</td>
<td>Pedestrian/Bicycle</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$2,550,000</td>
<td>$3,000,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-32</td>
<td>Evaluate Routes 44, 52, 55, and 82 as State Bicycle Routes and designate/sign feasible.</td>
<td>Pedestrian/Bicycle</td>
<td>ALL</td>
<td>Multiple</td>
<td>Short-Range</td>
<td>$50,000</td>
<td>$60,000</td>
<td>Yes</td>
<td>NYSDOT</td>
</tr>
<tr>
<td>P-33</td>
<td>Complete Phase IV of the Harlem Valley Rail Trail from Milton to the Columbia County line.</td>
<td>Pedestrian/Bicycle</td>
<td>NY</td>
<td>North East</td>
<td>Short-Range</td>
<td>$6,700,000</td>
<td>$8,040,000</td>
<td>Yes</td>
<td>DCDPW</td>
</tr>
<tr>
<td>P-4</td>
<td>Identify and install bike parking at key destinations and activity centers, to include bus stops and train stations.</td>
<td>Pedestrian/Bicycle</td>
<td>ALL</td>
<td>Multiple</td>
<td>Short-Range</td>
<td>$50,000</td>
<td>$60,000</td>
<td>Yes</td>
<td>PDCTC/Multiple</td>
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</tbody>
</table>

*2016 Effective April 1, 2016
<table>
<thead>
<tr>
<th>TIP ID</th>
<th>Project Description/Recommendation</th>
<th>Project Type</th>
<th>Area</th>
<th>Location</th>
<th>Time Frames</th>
<th>Est. Cost (2016)</th>
<th>Est. Cost (FYE)</th>
<th>Fed-Aid Eligible</th>
<th>Project Sponsor</th>
<th>TIP Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB-5</td>
<td>Improve pedestrian crossings on Route 9 in Wappingers Falls at CR 104 (New Hackensack Rd.), 1, Main St., Old Route 9, and between E. Main St. and Wertens Terr. (McDonalds/Planet Fitness). Install high-visibility crosswalks at South Ave. (Route 9)E. Main St., E. Main St./Remsen Ave., W. Main St. (Route 92)/Convent Ave., W. Main St. (Route 92)/West St., W. Main St. (Route 92)/School St., W. Main St. Route 92/E. Church St., and Route 9 at 9 Plaza.</td>
<td>Pedestrian/Bicycle</td>
<td>UF</td>
<td>Wappingers Falls</td>
<td>Mid-Range</td>
<td>$200,000</td>
<td>$240,000</td>
<td>Yes</td>
<td>TIP 40T</td>
<td>No</td>
</tr>
<tr>
<td>PB-7</td>
<td>In conjunction with planned road projects, sign and mark the City of Poughkeepsie’s nine bicycle routes as bicycle boulevards, with bicycle lanes or sharrows, or maintain as shared lanes, as appropriate.</td>
<td>Pedestrian/Bicycle</td>
<td>UF</td>
<td>Poughkeepsie City</td>
<td>Mid-Range</td>
<td>$100,000</td>
<td>$120,000</td>
<td>Yes</td>
<td>Poughkeepsie City</td>
<td>No</td>
</tr>
<tr>
<td>PB-8</td>
<td>Install a sidewalk on the north side of Route 52 from near Jeannette Dr., under I-84, to the existing sidewalk west of Blodgett Rd., and install a sidewalk on Geer Way and Central Hudson Way from Route 52 to Geer Park. Add crosswalks and pedestrian signals as appropriate (3,600 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UF</td>
<td>Fishkill Town</td>
<td>Mid-Range</td>
<td>$720,000</td>
<td>$864,000</td>
<td>Yes</td>
<td>Fishkill Town</td>
<td>No</td>
</tr>
<tr>
<td>PB-9</td>
<td>Install sidewalks on Route 9 between Meiser Ave. and IBM Rd. and construct a new pedestrian bridge on Route 9 over Wappinger Lake.</td>
<td>Pedestrian/Bicycle</td>
<td>UF</td>
<td>Wappingers Falls</td>
<td>Mid-Range</td>
<td>$3,400,000</td>
<td>$4,550,000</td>
<td>Yes</td>
<td>Poughkeepsie City/Wappingers Falls</td>
<td>Yes</td>
</tr>
<tr>
<td>PB-10</td>
<td>Install sidewalks on Route 9 from Marist College to Quiet Cove Park and further north to CR 40A (St. Andrews Rd.) (1,750 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UF</td>
<td>Hyde Park Town</td>
<td>Mid-Range</td>
<td>$550,000</td>
<td>$420,000</td>
<td>Yes</td>
<td>Hyde Park</td>
<td>No</td>
</tr>
<tr>
<td>PB-11</td>
<td>Install a sidewalk along Route 9 from the Hyde Park Town Center (Calmier PI) to CR 40A (St. Andrews Rd.) (1,500 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UF</td>
<td>Hyde Park</td>
<td>Mid-Range</td>
<td>$1,500,000</td>
<td>$1,500,000</td>
<td>Yes</td>
<td>Hyde Park</td>
<td>No</td>
</tr>
<tr>
<td>PB-12</td>
<td>Install pedestrian/bicycle/PB Project 1</td>
<td>Pedestrian/Bicycle</td>
<td>UF</td>
<td>Hyde Park</td>
<td>Mid-Range</td>
<td>$1,300,000</td>
<td>$1,300,000</td>
<td>Yes</td>
<td>Hyde Park</td>
<td>No</td>
</tr>
<tr>
<td>PB-13</td>
<td>Per the Village of Rhinebeck sidewalk Study, repair and install first priority sidewalks and crosswalks to Livingston Elementary School, Rhinebeck High School, Start Library and Recreation Park, Northern Dutchess Hospital, and the Dutchess County Fairgrounds (5,000 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UF</td>
<td>Rhinebeck Village</td>
<td>Mid-Range</td>
<td>$1,200,000</td>
<td>$1,440,000</td>
<td>Yes</td>
<td>Rhinebeck Village</td>
<td>No</td>
</tr>
<tr>
<td>PB-14</td>
<td>Per the Pine Plains Town Center Pedestrian Plan, install one sidewalk, crosswalks, and lane markings on Route 82 (Main St.), Route 199 (Church St.), and CR 88A (N. Main St.), connecting the Town Center to surrounding activity centers and residential areas within 1/4 mile (2,900 feet). Also rehabilitate the Academy/Smith intersection near Sayour Smith Intermediate Learning Center, to include drainage improvements, new crosswalks, and high-visibility pedestrian crossing/warning signs.</td>
<td>Pedestrian/Bicycle</td>
<td>UF</td>
<td>Pine Plains</td>
<td>Mid-Range</td>
<td>$580,000</td>
<td>$696,000</td>
<td>Yes</td>
<td>TIP 40T/DOCDPW/Pine Plains</td>
<td>No</td>
</tr>
<tr>
<td>PB-15</td>
<td>Construct the Hudson Highlands Fjord Trail, a nine-mile separated path/trail along Route 9D and the Hudson River, connecting the Beacon train station to the Village of Gold Spring train station in Putnam County (approx. 3.8 mile trail in Dutchess County).</td>
<td>Pedestrian/Bicycle</td>
<td>UF</td>
<td>Beacon/Fishkill Town</td>
<td>Long Range</td>
<td>$12,800,000</td>
<td>$17,920,000</td>
<td>Partial</td>
<td>TIP 40T/MTA/Fishkill Town/Beacon/Saint Hudson/Private</td>
<td>No</td>
</tr>
<tr>
<td>PB-16</td>
<td>Install a sidewalk on the west side of Creek Rd. from Smith St. to Dutchess Community College (DCC) including a sidewalk extension on Smith St. to Creek Rd. (3,400 feet) with appropriate landscaping and pedestrian amenities. Also improve sight distance for left turns onto Creek Rd and from Creek Rd to the rail trail.</td>
<td>Pedestrian/Bicycle</td>
<td>UF</td>
<td>Poughkeepsie City/Town</td>
<td>Long Range</td>
<td>$680,000</td>
<td>$852,000</td>
<td>Yes</td>
<td>Poughkeepsie Town</td>
<td>No</td>
</tr>
<tr>
<td>PB-17</td>
<td>Install a sidewalk on Route 376 (New Hackensack Rd.) from Hagan Dr. to Old N.Y Rd. in Old Oat Mills, as well as sidewalks on CR 77 (Vassar Rd.) from Route 113 (Spackenkill Rd.) through the Red Oaks Mill commercial district, and on Route 113 (Spackenkill Rd.) from CR 77 (Vassar Rd.) to Boardman Rd. (4,700 feet). Add crosswalks and pedestrian signals at the Route 376/Route 113/CR 77 intersection.</td>
<td>Pedestrian/Bicycle</td>
<td>UF</td>
<td>Poughkeepsie Town</td>
<td>Long Range</td>
<td>$940,000</td>
<td>$1,326,000</td>
<td>Yes</td>
<td>TIP 40T/DOCDPW/Poughkeepsie Town</td>
<td>No</td>
</tr>
<tr>
<td>PB-18</td>
<td>Install a sidewalk on Route 113 (Spackenkill Rd.) from Croft Rd. to Boardman Rd. (6,400 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UF</td>
<td>Poughkeepsie Town</td>
<td>Long Range</td>
<td>$1,880,000</td>
<td>$2,632,000</td>
<td>Yes</td>
<td>TIP 40T/Poughkeepsie Town</td>
<td>No</td>
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## Table 8-1. Moving Dutchess 2: Recommended Projects (2016-2040)

<table>
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<tr>
<th>Project ID</th>
<th>Project Description/Recommendation</th>
<th>Project Type</th>
<th>Area</th>
<th>Location</th>
<th>Time Frames</th>
<th>Est. Cost (2040)</th>
<th>Est. Cost (FYE)</th>
<th>Fed-Ad Eligible</th>
<th>Project Sponsor</th>
<th>TIP Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB-29</td>
<td>Create a shared-use path along the west side of 2nd St./Boardman Rd. betweenHooker Ave./New Hackensack Rd. and Spackenkill Rd., connecting Vassar College, the Arlington neighborhood, and the Vassar Farm with the Boardman Road library, our Lady of Lourdes High School, Poughkeepsie Day School, and destinations on Spackenkill Rd. (8,600 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>URT</td>
<td>Poughkeepsie Town</td>
<td>Long-Range</td>
<td>$2,150,000</td>
<td>$5,010,000</td>
<td>Yes</td>
<td>Poughkeepsie Town</td>
<td>No</td>
</tr>
<tr>
<td>PB-30</td>
<td>Create the Beacon Hudson Trail, a shared-use greenway trail along the Hudson River from the Beacon train station to the Newburgh-Beacon Bridge access road and north into the Town of Fishkill, and connect to the Wappinger greenway trail (1,900 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UHT</td>
<td>Beacon/Fishkill Town</td>
<td>Long-Range</td>
<td>$975,000</td>
<td>$1,365,000</td>
<td>Yes</td>
<td>Beacon/Fishkill Town</td>
<td>No</td>
</tr>
<tr>
<td>PB-31</td>
<td>Work with property owners to complete the Hudson River Greenway Trail from Quail Cove Park at the Hyde Park Town line south to the Louisa Grove Historic Site. Include connections to the Walkway elevator and around Kaal Rock Point (8,000 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UHT</td>
<td>Poughkeepsie Town</td>
<td>Long-Range</td>
<td>$2,000,000</td>
<td>$2,800,000</td>
<td>Yes</td>
<td>Poughkeepsie Town</td>
<td>No</td>
</tr>
<tr>
<td>PB-32</td>
<td>Install a sidewalk on one side of CR 93 (Myers Corners Rd./Middlebush Rd.) from Route 90 to Route 176 (24,800 feet) and mark crosswalks at key intersections. Incorporate a sidewalk and pedestrian shoulders as part of the replacement of the culvert over the Lake Ondard Stream. Also add paved shoulders (five feet if possible) on CR 93 (Middlebush Rd.) between Route 90 and Route 9 and improve pavement; and on CR 93 (Myers Corners Rd.) between Degenello Hills Rd. and Route 376.</td>
<td>Pedestrian/Bicycle</td>
<td>UHT</td>
<td>Wappinger Town</td>
<td>Long-Range</td>
<td>$4,800,000</td>
<td>$6,720,000</td>
<td>Yes</td>
<td>DCDPW/Wappinger</td>
<td>No</td>
</tr>
<tr>
<td>PB-33</td>
<td>Install sidewalks on Route 7 between CR 93 (Middlebush Rd./Myers Corners Rd.) and CR 28 (Old Hopewell Rd.) (8,800 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UHT</td>
<td>Wappinger Town</td>
<td>Long-Range</td>
<td>$1,380,000</td>
<td>$1,904,000</td>
<td>Yes</td>
<td>NYSDOT/Wappinger</td>
<td>No</td>
</tr>
<tr>
<td>PB-34</td>
<td>Implement pedestrian and bicycle improvements as recommended in the Upper Route 9G Corridor Management Plan (CMP).</td>
<td>Pedestrian/Bicycle</td>
<td>UHT</td>
<td>Red Hook Town/TSW</td>
<td>Long-Range</td>
<td>$2,000,000</td>
<td>$2,800,000</td>
<td>Yes</td>
<td>NYSDOT/DCPW/Red Hook/Tivoli</td>
<td>No</td>
</tr>
<tr>
<td>PB-35</td>
<td>Install sidewalks on Route 9G between the Hyde Park Trail (near Vail Hill Park Rd.) and Smith Court, and on Haviland Rd. between Route 9G and Haviland Middle School, as well as appropriate crosswalks and signs (5,500 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UHT</td>
<td>Hyde Park</td>
<td>Long-Range</td>
<td>$700,000</td>
<td>$980,000</td>
<td>Yes</td>
<td>Hyde Park</td>
<td>No</td>
</tr>
<tr>
<td>PB-36</td>
<td>As per the Village of Rhinebeck Sidewalk Study, repair and install second priority sidewalks and crosswalks on Village streets within a half-mile of the Route 9/9G intersection (20,900 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UHT</td>
<td>Rhinebeck Village</td>
<td>Long-Range</td>
<td>$2,180,000</td>
<td>$3,052,000</td>
<td>Yes</td>
<td>Rhinebeck Village</td>
<td>No</td>
</tr>
<tr>
<td>PB-37</td>
<td>Install a sidewalk on Route 22 from Quaker Hill Rd./E. Main St. to the hammelroad shopping plaza (6,800 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UT</td>
<td>Poughkeepsie</td>
<td>Long-Range</td>
<td>$1,360,000</td>
<td>$1,904,000</td>
<td>Yes</td>
<td>NYSDOT/Poughkeepsie</td>
<td>No</td>
</tr>
<tr>
<td>PB-38</td>
<td>Install sidewalks on the north side of Route 55 through the Ulster Town Center and on Dr. Frink Rd., and extend the sidewalk on Stringham Rd. south to Ulster Town Center (5,800 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UT</td>
<td>Ulster</td>
<td>Long-Range</td>
<td>$1,100,000</td>
<td>$1,624,000</td>
<td>Yes</td>
<td>NYSDOT/UL</td>
<td>No</td>
</tr>
<tr>
<td>PB-39</td>
<td>Install a sidewalk on the south side of Route 115 (Salt Point Turnpike) from the Steeple's Shop to Park View Dr. (1,500 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UT</td>
<td>Clinton</td>
<td>Long-Range</td>
<td>$300,000</td>
<td>$420,000</td>
<td>Yes</td>
<td>NYSDOT/Clinton</td>
<td>No</td>
</tr>
<tr>
<td>PB-40</td>
<td>Install a sidewalk or path on CR 71 (West Rd.) from Route 44 (Main St.) to Route 115 (Salt Point Turnpike) (6,600 feet) and incorporate crosswalks to connect destinations.</td>
<td>Pedestrian/Bicycle</td>
<td>UT</td>
<td>Ulster</td>
<td>Long-Range</td>
<td>$1,320,000</td>
<td>$1,848,000</td>
<td>Yes</td>
<td>DCDPW/Pleasant Valley</td>
<td>No</td>
</tr>
<tr>
<td>PB-41</td>
<td>Per the Pine Plains Town Center Pedestrian Plan, install phase two sidewalks and crosswalks on Route 82 (Main St.), Route 199 (Church St.), and CR 83A (W. Main St.), connecting the Town Center to surrounding activity centers and residential areas within 1/4-1/2 mile (2,900 feet).</td>
<td>Pedestrian/Bicycle</td>
<td>UT</td>
<td>Pine Plains</td>
<td>Long-Range</td>
<td>$580,000</td>
<td>$812,000</td>
<td>Yes</td>
<td>NYSDOT, DCDPW, &amp; Pine Plains</td>
<td>No</td>
</tr>
<tr>
<td>PB-42</td>
<td>Install a sidewalk on Route 22 from the Amenia Town Hall to Old North Rd. (near the Tractor Supply Co. shopping plaza) (2,800 feet). Consider extending to Maplebrook School if possible.</td>
<td>Pedestrian/Bicycle</td>
<td>UVT</td>
<td>Amenia</td>
<td>Long-Range</td>
<td>$560,000</td>
<td>$784,000</td>
<td>Yes</td>
<td>NYSDOT/Amenia</td>
<td>No</td>
</tr>
<tr>
<td>PS-1</td>
<td>Complete a Regional Freight Study for the TMA (Dutchess, Orange, and Ulster counties).</td>
<td>Planning Study</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$250,000</td>
<td>$250,000</td>
<td>Yes</td>
<td>PDCTC/DCT/UTC/UTC</td>
<td>No</td>
</tr>
<tr>
<td>PS-2</td>
<td>Complete a Regional Transit Study for the TMA (Dutchess, Orange, and Ulster counties).</td>
<td>Planning Study</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$250,000</td>
<td>$250,000</td>
<td>Yes</td>
<td>PDCTC/DCT/UTC/UTC</td>
<td>No</td>
</tr>
<tr>
<td>PS-3</td>
<td>Develop and implement a pavement-monitoring program for local roads in Dutchess County.</td>
<td>Planning Study</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$30,000</td>
<td>$30,000</td>
<td>Yes</td>
<td>PDCTC/DCT/UTC</td>
<td>No</td>
</tr>
<tr>
<td>PS-4</td>
<td>Conduct sidewalk inventories and develop sidewalk improvement strategies for cities (neighborhoods), villages, and town centers ($50,000 per study).</td>
<td>Planning Study</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$700,000</td>
<td>$700,000</td>
<td>Yes</td>
<td>PDCTC/Local</td>
<td>No</td>
</tr>
<tr>
<td>PS-5</td>
<td>Conduct safety assessments at high crash locations identified in Moving Dutchess 2 and Walk Bike Dutchess or proposed by member agencies and municipalities.</td>
<td>Planning Study</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$200,000</td>
<td>$200,000</td>
<td>Yes</td>
<td>PDCTC/DCT/UTC/UTC</td>
<td>No</td>
</tr>
</tbody>
</table>

**Note:** Effective April 1, 2016
Table 8-1. Moving Dutchess 2: Recommended Projects (2016-2040)

<table>
<thead>
<tr>
<th>Project ID#</th>
<th>Project Description/Recommendation</th>
<th>Project Type</th>
<th>Area(s)</th>
<th>Location</th>
<th>Time Frames</th>
<th>Est. Cost (2016)</th>
<th>Est. Cost (FY20)</th>
<th>Fed-Ad Eligible</th>
<th>Project Sponsor</th>
<th>TIP Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS-6</td>
<td>Conduct a comprehensive safety assessment focused on walking and bicycling on Main St. and implement changes to improve safety (e.g. repairs to road pavement, sidewalks, etc.).</td>
<td>Planning Study</td>
<td>LH</td>
<td>Poughkeepsie City</td>
<td>Short-Range</td>
<td>$75,000</td>
<td>$90,000</td>
<td>Yes</td>
<td>PDOT/Poughkeepsie City</td>
<td>No</td>
</tr>
<tr>
<td>PS-7</td>
<td>Analyze speed patterns on County and local roads, using speed data from the PDCTC’s Traffic Count program. Identify corridors with high percentages of “high-end” speeds (e.g. 10 mph or more over the posted speed limit) and develop engineering, enforcement, and educational approaches to reduce speeding.</td>
<td>Planning Study</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$75,000</td>
<td>$90,000</td>
<td>Yes</td>
<td>PDOT</td>
<td>No</td>
</tr>
<tr>
<td>PS-8</td>
<td>Complete a conceptual redesign of the Route 44/55 (eastbound and westbound arterials) into boulevard-like streets that improve traffic safety, pedestrian and bicycle access, and overall quality of life.</td>
<td>Planning Study</td>
<td>LH</td>
<td>Poughkeepsie City</td>
<td>Mid-Range</td>
<td>$250,000</td>
<td>$300,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>PS-9</td>
<td>Conduct sidewalk inventories and develop sidewalk improvement strategies for cities (neighborhoods), villages, and town centers ($50,000 per study) (completion of PS-4).</td>
<td>Planning Study</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$700,000</td>
<td>$840,000</td>
<td>Yes</td>
<td>PDOT/Local</td>
<td>No</td>
</tr>
<tr>
<td>PS-10</td>
<td>New long-range Metropolitan Transportation Plan for Dutchess County (2021).</td>
<td>Planning Study</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$150,000</td>
<td>$180,000</td>
<td>Yes</td>
<td>PDOT</td>
<td>No</td>
</tr>
<tr>
<td>PS-11</td>
<td>New long-range Metropolitan Transportation Plan for Dutchess County (2026).</td>
<td>Planning Study</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$150,000</td>
<td>$180,000</td>
<td>Yes</td>
<td>PDOT</td>
<td>No</td>
</tr>
<tr>
<td>PS-12</td>
<td>Update Walk Bike Dutchess, the pedestrian-bicycle plan for Dutchess County.</td>
<td>Planning Study</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$150,000</td>
<td>$120,000</td>
<td>Yes</td>
<td>PDOT</td>
<td>No</td>
</tr>
<tr>
<td>PS-13</td>
<td>Conduct a parking study for the City of Poughkeepsie, focusing on Main St. and the waterfront.</td>
<td>Planning Study</td>
<td>LH</td>
<td>Poughkeepsie City</td>
<td>Mid-Range</td>
<td>$200,000</td>
<td>$120,000</td>
<td>Yes</td>
<td>PDOT/Poughkeepsie City</td>
<td>No</td>
</tr>
<tr>
<td>PS-14</td>
<td>Complete a Corridor Management Plan (CMP) for Route 9D in the Village of Wappingers Falls and town of Fishkill and Wappinger to improve safety and operations for vehicles, bicyclists, and pedestrians.</td>
<td>Planning Study</td>
<td>LH</td>
<td>Multiple</td>
<td>Mid-Range</td>
<td>$200,000</td>
<td>$125,000</td>
<td>Yes</td>
<td>NYSDOT/PDCTC/Local</td>
<td>No</td>
</tr>
<tr>
<td>PS-15</td>
<td>Conduct a parking study of the Village of Wappingers Falls business district to evaluate the need for new municipal parking and identify parking management strategies.</td>
<td>Planning Study</td>
<td>LH</td>
<td>Wappingers Falls</td>
<td>Mid-Range</td>
<td>$50,000</td>
<td>$60,000</td>
<td>Yes</td>
<td>PDOT/Wappingers Falls</td>
<td>No</td>
</tr>
<tr>
<td>PS-16</td>
<td>Complete a Corridor Management Plan (CMP) for Route 9D in Hyde Park.</td>
<td>Planning Study</td>
<td>LH</td>
<td>Hyde Park</td>
<td>Mid-Range</td>
<td>$150,000</td>
<td>$180,000</td>
<td>Yes</td>
<td>NYSDOT/PDCTC/Hyde Park</td>
<td>No</td>
</tr>
<tr>
<td>PS-17</td>
<td>New long-range Metropolitan Transportation Plan for Dutchess County (2031).</td>
<td>Planning Study</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$150,000</td>
<td>$410,000</td>
<td>Yes</td>
<td>PDOT</td>
<td>No</td>
</tr>
<tr>
<td>PS-18</td>
<td>New long-range Metropolitan Transportation Plan for Dutchess County (2036).</td>
<td>Planning Study</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$150,000</td>
<td>$210,000</td>
<td>Yes</td>
<td>PDOT</td>
<td>No</td>
</tr>
<tr>
<td>SA-1</td>
<td>System-wide safety activities such as sign replacements, special surface treatments, gutteral replacements, installation of centerline rumble strips, and pedestrian countdown timers (estimated cost shows total cost for planning period based on an annual cost of $2 million for Dutchess County only).</td>
<td>Safety</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$10,000,000</td>
<td>$10,000,000</td>
<td>Yes</td>
<td>NYSDOT/DCDPW</td>
<td>Yes</td>
</tr>
<tr>
<td>SA-2</td>
<td>Realign CR 93 (Myers Corners Rd.) from Route 94 to corner of CR 93 &amp; CR 93 on Route 375 to improve sight distances and correct safety deficiencies.</td>
<td>Safety</td>
<td>LH</td>
<td>Wappinger</td>
<td>Short-Range</td>
<td>$6,000,000</td>
<td>$6,000,000</td>
<td>Yes</td>
<td>DCDPW</td>
<td>Yes</td>
</tr>
<tr>
<td>SA-3</td>
<td>Realign CR 28 (Old Hopewell Rd.) from Route 9 to CR 28 at CR 28 &amp; CR 28 W of Hill Rd. to improve sight distances and correct safety deficiencies.</td>
<td>Safety</td>
<td>LH</td>
<td>Wappinger</td>
<td>Short-Range</td>
<td>$5,900,000</td>
<td>$5,900,000</td>
<td>Yes</td>
<td>DCDPW</td>
<td>Yes</td>
</tr>
<tr>
<td>SA-4</td>
<td>Reconstruct CR 28 (Old Hopewell Rd.) at CR 28 &amp; CR 28 (All Angels Hill Rd.) to improve sight distances and correct safety deficiencies.</td>
<td>Safety</td>
<td>LH</td>
<td>Wappinger</td>
<td>Short-Range</td>
<td>$1,700,000</td>
<td>$1,700,000</td>
<td>Yes</td>
<td>DCDPW</td>
<td>Yes</td>
</tr>
<tr>
<td>SA-5</td>
<td>Realign CR 9 (Beekman Rd.) from CR 30 (Sun Lake Rd.) to Taconic State Parkway (TSP) to improve sight distances and correct safety deficiencies.</td>
<td>Safety</td>
<td>LF</td>
<td>Beekman/Last Fishkill</td>
<td>Short-Range</td>
<td>$5,000,000</td>
<td>$5,000,000</td>
<td>Yes</td>
<td>DCDPW</td>
<td>Yes</td>
</tr>
<tr>
<td>SA-6</td>
<td>Realign the Route 55/Gardner Hollow Rd. intersection to improve traffic safety and operations.</td>
<td>Safety</td>
<td>LF</td>
<td>Beekman</td>
<td>Short-Range</td>
<td>$440,000</td>
<td>$440,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>Yes</td>
</tr>
<tr>
<td>SA-7</td>
<td>Conduct a traffic signal warrant analysis for the Route 9/Highland Ln. intersection and evaluate the feasibility of creating a standard traffic signalized intersection.</td>
<td>Safety</td>
<td>LH</td>
<td>Red Hook Village</td>
<td>Short-Range</td>
<td>$10,000</td>
<td>$10,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>SA-8</td>
<td>Install a warning device on Route 44 near Beulavergie Hill (0.6 miles south of CR 83 Valley Rd.) to alert drivers of sharp curves.</td>
<td>Safety</td>
<td>HV</td>
<td>Amenia</td>
<td>Short-Range</td>
<td>$45,000</td>
<td>$45,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>Yes</td>
</tr>
<tr>
<td>SA-9</td>
<td>System-wide safety activities such as sign replacements, special surface treatments, gutteral replacements, installation of centerline rumble strips, and pedestrian countdown timers (estimated cost shows total cost for planning period based on an annual cost of $2 million for Dutchess County only).</td>
<td>Safety</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$20,000,000</td>
<td>$24,000,000</td>
<td>Yes</td>
<td>NYSDOT/DCDPW</td>
<td>Yes</td>
</tr>
<tr>
<td>SA-10</td>
<td>Improve safety at the NYSDOT-identified High Accident Location (HAL) on Route 44/55 (eastbound arterials) by adding warning signs, improving lane markings, updating signal timings, and increasing safety.</td>
<td>Safety</td>
<td>LH</td>
<td>Poughkeepsie City</td>
<td>Mid-Range</td>
<td>$1,000,000</td>
<td>$1,200,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>MTP ID</td>
<td>Project Description/Recommendation</td>
<td>Project Type</td>
<td>Area</td>
<td>Location</td>
<td>Time Frames</td>
<td>Est. Cost (20161)</td>
<td>Est. Cost (FY03)</td>
<td>Fed-Aid Eligible</td>
<td>Project Sponsor</td>
<td>TIP Status</td>
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</tr>
<tr>
<td>1A-11</td>
<td>Improve safety at the Route 376/Clove Branch Rd./Hillsale Rd. intersection by improving sight distances, adding road shoulders, and possibly realigning the intersection.</td>
<td>Safety</td>
<td>LT</td>
<td>East Fishkill</td>
<td>Mid-Range</td>
<td>$25,000</td>
<td>$30,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>1A-12</td>
<td>Install left-turn lanes at Route 82 at the Route 55 intersection and upgrade traffic signals to improve traffic safety.</td>
<td>Safety</td>
<td>LT</td>
<td>LaGrange</td>
<td>Mid-Range</td>
<td>$100,000</td>
<td>$120,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>1A-13</td>
<td>Realign the Route 115 (Salt Point Turnpike)/Hibseria Rd. intersection in the Salt Point hamlet to improve safety and visibility.</td>
<td>Safety</td>
<td>LT</td>
<td>Pleasant Valley</td>
<td>Mid-Range</td>
<td>$100,000</td>
<td>$120,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>1A-14</td>
<td>Encourage traffic calming measures on CR 71 (West Rd.) to reduce vehicle speeds, such as narrowing travel lanes, adding signage, and possibly lowering the speed limit.</td>
<td>Safety</td>
<td>LT</td>
<td>Pleasant Valley</td>
<td>Mid-Range</td>
<td>$100,000</td>
<td>$120,000</td>
<td>Yes</td>
<td>DCDPW</td>
<td>No</td>
</tr>
<tr>
<td>1A-15</td>
<td>Realign Clinton Corners Rd. as it intersects with CR 37 (Salt Point Turnpike) in Clinton Corners to improve sight distance.</td>
<td>Safety</td>
<td>LT</td>
<td>Clinton</td>
<td>Mid-Range</td>
<td>$250,000</td>
<td>$300,000</td>
<td>Yes</td>
<td>DCDPW</td>
<td>No</td>
</tr>
<tr>
<td>1A-16</td>
<td>Improve safety at the CR 10 [State Quarry Rd./Lake St.] intersection.</td>
<td>Safety</td>
<td>LT</td>
<td>Clinton</td>
<td>Mid-Range</td>
<td>$25,000</td>
<td>$30,000</td>
<td>Yes</td>
<td>DCDPW</td>
<td>No</td>
</tr>
<tr>
<td>1A-17</td>
<td>Improve sight distance at the Route 343/CR 2 [Seville Rd.] intersection.</td>
<td>Safety</td>
<td>PV</td>
<td>Amenia</td>
<td>Mid-Range</td>
<td>$25,000</td>
<td>$30,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>1A-18</td>
<td>Improve safety activities such as sign replacements, special surface treatments, guardrail replacements, installation of centerline rumble strips, and pedestrian countdown timers (estimated cost shows total cost for planning period based on an annual cost of $2 million for Dutchess County only).</td>
<td>Safety</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$20,000,000</td>
<td>$20,000,000</td>
<td>Yes</td>
<td>NYSDOT/DCDPW</td>
<td>No</td>
</tr>
<tr>
<td>1A-19</td>
<td>Implement recommendations from the CR 9 (Beekman Rd.) Safety Assessment, including reducing vertical and horizontal alignments near Limbach Rd. and improving the CR 7 (Beekman-Poughquag Rd.) and Recreation Rd. intersections.</td>
<td>Safety</td>
<td>LT</td>
<td>Beekman</td>
<td>Long-Range</td>
<td>$6,000,000</td>
<td>$7,200,000</td>
<td>Yes</td>
<td>DCDPW</td>
<td>No</td>
</tr>
<tr>
<td>1A-20</td>
<td>Realign the Route 55/CR 21 (Bozuga Rd.)/St. Paul Rd. intersection to improve traffic safety and operations.</td>
<td>Safety</td>
<td>LT</td>
<td>Union Vale</td>
<td>Long-Range</td>
<td>$500,000</td>
<td>$700,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>1A-21</td>
<td>Implement recommendations from the CR 18 (North Quaker Ln.) Safety Assessment, including reducing vertical and horizontal alignments at the Forest Dr. and Fallkill Rd. intersections.</td>
<td>Safety</td>
<td>JM</td>
<td>Hyde Park</td>
<td>Long-Range</td>
<td>$950,000</td>
<td>$1,080,000</td>
<td>Yes</td>
<td>DCDPW</td>
<td>No</td>
</tr>
<tr>
<td>1A-22</td>
<td>Implement recommendations from the CR 19 [State Quarry Rd.]. Safety Assessment, including realigning the White Schoolhouse Rd. intersection to improve sight distance and correct safety deficiencies.</td>
<td>Safety</td>
<td>JM</td>
<td>Rhinebeck Town</td>
<td>Long-Range</td>
<td>$1,850,000</td>
<td>$2,160,000</td>
<td>Yes</td>
<td>DCDPW</td>
<td>No</td>
</tr>
<tr>
<td>1TM-1</td>
<td>Construct a second park-and-ride lot near the existing lot at the Taconic State Parkway (TSP)/Route 52 interchange to relieve parking congestion.</td>
<td>TDM</td>
<td>LT</td>
<td>East Fishkill</td>
<td>Short-Range</td>
<td>$500,000</td>
<td>$500,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>1TM-2</td>
<td>Promote Travel Demand Management (ridesharing and vanpool services) throughout Dutchess County (511NY Rideshare) and implement the Enhanced Commuter Choice program.</td>
<td>TDM</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short, Mid, and Long-Range</td>
<td>$7,000,000</td>
<td>$7,000,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>Yes</td>
</tr>
<tr>
<td>1TM-3</td>
<td>Assess the need for additional park-and-ride lots in Dutchess County.</td>
<td>TDM</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$500,000</td>
<td>$500,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>2B-1</td>
<td>Bus replacements for the City of Poughkeepsie bus system (2016-2020).</td>
<td>Transit</td>
<td>PT</td>
<td>Poughkeepsie City</td>
<td>Short-Range</td>
<td>$800,000</td>
<td>$800,000</td>
<td>Yes</td>
<td>Poughkeepsie City</td>
<td>Yes</td>
</tr>
<tr>
<td>2B-2</td>
<td>Bus replacements for the Dutchess County Public Transit (DCPT) bus system (2016-2020).</td>
<td>Transit</td>
<td>PT</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$1,300,000</td>
<td>$1,300,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>Yes</td>
</tr>
<tr>
<td>2B-3</td>
<td>Operating assistance for the City of Poughkeepsie bus system (2016-2020).</td>
<td>Transit</td>
<td>PT</td>
<td>Poughkeepsie City</td>
<td>Short-Range</td>
<td>$1,700,000</td>
<td>$1,700,000</td>
<td>Yes</td>
<td>Poughkeepsie City</td>
<td>Yes</td>
</tr>
<tr>
<td>2B-4</td>
<td>Operating assistance for the DCPT bus system (2016-2020).</td>
<td>Transit</td>
<td>PT</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$4,960,000</td>
<td>$4,960,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>Yes</td>
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<tr>
<td>2B-5</td>
<td>Preventive maintenance activities for the City of Poughkeepsie bus system (2016-2020).</td>
<td>Transit</td>
<td>PT</td>
<td>Poughkeepsie City</td>
<td>Short-Range</td>
<td>$1,250,000</td>
<td>$1,250,000</td>
<td>Yes</td>
<td>Poughkeepsie City</td>
<td>Yes</td>
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<td>2B-6</td>
<td>Preventive maintenance activities for the DCPT bus system (2016-2020).</td>
<td>Transit</td>
<td>PT</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$8,460,000</td>
<td>$8,460,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>Yes</td>
</tr>
<tr>
<td>2B-7</td>
<td>Expand marketing of bus transit services (DCPT and City of Poughkeepsie).</td>
<td>Transit</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$25,000</td>
<td>$25,000</td>
<td>Yes</td>
<td>Dutchess County/Poughkeepsie City</td>
<td>No</td>
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<tr>
<td>2B-8</td>
<td>Poughkeepsie-White Plains Commuter Bus Service.</td>
<td>Transit</td>
<td>PT</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$6,000,000</td>
<td>$6,000,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>Yes</td>
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<tr>
<td>2B-9</td>
<td>Develop and implement a coordinated fare system for the DCPT and City of Poughkeepsie bus systems.</td>
<td>Transit</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$900,000</td>
<td>$1,020,000</td>
<td>Yes</td>
<td>Dutchess County/Poughkeepsie City</td>
<td>No</td>
</tr>
<tr>
<td>2B-10</td>
<td>Install bus stop signs at all scheduled bus stops (DCPT and City of Poughkeepsie), to include bus route maps, schedules, and appropriate lighting as feasible.</td>
<td>Transit</td>
<td>ALL</td>
<td>Service Area</td>
<td>Short-Range</td>
<td>$100,000</td>
<td>$120,000</td>
<td>Yes</td>
<td>Dutchess County/Poughkeepsie City</td>
<td>No</td>
</tr>
<tr>
<td>2B-11</td>
<td>Operating assistance for the Needwood-Beacon ferry service between the City of Newburgh and Beacon Train Station (2016-2020).</td>
<td>Transit</td>
<td>PT</td>
<td>Beacon</td>
<td>Short-Range</td>
<td>$4,500,000</td>
<td>$4,500,000</td>
<td>Yes</td>
<td>Dutchess County/Metro-North Railroad</td>
<td>Yes</td>
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<tr>
<td>2B-12</td>
<td>Improve pedestrian and bicycle access to transit services, including Dutchess County Public Transit, City of Poughkeepsie, and Metro-North Railroad.</td>
<td>Transit</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Short-Range</td>
<td>$250,000</td>
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<td>Dutchess County</td>
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<td>MTP ID</td>
<td>Project Description/Recommendation 1</td>
<td>Project Type</td>
<td>Area 2</td>
<td>Location</td>
<td>Time Frames 3</td>
<td>Est. Cost (2016) 4</td>
<td>Est. Cost (YOE) 5</td>
<td>Fed-Aid Eligible 6</td>
<td>Project Sponsor</td>
<td>TIP Status 7</td>
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<tr>
<td>--------</td>
<td>-------------------------------------</td>
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<td>--------</td>
<td>----------</td>
<td>---------------</td>
<td>-----------------</td>
<td>----------------</td>
<td>-----------------</td>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>TR-13</td>
<td>Poughkeepsie Train Station rehabilitation to include upgrades to the MTA Police district office.</td>
<td>Transit</td>
<td>UT</td>
<td>Poughkeepsie City</td>
<td>Short-Range</td>
<td>$2,000,000</td>
<td>$2,000,000</td>
<td>Yes</td>
<td>Metro-North Railroad</td>
<td>Yes</td>
</tr>
<tr>
<td>TR-14</td>
<td>Wassaic Metro-North Rail Yard Expansion.</td>
<td>Transit</td>
<td>KY</td>
<td>Xenia</td>
<td>Short-Range</td>
<td>$5,000,000</td>
<td>$5,000,000</td>
<td>Yes</td>
<td>Metro-North Railroad</td>
<td>Yes</td>
</tr>
<tr>
<td>TR-15</td>
<td>Bus replacements for the City of Poughkeepsie bus system (2021-2030).</td>
<td>Transit</td>
<td>UT</td>
<td>Poughkeepsie City</td>
<td>Mid-Range</td>
<td>$1,850,000</td>
<td>$1,850,000</td>
<td>Yes</td>
<td>Poughkeepsie City</td>
<td>No</td>
</tr>
<tr>
<td>TR-16</td>
<td>Bus replacements for the DCPT bus system (2021-2030).</td>
<td>Transit</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$13,500,000</td>
<td>$16,236,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-17</td>
<td>Operating assistance for the City of Poughkeepsie bus system (2021-2030).</td>
<td>Transit</td>
<td>UT</td>
<td>Poughkeepsie City</td>
<td>Mid-Range</td>
<td>$5,450,000</td>
<td>$4,080,000</td>
<td>Yes</td>
<td>Poughkeepsie City</td>
<td>No</td>
</tr>
<tr>
<td>TR-18</td>
<td>Operating assistance for the DCPT bus system (2021-2030).</td>
<td>Transit</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$29,200,000</td>
<td>$31,136,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-19</td>
<td>Preventive maintenance activities for the City of Poughkeepsie bus system (2021-2030).</td>
<td>Transit</td>
<td>UT</td>
<td>Poughkeepsie City</td>
<td>Mid-Range</td>
<td>$2,700,000</td>
<td>$3,240,000</td>
<td>Yes</td>
<td>Poughkeepsie City</td>
<td>No</td>
</tr>
<tr>
<td>TR-20</td>
<td>Preventive maintenance activities for the DCPT bus system (2021-2030).</td>
<td>Transit</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$16,970,000</td>
<td>$20,364,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-21</td>
<td>Install bus stop shelters at major bus stops (DCPT and City of Poughkeepsie).</td>
<td>Transit</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$500,000</td>
<td>$500,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-22</td>
<td>Provide additional service on DCPT bus routes through a combination of one or more of the following: Sunday service, additional holiday service, later weekday evening service, express services, and more frequent service in cities, villages/key centers, and train stations.</td>
<td>Transit</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$500,000</td>
<td>$500,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-23</td>
<td>Expand demand responsive transit services throughout Dutchess County.</td>
<td>Transit</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Mid-Range</td>
<td>$500,000</td>
<td>$600,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-24</td>
<td>Develop and implement a coordinated ITS architecture for the DCPT and City of Poughkeepsie bus systems to include real time bus location and arrival information.</td>
<td>Transit</td>
<td>ALL</td>
<td>Service Area</td>
<td>Mid-Range</td>
<td>$12,000,000</td>
<td>$14,400,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-25</td>
<td>Poughkeepsie-White Plains Commuter Bus Service (2022-2030).</td>
<td>Transit</td>
<td>UT</td>
<td>Beacon</td>
<td>Mid-Range</td>
<td>$9,000,000</td>
<td>$10,800,000</td>
<td>Yes</td>
<td>NYSDOT/Metro-North Railroad</td>
<td>No</td>
</tr>
<tr>
<td>TR-26</td>
<td>Operating assistance for the Newburgh-Beacon ferry service between the City of Newburgh and Beacon Train Station (2021-2030).</td>
<td>Transit</td>
<td>UT</td>
<td>Beacon</td>
<td>Mid-Range</td>
<td>$5,400,000</td>
<td>$4,080,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-27</td>
<td>Bus replacements for the City of Poughkeepsie bus system (2021-2040).</td>
<td>Transit</td>
<td>UT</td>
<td>Poughkeepsie City</td>
<td>Long-Range</td>
<td>$2,820,000</td>
<td>$3,920,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-28</td>
<td>Bus replacements for the DCPT bus system (2021-2040).</td>
<td>Transit</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$13,500,000</td>
<td>$18,942,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-29</td>
<td>Operating assistance for the City of Poughkeepsie bus system (2021-2040).</td>
<td>Transit</td>
<td>UT</td>
<td>Poughkeepsie City</td>
<td>Long-Range</td>
<td>$3,400,000</td>
<td>$4,760,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-30</td>
<td>Operating assistance for the DCPT bus system (2021-2040).</td>
<td>Transit</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$28,200,000</td>
<td>$33,920,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-31</td>
<td>Preventive maintenance activities for the City of Poughkeepsie bus system (2021-2040).</td>
<td>Transit</td>
<td>UT</td>
<td>Poughkeepsie City</td>
<td>Long-Range</td>
<td>$2,700,000</td>
<td>$3,780,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-32</td>
<td>Preventive maintenance activities for the DCPT bus system (2021-2040).</td>
<td>Transit</td>
<td>ALL</td>
<td>Dutchess County</td>
<td>Long-Range</td>
<td>$26,970,000</td>
<td>$33,718,000</td>
<td>Yes</td>
<td>Dutchess County</td>
<td>No</td>
</tr>
<tr>
<td>TR-33</td>
<td>Poughkeepsie-White Plains Commuter Bus Service (2021-2040).</td>
<td>Transit</td>
<td>ALL</td>
<td>Service Area</td>
<td>Long-Range</td>
<td>$5,200,000</td>
<td>$6,800,000</td>
<td>Yes</td>
<td>NYSDOT</td>
<td>No</td>
</tr>
<tr>
<td>TR-34</td>
<td>Operating assistance for the Newburgh-Beacon ferry service between the City of Newburgh and Beacon Train Station (2021-2040).</td>
<td>Transit</td>
<td>UT</td>
<td>Beacon</td>
<td>Long-Range</td>
<td>$9,000,000</td>
<td>$12,800,000</td>
<td>Yes</td>
<td>NYSDOT/Metro-North Railroad</td>
<td>No</td>
</tr>
</tbody>
</table>

Notes:
1. Project recommendations and timeframes are subject to change based on future conditions.
2. UT: Upper Hudson; LT: Lower Hudson; UT: Upper Taconic; UT: Upper Taconic; HV: Harlem Valley.
4. Total estimated planning level cost in 2016-dollars.
5. Total estimated cost in Year of Expenditure (YOE) dollars assumes 2% annual inflation.
6. 2016 Cost (Short-Range), 2020 Cost (Mid-Range), and 2040 Cost (Long-Range).
7. Federal-aid eligibility refers to eligibility of project to receive federal funding.
8. TIP status refers to whether the project is programmed on the pending TIP 2017-2021 TIP.
9. Estimated TDM cost for the planning period is $7,000,000, based on a $225,000 cost per year for 24 years (including YOE adjustments).
10. Project requires additional federal and State funding above current allocations (e.g. FHWA TIGER grant; NYSDOT Beyond Preservation).
11. Available highway/bridge funds include estimated annual federal, State, and local funds as follows: Short-Range: $29 million; Mid-Range: $33 million; Long-Range: $39.4 million.
12. Available transit funds include estimated federal, State, and local annual total of $11.5 million (includes MTA share to UZA 89).
13. Available planning funds: include estimated federal, State, and local annual total of $826,500.

Federal-aid Eligible Sub-totals by Project Type

<table>
<thead>
<tr>
<th>Project Type</th>
<th>FY 2016</th>
<th>YOE</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridge Maintenance</td>
<td>$280,400,000</td>
<td>$399,560,000</td>
<td>27.9%</td>
</tr>
<tr>
<td>Highway Maintenance</td>
<td>$227,160,000</td>
<td>$286,800,000</td>
<td>23.5%</td>
</tr>
<tr>
<td>Highway Operations</td>
<td>$208,670,000</td>
<td>$208,670,000</td>
<td>97.1%</td>
</tr>
<tr>
<td>Safety</td>
<td>$79,750,000</td>
<td>$93,985,000</td>
<td>7.7%</td>
</tr>
<tr>
<td>Pedestrian-Bicycle</td>
<td>$43,345,000</td>
<td>$57,003,000</td>
<td>4.7%</td>
</tr>
<tr>
<td>Travel Demand Management (TDM)</td>
<td>$7,550,000</td>
<td>$7,560,000</td>
<td>0.6%</td>
</tr>
<tr>
<td>Transit Planning Studies</td>
<td>$3,750,000</td>
<td>$4,135,000</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

Federal-aid Eligible Sub-totals | $785,875,000 | $1,218,579,000 |

Total Federal-aid Recommendations

<table>
<thead>
<tr>
<th>FFY 2016</th>
<th>FYE</th>
<th>Available Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway &amp; Bridge</td>
<td>$798,875,000</td>
<td>$393,150,000</td>
</tr>
<tr>
<td>Transit</td>
<td>$138,790,000</td>
<td>$220,858,000</td>
</tr>
<tr>
<td>Planning/TDM</td>
<td>$10,690,000</td>
<td>$68,590,000</td>
</tr>
</tbody>
</table>

Total Federal-aid Recommendations | $979,375,000 | $1,433,079,000 |
### Table 8-2. Recommended Funding by Project Type

<table>
<thead>
<tr>
<th>Federal-aid Eligible Project Type</th>
<th>FFY 2016</th>
<th>YOE¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridge Maintenance</td>
<td>$283,400,000</td>
<td>$339,560,000</td>
</tr>
<tr>
<td>Highway-Maintenance</td>
<td>$227,160,000</td>
<td>$286,800,000</td>
</tr>
<tr>
<td>Highway-Operations</td>
<td>$156,150,000</td>
<td>$208,678,000</td>
</tr>
<tr>
<td>Safety</td>
<td>$79,750,000</td>
<td>$93,985,000</td>
</tr>
<tr>
<td>Pedestrian Bicycle</td>
<td>$43,345,000</td>
<td>$57,003,000</td>
</tr>
<tr>
<td>Travel Demand Management</td>
<td>$7,550,000</td>
<td>$7,560,000</td>
</tr>
<tr>
<td>Transit</td>
<td>$178,790,000</td>
<td>$220,858,000</td>
</tr>
<tr>
<td>Planning Studies</td>
<td>$3,730,000</td>
<td>$4,135,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$979,875,000</strong></td>
<td><strong>$1,218,579,000</strong></td>
</tr>
</tbody>
</table>

¹ Year of Expenditure (YOE).

### Table 8-3. Recommended Funding by Overall Project Type

<table>
<thead>
<tr>
<th>Federal-aid Needs</th>
<th>FFY 2016</th>
<th>YOE¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway &amp; Bridge</td>
<td>$789,805,000</td>
<td>$986,026,000</td>
</tr>
<tr>
<td>Transit</td>
<td>$178,790,000</td>
<td>$220,858,000</td>
</tr>
<tr>
<td>Planning/TDM</td>
<td>$11,280,000</td>
<td>$11,695,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$979,875,000</strong></td>
<td><strong>$1,218,579,000</strong></td>
</tr>
</tbody>
</table>

¹ Year of Expenditure (YOE).

### Table 8-4. Recommended Funding by Project Type and Time Period

<table>
<thead>
<tr>
<th>Federal-aid Eligible Project Type</th>
<th>Short-Range (2016-2020)</th>
<th>Mid-Range (2021-2030)</th>
<th>Long-Range (2031-2040)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridge Maintenance</td>
<td>$87,600,000</td>
<td>$149,160,000</td>
<td>$102,800,000</td>
<td>$339,560,000</td>
</tr>
<tr>
<td>Highway-Maintenance</td>
<td>$40,210,000</td>
<td>$90,840,000</td>
<td>$155,750,000</td>
<td>$286,800,000</td>
</tr>
<tr>
<td>Highway-Operations</td>
<td>$14,010,000</td>
<td>$25,968,000</td>
<td>$168,700,000</td>
<td>$208,678,000</td>
</tr>
<tr>
<td>Safety</td>
<td>$29,075,000</td>
<td>$25,770,000</td>
<td>$39,140,000</td>
<td>$93,985,000</td>
</tr>
<tr>
<td>Pedestrian Bicycle</td>
<td>$11,160,000</td>
<td>$10,920,000</td>
<td>$34,923,000</td>
<td>$57,003,000</td>
</tr>
<tr>
<td>Travel Demand Management</td>
<td>$1,625,000</td>
<td>$2,760,000</td>
<td>$3,175,000</td>
<td>$7,560,000</td>
</tr>
<tr>
<td>Transit</td>
<td>$38,170,000</td>
<td>$85,136,000</td>
<td>$97,552,000</td>
<td>$220,858,000</td>
</tr>
<tr>
<td>Planning Studies</td>
<td>$1,520,000</td>
<td>$2,195,000</td>
<td>$420,000</td>
<td>$4,135,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$223,370,000</strong></td>
<td><strong>$392,749,000</strong></td>
<td><strong>$602,460,000</strong></td>
<td><strong>$1,218,579,000</strong></td>
</tr>
</tbody>
</table>
### Table 8-6. Fiscal Constraint Analysis by Overall Project Type and Time Period

<table>
<thead>
<tr>
<th>Federal-aid Eligible Sub-totals¹</th>
<th>Recommended</th>
<th>Available</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short-Range (2016-2020)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highway &amp; Bridge Projects</td>
<td>$182,055,000</td>
<td>$146,544,000</td>
<td>-$35,511,000</td>
</tr>
<tr>
<td>Transit Projects</td>
<td>$38,170,000</td>
<td>$56,000,000</td>
<td>$17,830,000</td>
</tr>
<tr>
<td>Planning Studies</td>
<td>$3,145,000</td>
<td>$4,132,500</td>
<td>$987,500</td>
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<td>$223,370,000</td>
<td>$206,676,500</td>
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<td><strong>Mid-Range (2021-2030)</strong></td>
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<tr>
<td>Highway &amp; Bridge Projects</td>
<td>$302,658,000</td>
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<td>Transit Projects</td>
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<td>$112,000,000</td>
<td>$26,864,000</td>
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<td>$8,265,000</td>
<td>$3,310,000</td>
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<td>$392,749,000</td>
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<td><strong>Long-Range (2031-2040)</strong></td>
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<td><strong>Overall Planning Period (2016-2040)</strong></td>
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<td>Highway &amp; Bridge Projects</td>
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<td>$1,218,579,000</td>
<td>$1,123,479,000</td>
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¹ Funding amounts rounded to the nearest hundred-thousand.