

November 2007

PDCTC

Poughkeepsie-Dutchess County Transportation Council

NEW Connections





NEW Connections

Adopted November 29, 2007

Financial assistance for *New Connections* was received from the Federal Highway Administration, the Federal Transit Administration and the New York State Department of Transportation. The recommendations of this plan are not necessarily those of state and federal agencies.

Photos and Graphics are by the Poughkeepsie-Dutchess County Transportation Council unless otherwise noted.

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To adopt the Poughkeepsie-Dutchess County Transportation Council 2007 Metropolitan Transportation Plan, *New Connections*, and associated Air Quality Conformity Determination Statement

WHEREAS, the Poughkeepsie-Dutchess County Transportation Council has been designated by the Governor of the State of New York as the Metropolitan Planning Organization responsible, together with the State, for the comprehensive, continuing, and cooperative transportation planning process for the Poughkeepsie Metropolitan Area; and,

WHEREAS, the federal surface transportation programs that are the responsibility of the Poughkeepsie-Dutchess County Transportation Council are authorized by the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA) (Pub. L. 109-59, August 10, 2005) through September 30, 2009; 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 implemented the provisions of 23 U.S.C. 134 and 135, and 49 U.S.C. 5303 and 5304 pursuant to SAFETEA; 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; 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, *New Connections*; and,

WHEREAS, *New Connections* was developed in accordance with 23 CFR Part 450.322 (Development of the Metropolitan Transportation Plan) and includes the following:

- (1) The projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan.
- (2) Operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods.
- (3) Consideration of the results of the Congestion Management Process for the Mid-Hudson Valley TMA.

- (4) An assessment of capital investment and other strategies to preserve existing and projected future metropolitan transportation infrastructure and provide for multimodal capacity increases based on regional priorities and needs.
- (5) A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities.
- (6) Pedestrian walkway and bicycle transportation facilities in accordance with 23 U.S.C. 217(g).
- (7) Transportation and transit enhancement activities, as appropriate.
- (8) A financial plan that demonstrates how the adopted transportation plan can be implemented; and,

WHEREAS, the Poughkeepsie-Dutchess County Transportation Council consulted, as appropriate, with Federal, State, and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation when it developed *New Connections*; and,

WHEREAS, *New Connections* has as one of its goals improving the safety of the transportation system, and recommends actions consistent with the 2007 New York State Strategic Highway Safety Plan; and,

WHEREAS, the Poughkeepsie-Dutchess County Transportation Council afforded citizens, affected public agencies, and representatives of transportation providers with a reasonable opportunity to comment on *New Connections*, in accordance with the Public Participation Policy dated October 12, 2007; and,

WHEREAS, the Poughkeepsie-Dutchess County Transportation Council held a thirty-day public comment period for *New Connections*, during which the document was made available to the public, including in electronic format on the world wide web; and,

WHEREAS, the Poughkeepsie-Dutchess County Transportation Council shares responsibility for the Poughkeepsie (Mid-Hudson) Ozone Non-attainment Area with the New York Metropolitan Transportation Council and Orange County Transportation Council; and,

WHEREAS, an air quality conformity determination statement for *New Connections* and the 2008-2012 Transportation Improvement Program, which includes the combined emissions results from the New York Metropolitan Transportation Council, Orange County Transportation Council, and Poughkeepsie-Dutchess County Transportation Council was completed on October 25, 2007; and,

WHEREAS, the air quality conformity determination statement demonstrates that *New Connections* and the 2008-2012 Transportation Improvement Program comply with federal and state air quality standards; and,

WHEREAS, the Poughkeepsie-Dutchess County Transportation Council held a thirty-day public comment period for the air quality conformity determination statement; now therefore be it

RESOLVED, that the Poughkeepsie-Dutchess County Transportation Council adopts *New Connections* as the Metropolitan Transportation Plan for the Dutchess County portion of the Poughkeepsie-Newburgh Urbanized Area; and,

RESOLVED, that *New Connections* establishes the policies and programming priorities for the metropolitan area's transportation system; and,

RESOLVED, that the Poughkeepsie-Dutchess County Transportation Council hereby authorizes the Secretary of the Poughkeepsie-Dutchess County Transportation Council to transmit *New Connections* to the Federal Highway Administration, Federal Transit Administration, and New York State Department of Transportation.

11.29.07

Date

By Joan Dupont
Joan Dupont, Secretary
Poughkeepsie-Dutchess County
Transportation Council

Chapter 1

Introducing *New Connections*

New Connections represents the fourth Metropolitan Transportation Plan in the twenty-five year history of the Poughkeepsie-Dutchess County Transportation Council (PDCTC), continuing a long tradition of metropolitan transportation planning for Dutchess County. From its designation in 1982 as the Metropolitan Planning

Organization for the Poughkeepsie Metropolitan Area to its present role in the three county Mid-Hudson Valley Transportation Management Area, the PDCTC has sought to meet the transportation needs of its residents, workers, and visitors. This fundamental mission sat at the core of previous Metropolitan Transportation Plans in 1994, 1998, 2003, and endures now with

New Connections. Similarly, the basic purpose behind all these

plans remains the same: present a set of policies and projects designed to not only maintain the existing transportation system, but to also prepare it to meet the challenges in the coming decades. What has changed is how the PDCTC has tried to accomplish these goals.

New Connections presents a set of policies and projects designed to not only maintain the existing transportation system, but to also prepare it to meet the challenges in the coming decades

Just as Dutchess County has changed in the past quarter century, the PDCTC, as an organization and through its policies, adapted itself to meet new challenges, while still adhering to its core transportation mission. The need to adapt to shifting norms, be they based on population, human behavior, technology, or the environment, stands as a necessity for any organization wishing to remain relevant. This certainly holds true for transportation planning, where simply meeting a statutory requirement runs the risk of making an organization irrelevant. Recognizing this fact, the PDCTC seeks to maintain its relevancy through *New Connections*, by not only addressing traditional transportation issues but also looking at areas that have historically been outside the routine transportation planning process.

The Metropolitan Planning Organization (MPO)

Federal transportation laws require that all Urbanized Areas¹ be represented by a MPO, which is responsible for ensuring that Federal transportation dollars (highway and transit) are committed through a locally driven, comprehensive planning process. The purpose of a MPO is to provide a forum for state and local officials to discuss transportation issues and, in turn, reach a consensus on transportation plans and specific programs of highway and transit projects. The US 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. To guide this planning process, a MPO must regularly develop three critical documents: a Metropolitan Transportation Plan (MTP), a Unified Planning Work Program (UPWP), and a Transportation Improvement Program (TIP). In addition to these base requirements, a MPO located in a Transportation Management Area

¹ The U.S. Census Bureau defines an Urbanized Area as a central place(s), including adjacent territory, with a general population density of at least 1,000 people per square mile of land area that together have a minimum residential population of at least 50,000 people.

(TMA) must also develop a Congestion Management Process (CMP), while a MPO located in an air quality non-attainment area must demonstrate conformity with Federal environmental regulations.

The Mid-Hudson Valley Transportation Management Area (TMA)

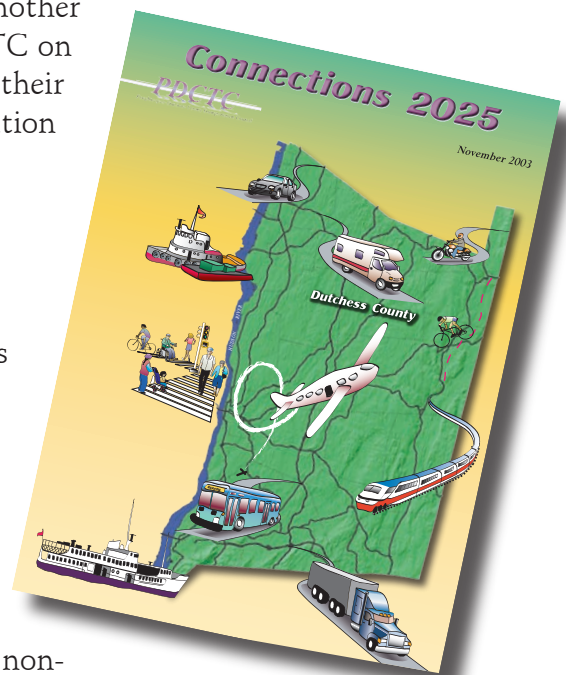
The PDCTC lies within the Poughkeepsie-Newburgh Urbanized Area, which was designated by the U.S. Census Bureau in May 2002. This Urbanized Area (UA) includes parts of three counties: Dutchess, Orange, and Ulster, with a total population of almost 352,000. The new UA combined the previously separate Poughkeepsie UA with the Newburgh UA, thus surpassing the 200,000 person threshold used by USDOT to establish a Transportation Management Area (TMA). The TMA denotation, a standard first instituted by the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), remains today and carries with it additional responsibilities for a MPO. These include requirements for a Congestion Management Process (CMP), a system to disburse Section 5307 Federal Transit Administration (FTA) funds, and a formal federal certification review every four years.

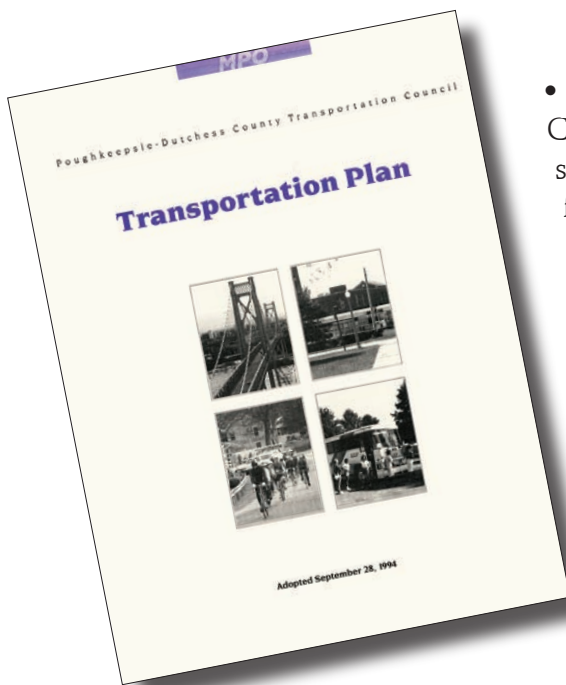
Prior to the 2000 Census, two MPOs – the PDCTC and the Orange County Transportation Council (OCTC) – operated within the Mid-Hudson Valley. This changed in 2002 when a third MPO, the Ulster County Transportation Council (UCTC), received its formal designation as the MPO for the new Kingston UA. And though each is a separate, independent organization, the three MPOs must work together in managing the TMA, since the three share a portion of the larger Poughkeepsie-Newburgh UA (See Figure 1).

The OCTC, PDCTC, and UCTC participate in a collaborative planning relationship that focuses on addressing regional transportation issues and meeting the federal requirements for a TMA. An example of this partnership is the development and use of a single CMP instead of three separate programs; another example is the work done by the OCTC and PDCTC on joint air quality conformity determinations for their Metropolitan Transportation Plans and Transportation Improvement Programs.

Core PDCTC Responsibilities:

- **Metropolitan Transportation Plan (MTP)**
The Metropolitan Transportation Plan acts as the central guiding document for improving transportation in Dutchess County over the next twenty-five years. The Plan establishes long and short range goals and recommendations, which propel the types of projects and studies pursued in the five year TIP and the annual UPWP. Federal law requires an update to the Plan every four years for a MPO in an air quality non-attainment area; the law also requires that the Plan be developed under fiscally constrained conditions. *New Connections* is the fourth Plan of the PDCTC, preceded by Plans completed in 1994, 1998, and 2003.





- **Transportation Improvement Program (TIP)**
Covering a five-year period, the TIP lists the funding sources, locations, schedule, and sponsors for federally funded transportation projects. The TIP implements the short range goals and recommendations of the Metropolitan Transportation Plan. The PDCTC, working with member agencies, updates the TIP on a biannual basis, with project scheduling based on a Federal Fiscal Year (FFY) calendar. In addition to federally funded projects, the TIP also lists major transportation projects supported by other funds for several of the larger transportation agencies: the Metropolitan Transportation Authority (MTA), NYS Bridge Authority (NYSBA), NYS Thruway Authority (NYSTA), and NYS Department of Transportation (NYSDOT).

- **Unified Planning Work Program (UPWP)**

The UPWP is an annual work program and budget that describes the activities and planning studies the PDCTC will complete during the upcoming year. As done with the TIP, the UPWP must support the actions promoted in the Metropolitan Transportation Plan; this especially holds true for PDCTC staff work on local planning studies and the program initiatives. The PDCTC organizes its annual UPWP around the New York State Fiscal Year (SFY).

Additional PDCTC Responsibilities:

- **Air Quality Conformity**

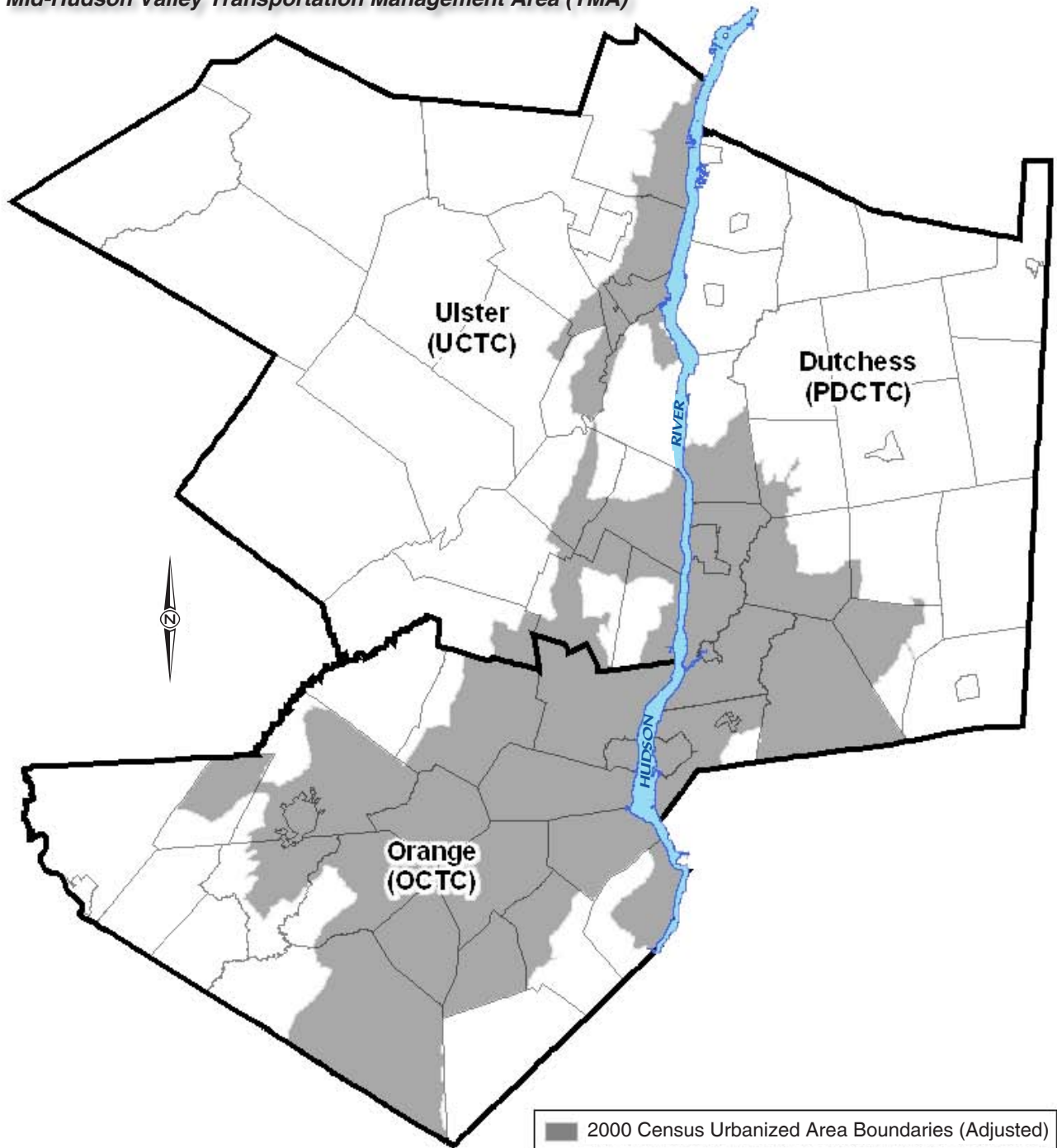
Federal transportation and environmental laws require that transportation activities conform to national and state air quality standards before receiving federal transportation funding. These standards, set forth in the National Ambient Air Quality Standards (NAAQS), set limits on the levels of air pollution that can exist in a region. Dutchess County sits in the Mid-Hudson Moderate Ozone Non-attainment Area, as designated by the U.S. Environmental Protection Agency (EPA), which also includes Orange and Putnam Counties. The PDCTC must therefore demonstrate that future Plans and TIP projects do not violate air quality standards, worsen existing conditions, or delay timely attainment of the NAAQS. Such a demonstration was made for *New Connections*.

- **Congestion Management Process (CMP)**

A MPO located within a designated TMA must create a CMP, which institutes a formal process to measure and manage the performance of a transportation system. Such a process must describe methods to collect and analyze transportation network data, with the intent of developing effective strategies to mitigate identified congestion. The OCTC, PDCTC, and UCTC adopted a joint Congestion Management System in 2005.²

² The Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA), signed into law on August 10, 2005, maintains the requirement that a TMA actively measure and manage congestion. However, the law describes this requirement as a Congestion Management Process (CMP) instead of Congestion Management System (CMS).

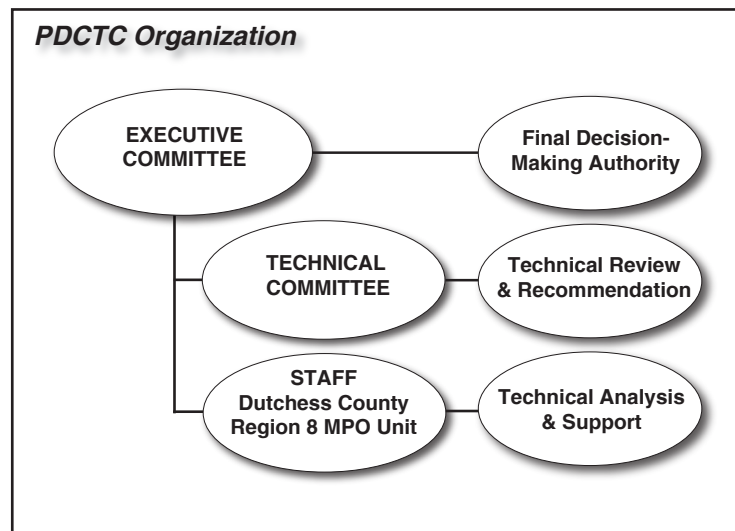
Mid-Hudson Valley Transportation Management Area (TMA)



PDCTC Organization:

The PDCTC organizes itself around three components: two committees (Executive and Technical) and a shared staff section. In use since its inception, this structure satisfies the PDCTC's mission to meet the transportation needs of Dutchess County through a collaborative planning process. An essential part of this process includes participation from locally elected representatives, public transportation agencies, and the general public. The mechanics of how the PDCTC carries out its mission, to include how it involves the public, are codified in its Operating Procedures, which were updated in 2007.

- **Executive Committee:** The Executive Committee acts as the final decision-making authority on all PDCTC actions. This authority covers approval actions on the Plan (e.g. *New Connections*), TIP, and UPWP, but also additional actions such as approval of the joint CMP and air quality conformity determination statements. The primary challenge of the Executive Committee is to make decisions on transportation planning issues and projects, while understanding the competing needs for limited resources. The Executive Committee operates by consensus and usually meets at least once a year, with all meetings open to the public.



- **Technical Committee:** The Technical Committee, consisting of representatives for each member of the Executive Committee, provides oversight and guidance to the staff regarding transportation planning issues and program work. Actions requiring approval from the Executive Committee are first reviewed by the Technical Committee. The Technical Committee meets approximately eight to ten times a year and all meetings are open to the public.
- **PDCTC Staff:** The PDCTC staff performs operational and tactical level work on all UPWP task items and other transportation related actions as needed. The staff coordinates with member agencies to meet program requirements and prepares materials for review by the Technical Committee and subsequent approval by the Executive Committee. The Dutchess County Department of Planning and Development and the New York State Department of Transportation-Region 8 provide administrative and logistical support for PDCTC staff.

Federal Laws

The PDCTC, as with any MPO, must adhere to a set of federal laws and regulations that govern the metropolitan planning process and, in turn, establish the requirements for receiving Federal transportation funds. These regulations prescribe the basic roles and responsibilities of a MPO, while also guiding the minimum level of content for actions such as the Metropolitan Transportation Plan. Indeed, the requirement to produce a twenty year 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 is one example. Subsequent legislation in 1998, the Transportation Equity Act for the 21st Century (TEA-21), modified, and in some cases,

expanded federal planning requirements for MPOs. This tradition continued with the current transportation law: the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA), which was enacted in 2005. This fifteen-year span of federal law has shaped the manner by which the PDCTC has sought to meet the transportation needs of Dutchess County, and formed a precedent that will likely remain for years to come.

SAFETEA

The current five-year transportation law programs over \$244 billion towards highway and transit projects and programs, while modifying or amplifying previous guidance on MPO planning processes. Two notable highlights for metropolitan planning include a four-year update cycle for Metropolitan Transportation Plans and Transportation Improvement Programs in Non-attainment Areas, and the designation of eight planning factors. The eight planning factors are of particular importance, because they directly impact the scope and focus of the PDCTC planning process. That impact becomes most apparent with how *New Connections* was developed.

SAFETEA Planning Factors:

- Support the economic vitality of the metropolitan area.
- Increase the safety of the transportation system.
- Increase the security of the transportation system.
- Increase the accessibility and mobility of people and for freight.
- 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.
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
- Promote efficient system management and operation.
- Emphasize the preservation of the existing transportation system.

Other Federal Laws

Beyond traditional transportation laws, the PDCTC must also adhere to a separate set of Federal laws that apply to all programs that receive Federal funding. The following laws play an important part in the MPO process:

- **Civil Rights Act of 1964 (Title VI):** 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.
- **National Environmental Policy Act of 1969 (NEPA):** Establishes a national policy to promote efforts which will prevent or eliminate damage to the environment.
- **Americans with Disabilities Act of 1990 (ADA):** Institutes enforceable standards to prevent discrimination against individuals with disabilities.

- **Clean Air Act Amendments of 1990 (CAAA):** Mandates that transportation plans, programs, and projects conform to a State air quality implementation plan.

Development of *New Connections*

The PDCTC initiated *New Connections* through a review of existing Federal, State, and County land use and transportation planning laws and guidance. This review sought to identify those planning policies and recommendations that support the mission of meeting the current and future transportation needs of Dutchess County. More often than not, the same themes arose from each of these sources, whether they originated from legal statutes, regional plans, or best practices. The task then was to organize these themes into a set of transportation strategies that fulfilled Federal SAFETEA requirements, but also fulfilled the internal goals of the PDCTC.

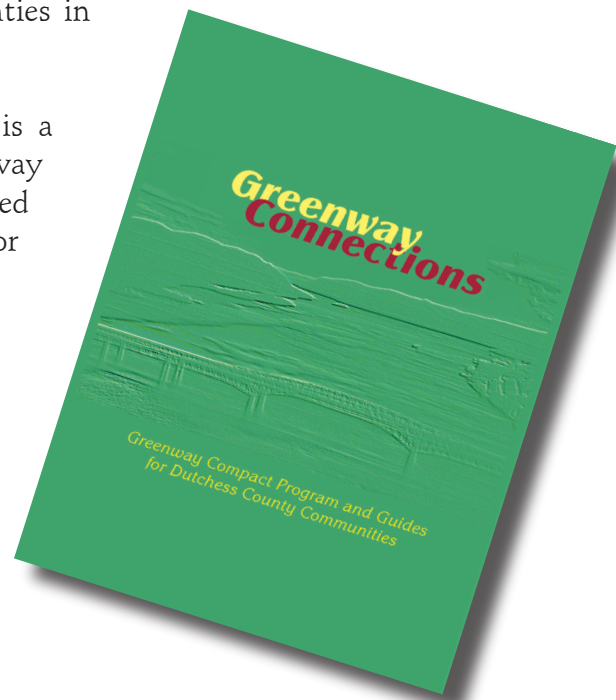
In addition to the goals and recommendations promoted in the previous long range plan, *Connections 2025*, two planning documents from two of our traditional planning partners proved particularly valuable during the development of *New Connections*: the Dutchess County Planning Department's *Greenway Connections* and the New York State Department of Transportation's *Transportation Strategies for a New Age: New York's Transportation Plan for 2030*. These two documents, coupled with *Connections 2025* and SAFETEA planning guidance, did the most to shape the strategic direction of *New Connections*.

Greenway Connections

In early 2000 the Dutchess County Department of Planning and Development completed *Greenway Connections* – a guidebook that not only demonstrates the benefits of the Greenway Compact Program, but presents a set of policies and site specific design guidelines that promote sustainable development. The guidebook was developed in cooperation with the Hudson River Valley Greenway Council, 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 communities, which is guided by a policy framework that covers five major goals:

- Regional Cooperation
- Environmental and Cultural Protection and Enhancement
- Economic Development
- Public Access
- Heritage and Environmental Education



Greenway Connections implements the Greenway Compact Program in Dutchess County, describing basic 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.” *Greenway Connections* endorses an integrated system of scenic roads and streets, bicycle and transit routes, open space corridors, waterways, and sidewalks linked to trails throughout Dutchess County and the region. It also lists several model trail, rail, access management, transit-oriented development, and pedestrian improvement projects that will help build this Greenway network.

New York State Transportation Plan

The Transportation Plan from the New York State Department of Transportation presents a comprehensive, twenty-five year outlook for transportation in New York State and includes new ideas for managing and operating the State’s multi-modal transportation network. The Plan is designed to foster the creation of a seamless, customer-friendly transportation network that is predictable, convenient, and accountable to the public. Released in 2006, *Transportation Strategies for a New Age: New York’s Transportation Plan for 2030* starts out with a simple, but broad vision statement:

New York State’s vision for transportation in 2030 is of 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, five priority result areas were developed, which will be used by NYSDOT to define measurable goals and monitor progress in achieving this vision, while also meeting customer expectations.

- Mobility and Reliability – Places a high priority on travel time predictability for both personal travel and the movement of goods. Reliable transportation requires that all systems be adequately maintained to support predictable, efficient, and safe travel.
- Safety – Safe travel is the highest priority for transportation customers. They expect actions to address transportation system safety deficiencies, operator errors, and effective enforcement.
- Environmental Conditions – Transportation investments should address environmental and energy concerns through the protection of human, natural, and built environments, and the conservation of New York’s non-renewable energy resources.



- Economic Sustainability – The transportation system should strengthen the economic sustainability and improve the quality of life in local communities. Transportation is an important component of the State’s Quality Communities Program.
- Security – Mitigate the vulnerabilities of the transportation system, develop emergency plans to assist with recovery, and protect critical data, information, and communication networks.

The twenty-five year plan recommends a mutually supportive approach to transportation planning and investment decision-making among the public and private owners and operators of the State’s diverse transportation network. The Plan also includes a discussion of transportation issues currently facing New York, along with some potential strategies.

Other Planning Resources

In addition to plans from traditional sources, staff studied the following resources to measure their benefit towards meeting the provisions of SAFETEA and accomplishing the PDCTC mission:

- *State and Local Governments Partnering for a Better New York*, New York State Quality Communities Interagency Task Force, 2001.
- *New York State Open Space Conservation Plan*, New York State Department of Environmental Conservation, 2006.
- *New York State Energy Plan*, New York State Department of Environmental Conservation, 2002.
- *Hudson River Valley Scenic Byways Public Outreach Project*, New York State Hudson River Valley Greenway, 2004.
- *A Region at Risk*, Regional Plan Association, 1996.
- *HVQoL= Transportation, A Strategy for Transportation and Quality of Life in the Hudson Valley Region*, Mid-Hudson Pattern for Progress, 2002.

Common Themes

The policies and recommendations presented in all of the resources mentioned above possessed a number of universal themes or ideas about the way ahead for transportation. Irrespective of some minor differences, the majority of the organizations endorsed a set of overlapping goals and objectives:

- Continue to invest in a “state of good repair” for transportation infrastructure.
- Support both community revitalization and open space and farmland protection activities to support orderly and sustainable growth.

- Regional, local, and public-private partnerships are necessary to implement common goals.
- Expand transportation choices to include more opportunities for walking, bicycling, and transit.
- Enhance connections between communities and between Dutchess and surrounding areas.
- Promote greater energy efficiency and explore alternative energy sources.
- Improve coordination between transportation and land use decision making processes.

PDCTC Strategic Areas

Recognizing the similarities in how member agencies and other planning partners viewed the future of transportation in Dutchess County and its surrounding region, the PDCTC set out to shape these ideas into a targeted transportation strategy. To that end, the PDCTC identified five strategic areas for *New Connections*: System Management and Preservation, Mobility and Accessibility, Land Use and Economic Development, the Environment and Energy, and Safety and Security. While pursuing these strategic areas, the PDCTC participated in a consultation process that captured input from the public and applicable organizations to better focus long range planning efforts and inform the recommendations contained in *New Connections*.

The five strategic areas fully reinforce the intent of SAFETEA, its planning factors, and the mission of the PDCTC. To better capture this dynamic, the PDCTC will use these strategic areas to form the framework for future discussions with the Executive and Technical Committees, member agencies, community based organizations, and the general public. The recommendations presented in *New Connections* are organized around these five strategic areas.

Transportation Plan Goals

- 1) ***System Management and Preservation***
- 2) ***Mobility and Accessibility***
- 3) ***Land Use and Economic Development***
- 4) ***Environment and Energy***
- 5) ***Safety and Security***

Transportation Plan Goals

- 1) **System Management and Preservation:** *Preserve the existing transportation system through appropriate maintenance, management, and operational improvements.*

The intent of this strategy is to ensure maintenance of the existing transportation system in a good state of repair, adjusting the system as necessary to improve its safety, efficiency, and reliability, and analyzing relevant demographic and traffic data to understand how the transportation system might be used in the future.

- 2) **Mobility and Accessibility:** *Provide reliable, efficient, and cost effective options for movement within the area and to and from other regions.*

This strategy goes beyond the traditional focus on infrastructure maintenance or of studying each mode of travel in isolation, but instead looks at strengthening the interconnections among the many modes of travel. This also includes strengthening the internal connections between the County's communities and external connections to the greater region. An advanced objective of this strategy is to prepare the transportation system to absorb shifts in travel behavior resulting from outside forces, including changes in the economy, energy use, and security climate.

- 3) **Land Use and Economic Development:** *Integrate land use, economic development, and transportation activities to promote sustainable development in Dutchess County.*

Recognizing the direct correlation between land use decisions and their impacts on the transportation system, this strategy seeks to influence the design and scope of County land use patterns so that they support a safe, efficient, and reliable transportation system. Another objective includes reinforcing sustainable land use practices and techniques that promote the most efficient and safe use of the transportation system, while also minimizing future costs to maintain or redesign the system; the following are examples of such practices: access management enforcement, Transit Oriented Development (TOD), neighborhood centers, open space programs, and form based zoning codes.

- 4) **Environment and Energy:** *Protect natural and man-made resources to enhance quality of life. Conserve energy resources and improve air quality in the region.*

The focus of this strategy is to promote a transportation system that minimizes adverse effects on the natural environment and better prepares the system to transition to alternative energy sources. It will also ensure that the impacts of transportation decisions do not favor or harm various socio-economic groups disproportionately, a concept commonly referred to as Environmental Justice.

- 5) **Safety and Security:**

- a. *Improve safety of the transportation system for all users.*

An important strategic pursuit in *New Connections* centers on improving the safety of all travelers whether they are pedestrians, bicyclists, transit users, or motorists, and regardless of whether or not they are residents or visitors. The focus will be on ensuring safety is a key factor in the design and operation of facilities and systems, and behavioral changes through education and enforcement, with a goal of reducing crashes and their severity.

- b. *Cooperate with and support county, regional and state transportation security programs.*

Ensuring the security of the transportation system is complicated by the numerous factors outside the control of the PDCTC. However, this does not negate the need to make a good faith effort to address those safety and security concerns that are within the power of the PDCTC to act on. Much of this effort relies on work being done by agencies with a direct need to address transportation security and emergency response efforts.

For each of these strategic areas, the PDCTC consulted with member agencies, locally elected officials, and the public to determine what transportation projects or studies best achieve the stated objectives – with the understanding that *New Connections* must remain fiscally constrained and that it must adhere to all applicable Federal laws, regulations, and guidance. In addition, this consultation process actively sought input and advice from community based organizations such as environmental conservation councils, local planning coalitions, human service organizations, historic preservation societies, and outdoor recreational groups.

Chapter 2

A Snapshot of Dutchess County

Though often masked in the language of money and projects, in the end, a transportation system really isn't about roads, cars, or trains, but about people. A transportation system has one simple, overarching function: to serve people, whether their own personal mobility needs or the mobility needs of the goods and services they require. Given the intrinsic link between a people and their transportation system, effective transportation planning requires that we understand the nature of the population we serve. Such an understanding seeks to shed light on the one truth in transportation planning: people are the single most important influence on our transportation system. Where people choose to live, work, and play, and how they choose to get to those locations are the reasons we have highways and railroads, and also why organizations like the PDCTC exist.

A transportation system has one simple, overarching function: to serve people, whether their own personal mobility needs or the mobility needs of the goods and services they require.

Historical Overview

The people and communities of Dutchess County remain closely connected to the Hudson River. This relationship dates back to the region's first inhabitants, who used the River as their primary means of travel and venue to conduct commerce. The economic power of the Hudson River naturally led to the creation of numerous settlements. In Dutchess County, the cities of Poughkeepsie and Beacon developed into sizeable and flourishing river-based communities. Over time, portions of the County's population settled away from the River and occupied

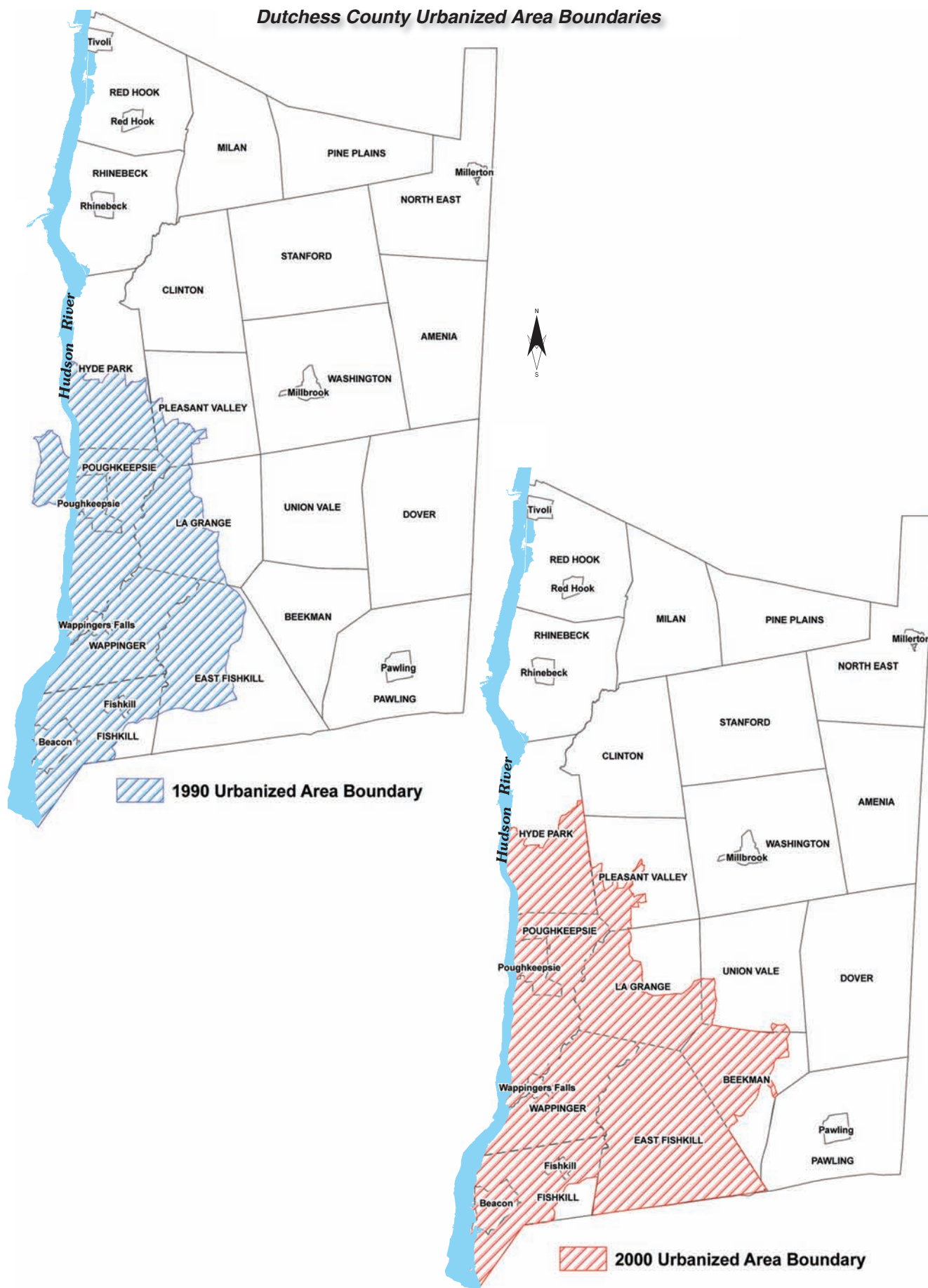


the agriculturally rich inland areas. This settlement pattern led to the creation of new roads, railroads, and ferries - all of which improved the linkages between communities and businesses.

The nature of growth in Dutchess County stayed fairly constant through the age of sail and steam, but changed with the introduction of the private automobile, which greatly expanded people's options on where to live and work. The advent of the auto ushered in a new era for transportation that helped

fuel the economic and population boom of Post-war America, including Dutchess County. Due in part to its proximity to New York City, Dutchess experienced very high rates of population growth throughout the 1950s, 1960s, and 1970s; from 1950-1970 the county's population grew by 85,000. This growth was spurred on by gains in personal wealth and vehicle ownership, which allowed families to live farther away from urban areas. The economic centers of the county underwent a similar shift, with many commercial activities and industries choosing to relocate near major state roads (e.g. Route 9, Route 44, Route 52) and, in turn, closer to the suburban work force. What developed over time was a land use pattern closely connected to the use of private automobiles.

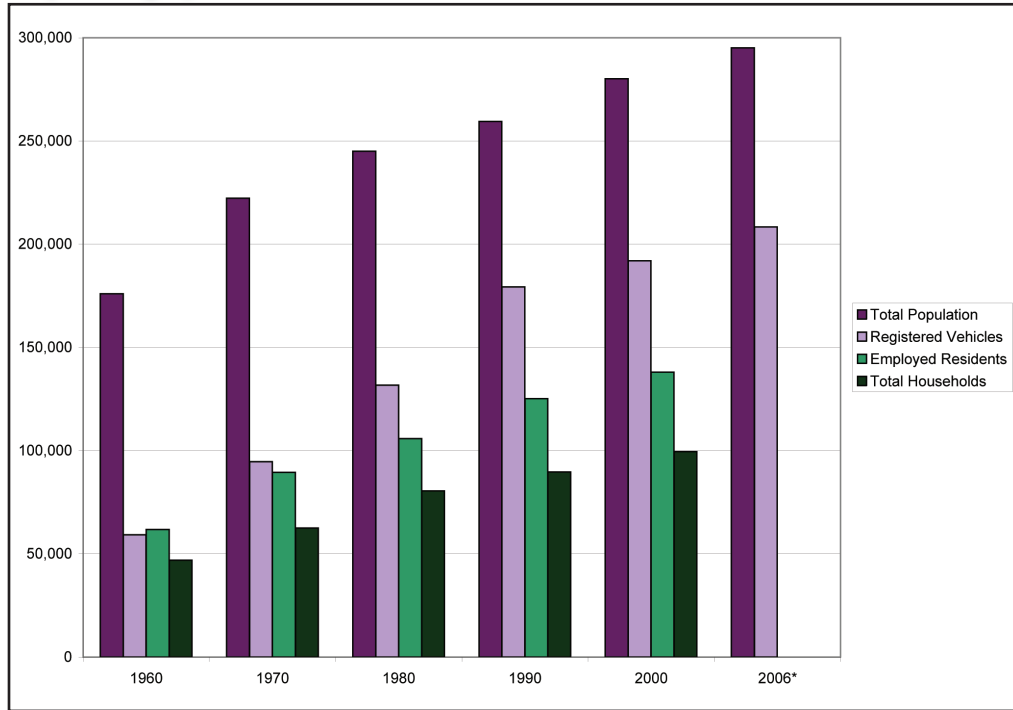
Dutchess County Urbanized Area Boundaries



Population Growth

Population growth: the centuries old companion of Dutchess County. No other social or economic trend has mattered more for transportation planning in Dutchess than the changes in our total population. Other population characteristics (e.g. age, ethnicity, and income), though necessary to understand and certainly influential, do not carry the same weight as sheer population change in trying to understand the demands on our transportation system.

Key Demographic Indicators



Source: US Census Bureau and 1960-1980 Dutchess County Data Books.

*Note: Census estimates (non- ACS) unavailable for total employment and number of households.

It still remains that people require the ability to move, and they do this on our roads, sidewalks, trails, and railroads; the more people, the more these facilities will be used.

According to a Census Bureau estimate for 2006, Dutchess County is home to over 295,000 people. These people are spread across thirty municipalities: two cities, eight villages, and twenty towns, representing a wide spectrum of urban, suburban, and rural development patterns. Collectively, these municipalities support an estimated 2006 population that is over five percent higher than the 280,150 counted in the decennial 2000 Census. This growth in total population continues the movement seen between 1990 and 2000, when the county population grew by eight percent from 259,462 to 280,150. The 2000 Census also showed that the Town of Poughkeepsie, with 42,777 people, was the most populated municipality in Dutchess; the City of Poughkeepsie followed with the second highest population: 29,871. Combined, these two communities account for more than a quarter of the County's total population.

Most Populated Dutchess Communities (2006)

Town of Poughkeepsie	43,913
City of Poughkeepsie	30,050
Town of East Fishkill	29,028
Town of Wappinger	22,671
Town of Hyde Park	20,697

The population growth experienced by Dutchess County between 1990 and 2000 did not occur evenly. Some communities grew at very fast rates; for example the Town of Pawling's population increased by a county-high thirty-three percent (1,315) between 1990 and 2000, followed by Beekman at over thirty percent, and Union Vale at twenty-seven percent. Looking at absolute change, the Towns of Beekman, East Fishkill, and Poughkeepsie accounted for almost half of total population growth during the decade. Census estimates for 2006 show similar population growth patterns, with East Fishkill, Pawling, and Union Vale estimated to have double-digit rates of growth between 2000 and 2006.

The growth in housing units over the past fifteen years directly correlates with the growth in population. Census data showed that from 1990 to 2000 the number of total housing units in Dutchess grew by over eight and a half percent (8,471 units) to 106,103. Those areas that saw the largest increases in population also saw sharp jumps in the number of housing units. The Towns of Beekman, East Fishkill, and Fishkill accounted for the greatest share of the increase, totaling 3,267 new units between 1990 and 2000.

The current ratio of passenger vehicles to people is approximately 1:1.4, moving Dutchess closer to the unique threshold of one registered vehicle for every person in the County.

Impacts on Transportation

A look at vehicle registration data shows how local population growth relates to our transportation system. Between 2000 and 2006, while the County's population grew by over five percent, standard vehicle registrations grew by over eight percent; according to the

Total Population & Registered Vehicles: 2000-2006				
	2000	2006	Change	% Change
Population	280,150	295,146	14,996	5.4%
Registered Vehicles	191,998	208,369	16,371	8.5%

NYS Department of Motor Vehicles, standard vehicle registrations in force increased from almost 192,000 to over 208,000 between 2000 and 2006. Viewed in relation to the County's population, the current ratio of passenger vehicles to people is

approximately 1:1.4, moving Dutchess closer to the unique threshold of one registered vehicle for every person in the County. This supports the trend identified in the past half-century, where rises in vehicle ownership coincide with, and often exceed, growths in population.

The 2001 National Household Travel Survey (NHTS) and the 2000 Census both confirmed the growing presence of private vehicles in households. The 2001 NHTS estimated that over seventy percent of all households in Dutchess County had one or two vehicles available, while the 2000 Census presented a similar pattern with seventy-three percent of households having one or two vehicles available. The percentage of households with three or more vehicles reached twenty-three percent in the 2001 NHTS and almost twenty percent in the 2000 Census.

These rates maintain the upward trend line of vehicle availability in Dutchess households since 1960, when fifteen percent of homes did not have a vehicle, compared to only eight percent in 2000. Two municipalities stood out in the 2000 Census as having the highest number of households with no vehicle available: the City of Poughkeepsie, with almost 3,000 no vehicle households – by far the highest number in Dutchess, and the Town of Poughkeepsie with almost 900. As a percentage of total households, the Village of Fishkill had the highest number of households without a vehicle at over twenty-seven percent.

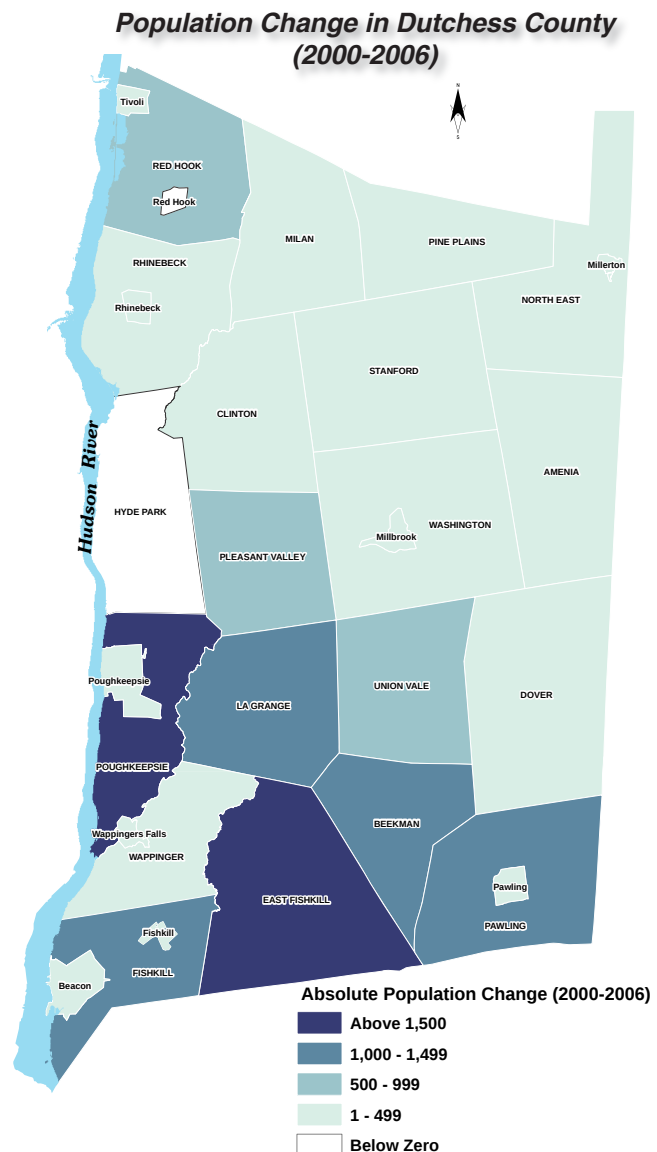
The data brings into focus the fact that the private vehicle is the primary means by which the majority of people in Dutchess move about.

The data brings into focus the fact that the private vehicle is the primary means by which the majority of people in Dutchess move about. That's the majority. The data equally brings into focus the fact that some people, although in the minority, choose or must use other modes of transportation. Though, we should use caution in viewing these transportation choices as isolated decisions that have no effect on one another.

It stands that individual transportation decisions – whether it's driving a car instead of riding a bus, choosing this road over that, or leaving for work five minutes earlier or later – all interact with similar decisions made by others. Combined, these choices impact the entire transportation system and the people that use it.

Of course, vehicles and the roads they travel on represent one part of a complete transportation system; population growth can impact public transportation just as much as it impacts roads. Two examples of this emerge from passenger data from Dutchess County's LOOP bus system and Metro-North Railroad, the local commuter rail service. Between 1990 and 2006, the number of total passengers using the LOOP bus system grew from 547,000 to almost 663,000 – a twenty-one percent increase in sixteen years, which equates to an annual growth rate that is one and a half times faster than the rate of population growth during the same period. The same trends occurred with Metro-North Railroad, where passenger boardings at stations in Dutchess County rose almost 117 percent on weekdays and over 131 percent on weekends between 1990 and 2006; although commuter rail ridership serves a small share of overall travel, its annual rate of growth exceeds population growth by an 8-to-1 margin.

The variations in how much and where the County's population grew support the oft-cited observation that Southern Dutchess County has faced intense development pressure, which in turn has placed equal pressure on the area's transportation system. Yet, we need to realize that the effects of recent population growth, including their impacts on transportation, do not occur in a vacuum. Very few people pursue their life's activities without leaving the confines of their city, town, or village. Growth in one location impacts much more than a single community, it impacts an entire region. This impact is evident as



Source: US Census Bureau Estimates.

we look at where and how people participate in one of life's major activities: work.

Work Locations

Knowing where we work and how we get there remains an essential component of understanding how our transportation system is used and how communities interact with one another. More often than not, discussions about the effectiveness of our transportation system inevitably turn to its ability to move people to and from their jobs – although people's mobility requirements clearly go beyond just getting to work. Nevertheless, employment data tells us a lot about Dutchess County, the place and its people.

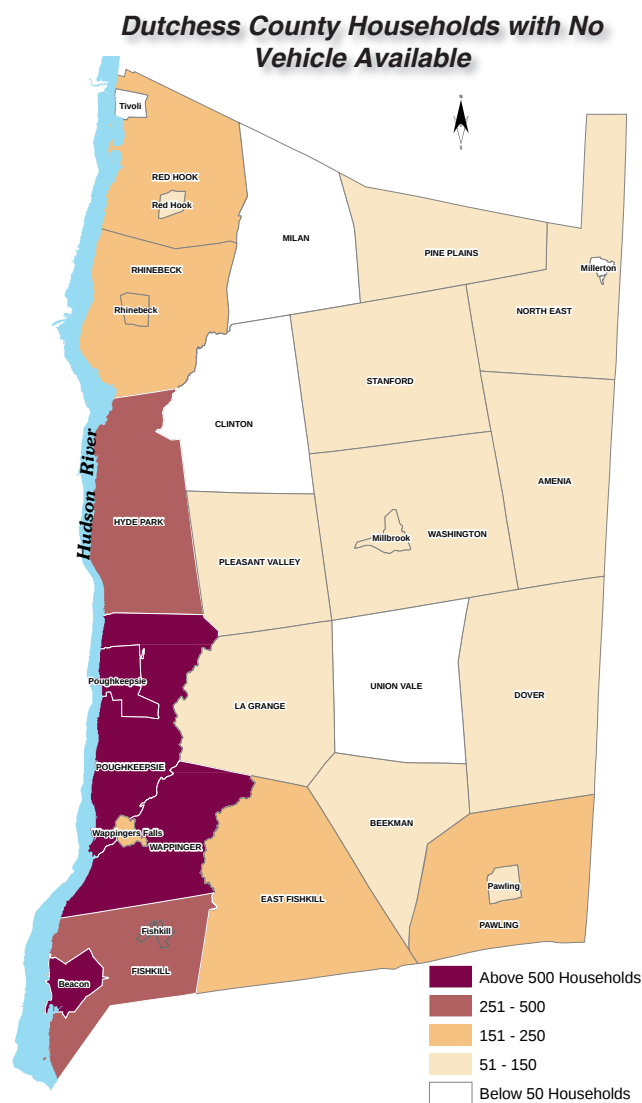
The 2000 Census identified 128,437 workers aged sixteen and over living in Dutchess County, almost forty-six percent of the County's total population. Compared to the 1990 Census, the total number of residents who worked in 2000 grew at a much slower rate (two percent) than the County's total population. This trend can be partly explained by a demographic shift in the population. Where between 1990 and 2000 there was a twenty-one percent drop in

Most Households with No Vehicle (2000)

City of Poughkeepsie	2,933
Town of Poughkeepsie	873
City of Beacon	749
Town of Wappinger	523
Town of Fishkill	493

those aged twenty to thirty-four, coupled with a twelve percent increase in children less than fourteen and a thirteen and a half percent increase in those over sixty-five. More interestingly, the 2000 Census identified some noticeable changes in work locations for County residents.

A recent perception holds that many of the County's new residents commute to jobs outside Dutchess, most notably Westchester County and New York City. A comparison of 1990 and 2000 Census data lends support to that perception. In those ten years, the share of working residents who commuted outside Dutchess grew by eight percent to 39,474; the same growth rate in total population. Of the residents commuting outside Dutchess County, almost twelve percent worked in Westchester County: the most popular non-Dutchess work location; this was a three percent increase from 1990. Other areas to the south held on to their popularity from 1990, with four and a half percent working in New York City and three and a half percent in Putnam County. County residents also commuted across the Hudson River to Orange and Ulster counties, with three



Most Popular Out-of-County Work Destinations (2000)

Westchester Co.	14,903
New York City	5,798
Putnam Co.	4,494
Connecticut	3,834
Orange Co.	3,828

percent of working residents working in each county. Connecticut, mainly Fairfield and Litchfield counties, increased its appeal to working residents with three percent commuting there to work.

The 2000 Census showed that the communities with a high share of their

residents working outside the county included the very same communities with some of the highest increases in population: Beekman and East Fishkill each had about fifty percent of their workforce commuting outside the County. The Town of Pawling, with the highest rate of population growth, had the highest share of residents working outside the County, almost fifty-nine percent. Inversely, the Town of Hyde Park, City of Poughkeepsie, and Village of Millbrook had the lowest share of their residents working outside Dutchess, with each at or below fifteen percent.

As would be expected, the communities with a large share of their population commuting outside Dutchess County also had the longest average commute times. Workers from the Towns of Beekman, East Fishkill, and Pawling had the longest average commute times in Dutchess: each around thirty-eight minutes. For the County as a whole, the average commute time increased by over five minutes between 1990 and 2000 to almost 30 minutes.

Most Residents Working Outside Dutchess (2000)

Town of East Fishkill	6,547
Town of Wappinger	4,337
Town of Poughkeepsie	3,753
Town of Fishkill	2,998
City of Beacon	2,705

The 2000 Census not only tells a lot about our residents, but also a great deal about our workers. The Census indicated that 114,354 people worked in Dutchess, with seventy-eight percent (88,963) commuting from within Dutchess County. Ulster County provided the next highest number of workers to Dutchess: 10,685 or a nine percent share of those working

in the County. The remaining workers came from neighboring areas, including Orange County with 5,160 (four and a half percent) and Columbia County with 2,042 (almost two percent). Compared to 1990 Census data, the distribution of where in-bound workers originated from remained the same. Though, between 1990 and 2000, Dutchess experienced a five percent decrease in the total number of workers working in the County.

As with population, the Town and City of Poughkeepsie ranked the highest when looking at the number of people working in a municipality. According to the 2000 Census Transportation Planning Package (CTPP), almost 32,000 people traveled to the Town of Poughkeepsie to work, and over 16,000 commuted to the City of Poughkeepsie. Combined, these two communities served as the work location for forty-two percent of all workers working in Dutchess County; this not only includes workers commuting from within Dutchess, but also those coming from outside the County.

Comparing the number of residents who work outside Dutchess (out-flow) between the number of workers traveling into Dutchess to work (in-flow), we see an imbalance, best described as a worker deficit, in that the County loses more workers to other counties than it gains. Specifically, the County sent out 39,474 workers to non-Dutchess communities, while it

only gained 25,391 from those same communities. This represents a wider gap than was present in 1990, when Dutchess sent 29,304 workers out, but gained 24,835 in return; though still a net loss.

Impacts on Transportation

The data on employment and work locations demonstrates the close connection among the counties of the Mid-Hudson Valley and the greater New York metropolitan area. Though more than two-thirds of Dutchess residents work within the County, some communities, especially those to the south, still rely on other counties to supply jobs for their residents, just as out-of-county employers rely on Dutchess County to provide affordable living space for their workers. The reverse relationship holds true for areas such as Ulster County, where Dutchess supplies jobs and Ulster the living space. These are generalizations of course, but they help us see the big picture. The idea that a single county can act as the sole source of housing and jobs for all its residents is unrealistic. The question we must

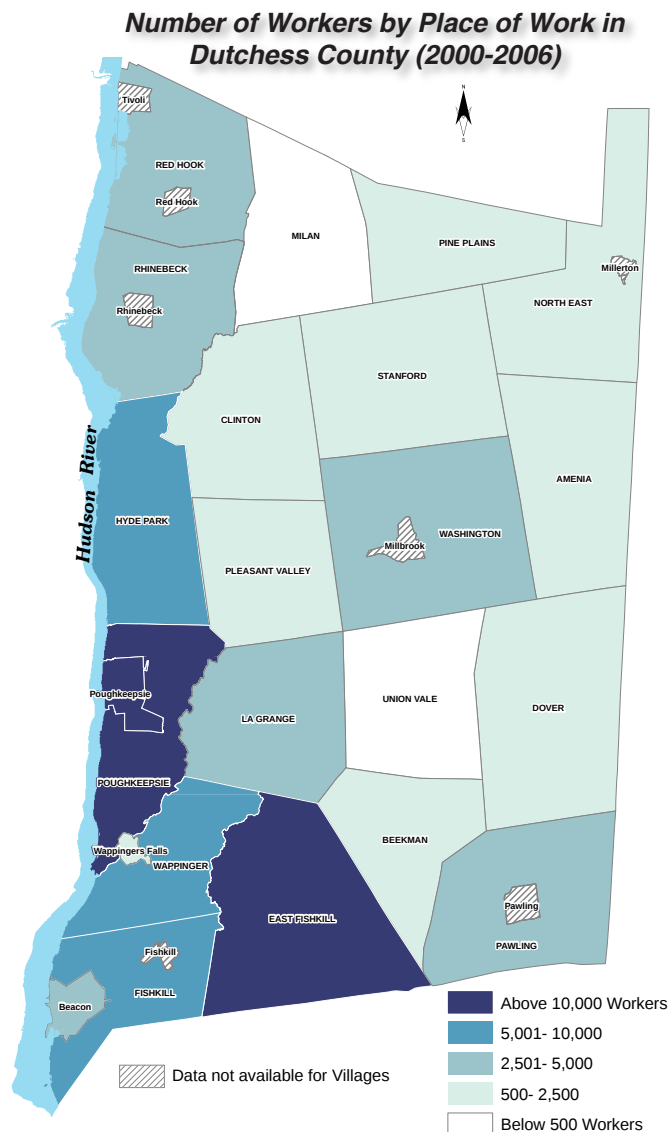
Data on employment and work locations demonstrates the close connection among the counties of the Mid-Hudson Valley and the greater New York metropolitan area.

ask ourselves, given this reality, is how we manage the good and especially the bad associated with such a relationship – whether it's increased demand on public services, rising housing costs, longer commutes, or spreading suburban sprawl. The same holds true for our transportation system, except the issue at hand is not one of interdependence, but dependence.

Transportation Choice

The majority of Dutchess County's residents depend on the private automobile for their transportation needs. This reality has taken decades to achieve and will remain for years to come, as will the impacts this choice has on land use patterns and the transportation system.

The 2000 Census showed just how dependent the County is on automobiles. Of the 128,437 workers in Dutchess, over seventy-eight percent drove alone to work, almost the same rate as was reported in the 1990 Census. This left twenty-two percent of all workers using other modes of transportation: carpooling, transit, walking, and bicycling, plus those who worked at



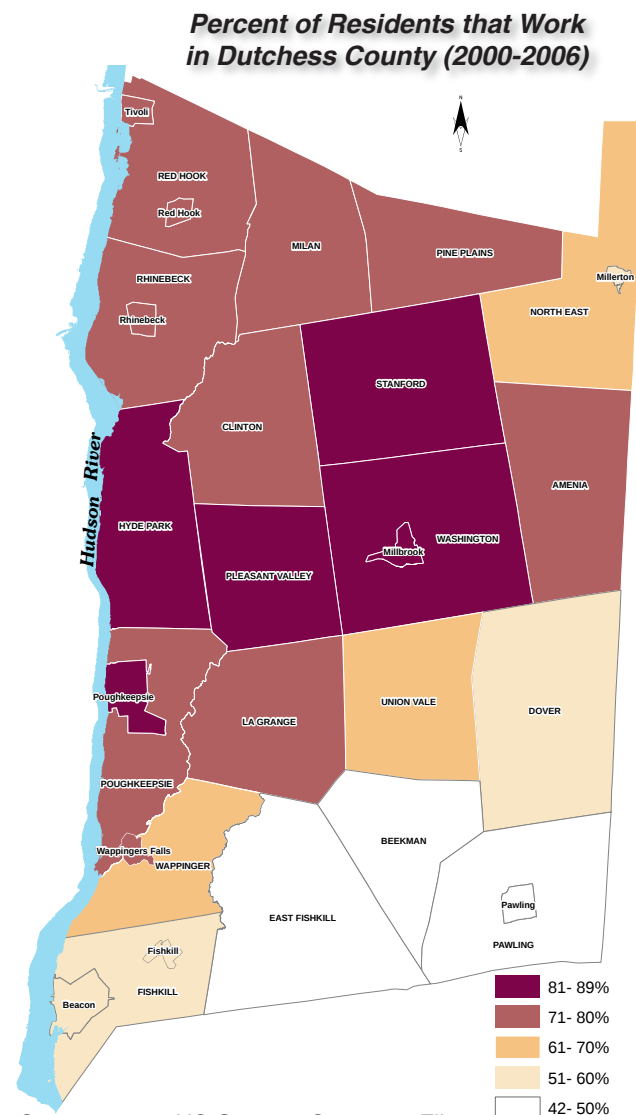
Source: Census Transportation Planning Package, Part 2.

Means of Transportation to Work (2000)	
Drove Alone	100,776
Carpooled	12,347
Public Transportation	5,342
Walked	4,956
Other	854
Worked at Home	4,162

home. Of those modes, carpooling, at almost ten percent stood as the second most popular way to get to work, followed by transit at slightly over four percent. The remaining modes ranged from just under four percent to less than one. This modal distribution closely resembled national rates. More recent 2005 American Community Survey (ACS) estimates revealed similar commuting choices for workers living in Dutchess County.

People's preference for using a private vehicle to commute varies throughout Dutchess County. The 2000 Census captured this variation among the thirty municipalities, where some commuters were more inclined to drive alone than to car pool or use transit. As might be expected, workers in rural and suburban communities showed a higher tendency to drive alone to work: over eighty-five percent of workers in the Towns of Clinton, Dover, East Fishkill, LaGrange, Pleasant Valley, and Union Vale, and the Village of Rhinebeck chose to drive alone. Notwithstanding the City of Poughkeepsie and Town of Pine Plains, no less than seventy-five percent of the workers in each of the thirty municipalities chose to drive alone to work; the Town of Pine Plains held the highest share of workers using carpools in the County, at well over fourteen percent.

Communities with a smaller share of their workers driving alone tended to have a higher share using transit or walking to work. Ten percent of workers in the City of Poughkeepsie, benefiting from a more robust transit network, used transit for commuting: the highest rate in Dutchess. High rates of transit commuters were also found in the City of Beacon, Town of Fishkill, and Town and Village of Pawling, each over six percent. Municipalities with a higher share of workers walking to work included the Village of Millbrook at almost eleven percent, the county-high, and the Towns of North East and Red Hook each at almost ten percent. More importantly, in terms of raw numbers, the Town of Poughkeepsie led the County with over 1,700 workers walking to work, followed by the City of Poughkeepsie with almost 850; the reverse held true for transit users, with the City having almost 1,200 workers using transit, the county-high, followed by the Town with over 730 transit users.



Source: 2000 US Census, Summary File 3.

The variation in how residents commute to work relates a great deal, perhaps exclusively, to the availability and convenience of different modes of transportation.

Travel Behavior

The 2001 National Household Travel Survey (NHTS), which includes additional survey data for each New York State MPO area, provides the most current information on travel behavior in Dutchess County. The fourteen month survey reveals a great deal about the transportation choices made by Dutchess residents, including the times, distances, modes, and reasons surrounding our travel.

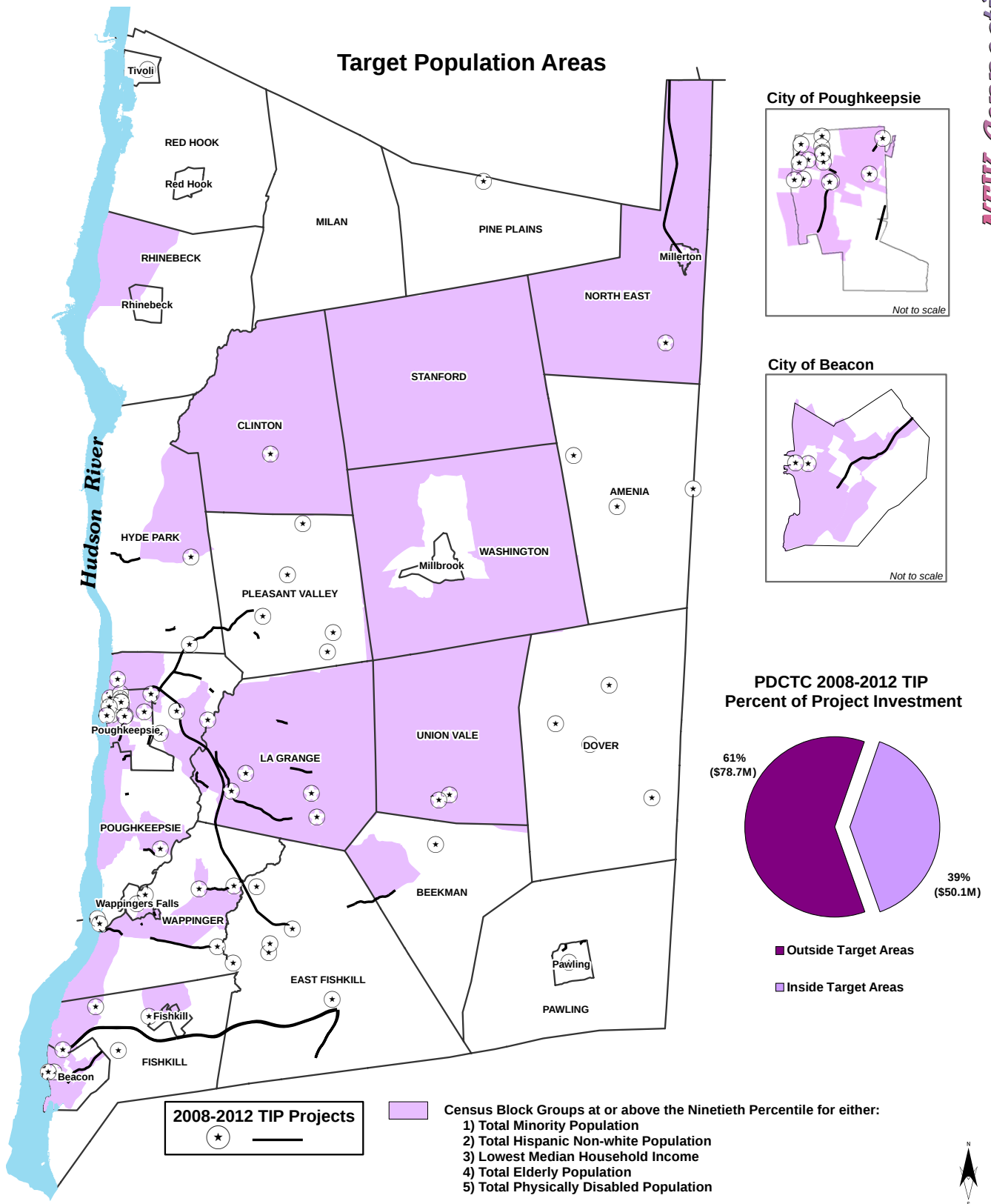
One of the interesting aspects of the 2001 NHTS data pertains to trip purposes. Though transportation planning often focuses on commuting behavior, the survey showed that earning a living ranked as the third most cited reason for making a trip. Respondents actually made the most trips so they could conduct family/personal business, followed by social/recreational activities. This ranking held regardless of whether a person made a trip on a weekday or weekend. The 2001 NHTS estimated that approximately forty-five percent of all daily person trips in Dutchess (weekday/weekend combined) fell under the family/personal business category, followed by social/recreational purposes at twenty-five percent, and then work related purposes at just eighteen percent. Work related trip purposes naturally increased on weekdays, but only to a twenty-one percent share of all weekday trips; correspondingly, recreational trips increased on weekends. These distributions mirror national patterns.

The 2001 NHTS also exposed the travel characteristics of different trip purposes in Dutchess. In general, people travel further to earn a living than they do for other trip purposes; one of the few exceptions being vacations. For weekday travel across all modes, the survey estimated that people traveled an average of sixteen miles to get to work, compared to ten miles for social/recreational purposes, and over six miles for family/personal business. Comparable distances were found for weekend travel, though social/recreational based trips averaged longer at almost twenty miles. As to time of day, the average number of trips per person (for all trip purposes) was highest between 9:00 a.m. – 1:00 p.m. at 1.06 trips, followed by 1:00 – 4:00 p.m. at 0.92 trips per person. Though, the 6:00 a.m. – 9:00 a.m. period was still the most popular time to travel for work. Looking at average daily person trips, 2.13 of 3.79 daily trips were five miles or less (within biking distance), while 0.23 trips were thirty-one miles or more (carpooling distance).

The 2001 NHTS, along with preceding surveys, point to the reality that people use a transportation system for different purposes and to varying degrees; and in that regard, the people of Dutchess County are not much different from most other communities.

Environmental Justice

The Poughkeepsie-Dutchess County Transportation Council (PDCTC) provides assurance that no person conducting business with the PDCTC, on the grounds of race, color, national origin, sex, disability or age be excluded from participation in, be denied the benefits of, or otherwise subjected to discrimination under any program or activity the PDCTC administers. This assurance is in compliance with Title VI of the Civil Rights Act of 1964 and related statutes.



(Source: 2000 Census Summary Files 1 & 3)

Public policy, including transportation policy, has and will continue to affect communities in varying ways. Sometimes, transportation decisions unintentionally degrade the quality of life for areas with large numbers of disadvantaged population groups. Environmental justice seeks to prevent this, ensuring that the positive and negative effects of transportation decisions are not biased towards certain groups and areas.

Public policy, including transportation policy, has and will continue to affect communities in varying ways.

The PDCTC remains committed to the principles of environmental justice. In preparation of the current 2008-2012 TIP and the previous Regional Transportation Plan, the PDCTC sought to ensure that the projects and policies it recommended did not negatively impact populations considered most sensitive to our policies. In support of this goal, the PDCTC has continued to refine the process it uses to locate areas within the County that contain the highest concentrations of people requiring increased awareness by the Council.

The latest analysis uses 2000 Census Block Group data for five specific characteristics: total minority population, total Hispanic Non-white population, total elderly population (aged 65 and over), median household income, and total physically disabled. For each characteristic, the ninetieth percentile was calculated and mapped. The ninetieth percentile designation meaning that ninety percent of the data values lie at or below the ninetieth percentile, while ten percent lie above. The results for each of these five analyses were combined into a single target population map, which showed all Block Groups at the ninetieth percentile for any one of the characteristics. This identified 54 Block Groups, ranging from urban, suburban, and rural areas, which require increased awareness in the transportation planning process.

To measure the distribution of transportation investments across Dutchess County, staff overlaid the target population map with the projects in the 2008-2012 TIP. Only projects suitable for mapping were included, since system-wide preventive maintenance projects such as lane striping and repaving do not have a specific geographic location. The analysis showed that 39 percent (approximately \$50.1 million) of the total transportation investments mapped were located in target population areas, which represent 36.8 percent of the total population in Dutchess County.

Though the analysis demonstrates an equitable distribution of transportation investment in those areas with high concentrations of sensitive populations, the PDCTC acknowledges that not all projects may benefit those groups and may in fact worsen their quality of life. However, quantifying such effects has proved problematic. Instead, staff has and will evaluate such effects on a project-by-project basis, always mindful of how a project will impact sensitive populations identified through this and future analyses.

Immigration

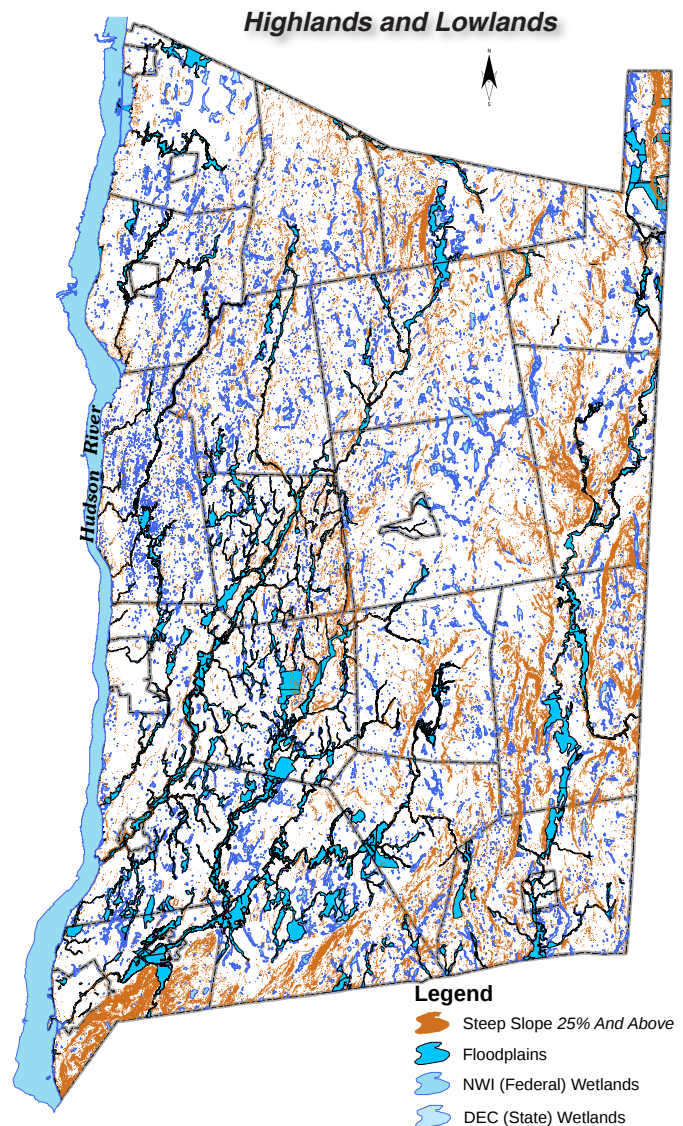
Across many American communities, immigration, both legal and illegal, has played an increasingly important role in explaining the population growth that has occurred over the past fifteen years. Dutchess County has not been immune to this trend; according to the US Census, the County's number of self-identified non-U.S. citizens grew from 6,500 to over 12,300 between 1990 and 2000 (an 88 percent increase). Yet, accurately quantifying this segment of

the population, especially illegal immigrants and migrant workers, remains problematic given their likelihood of being under-represented in traditional Census products. This holds true for decennial population counts, but also with regard to other demographic data: housing, employment, and transportation/commuting. This fact forces us to assume that current Census data is conservative in nature and that the numbers on the ground (i.e. population, workers) are higher than reported.

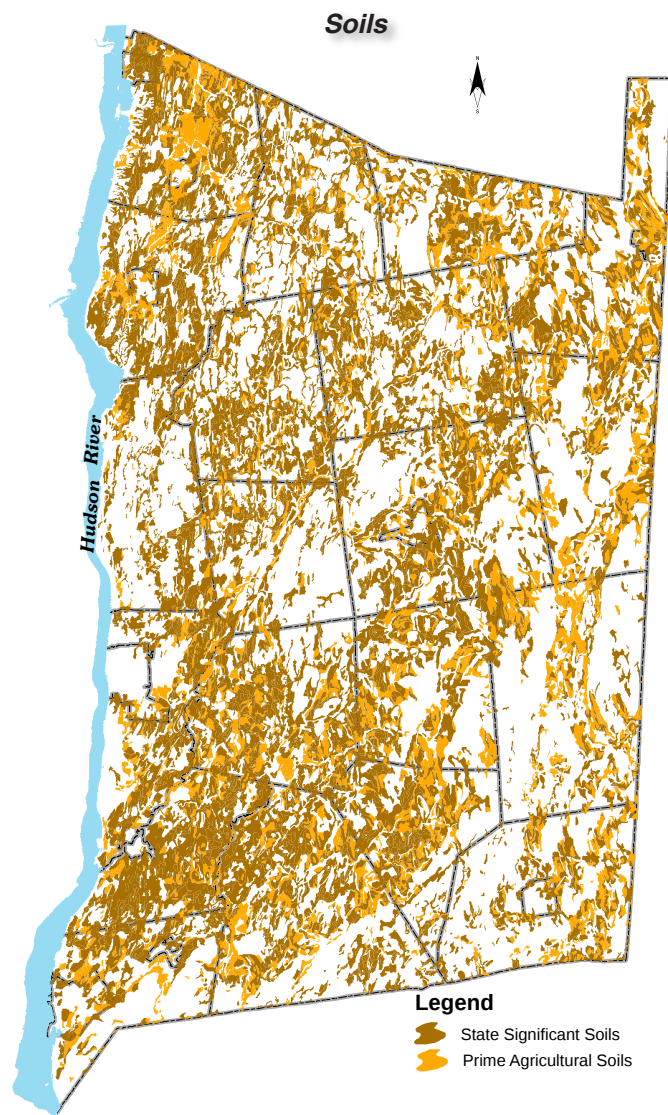
Environmental/Cultural Resources

The environment and cultural resources in Dutchess County play an important role in the daily activities of the residents of the county and the travelers who pass through it. These resources also need to be considered when planning future transportation projects. Based on their importance, staff reviewed several documents including *Greenway Connections*, *Dutchess County Natural Resources*, *2006 New York State Open Space Plan*, and others to identify existing inventories of resources and plans that could be integrated into our planning activities. The following descriptions and maps of resources are from those documents and resources from the Dutchess County GIS database.

- Highlands:** Ridgelines and hillsides providing large blocks of land for wildlife habitat, important species and scenic woodlands. Because of steep slopes, exposed bedrock and shallow erodible soils, Highlands are generally only appropriate for scattered housing, forests, and recreational uses. The Hudson Highlands along the County's southern boundary have acted as a barrier for expanding metropolitan development out of New York City.
- Lowlands:** The waterways, wetlands and floodplain systems of the valley floors. The 100-year floodplains are regulated by municipalities to restrict residential and other uses that would be damaged by high waters. They store heavy storm water flows, so filling floodplains for new construction often endangers downstream properties.
- Steep Slopes:** The County has several areas of concentrated steep slopes (greater than 25% grade) which are located in the Southern portion of the County (part of the Hudson Highlands) and the Taconic Ridge in the eastern part of the county, which separates the Harlem Valley from the rest of the County.



- **Rivers and Streams:** The Hudson River is the most significant river within the region due to its size and location. The people and communities of Dutchess County have and still remain closely connected to the Hudson River. This relationship dates back to the region's first settlers, who used the River as their primary means of travel and venue to conduct commerce. It acts as the western border of the county, it limits movement between Dutchess and Ulster and Orange Counties either across one of three bridges or by Ferry, and it carries a significant amount of freight throughout the region and state.
- **Wetlands:** Areas where the water is at or near the surface part of 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 both at the state and federal levels, with state wetlands also including 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 – perfect for potential trails.
- **Floodplains:** Flooding is common along many of the region's rivers and streams. 100-year floodplains occur along every river and stream in the region. Large areas along the Ten Mile River and Wappinger Creek are particularly prone to flooding.
- **Soils:** Prime agricultural soils are evident throughout much of the region. Particularly important locations exist along the major stream valleys and Central and Northern Dutchess County.
- **Forest Coverage:** Large stands of woods exist in almost every part of the county, with the exception of the most densely urbanized areas, particularly around the City of Poughkeepsie, and throughout rural area where prime agricultural soil exist.
- **Cultural/Heritage Assets:** These areas include the Hudson River Valley National Heritage Area, major lakes and riverfronts, and the Hudson River Greenway Trail. Such initiatives as the Hudson River Greenway Plan aim to enhance areas along the Hudson River by providing greater access to the waterfront and preserving areas along the Hudson River Corridor.



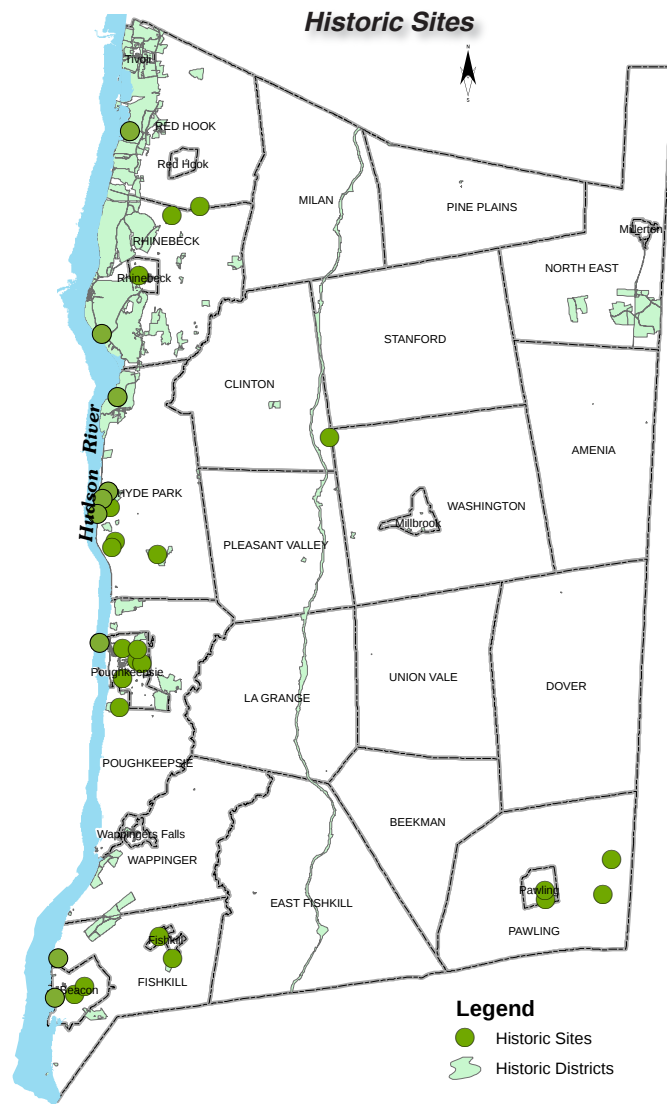
- **Historic Sites:** The Dutchess County Planning Department maintains a listing of Historic Places on the National Register. That list includes over 230 listings. Areas with historic significance in the region include the Vanderbilt Mansion National Historic Site, Franklin D. Roosevelt National Historic Site, the Academy Street Historic District in the City of Poughkeepsie, and the Hudson River Historic District to name a few. There are also over 30 historic site museums in the County as well.
- **Natural Resources:** The 2006 *New York State Open Space Conservation Plan* prepared by the Department of Environmental Conservation (NYSDEC), the Office of Parks, Recreation and Historic Preservation and the Department of State identifies a number of initiatives in the County aimed at protecting and preserving natural resources in the County.

Among the natural areas the State highlighted in the Plan are the following:

- **Hudson Highlands** (including the Fishkill Ridge)
- **Great Swamp** (Dover and Pawling)
- **Hudson River Estuary and Greenway Trail Corridor**
- **New York City Watershed Lands**
- **Taconic Ridge and Harlem Valley**
- **Turtle Conservation Sites**

These areas contain ecological, scenic, biodiversity and recreational resources, which the state has identified for protection. Potential protection measures include property acquisition, resource management, and appropriate mitigation techniques.

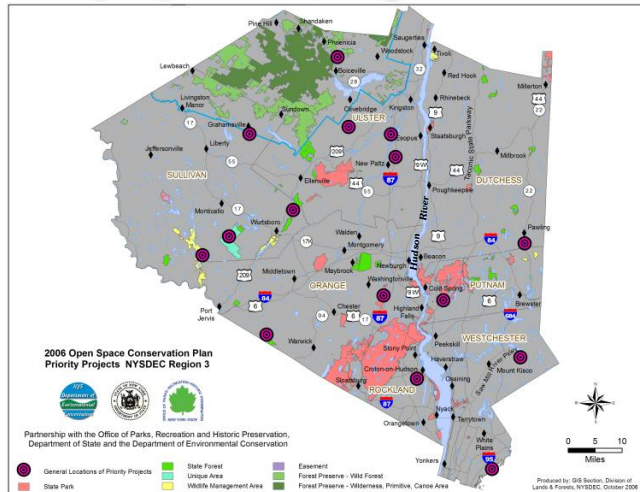
- **Critical Environmental Areas CEAs:** Local agencies may designate specific geographic areas within their boundaries as “Critical Environmental Areas” (CEAs). State agencies may also designate geographic areas they own, manage or regulate.



To be designated as a CEA, an area must have an exceptional or unique character with respect to one or more of the following:

- a benefit or threat to human health;
- a 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.

2006 Open Space Conservation Plan Priority Projects NYSDEC Region 3



Following designation, the potential impact of any Type I or Unlisted Action on the environmental characteristics of the CEA is a relevant area of environmental concern and must be evaluated in the determination of significance prepared pursuant to Section 617.7 of SEQR.

There a number of activities currently underway to address some of the concerns noted above:

- **Dutchess County Agriculture and Farmland Protection Plan** The Open Space and Farmland Protection Matching Grant Program was established as a proposal of the County Executive and adopted in December 1999 to implement the Dutchess County Agriculture and Farmland Protection Plan and to protect important agricultural and open space resources. Conservation of agricultural lands provide many benefits to our region; it protects the environment, promotes local sustainability; and is an important component of the local economy.
- **Dutchess County Partnership for Manageable Growth** is designed to assist the County and its municipalities implement the recommendations of adopted planning documents including Directions: The Plan for Dutchess County, the Dutchess County Agriculture and Farmland Protection Plan, Greenway Connections, and the Dutchess County Water and Wastewater Plan. It enhances the current Open Space and Farmland Protection Matching Grant Program with the addition of a water and wastewater partnership program for the improvement of water and sewer services throughout the County and initiatives to further Greenway Partnerships between the County and its municipalities.

Environmental Mitigation

The review of county and regional resource inventories has allowed the PDCTC to identify important cultural and environmental resources and action plans. The next step is recognizing those critical areas and planning documents and ensuring the transportation planning process is consistent with applicable federal, state, and local programs, goals and objectives and considers

appropriate environmental mitigation activities. As required through SAFETEA, the Metropolitan Transportation Plan needs to discuss Environmental Mitigation:

“A transportation plan shall. . include a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan. The discussion shall be developed in consultation with Federal, State, and tribal wildlife, land management, and regulatory agencies.”

Individual PDCTC members are already engaged in environmental mitigation activities at the planning and project-level through (a) the implementation of NEPA and SEQRA regulations and (b) the development of Context Sensitive Solutions (CSS) which ensure that projects are consistent with community objectives, and preserve environmental, scenic, aesthetic, historic, and natural resource values of the area in which they are located.

New Connections is a policy level document with few specific long-term projects for which identifying potential mitigation activities would be appropriate. Specific mitigation measures will be examined at the project phase through the SEQR/NEPA process and are therefore beyond the scope of this document. Identifying potential environmental mitigation actions is routinely considered as part of transportation planning studies. The PDCTC also maintains a geographic information system (GIS) to support its transportation planning efforts. Among the information that is readily available are county-wide data layers for watershed boundaries, streams and ponds, wetlands, soils and steep slopes.

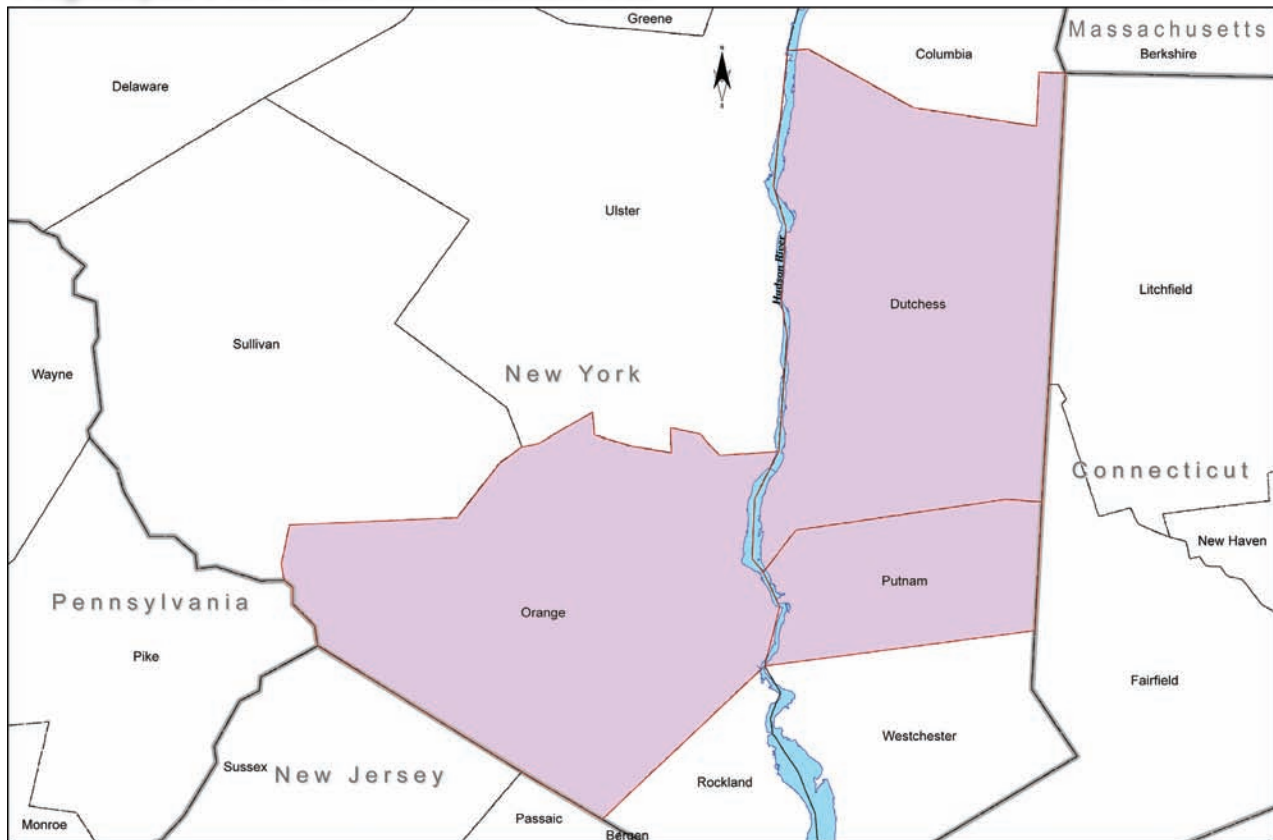
Mitigation is normally evaluated during the design of a project and the selection of project alternatives. However, mitigation actions can also be stand-alone projects intended to offset or replace a certain environmental function(s) that was lost as a result of construction of the transportation project. Examples include storm water management facilities, wetland replacement projects, stream restoration projects, reforestation projects, construction of sound walls, replacement of parklands and wildlife crossing structures. A typical highway runoff mitigation situation occurs when the runoff from a section of roadway is causing erosion and sedimentation problems that are impacting a wetland and/or a lake. Possible mitigation would be to rebuild and/or repair drainage ditches. If it is discovered that the time of year of a roadway's construction may impact some endangered species, the project's construction schedule is adjusted to minimize its impact on the nesting habits of the species. Archeologists are called in during the construction phase of a project in the event that a potential historic site, previously unknown, is uncovered.

Environmental mitigation measures can be funded with federal, state and local monies. From the federal standpoint, such activities can be a part of the actual construction activity (normal federal-aid monies) or can be with FHWA transportation enhancement (TE) funding for stand-alone projects. In both causes, the types of actions eligible for funding are generally the same, although TE projects have more latitude in eligibility as long as the site can relate to a transportation facility.

Air Quality/Energy

Air quality has become an increasing concern as the nature and extent of pollution have become better identified and its adverse effects upon the public health made clearer. Federal legislation such as the Clean Air Act Amendments of 1990 (CAAA) and SAFETEA have detailed the

Poughkeepsie 8-Hour Ozone Non-Attainment Area



linkage between transportation planning and air quality. The CAAA set air quality standards through the National Ambient Air Quality Standards (NAAQS). In areas where that standard is not met, it must be demonstrated that transportation plans and projects will reduce motor vehicle emissions.

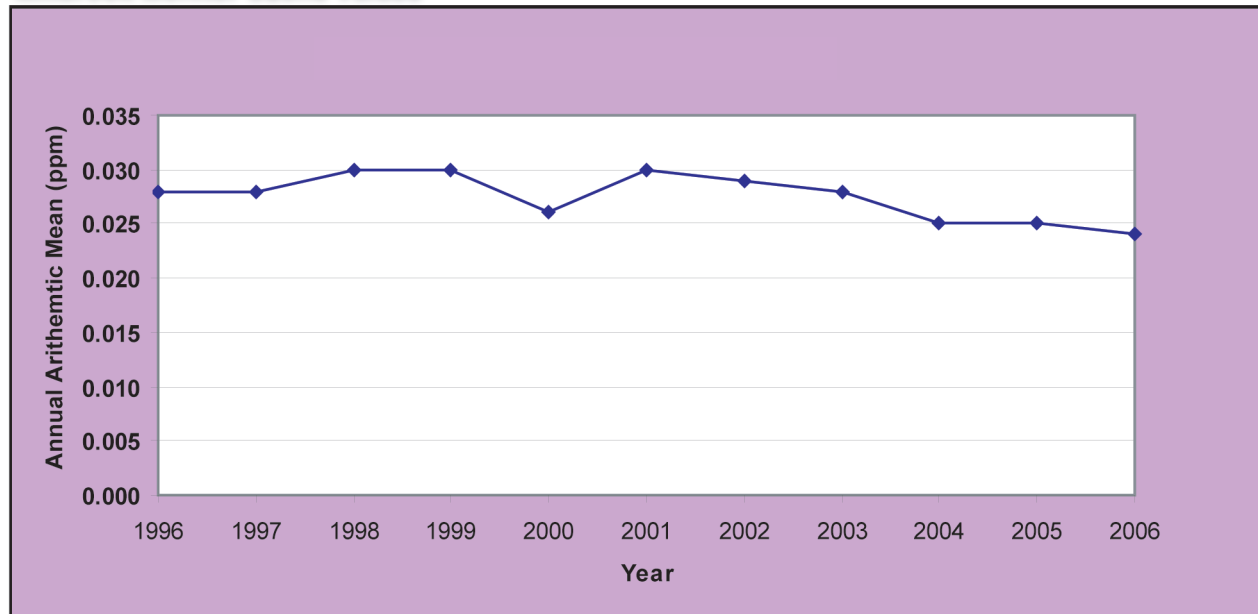
Dutchess County is part of the Poughkeepsie Ozone Non-attainment Area, which also includes Putnam and Orange counties. Effective June 15, 2004, the USEPA designated Dutchess, Orange, and Putnam County to be a Non-attainment Area under the 8-hour ozone standard.

While Dutchess County is a non-attainment area for Ozone, the monitor (IES-Millbrook) that records that data has shown some improvement in the levels of Ozone. The annual average parts per million(ppm) of Ozone has dropped from 0.028 in 1996 to 0.024 in 2006¹. The new 8-hour standard is based upon an 8-hour average value of ozone. The test is that the 4th Highest Daily Maximum 8-Hour Average during the last 3 years not exceed an average of 0.084 ppm. The 4th highest daily maximum value in Dutchess County has dropped from 0.076 in 2004 to 0.064 in 2006, with a three year average of 0.080 ppm. While the numbers are showing decreases, the overall trend has not justified re-designation as an attainment area for Ozone.

The PDCTC works with various agencies in regards to air quality and conformity. Air quality, as it pertains to the operations of the PDCTC and its member agencies, includes the state and federal requirements for transportation conformity, project level analysis for Congestion Mitigation/Air Quality (CMAQ) funding, and requirements for the State Energy Plan (SEP)

¹ New York State Ambient Air Quality Report for 2006, NYSDEC

Millbrook Monitor Ozone Values



Source: New York State Ambient Air Quality Report for 2006, NYSDEC.

and Greenhouse Gas analysis. The Interagency Consulting Group (ICG) is federally mandated to exist as part of the conformity rule. The ICG operates on a consensus basis and is required to approve the PDCTC's conformity analysis. This group consists of the following agencies: the PDCTC, Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the New York State Department of Transportation Environmental Analysis Bureau (NYSDOT EAB), the New York State Department of Environmental Conservation (NYSDEC) and the Environmental Protection Agency (EPA). The PDCTC is in constant communication with the ICG to ensure that conformity is met.

New York State Energy Plan

The New York State Energy Plan (June 2002) was developed by the New York State Energy Planning Board to provide guidance to state agencies regarding energy development and use. There are five major policy objectives:

1. Supporting the continued safe, secure, and reliable operation of the State's energy and transportation systems infrastructures;
2. Stimulating sustainable economic growth, technological innovation, and job growth in the State's energy and transportation sectors, through competitive market development and government support;
3. Increasing energy diversity in all sectors of the State's economy through greater use of energy efficiency technologies, and alternative energy resources, including renewable-based energy;
4. Promoting and achieving a cleaner and healthier environment; and,
5. Ensuring fairness, equity, and consumer protections in an increasingly competitive market economy.

Transportation is a key component of the energy sector in New York State, and the Energy Plan discusses the ways that the State's transportation needs are related to the "complementary goals of fostering economic growth, preserving and enhancing the environment for an improved quality of life, and increasing energy efficiency."

The NYSDOT EAB is responsible for making sure that the PDCTC adheres to the State Energy Plan and related Greenhouse Gas analysis requirements, as these are State mandated activities. The PDCTC through consultation with its various member agencies and the previously outlined consortium of interested parties (ICG) actively solicits input into this policy level plan.

Energy Use

At the most basic level, energy use in transportation is a combination of distance traveled (e.g. vehicle miles traveled) and fuel efficiency (e.g. miles per gallon). Reducing the amount of energy used for transportation can be accomplished by reducing miles traveled, increasing the number of people in a vehicle, increasing the fuel efficiency of vehicles, or by reducing delay created by congestion. While there currently isn't a standard for greenhouse gases and energy use, they are of concern and the NYS Energy Plan points to several actions that can help limit and or reduce energy consumption.

The Energy Plan examines a number of different actions that could help reduce total energy consumption and/or increase use of renewable or alternative energy sources. Actions that hold some promise for Dutchess County include:

- Intersection Management – signal coordination, timing improvements, turning lanes
- Intelligent Transportation Systems (ITS) projects – signal improvements, traveler information facilities
- Transportation Demand Management (TDM) activities – carpool programs, park and ride facilities, inter-county bus and ferry services
- On-going commitment to infrastructure maintenance
- Increasing efficiency of the system to reduce congestion
- Maintaining local transit services
- Planning and implementing new bicycle and pedestrian facilities
- Exploring opportunities for the use of alternative fuels by local transit systems

Most of these activities are among the major recommendations of *New Connections*, and should assist Dutchess County and New York State to achieve the overall goals of the Energy Plan.

Snapshot Summary

The information presented in this chapter points to an obvious truth: Dutchess County is a multifaceted area, both in how its people interact and the resources available to it. Whether its population growth, more vehicles on the road, expanding land consumption, environmental constraints, or poor air quality, the challenges facing the County are numerous and complex – and solely relying on a transportation solution to address them does not guarantee success, because many of the challenges are influenced by decisions made outside the realm of transportation. In addition, we should acknowledge that many of the challenges facing our transportation system are not homegrown, but byproducts of national and regional trends outside the control of a single county.

The mobility challenges facing the County are numerous and complex – and solely relying on a transportation solution to address them does not guarantee success

Chapter 3

Transportation System

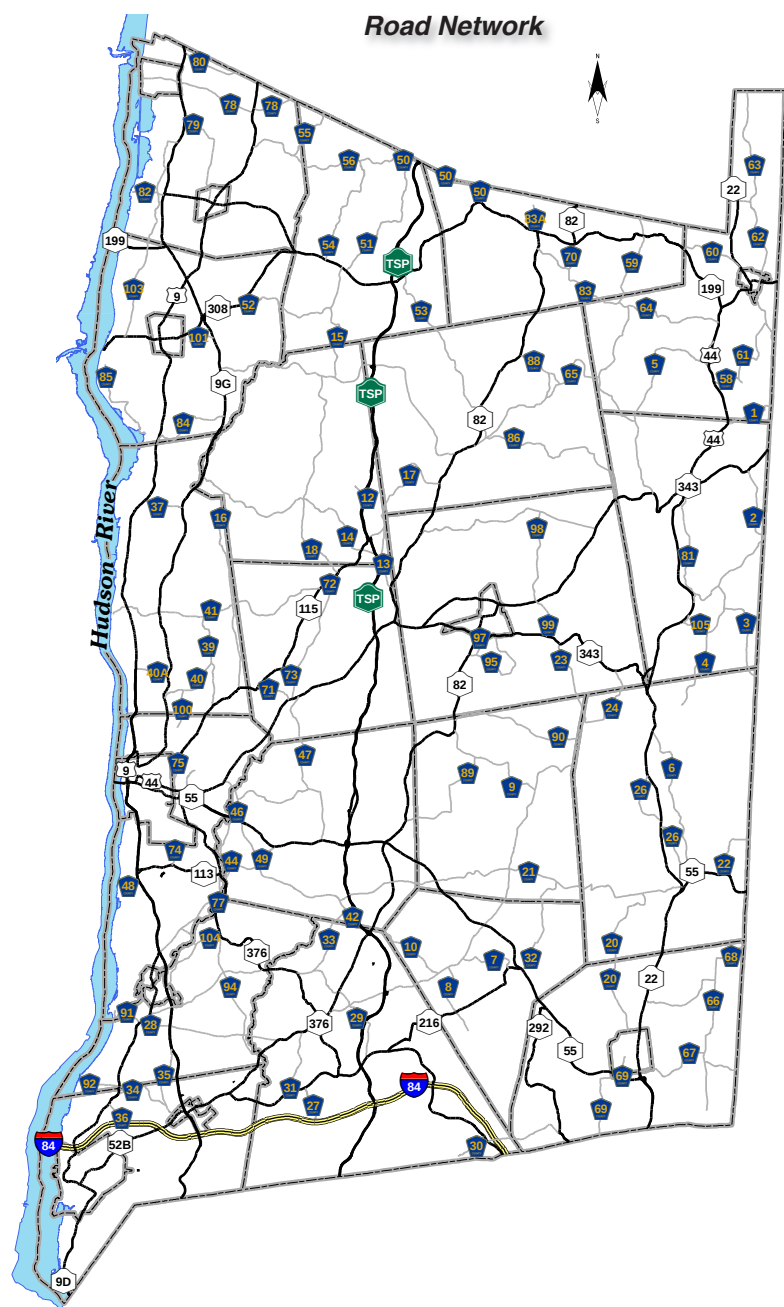
*Transportation users,
regardless of mode or
location, see just
one system.*

Discussions about the transportation system tend to talk in terms of jurisdiction and function, which more often than not separates the highway system from transit, the driver from the bicyclist, and the interstate from the local road. Though a convenient way to describe a network, it glosses over the reality that transportation users, regardless of mode or location, see just one system. This is not to say that facility type and jurisdiction are not important, but for many travelers, facility jurisdiction is less important than being able to complete a desired trip safely, reliably, and efficiently.

The PDCTC appreciates the reality that the County's transportation system is an inter-related network that is multi-jurisdictional in its form and use. Accordingly, *New Connections* differs from previous transportation plans in that it goes beyond the traditional format of separating out the system by mode (roads, bridges, transit) or jurisdiction (state, county, special authority), but also addresses the system through the prism of strategic transportation corridors; this provides us a means to present the system across transportation modes and municipal boundaries, while also identifying the key paths for both inter and intra County travel.

The County-wide Transportation System

Though using strategic transportation corridors provides a good way to understand the County's transportation system, there is some value in describing each element of the system.



Roads and Bridges

The roads and highways located in Dutchess County carry the highest share of trips than any other part of the transportation system and, therefore stand out as the most significant elements of the entire system. In Dutchess County, there are over 2,400 miles of public roads, ranging from short cul-de-sacs and narrow rural lanes to major highways like Interstate-84, which connects New York to Connecticut and Pennsylvania. And though probably the most recognizable and used, major state highways make up only seventeen percent of the total road mileage in Dutchess, followed by County owned roads at sixteen percent. The reality remains that local roads, those maintained by the County's thirty villages, towns, and cities and which provide access to individual properties, form the majority of our road system: constituting almost sixty-seven percent of total road mileage. Similarly, of the 354 highway bridges (spans in excess of 20 feet) in Dutchess County, just half are on State facilities and under the responsibility of NYSDOT or the NYS Bridge Authority. The remaining bridges lie on county or local roads.

With much of the County's road network under local control, it is worth noting the importance of local land use decisions and policies on the transportation system. The system-wide impacts of a routine site plan review or sub-division regulation may seem slight, 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. This is not to say that all such impacts are negative; local decisions can certainly add value to the system. Yet, when these decisions negatively impact mobility and safety, not only does a single community suffer, but so do nearby communities and the region as a whole.

A good way to understand how roads interact is looking at their functional classification, which is the process where streets and highways are grouped into classes according to the character of service they are intended to provide. Functional classification describes the nature of this service by defining the part that any particular road or street should play in serving the flow of trips through a highway network. The hierarchy runs from roads for long interstate trips such as Interstate-84 to those providing access to adjacent properties (a town road). The table below lists the different functional classifications by the number of centerline miles in the County.

Highway Functional Classification

Functional Class	Total Miles	Urban		Rural	
		Miles	%	Miles	%
Interstate	18	18	2%	0	0%
Principal Arterial	114	13	1%	101	8%
Principal Arterial	64	64	5%	0	0%
Minor Arterial	107	80	7%	27	2%
Collectors	445	175	15%	270	22%
Local	1,689	855	71%	833	68%
Total	2,437	1,206	100%	1,231	100%
Fed Aid Eligible	554	351	29%	203	16%

Source: NYSDOT - Highway Data Services Bureau - LHI Listing March 13, 2007.

In June 2007 the PDCTC Executive Council agreed to several changes to the Functional Classification system which were forwarded to NYSDOT-Region 8 for approval. These changes were relatively minor, increasing the Urban Federally Aid eligible mileage to 360.

Transit Services

Bus and rail transit play a crucial role in Dutchess County's transportation system by providing people a travel option independent of the private automobile. For some, bus and rail transit adequately satisfy individual transportation needs to the point that owning a vehicle is not necessary, which benefits low income households and those who cannot drive. Inversely, especially in the case of commuter rail, transit can offer a more convenient travel option than the private auto, giving people better access to high paying jobs not available closer to home. Transit also enables large businesses to tap into important job and customer pools. Lastly, transit service benefits the environment, especially regional air quality, by reducing personal vehicle trips.

Dutchess County clearly benefits from a diverse range of transit services, but access to these services is neither universal nor evenly distributed across the County – one of its limiting factors. This unevenness stems from two main reasons: 1) a limited number of transit vehicles, and 2) low density land use patterns in some parts of the County, especially in the east and north, which do not have sufficient population densities to support robust transit service; though changes in future development patterns or demographics may support improved transit access to presently underserved areas.

Dutchess County is served by a variety of local and regional transit services:

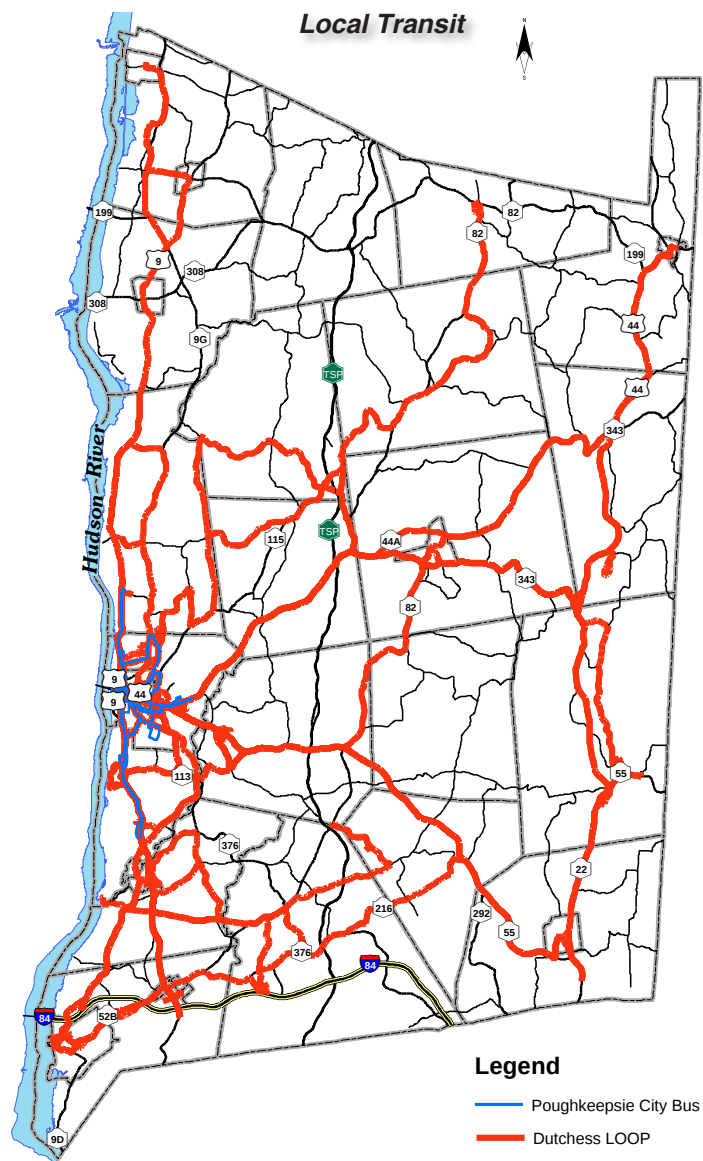
- **Local Bus Service:** Two locally operated public bus systems operate within Dutchess County: Dutchess County LOOP and the City of Poughkeepsie bus system. While the City of Poughkeepsie focuses its service in the vicinity of the City, Dutchess County LOOP serves traditional urban centers and suburban communities, with limited service to some rural areas. Most local bus service, as measured by passengers and hours of service, is concentrated in the more densely populated parts of the County. Service outside of the urbanized area tends to be more limited.



Dutchess County LOOP operates three demand responsive services: 1) ADA Paratransit - mandatory ADA complementary paratransit service for the City of Poughkeepsie and Dutchess County. This service is for individuals who live within 3/4 mile of a City Bus or LOOP fixed route but who have a disability that precludes them from riding the fixed route service; 2) Dial-a-Ride - service for individuals 60 and over who cannot use the regular LOOP service. To be eligible, passengers must be a resident of Beekman; Dover; East Fishkill; Hyde Park; La Grange; Pleasant Valley; Town of Poughkeepsie; Red Hook; Union Vale; Wappinger; or the City of Poughkeepsie. Trips must also have an origin point in one

of those municipalities; and
 3) Rural Paratransit - service is available between 7:00 AM and 4:00 PM on weekdays and is open to the general public. Service is available in the Towns of Milan; Pine Plains; North East; Clinton; Stanford; Amenia; Washington; Union Vale; Dover; and Pawling.

- Regional Bus Service: Inter-county bus service is provided by several private operators to locations outside the County.
 - *Mulligan* provides service between the Village of New Paltz in Ulster County and the City of Poughkeepsie.
 - The *Newburgh-Beacon Bus* shuttle provides regular service between the City of Newburgh, Stewart Airport, and the Beacon train station.
 - *Leprechaun* operates a weekday commuter service between Poughkeepsie and White Plains in Westchester County.



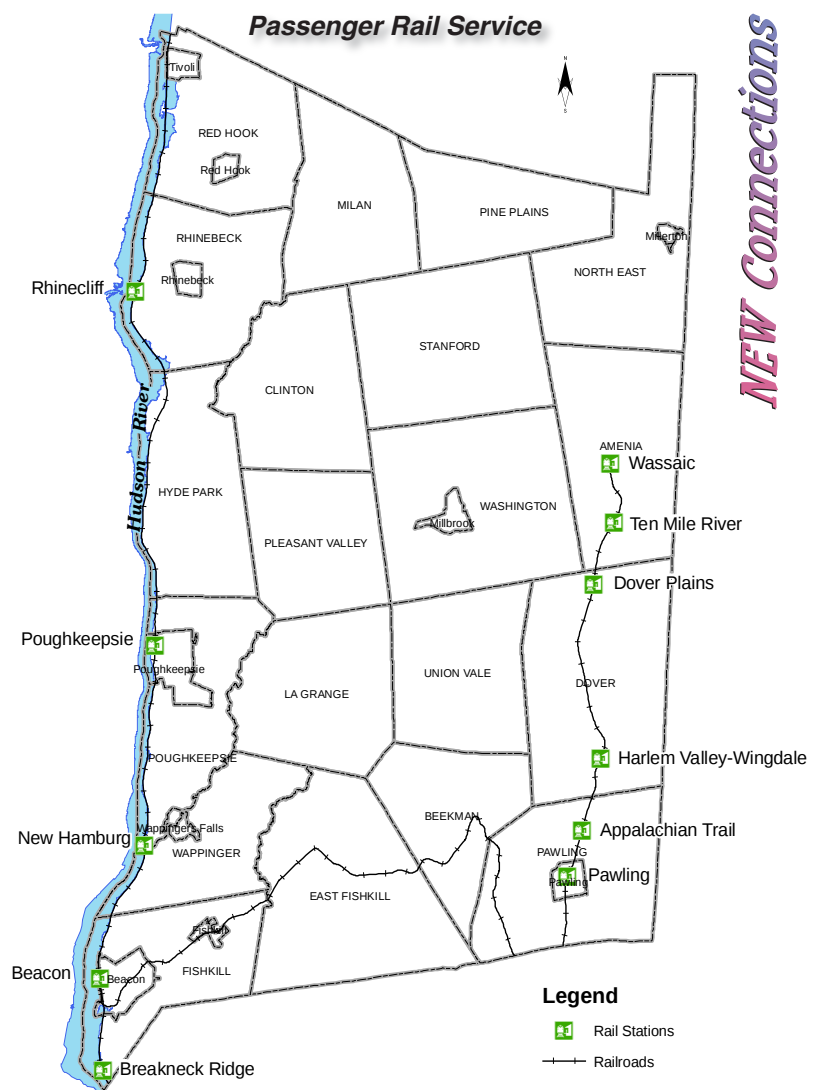
- *Coach USA/ShortLine* provides regular service between Rhinebeck and Fishkill in Dutchess County with connections to New York City (via Newburgh and northern New Jersey).
- *Trailways* provides regular service between Poughkeepsie and Kingston and Newburgh with connections to Albany and Long Island (via Kingston and Newburgh).

- Passenger Rail Service: Amtrak and Metro-North Railroad provide passenger rail service in Dutchess County.
 - *MTA/Metro-North Railroad* carries travelers from eight stations (and the Appalachian Trail) on the Hudson and Harlem Lines to Grand Central Terminal

in Manhattan. At the Dutchess County end there is peak period bus service (LOOP Commuter Train Connection) at the three Hudson Line stations, and more limited service at some of the other stations.

- *Amtrak* provides service from Poughkeepsie and Rhinecliff south to New York's Penn Station and north to the Albany area (Rensselaer) for connections to its national system.

- **Passenger Ferry Service:** In October 2005, NYSDOT, MTA/Metro-North Railroad, and *New York Waterways* reintroduced passenger ferry service between the Cities of Newburgh (Orange County) and Beacon. The service currently operates during weekday peak periods and is timed to serve trains arriving and departing the Metro-North station at Beacon. A private, weekend water taxi service was also started in 2007, operating during the summer.



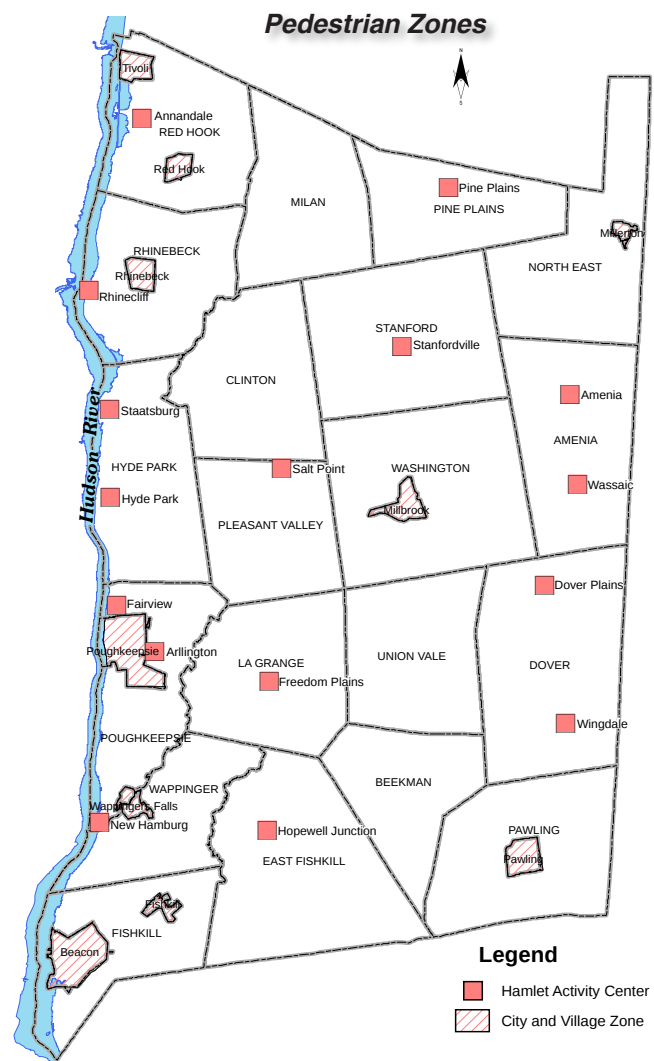
Non-Motorized Facilities

The emphasis on walking and bicycling for transportation, recreation, and physical exercise has increased dramatically in the past decade, and the range of facilities for these traditional modes of travel is growing.

Pedestrian Facilities: Previous transportation plans identified areas where more formal accommodation of pedestrians was appropriate and desirable. These “Pedestrian Zones” occur in the cities, villages, larger hamlets, and other activity centers where walking is common. An inventory of the county’s major sidewalk systems was completed in 1999, and a preliminary analysis shows that there are about 241 miles of sidewalks in the county. Most facilities are concentrated in the two cities, Beacon and Poughkeepsie, the eight villages, and in some of the larger hamlets, and include sidewalks, crosswalks, and pedestrian signals in central business areas.

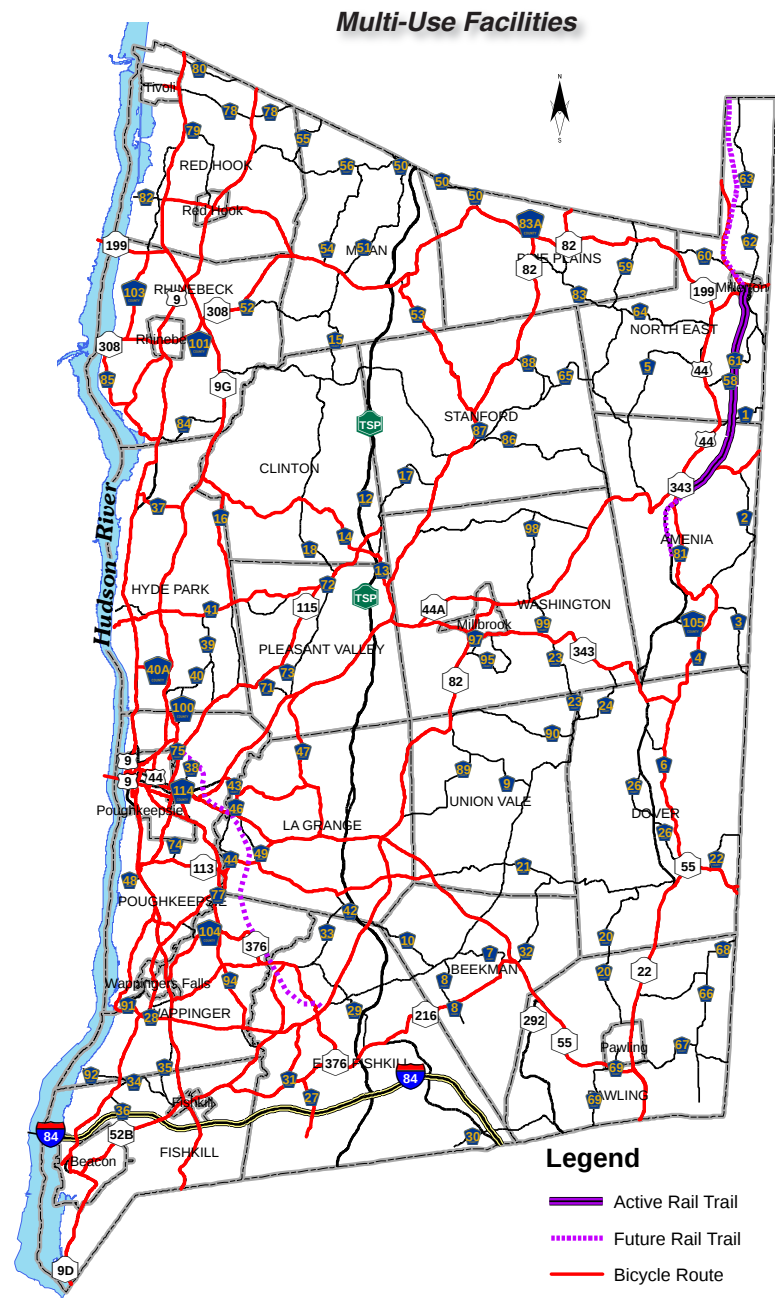
- The County also has a wide variety of publicly accessible hiking and walking trails. These range from 25 miles of the Appalachian Trail in Beekman, Pawling, and Dover to approximately 10 miles in the Hyde Park Trail System as well as numerous state, county, and local parks. Most trails are used primarily for recreational purposes, but as new trails are established and existing trails are extended and connected, these facilities will provide important connections within the larger community.
- **Bicycle Facilities:** The Bicycle Network map identifies major bicycle routes in the metropolitan area. The vast majority of the routes run along existing state and county roads and will be accommodated with wider lanes and/or shoulders. NYSDOT has plans to expand signed bicycle routes in the county along portions of Route 22 and US 44. There are a number of formal bicycle routes in Dutchess County:

- NYS Bicycle Route 9: Signed route between New York City and Montreal, Canada, a distance of 345 miles. In Dutchess County it passes through Fishkill, Wappinger, Poughkeepsie (Town and City), Hyde Park, Rhinebeck, and Red Hook on a variety of state, county, and local streets and roads for a distance of 53 miles. This route is designed for experienced bicyclists.
- NYS Bicycle Route 17: Signed route between Lake Erie and Wappinger. It connects with Bicycle Route 9 at the intersection on Route 9D and CR 93 (Middlebush Road) in the Town of Wappinger, and crosses the Newburgh-Beacon Bridge. Like Bicycle Route 9, it is designed for experienced bicyclists.
- NYS Bicycle Route 113: Signed route along the entire length of Spackenkill Road in the Town of Poughkeepsie. It runs between US 9 and Bicycle Route 9 at the intersection of Route 113 with Route 376/CR 77 (Vassar Road). It is also designed for experienced bicyclists.
- The Winnakee Land Trust established two signed bicycle touring routes in Red Hook and Rhinebeck. These routes traverse local and county roads for a total distance of 15 miles.



- **Multi-Use Facilities:** Trails and paths that are physically separated from automobile traffic can be used by both walkers and cyclists. In Dutchess County, abandoned and underutilized railroad rights of way are being converted into linear parks.

- **Harlem Valley Rail Trail:** Upon completion, this trail will run from the Wassaic train station to Copake Falls in Columbia County, a length of 22 miles. As of 2007 the trail was open between Wassaic Train Station in Amenia and Main Street (Route 44) in the Village of Millerton, a distance of 10.7 miles.
- **Dutchess Rail Trail:** This facility will use a portion of the abandoned Maybrook Rail-line right-of-way that Dutchess County acquired in the mid-1980s. The trail will connect Poughkeepsie and Hopewell Junction (East Fishkill) when completed. The trail, part of which opened in 2007, will be approximately 11.2 miles in length.
- **Wilbur Boulevard Path:** This path runs parallel to Wilbur Boulevard in the City and Town of Poughkeepsie. The path is approximately 1.2 miles in length.
- **Maybrook Trailway I:** This trail will run from CR 30 (Holmes Road) in the Town of Pawling to Towners in Putnam County.



New Connections presents the County's transportation system in terms of strategic transportation corridors, which rely on geography as an important organizing principle.

This section will be approximately 3.7 miles, which is the first phase of a larger plan to construct a trailway to Brewster (Putnam County) and Danbury (Connecticut) and also the North County Trailway in Westchester County. The section between CR 30 (Holmes Road) and Towners Road is expected to go to construction in 2007.

All these facilities provide excellent opportunities for a wide range of walkers and recreational cyclists, and complimentary tourism efforts in numerous communities.

Airport Facilities

Airport facilities in Dutchess County are primarily for private general aviation aircraft. Commercial service at Dutchess County airport was suspended in August 2001. There are five public airports in the county: Airhaven (Hyde Park), Dutchess County Airport (Wappinger), Sky Acres (Union Vale), Sky Park (Red Hook) and Stormville (East Fishkill).

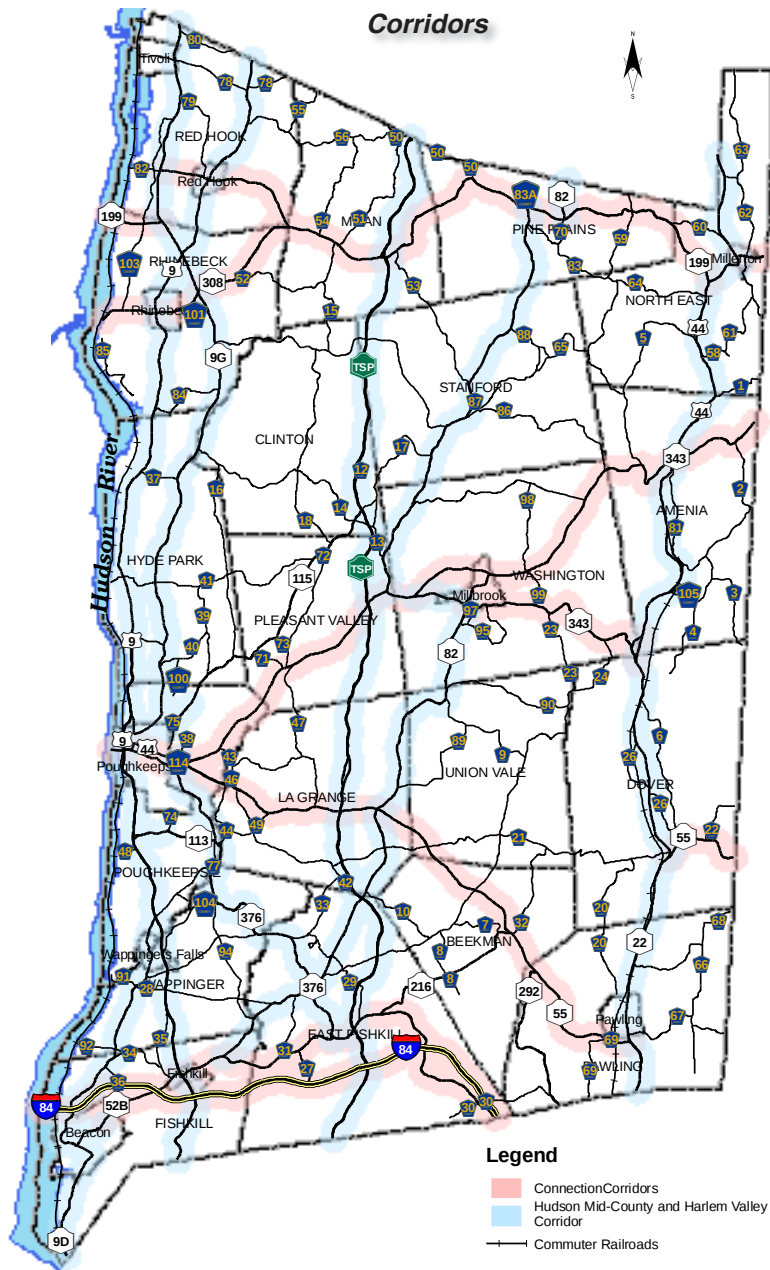
Stewart International Airport, located in neighboring Orange County, is a regional airport offering regularly scheduled passenger flights to cities in Florida and several major airline hubs (Atlanta, Detroit, and Philadelphia). On November 1, 2007, the Port Authority of New York and New Jersey took over management of airport operations.

Corridors and Connections

New Connections builds upon the corridor-based approach used in the long range plans of NYSDOT and other MPOs, by applying it to the geography and transportation characteristics of Dutchess County and its people. In Dutchess, geography has and always will influence the character and scope of its land use patterns, and the design and function of its transportation system. The influence of this geography not only touches upon the County's internal relationships, but also its external relationships within the greater Hudson Valley region. To capture this quality, *New Connections* presents the County's transportation system in terms of strategic transportation corridors, which rely on geography as an important organizing principle.

In general the transportation system tends to be richer and more varied in the more urban and suburban portions of the county. Most travel in the County takes place in motor vehicles (automobiles, trucks, buses) on the public road system, and most personal trips are made by private vehicle rather than by public transit. Nevertheless, non-highway, non-automobile travel options provide important links within the county and to the surrounding region.

The PDCTC has identified three strategic transportation corridors in Dutchess County: the Harlem Valley, Mid-County, and Hudson Corridors. These three corridors provide the most important transportation connections within the County.



Harlem Valley Corridor

The Harlem Valley Corridor traverses the eastern most portion of the County and spans four towns (Amenia, Dover, North East, and Pawling) and two villages (Millerton and Pawling). In general, the corridor is of a rural nature with pockets of denser residential and commercial development in and around the Villages and hamlets. The level of employment in the Harlem Valley leveled off when two major State operations, the Wassaic Developmental Center in Amenias and the Harlem Valley Psychiatric Center in Dover, closed in the mid-1990s. Portions of the State properties and related infrastructure were sold to private interests; one of whom has proposed a large mixed use development in Dover.

NYS Route 22, Metro-North Railroad's Harlem Line, and to a lesser degree, the Harlem Valley Rail Trail all serve as the influential north-south axis of the Harlem Valley Corridor. A number of east-west road connections provide access to

Connecticut to the east and the Poughkeepsie metropolitan area to the west; these connections primarily include US Route 44, and NYS Routes 55, 199, and 343. The Metro-North Harlem Line provides rail service to White Plains and Manhattan from five stations; Dutchess County LOOP provides bus service between Harlem Valley communities and the western part of Dutchess. A major multi-use facility, the Harlem Valley Rail Trail, connects the Wassaic train station to the Village of Millerton, with plans to push the trail further north to Columbia County.

Through the years, development has tended to focus more on the Route 22 axis than in the areas to the east and west; as would be expected this development includes the majority of commercial land uses in the Harlem Valley Corridor, which tend to gravitate towards major roads; though Route 22 does support some residential development.

Issues and Concerns:

- Continued population growth, especially in the southern portion of the corridor (Pawling and Dover).
- Concerns about traffic congestion and safety on Route 22.
- Strong demand for parking at Metro-North train stations.
- Lack of non-auto transportation options particularly for elderly, disabled, and youth populations.

Mid-County Corridor

The Mid-County Corridor covers a large portion of central Dutchess County and includes eleven municipalities: Beekman, Clinton, East Fishkill, LaGrange, Milan, Millbrook, Pine Plains, Pleasant Valley, Stanford, Union Vale, and Washington. The Mid-County corridor contains a variety of land uses, ranging from rural agricultural patterns in the north to progressively more suburban patterns to the south. The majority of the development in the corridor is residential in nature, with typical service related commercial activities and public facilities. The corridor supports pockets of intense industrial and manufacturing activity, most notably along I-84 in East Fishkill (IBM and related facilities).

The communities in this corridor have experienced significant growth during the past 15 to 20 years, which has led to a loss of open space, including agricultural land, and changes in overall community character. The major north-south road, the Taconic State Parkway, does not permit commercial traffic, and has evolved from a rural-style parkway to a major commuter corridor, particularly south of Route 44. East-west connections are provided by Interstate 84, US Route 44, and NYS Routes 44A, 52, 55, 199, 308 and 376. Bus transit options are slightly more robust here than in the Harlem Valley Corridor, though still somewhat limited; Dutchess County LOOP operates both fixed route and paratransit services along this corridor.

Issues and Concerns:

- Continued residential growth, especially in the southern portion of the County (Beekman and East Fishkill).
- Altered character of traffic on the Taconic State Parkway and its impact on safety.
- Lack of non-auto transportation options particularly for elderly, disabled, and youth populations.
- Increased vehicular traffic on some County Routes.

Hudson Corridor

The western portion of the County is the historic location of activity in Dutchess County; early travel centered on the Hudson River and supported river communities like Beacon, Poughkeepsie, and Rhinecliff. This strategic corridor encompasses a wide mix of communities, thirteen in all: the Cities of Beacon and Poughkeepsie, the Towns of Fishkill, Hyde Park, Poughkeepsie, Red Hook, Rhinebeck, and Wappinger, plus the Villages of Fishkill, Red Hook, Rhinebeck, Tivoli, and Wappingers Falls. The Hudson Corridor contains a significant share of the County's population, as well as providing the largest share of jobs for residents. It also

supports the fullest spectrum of land use types, ranging from densely populated urban centers in Beacon and Poughkeepsie, to traditional villages, suburbs, and rural landscapes.

The Hudson Corridor possesses the most robust transportation system in Dutchess County, including major state north-south highways (Routes 9, 9D, and 9G), passenger rail service (Metro-North Railroad and Amtrak) linking Dutchess with New York City, Albany and other locations around the country, and the heaviest concentration of local and regional bus transit services (both LOOP and City of Poughkeepsie Bus systems). In addition, the New York State Bridge Authority operates five major facilities that connect seven counties in the region, and three, Newburgh-Beacon Bridge, Mid-Hudson Bridge, and Kingston-Rhinecliff Bridge connect Dutchess to Orange and Ulster counties. It is also over these facilities that travelers can reach the New York State Thruway at Newburgh (Exit 17), New Paltz (Exit 18), and Kingston (Exit 19).

Issues and Concerns:

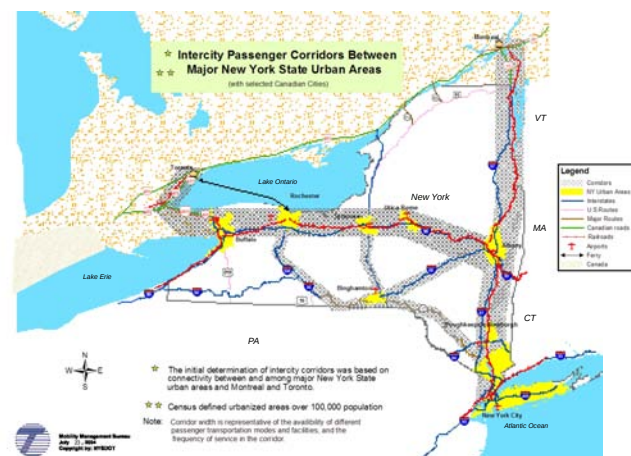
- Continued residential growth outside traditional centers.
- Traffic congestion on major road facilities, including portions of Routes 9, 9G, and 9D.
- Limited east-west connections.
- Demand for parking at Metro-North and Amtrak train stations.
- Interest in maintaining and enhancing the character of community centers.

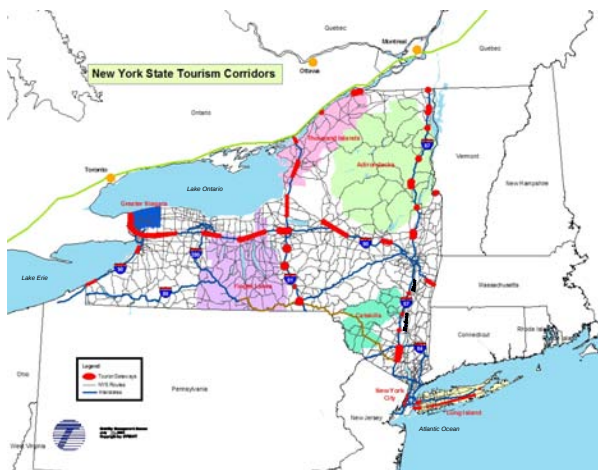
The combination of historic development patterns, anticipated growth, and an assessment of transportation system conditions and needs will help guide our decisions concerning future investment between now and 2035.

New York State Corridors

In its new master plan, *Transportation Strategies for a New Age*, the New York State Department of Transportation (NYSDOT) outlines its commitment to identify and invest in major multimodal corridors throughout New York. To date, four types of corridors have been defined:

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

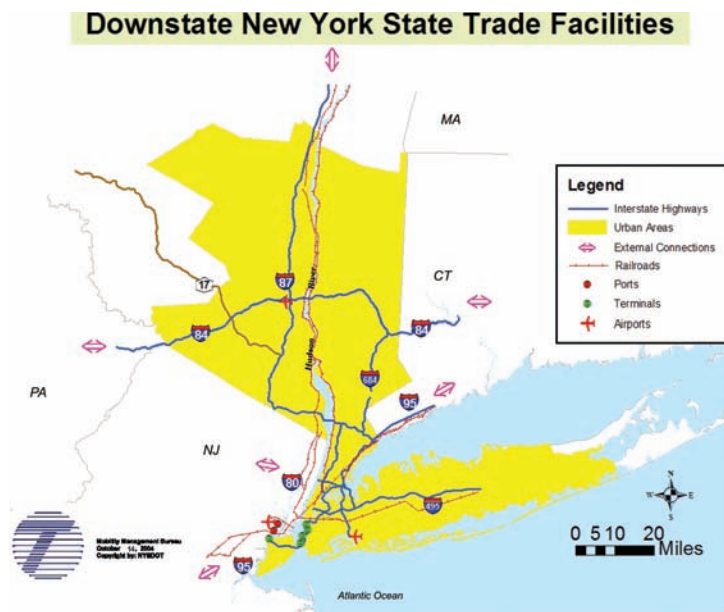
- *Tourism Corridors* support high volume tourist travel from inside and outside the state to major tourist destinations.

Obviously some corridors and some facilities can and do serve more than one type of travel function. The State's criteria for designation included current and projected levels of demand, and an assessment of the value and criticality of connections between major centers and activities. Beyond the major corridors, NYSDOT

recognizes that other transportation facilities perform essential functions in moving people and goods in more local settings. The facilities in Dutchess County identified as state corridors include:

- Interstate 84
- Hudson Line (Rail)
- Harlem Line (Rail)
- Hudson River
- Newburgh Beacon Bridge
- Mid-Hudson Bridge
- Kingston Rhinecliff Bridge
- US 9
- US 44
- NY 22
- NY 55
- Taconic State Parkway

These corridors form the foundation of the priority transportation network in Dutchess County.



State of the System

The state of the system can be described in a variety of ways: by condition (pavement, age of transit vehicles), reliability (areas of congestions, on-time performance), usage (volume of traffic, number of transit riders), or safety (number of accidents).

In previous plans the PDCTC has used information from member agencies to describe the characteristics or performance of the transportation system. Generally, more detailed data is available from larger agencies such as NYSDOT and Metro-North rather than smaller ones, and more information is available in the aggregate (e.g. total transit passengers, average daily traffic) than for specific components of the system. Below is a summary of the state of the transportation system within Dutchess County.

System Condition

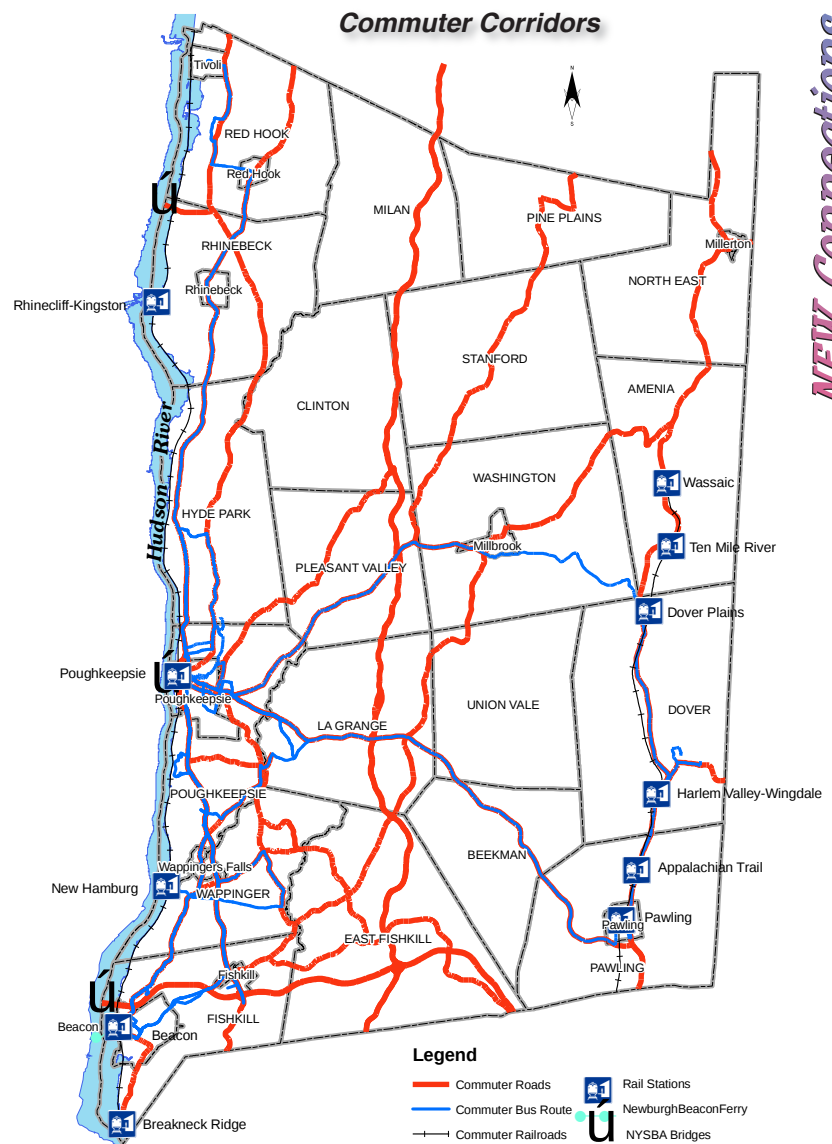
Roads and Bridges

The New York State Department of Transportation conducts annual pavement condition surveys as part of an overall “sufficiency rating” program. This survey is performed by using photographic and verbal scales during an “in-motion” windshield survey to assess surface and base pavement distress. Each highway section is then rated on a scale of 1-10, with 1 being the worst and 10 the best.

In 2006 the surface conditions of the state roads in Dutchess County were in above-average condition with almost 70 percent of the road miles rated as either good or excellent, 26 percent as fair, and 4 percent as poor.

The Dutchess County Department of Public Works (DPW) does not regularly conduct pavement condition surveys. Since 1993 the Dutchess County Department of Public Works has implemented a regular repaving plan, paving 379 miles (96 percent) of the 396 total miles of roadway under their jurisdiction. The Dutchess County Department of Public Works continues to be aggressive in pavement resurfacing by repaving a certain percentage of their mileage each year.

In 2000, of the 131 bridges (in Dutchess County) under the responsibility of NYSDOT there were 18 percent deficient, while in 2006 that number rose to 27 percent. NYSDOT continues to progress bridge projects through its Bridge Management System as funding permits. In 2000, of the 148 bridges under the responsibility of DCDPW in Dutchess County, 43 percent were deemed structurally deficient, while in 2006 that number dropped to 38 percent. There are certain bridges in the state, called “R Rated Bridges,” that limit the types of vehicles that can travel on them. An R-Posted Bridge is one, which based on design or condition, does not have the reserve capacity to accommodate most vehicles over legal weights, but can still safely carry legal weights. These bridges are identified with signage stating “No Trucks with R Permits.”



There were 19 'R' posted bridges in the County in 2000, while in 2007 that number fell to 12.

R-Posted Bridges

BIN	CARRIED	CROSSED	Municipality
1047720	CR 78 (Broadway)	Stoney Creek	V/Tivoli
3342660	CR 3 (S Amenia Rd.)	Webatuck Creek	T/Amenia
3342820	CR 14 (Hollow Rd.)	Little Wappinger Creek	T/Clinton
3343340	Fishwoods Road	Kobe Creek	T/Milan
3343490	CR 50 (Mount Ross Rd.)	Roeliff Jansen Kill	T/Pine Plains
3343530	SR 115 (Salt Point Trnpg)	Little Wappinger Creek	T/Pleasant Valley
3343730	CR 79 (Linden Ave.)	Saw Kill	T/Red Hook
3343870	CR 17 (Salt Point Trnpg.)	Willow Brook	T/Stanford
3343880	CR 17 (Salt Point Trnpg.)	Wappinger Creek	T/Stanford
3343920	CR 21 (Bruzgul Rd.)	Fishkill Creek	T/Union Vale
3343930	CR 21 (Bruzgul Rd.)	Fishkill Creek	T/Union Vale
3344080	Canoe Hill Road	East Branch Wappinger Creek	T/Washington

Source: NYSDOT Listing of Posted Bridges,
Sunday, September 9, 2007

Transit Services

One way to judge the condition of the transit system is by the age of its transit vehicles. The Dutchess County LOOP operates 28 Motor Buses (generally larger coaches such as the Gilligs) as part of their fleet with an average age of 6.5 years; they also operate 20 demand responsive vehicles (generally smaller buses or cutaway vans) with an average age of 5.4 years. The City of Poughkeepsie operates 8 buses as part of their fleet with an average age of 9.13 years. Both agencies adhere to a standardized replacement schedule for transit vehicles as defined by the Federal Transit Administration.

Non-Motorized Facilities

The City of Poughkeepsie conducted an inventory of their sidewalks and curb ramps to evaluate their condition and Americans with Disabilities Act of 1990 (ADA) compliance. After completing that survey they have used those results to implement a city-wide replacement and repair plan to upgrade and enhance their pedestrian network. NYSDOT completed a survey when the ADA was first passed as well. At this time they are the only two agencies that have conducted such an evaluation of their sidewalk system. We encourage other jurisdictions to complete such an analysis.

In addition to sidewalks facilities such as roadway shoulders and trails need to be evaluated for condition as well as their ability to handle capacity in terms of width. The 1996 *Bicycle and Pedestrian Plan* evaluated the condition and width of shoulders along bicycle routes in general terms. Both NYSDOT and DCDPW have committed to maintaining and enhancing shoulders where possible for non-motorized users.

System Reliability

Roads and Bridges

As required by federal law, the three MPOs of the Mid-Hudson Valley Transportation Management Area (TMA) – the PDCTC, Orange County Transportation Council (OCTC), and Ulster County Transportation Council (UCTC) – adopted a joint Congestion Management Process (CMP) in 2005. The CMP serves as an excellent tool to measure the reliability of the road network.

The CMP uses a four step process to measure and define recurring congestion in the three counties. The process relies on calculating Vehicle-to-Capacity (V/C) ratios, produced from travel demand models, to measure congestion. V/C ratios address the issue of congestion from the perspective of supply and demand. A particular road has a finite physical capacity, a limit to the number of vehicles that can safely travel on the road at any one time. At a given point, the sheer number of vehicles on the road creates congestion and an unacceptable level of service: usually, but not limited to, morning and evening peak commuting periods. To quantify this level of service, a V/C ratio – or percent of use – is calculated for roadways.

The CMP translates V/C ratios into descriptive levels of congestion. A facility operating between 80 to 89-percent of its capacity during peak periods is classified as having moderate congestion, while a facility operating at 90 to 99-percent of capacity is classified as having heavy congestion. When the measured V/C ratio exceeds the 100-percent threshold, the facility is classified as having severe congestion.

In accordance with the implementation schedule, the three MPOs completed a joint CMP progress report in June 2006, which identified locations with severe, heavy, and moderate peak hour congestion. The following facilities were identified as having the worst congestion in Dutchess County, with a Vehicle-to Capacity ratio of 1.00 or higher.

- Route 55 between Taconic State Parkway and CR 49 (Titusville Rd.)
- Route 376 between CR 104 (New Hackensack Rd.) and Degarmo Rd.
- CR 44 (Red Oaks Mill Rd.) between Route 376 and CR 49 (Titusville Rd.)
- CR 77 (Vassar Rd.) between Spring Rd. and CR 110 (Jackson Rd.)
- CR 104 (New Hackensack Rd.) from Route 376 to CR 94 (All Angels Rd.)
- Spring Rd. between Route 9 and Kerr Rd. (Town of Poughkeepsie);

The CMP is also discussed in Chapter 5 (Plan Recommendations).

Transit Services

MTA/Metro-North measures the effectiveness of their service by measuring what percentage of their scheduled trips are on-time. On Time Performance (OTP) is a measure of how many trains arrive less than six minutes after their scheduled time. In 2006 the OTP for East of Hudson service (Hudson and Harlem Lines) was 97.8 percent.

In addition to the performance of the systems the ancillary facilities such as parking affect the reliability of the system.

Neither the Poughkeepsie Transit System nor the Dutchess County LOOP routinely monitors system reliability.

Non-Motorized Facilities

The reliability of the non-motorized infrastructure has not been a problem in terms of capacity. The facilities continue to handle existing levels of use. Though there have been some issues with amenities such as inadequate parking at rail trails during peak periods. As usage increases, surveys should take place to ensure that the needs haven't outpaced the facilities.

System Use

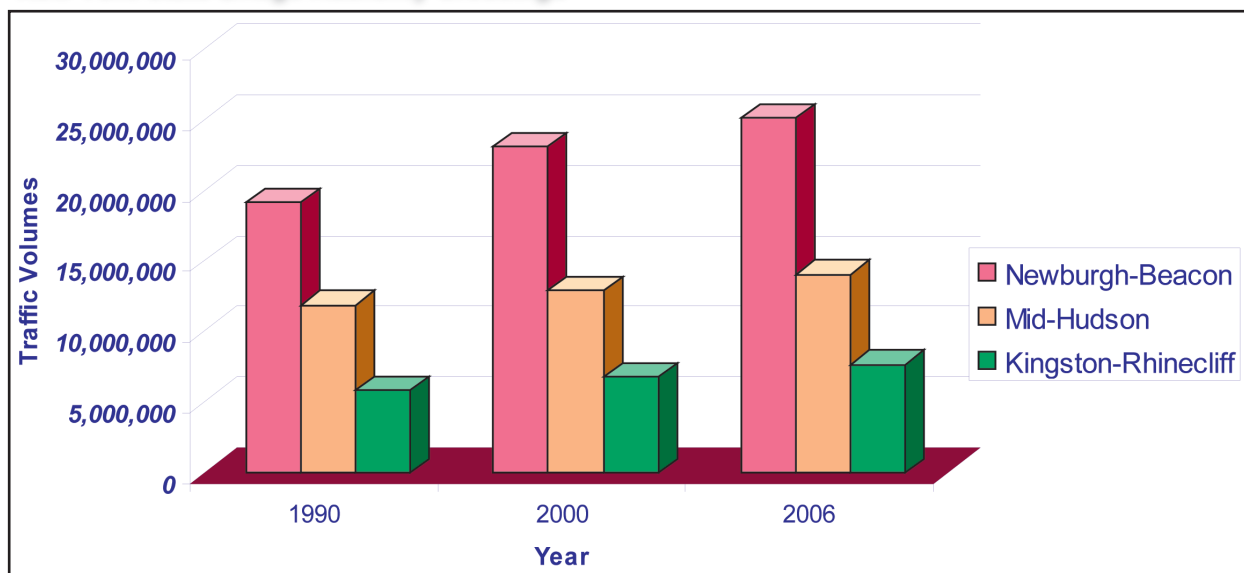
Roads and Bridges

The PDCTC started a traffic count program in 1999 to supplement work done by NYSDOT-Region 8 and to provide base data for its travel demand model. Each segment in the program is counted every three years. By the end of 2007, there will be three separate counts for most road segments in the County.

By averaging available count data, the PDCTC has identified the 10 road segments with the highest average annual daily traffic (AADT) on state and county facilities. As would be expected, the highest volumes on State facilities were on Interstate 84 and Route 9, while on county facilities were on CR 77 (Vassar Rd.) and CR 93 (Myers Corners Rd.). All of these sections were within the Urbanized Area.

In 2006 the three NYS Bridge Authority crossings in Dutchess carried over 46.7 million vehicles - an increase of 9.1 million vehicles in the last eleven years. More than half of the vehicles (25.1 million) were carried on the Newburgh-Beacon Bridge. Over 14.0 million vehicles used the Mid-Hudson Bridge, while the Kingston-Rhinecliff Bridge carried 7.6 million vehicles.

New York State Bridge Authority Crossings

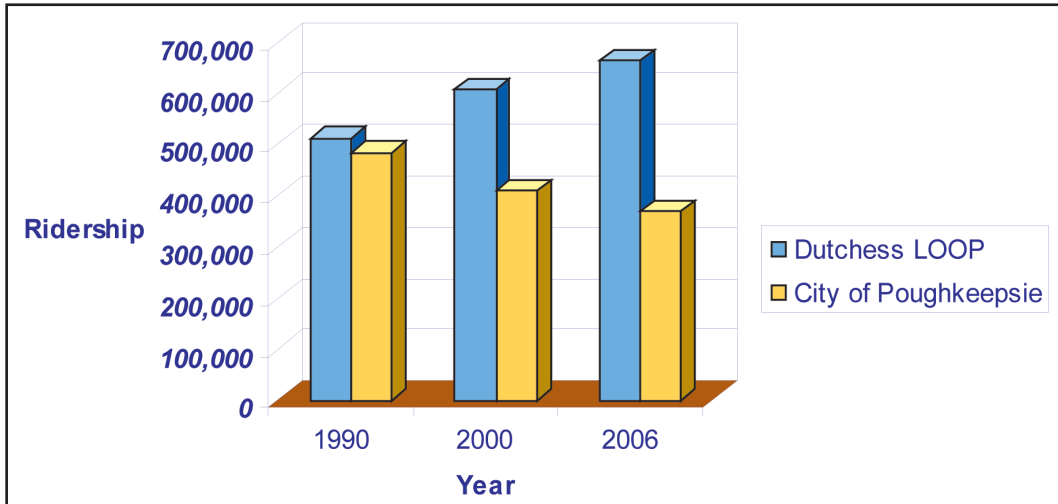


Transit Services

The Dutchess County LOOP system operates 48 transit vehicles over more than 30 different fixed routes, in addition to supporting demand responsive services such as Dial-A-Ride. The system has seen an 8 percent increase in ridership from 2000 (607,200) to 2006 (663,005).

The City of Poughkeepsie Transit Service operates seven routes, with eight transit vehicles. The system has seen an 11 percent decrease in ridership since 2000 (407,509) to 2006 (368,118).

Local Bus Transit Ridership



Another measure for transit systems are the utilization of park and rides for commuting either through carpools, vanpools or transit services.

Park and Ride Utilization

Municipality	Location:	# of Spaces	Daily Utilization
East Fishkill	I-84 at Lime Kiln Road	90	66%
	Taconic Parkway at Route 52	100	100%
Fishkill	Dutchess Intermodal Center	25	1%
Hyde Park	Dutch Reformed Church, Route 9	15	5%
LaGrange	Taconic Parkway at Todd Hill Road	28	70%
Stanford	Taconic Parkway at Bulls Head Road	25	80%

Passenger train service in Dutchess County is provided by Amtrak and Metro-North Railroad (MNR), a subsidiary of the Metropolitan Transportation Authority (MTA). CSX currently provides rail freight service in Dutchess County. Since the 2003 transportation plan, Norfolk Southern Corporation (NS) and CSX Corporation (CSX) have purchased and divided the former Consolidated Rail Corporation (Conrail) system. There has been no significant impact on existing passenger operations.

There are eight Metro North stations in Dutchess County: Poughkeepsie, New Hamburg, and Beacon on the Hudson Line, and Wassaic, Ten Mile River, Dover Plains, Harlem Valley/

Wingdale, and Pawling on the Harlem Line. Since 1990, ridership from Dutchess County has increased by almost 117 percent. In 2006, Metro-North carried 5,600 passengers on an average weekday from Dutchess County, compared to approximately 2,600 passengers in 1990.

Metro-North Ridership

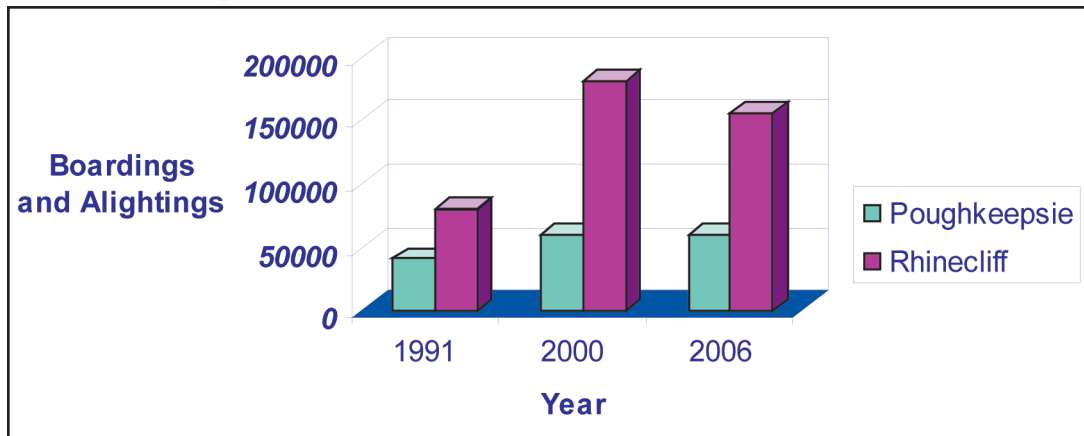
AVERAGE WEEKDAY INBOUND BOARDINGS DUTCHESS COUNTY STATIONS

LINE/STATION	WEEKDAY INBOUND BOARDINGS				
	1990	1996	2000	2006	% Change 1990-2006
Hudson Line					
Poughkeepsie	1,011	1,282	1,598	1,676	66%
New Hamburg	507	799	799	1,088	115%
Beacon	931	1,231	1,611	2,104	126%
Total Hudson Line	2,449	3,312	4,008	4,868	99%
Harlem Line					
Wassaic	NA	NA	139	300	n/a
Tenmile River	NA	NA	27	21	n/a
Dover Plains	70	145	97	129	84%
Harlem Valley-Wingdale	26	78	120	118	354%
Pawling	72	129	209	252	250%
Total Harlem Line	168	352	592	820	388%
TOTAL DUTCHESS COUNTY	2,617	3,664	4,600	5,688	117%

As would be expected parking is at a premium at the Metro North Stations and in particular at the Hudson Line stations with a waiting list for permits at the Poughkeepsie Station.

Several public and private operators provide bus service to Metro-North and Amtrak stations. The Poughkeepsie Station is served by Poughkeepsie City Bus, Mulligan Bus, Leprechaun Lines, ShortLine, and the LOOP Commuter Train Connection (Hyde Park and Apple Valley routes). The New Hamburg and Beacon stations are served by separate LOOP Commuter Train Connection shuttles. The Newburgh-Beacon Bus Shuttle and Newburgh-Beacon Ferry also serve the Beacon station. On the Harlem Line, Pawling, Wingdale, and Dover Plains are served by Dutchess County LOOP.

Intercity passenger rail service between New York City and Albany is provided by Amtrak in the western part of Dutchess, with stops at Poughkeepsie and Rhinecliff. Intercity ridership from Dutchess County has fluctuated: between 1991 and 2000 ridership increased by over 44 percent, but dropped 10 percent after 2000.

Amtrak Ridership

Ferry service was restored between Newburgh and Beacon in October 2005 and has steadily grown in popularity. For 2006, the ferry averaged 285 passengers on an average weekday.

Non-Motorized Facilities

Volume data for non-motorized transportation facilities is not collected, which has been identified as a future need. Local communities have identified infrastructure needs necessary to promote walking and bicycle trips.

Freight Movement

Another measure of system usage is freight movement. Although the County has one major distribution center in the Town of Fishkill (GAP/Old Navy), the local transportation network is primarily used for local goods movement between homes and businesses. Regional trips occur along the railroads, Hudson River, and Interstate 84, which supports 10,000 semi-trailers daily.

The Hudson River acts as a transportation facility for 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 (Albany) and points south. CSX averages between 4 and 8 trains daily, most going overnight to avoid conflicts with passenger service.

According to data from the *2002 Commodity Flow Survey*, 90 percent of all commodities (by weight) in New York State are transported by truck, while only 3 percent are moved by rail; the remaining 7 percent are split between pipeline, air, water, and multiple modes. The NYSDOT Planning and Strategy Group and their consultant, Reebie Associates, evaluated data from the Bureau of Economic Analysis and found that freight in Dutchess County Exhibits similar statistics with 95.9 percent of freight going from Dutchess County moved by truck and the remaining 4.1 percent by rail. Similar trends occur for the freight shipped to Dutchess County; 96.2 percent was shipped by truck and the remaining 3.8 percent by rail.

From Dutchess County to Bureau of Economic Analysis (BEA) regions:

Top BEA Destinations (tons):

- New York, NY (551,723)
- Buffalo, NY (137,584)
- Syracuse, NY (111,017)
- Detroit, MI (63,286) – 70.7 percent moved by rail
- Philadelphia, PA (54,659)

From BEAs to Dutchess County (tons):

- New York, NY (425,315)
- Syracuse, NY (210,379)
- Buffalo, NY (177,529)

System Safety

Roads and Bridges

The obvious measure for safety is the number and type of crashes (accidents). The most recent data available from the NYS Department of Motor Vehicles covers the period 2003 to 2005. In 2005 there were 4,569 reported crashes in Dutchess County and 31 fatalities. Since 2003 the rate of crashes per mile in the County has stayed constant at 1.1 crashes per mile, below the statewide average, which fell from 1.5 to 1.3.

SAFETEA requires that New York State submit an annual report that describes not less than five percent of locations on public roads identified with “severe safety needs.” This report is based upon the High Accident locations on state facilities. Five locations were listed in Dutchess County:

- Route 9 (NY 52 to Church St.), Village of Fishkill
- Route 9 @ I-84 ramps, Town of Fishkill
- Route 9 @ US 44/NY 55 Interchange, City of Poughkeepsie
- US 44/ NY 55 Arterial west end, City of Poughkeepsie
- Route 9D @ I-84, Town of Fishkill

These locations were selected based on the most recent data available at the time (2000-2002), and some of the locations have already undergone improvements. The first two locations met those conditions, and NYSDOT has addressed the problems through completed projects. The last three have recommendations to rebuild the interchanges, which NYSDOT-Region 8 is addressing.

SAFETEA requires that New York State defines their High Risk Rural Road (HRRR). States are required to identify these roadways (and expend the HRRR funds) on any roadway functionally classified as a rural major or minor collector or a rural local road on which the accident rate for fatalities and incapacitating injuries exceeds the statewide average for those functional classes of roadway; or that will likely have increases in traffic volume that are likely to create an accident rate for fatalities and incapacitating injuries that exceeds the statewide average for those functional classes of roadway.

The NYSDOT High Risk Rural Roads Program has identified seven locations in the County:

- NY 9G @ NY 308, Town of Rhinebeck
- NY 9G @ CR 101 (Violet Hill Rd.), Town of Rhinebeck
- NY 9G @ CR 19 (Slate Quarry Rd.), Town of Rhinebeck
- NY 9G @ Fallkill Rd., Town of Hyde Park
- CR 18 (Clinton Hollow Rd.) @ CR 14 (Hollow Rd.), Town of Hyde Park
- Mount Rusten Rd. from Tator Hill Rd. to Ferncliff Forest in the Town of Rhinebeck
- CR 19 (Slate Quarry Rd.) from NY 9G to Wurtemberg Rd., Town of Rhinebeck

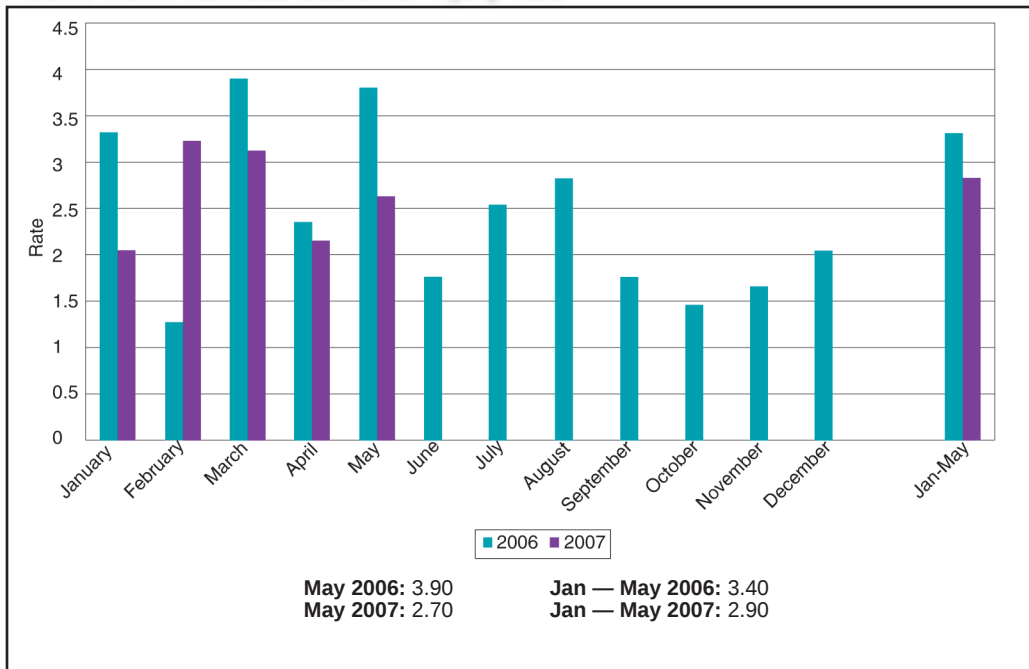
This program is a relatively new requirement and as such the implementation of the program is still under development.

Transit Services

SAFETEA added language in several provisions regarding the safety and security of transit systems. The language reinforces the message that safety should be considered throughout the planning, programming and operation of transit systems.

Metro North Railroad tracks customer safety by measuring the number of customer injuries per million customer miles for their entire system.

Metro-North Railroad Customer Injury Rate



Source: MNR Committee Books

Non-Motorized Facilities

The PDCTC continues to work with the Dutchess County Department of Planning and Development and local communities to ensure that bicyclists and pedestrian are included in the planning process and identified and anticipated needs are addressed.

The most recent crash data available from the NYS Department of Motor Vehicles covers 2005. In 2005 there were 81 crashes involving pedestrians and motor vehicles and 30 involving bicyclists and motor vehicles. Of the 4,569 reported accidents in Dutchess County 1.8 percent involved pedestrians and 0.6 percent involved bicyclists. Three pedestrians died as a result of a motor vehicle crash.

To help raise awareness and reduce crashes the *New York State Strategic Highway Safety Plan* focuses on educating pedestrian/bicyclists and motorists on traffic laws, safe street-crossing behaviors, riding techniques and the importance of following traffic control devices. In Dutchess County this is being done through educational brochures, public service announcements, and bicycle safety rodeos sponsored by the Dutchess County Traffic Safety Board.

System Security

The PDCTC recognizes the importance of safeguarding the personal security of users of the transportation network. However, most of the issues related to security and transportation are outside of the direct control of the MPO. Yet, the MPO can act as a conduit to facilitate interagency cooperation to that end.

The NYSDOT Transportation Master Plan includes a section devoted to transportation security, which involves developing appropriate responses to potential emergency or disaster incidents and identifying and protecting critical transportation infrastructure. NYSDOT works closely major transportation operating agencies and security and emergency management agencies to carry out appropriate planning and response activities.

Metro-North provides security for customers and employees by working with the MTA Police Department in the development and implementation of deterrence, detection, mitigation, response and recovery initiatives. The security program is designed to eliminate or minimize risks wherever possible, minimize the potential consequences from those risks that cannot be eliminated, and respond to and recover from any risks that occur.

The PDCTC will support efforts of its member agencies in the development and implementation of their safety and security programs wherever possible and it is deemed appropriate.

One of the most significant components of security in the MPO area is working with the existing Hudson Valley Transportation Management Center (HVTMC) in Hawthorne, NY. The TMC's goal is to improve the operation of the highway system through teamwork and technology, thereby improving the mobility of travelers and goods in the Hudson Valley. The New York State Department of Transportation and the New York State Police and other agencies have entered into a partnership to implement a broad range of diverse technologies,

known collectively as Intelligent Transportation Systems (ITS). ITS is comprised of a number of technologies, including information processing, communications, control equipment, and electronics. Joining these technologies to our regional transportation system will save lives, time, and money. The PDCTC's role during the future years will be to continue to facilitate discussion as well as aid in emergency planning exercises.

The Dutchess County Department of Emergency Response is responsible for developing and maintaining a Comprehensive Emergency Management Plan (CEMP). The planning effort incorporates New York State's Emergency Management Plan. The County's development of the CEMP was authorized by State Executive Law and the New York State Defense Emergency Act. Its purpose is to minimize or prevent the effects of disasters and to enhance the efficiency of response and recovery operations within Dutchess County. The CEMP includes the results of a systematic investigation and analysis of potential hazards that could affect the county, an assessment of the capabilities existing in the county to deal with potential problems and, finally, the development of necessary actions to achieve expected results. The PDCTC will assist as applicable in the development or implementation of that plan.

Performance Measures

A growing trend among many agencies and organizations, both public and private, centers on the use of performance measures to gauge progress towards meeting specific goals and objectives. This trend holds true in the field of transportation. In fact, SAFETEA references the use of performance measures in many new initiatives and specifically recommends their use within Metropolitan Transportation Plans. Establishing performance measures can support the decision-making process by focusing limited financial resources more effectively and efficiently. One definition of performance measures is:

*"The use of statistical evidence to determine progress toward specific defined organizational objectives. This includes both evidence of actual fact, such as the measurement of pavement surface smoothness, and measurement of customer perception such as would be accomplished through a customer satisfaction survey."*¹

The full implementation of Performance Measures includes a number of steps, starting with the definition of the transportation objectives. Objectives can be used to achieve an overall planning goal or they can be used to assist in the selection process for projects that will help an agency meet their objectives. Once the goal has been set, an organization needs to define the actual measure and identify the data required to complete the measure. Finally, agencies will have to begin to collect, maintain, and analyze the data. Not all measures are readily quantifiable, which will require identifying possible qualitative measures to support an identified objective.

The PDCTC members discussed the use of performance measures for a broader range of transportation modes. There was support for exploring the use of existing data and developing appropriate measures in those cases where data is routinely or regularly shared or analyzed. The PDCTC and its members will continue to evaluate data needs and which performance measures may be beneficial. Some potential opportunities include pavement and bridge

¹ *Performance Based Planning Manual (Preliminary Draft), NCHRP Project 832 (2005)*

conditions, highway capacity, travel time, safety, and transit use and efficiency. Below are some examples of Performance Measures that are currently measured:

Bridge Conditions

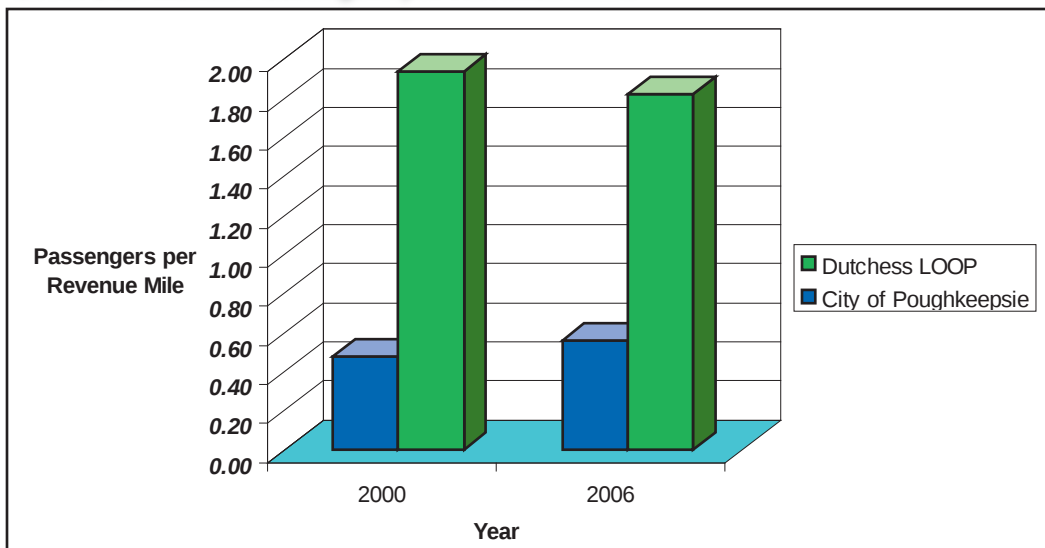
NYSDOT has used performance measures for key components of the transportation system to assess the impact of the potential investments and to make necessary adjustments. Their use is continued in the development of the recent program update (2007-2019).

NYSDOT's 21st Century goal for bridges seeks to "Assure a safe and serviceable bridge infrastructure for all public highway facilities in New York State at the lowest practical life-cycle cost." This goal is supported by three performance measures, which address safety, preservation, and serviceability. One performance measure ties the percentage of deficient bridges to the functional classification of the road; the overall goal for non-deficient bridges is 79.1 percent. In addition, the State aims to eliminate all posted and "R" rated bridges.

Transit Performance

Transit agencies traditionally have several measures of performance. One measure is "passengers per revenue mile," this is a measure of the number of passengers carried by the agencies while they earn revenue. The LOOP system has seen an increase from 0.48 passengers per mile in 2000 to 0.56 in 2006, while the City of Poughkeepsie City Bus has seen a slight decrease, from 1.94 in 2000 to 1.82 in 2006. The PDCTC expects to receive analysis tools for the local bus systems from the *Transit Development Plan*.

Local Bus Transit Passengers per Revenue Miles



Summary

Roads and vehicles form the basis of the County's transportation system. Yet public transit, bicycle and pedestrian systems, and air travel also play an important role, providing residents and visitors with a range of transportation options. Looking at these choices in terms of corridors and how and where they interact will help guide future decisions in terms of needs.

Chapter 4

Looking Forward

New Connections charts a course for future transportation investment in Dutchess County over the next twenty-five years. As in the past, this investment will fund a broad range of transportation projects, including traditional construction and maintenance projects, support of transportation policies/programs, and work on local planning studies. Accordingly, the most difficult question this long range plan must answer is where this investment should take place. The PDCTC understands that answering such a question depends on many unforeseen factors and events, part of which is how the County's demographics will change over the course of a quarter century. This not only includes changes in absolute population and employment, but also changes in the make-up of that population and work-force: two more relevant issues being growth in the elderly population and shifts from non-retail to retail and service based employment. Understanding these demographic changes and their impacts on the transportation system is essential, if we are to effectively meet tomorrow's transportation challenges.

Looking forward, total population is expected to reach 300,000 within the next three years (2010 Census) and continue to increase through 2035.

Demographic Trends

Making accurate, long range forecasts for any variable, let alone people, is difficult. Even more problematic is trying to understand the impacts these potential changes may have on a local transportation system. The PDCTC collected demographic forecasts from a variety of agencies to help inform our understanding of the potential changes that might face Dutchess County in the next twenty-five to thirty years. The main sources for county-level demographic population and employment projections are the New York State Department of Transportation, the New York Metropolitan Transportation Council, and Dutchess County's Forecasting Project completed in 1996.

All sources predict greater population and employment growth, but there are differences in the rates. Projections prepared prior to the 2000 Decennial Census generally underestimated growth in large part due to mid-decade reductions in jobs at some of the County's major employers, including IBM and New York State. Looking forward, total population is expected to reach 300,000 within the next three years (2010 Census) and continue to increase through 2035. The PDCTC used the NYSDOT/Global Insight projections (prepared in 2005) to complete the county-level analysis for *New Connections*. Some highlights:

- Total population will increase to 333,000 by 2030; a 19 percent increase over 2000. Using Global Insight growth rates, the PDCTC estimates population to increase to over 342,000 by 2035.
- People over the age of 65 will more than double from 33,690 to 70,912, and will constitute 20 percent of total population, up from 12 percent.
- Number of people in traditional working age (19-65) will increase from 167,130 to 182,000; 55 percent of total population, a decline from 59 percent.

- The number of jobs in the County will increase by 43 percent from 114,500 in 2000 to over 163,000 by 2030 (Global Insight); the PDCTC estimates employment to reach 172,000 by 2035.
- The mix of jobs will change with a greater number of service-oriented jobs and fewer manufacturing jobs.

Population and employment growth will also occur in neighboring counties. Of note, the combined population of the three counties that make up the Mid-Hudson Valley TMA (Dutchess, Orange, and Ulster) is estimated to grow by 20 percent between 2000 and 2030, going from almost 800,000 to 961,000 (though not all will be located within the Poughkeepsie-Newburgh Urbanized Area). This includes a 29 percent increase in population for Orange County and a smaller 6 percent increase in Ulster County. Likewise, combined employment in the TMA is estimated to grow from 336,000 in 2000 to 434,000 by 2030, a 29 percent increase.

Given the almost certainty of population and employment growth in the County and greater region, the next task is to understand the implications of this growth on the County's transportation system, environment, and future development patterns. Clearly, we must assume that this growth will place additional pressure on existing infrastructure, public services, and resources.

Development Trends

The PDCTC has maintained a Major Projects database since the mid-1980s to track significant development projects in the County. For urban municipalities, the database tracks projects of 25 or more residential units or over 25,000 square feet of non-residential gross floor area; for rural municipalities, the threshold is 10 or more residential units or over 10,000 square feet of non-residential floor space. In the past twenty years 400 new residential, retail and office projects have been identified and tracked from proposal to completion. Residential development has been focused in southern Dutchess County and is evident in the population growth during the 1990s and into the current decade. New retail, office, and industrial uses have been concentrated along major arterial routes in the urbanized area. Since the Major Projects Report focuses on proposed new development, it does not completely reflect the significant private and public investment in redevelopment and smaller "infill" projects in Beacon and Poughkeepsie during the past decade. A review of the major projects database identified the following trends:

- Most new residential projects are located in southern Dutchess County, but there are significant new projects proposed in the Harlem Valley and northern Dutchess.
- Retail and office projects continue to be concentrated along major state highways.
- There is an increase in the number of residential developments that have attached/multi-family units.
- More residential projects contain a mix of single family and multi-family units.

Travel Forecasts

To better understand the impact of future development on the County's transportation system, the PDCTC maintains a travel demand model that simulates current and future

highway networks and land uses on a regional scale. The model uses a three step process (trip generation, trip distribution, and trip assignment) and relies on digital mapping – GIS (Geographic Information Systems) – to represent the system. The base network incorporates existing demographic data, along with trip generation, distribution, and assignment data to simulate vehicle travel patterns. Similarly, the model can measure the effects of changing demographics and land use patterns on the transportation system by using forecast data for housing and employment.

PDCTC uses information about population and employment growth and development trends to develop the forecast data for use in the travel model. The resulting information about vehicle miles traveled (VMT) as a measurement of congestion is useful in determining locations where additional investment may be necessary. Between 2002 (the current base year) and 2035 the level of vehicle traffic is expected to increase by 30 percent and motorists will experience congestion in more locations in the County, especially during peak travel periods.

There is less information about transit travel in the County. Transit accounts for about four percent of the work trips and less than one percent of all trips. The two local bus systems (LOOP and City of Poughkeepsie) maintain data on total transit trips (as measured by boardings), but do not have the capability to forecast future demand on either a system or route level. The Dutchess County Transit Development Plan, scheduled for completion in early 2008, will provide additional data and an assessment of needs for the next five years. Nonetheless, the PDCTC expects commuter demand for inter-county transit connections to remain very strong. This includes contracted services such as the Poughkeepsie-White Plains and Beacon-Newburgh bus shuttles, and also the Newburgh-Beacon ferry service, which has seen a steady increase in passengers since its start. The demand for inter-county connections is evident in the new bus service that will connect points in Ulster County with the Poughkeepsie train station.



(Photo courtesy of Fred Robbins)

The Metropolitan Transportation Authority (MTA) is in the process of updating its Regional Strategic Review of all its operations, including Metro-North Railroad. The initial analysis assumes growth on the Hudson and Harlem lines, including new demands for off-peak and weekend service. The strategy will support MTA's next 20 Year Needs Assessment (through 2030) and a new Five-Year Capital Program (2010-2014).

Implications of Change

Changes in population, jobs, land development and travel activity are interrelated, and the current trends and reasonable expectations point to growth in most activity measures. Population and job growth will translate into more demand for travel both within the County and to the surrounding region. Implications of these trends include:

- The demand for new housing, along with associated service and retail industries, will grow. This will occur across a broad range of locations, including traditional urban centers and undeveloped rural areas.

- There will be a greater mix and range of housing types to accommodate different segments of the population.
- Continued development of vacant land in suburban and rural areas is affecting capacity of major arterials in some communities. Scattered development makes the provision of effective transit more difficult.
- There will be traffic congestion in more locations and for longer periods of time. Even in places that may not register as officially congested, there will be a change in the travel experience and increased concerns about safety.
- Increased congestion may challenge our ability to meet and maintain air quality standards.
- A larger share of the population may work in service and retail jobs and travel outside the traditional weekday morning and afternoon peak periods. Weekend travel will increase.
- Public transit schedules may have to be adjusted to meet service and retail job hours.
- There may be a mismatch between the number and location of workers and jobs, which could increase regional travel.
- There may be greater opportunities for transit or carpooling for long distance (e.g. out of county) commuting trips.
- A larger segment of the County's population will be over 65 and may rely more on public transit and non-motorized transportation options, and the assistance of human service agencies for their transportation needs.
- The growth in the number of older residents may prompt the need to evaluate and retrofit roads to provide more visible lane markings and street signage, better lighting, increased sight distances, and longer merge lanes. These design improvements would aid all drivers.
- Increased demands on the transportation system, especially on roads and bridges, will affect the conditions of our aging infrastructure and increase costs of maintaining in acceptable condition.

These implications are mostly based on recent trends. They do not take into account significant changes in global or national forces that may impact our transportation system, such as disruptions to the supply or price of fuel, a downturn in national and regional economic activity, public and private responses to global climate change, or similar behavior altering events. The challenge continues to lie in finding the balance between competing needs and limited resources, and in the end, supporting policies, projects, and initiatives that will serve the most pressing long range transportation needs for Dutchess County.

Available Funds

SAFETEA, the current federal transportation law, retains the requirement for fiscally constrained transportation plans and transportation improvement programs. The projects and programs identified in the metropolitan transportation plan must have some assurance of being funded within the time period described. Any estimate of future funding is challenging, due to the difficulty of anticipating future federal, state, and local transportation priorities.

Federal and State Funds

PDCTC relied on funding estimates prepared by NYSDOT-Region 8 as the basis of its financial assessment (see Table 4-1). Dutchess County is part of the Poughkeepsie-Newburgh Transportation Management Area (TMA), which receives direct allocation of FHWA Surface Transportation Program (STP)-Large Urban funding, and FTA Urban Area (Section 5307), Job Access and Reverse Commute (JARC), and New Freedoms funding programs. Dutchess County also receives a direct allocation of Congestion Mitigation and Air Quality (CMAQ) funds, because of its status as a non-attainment area for Ozone. The remaining non-attributable FHWA funds and the New York State Dedicated Funds (SDF) are allocated to the NYSDOT-Region 8 for distribution among the six urban/metropolitan counties (Dutchess, Orange, Putnam, Rockland, Ulster and Westchester) and one rural county (Columbia). Region 8 took into account both historic expenditures and an analysis of various factors (population, population density, lane miles, and bridges) to create funding targets for the various parties (MPOs and counties). The targets are intended as guides, but over the long-range planning horizon represent reasonable estimates of available funding. For transit, the PDCTC assumed that current allocation of FTA and SDF transit funding would continue for the duration of the plan period.

Table 4-1. Estimate of Available Transportation Funding (2008-2035)

	Total Estimate 2008-2035 (\$-millions)
Federal Funding	
National Highway System	\$132.7
Interstate Maintenance	\$124.5
Surface Transportation Program	\$275.5
Highway Bridge Rehabilitation & Replacement	\$187.8
Congestion Mitigation & Air Quality	\$128.0
FTA Section 5307 ¹	\$66.0
FTA Section 5311	\$1.5
FTA Miscellaneous	\$3.1
Total Federal-Aid	\$919.1
State Funding	
State Dedicated Funding - Highway	\$1,376.7
State Dedicated Funding - Transit	\$5.0
Total State Funding	\$1,381.7
Local Funding	
Local Funding (FHWA Match)	\$11.2
Local Funding (FTA Match)	\$13.5
Local Funding (Dutchess County) ²	\$156.2
Total Local Funding	\$180.9
Total	\$2,481.7

¹ Does not include MTA Section 5307 earnings (\$2.2 million/year).

² Estimate based on recent Dutchess County capital funding and Consolidated Local Street and Highway Improvement Program (CHIPs) funding.

Local Funds

It has historically been difficult for the PDCTC to estimate funding sources that will be available from local governments (city, town, and village). The estimates developed by NYSDOT do include an estimate of non-federal funds required to match the federal highway funds on the current 80/20 split for locally-sponsored projects. The Dutchess County Department of Public Works spends an average of \$5.6 million each year in County and CHIPs (Consolidated Local Street and Highway Improvement Program) funding in addition to the required match for federal-aid projects. The PDCTC also calculated local funding required to match the Federal Transit Administration program funds during the plan period.

The combined estimate of resources available to support the metropolitan transportation system is approximately \$2.48 billion, or an average of \$87.6 million per year.

2008-2012 Transportation Improvement Program

Approximately \$139 million is programmed in the 2008-2012 TIP for a range of highway, bridge, transit, operations, and pedestrian and bicycle projects in Dutchess County. An additional \$376 million in multi-county and system-wide projects that include cyclical maintenance projects for signal replacements, highway sign improvements, pavement markings, and regional demand management and transit operations. The TIP also lists projects supported with non-federal funds by NYSDOT and regional authorities, including the Metropolitan Transportation Authority, the NYS Bridge Authority, and the NYS Thruway Authority.

Estimated Needs

In order to demonstrate fiscal constraint, the PDCTC cannot identify specific projects as committed unless it can reasonably assume sufficient funds will be available for implementation within the plan period, in this case 2008-2035. In a departure from previous plans, the PDCTC has elected to prepare a policy-based plan that does not commit to specific projects beyond those listed in the current 2008-2012 TIP.

Highway

In mid-2007 NYSDOT-Region 8 prepared an estimate of annual capital funding needs for its seven-county area. These needs totaled approximately \$622 million annually for state and local projects such as infrastructure maintenance, demand management programs, regional transit services, and intelligent transportation systems. Based on a historical distribution of funds, approximately 14 percent (\$89 million) of the Region's annual needs are assumed to be in Dutchess County (see Table 4-2). The needs estimate does include the post-TIP cost of several significant capacity projects that were identified in the Region's 12-year capital program.

Dutchess County DPW is responsible for almost 400 miles of county operated roads, in addition to 312 bridge and drainage structures (over five feet in length). Dutchess County DPW estimates annual capital funding needs of about \$20 million to maintain the existing system, a portion of which would be eligible for federal funding.

Table 4-2. Estimate of Anticipated Transportation Needs (2013-2035)

Transportation Plan Goals	Current Dollars* \$-millions	Year of Expenditure** \$-millions
System Management & Preservation	2,281.4	3,777.5
Highway Reconstruction	662.5	1,096.9
Bridge Rehabilitation & Construction	1,117.4	1,850.2
Highway & Bridge Maintenance	438.0	725.2
Transit Infrastructure & Operations	58.5	96.9
Pedestrian & Bicycle Infrastructure	5.0	8.3
Mobility & Accessibility	287.5	476.2
Highway & Bridge Capacity	40.0	66.2
ITS & Traffic Improvements	203.2	336.5
Transit & Demand Management	9.9	16.4
Pedestrian & Bicycle Capacity	34.5	57.1
Safety Improvements	69.0	114.2
Environment & Energy	4.9	8.1
Land Use & Economic Growth	50.0	82.8
Total	2,692.8	8,712.5

*Current dollars reflects needs based upon current costs with no inflation.

**Assumes an annual inflation rate of 4%.

Note: Based on combination of NYSDOT-Region 8 Estimate of Capital and Operating Needs and information from the Dutchess County Department of Public Works - Engineering and local transit agencies.

Local Transit

For *New Connections*, the County's two public bus operators, Dutchess County LOOP and the City of Poughkeepsie, developed estimates for their future funding needs, which are split across three general areas: capital expenses, preventive maintenance, and operations. The estimates for future maintenance and operating needs are based on extrapolating annual transit funding levels out to 2035, while capital needs are primarily based on each system's vehicle and equipment replacement schedule. The PDCTC expects federal transit funding levels to remain fairly constant through the life of this plan.

A comparison of reasonably available resources and estimated highway and bridge needs reveals an annual funding shortfall of between \$10 and \$23 million.

For the years beyond the 2008-2012 TIP, Dutchess County LOOP estimates a need of \$22.2 million for preventive maintenance and operations and \$18.6 million for capital needs between 2012 and 2035. Likewise, the City of Poughkeepsie estimates over \$12.5 million in preventive maintenance and operations and another \$17.7 million in capital needs for its bus system.

Fiscal Constraint Analysis

A comparison of reasonably available resources and estimated highway and bridge needs reveals an annual funding shortfall of between \$10 and \$23 million, depending on what is included. Although current funding resources will not support the identified level of capital investment activity, it is reasonable to assume that over the longer term funding resources will

keep pace with inflation and the demands of population and travel growth. The estimated transit funding will support the level of investment currently envisioned by the two local transit agencies.

During the period of the previous Metropolitan Transportation Plan, *Connections 2025*, the PDCTC expected investment to be focused on infrastructure repair and maintenance, safety, operational improvements, and some critical capacity expansion projects. The allocation of resources in *New Connections* is similar (Table 4-3), with 83 percent allocated to System Management and Preservation, and 10 percent for Mobility and Accessibility projects and activities. Remaining funds are allocated for safety Improvements, Land Use and Economic Growth, and Environment and Energy activities.

Nevertheless, for the period covered by this plan, it will be important for the PDCTC and its members to explore options to secure sufficient funds that maintain appropriate levels of investment in the regional transportation system.

Table 4-3. Allocation of Resources (2008-2035)

Transportation Plan Goals	TIP Costs 2008-2012 \$-millions	Long Term Post 2012 \$-millions	Total \$-millions	% of Total
System Management & Preservation	64.6	1,989.7	2,054.3	83%
Highway Reconstruction	3.0	613.6	616.6	
Bridge Rehabilitation & Construction	14.3	955.0	969.3	
Highway & Bridge Maintenance	29.4	357.6	387.0	
Transit Infrastructure & Operations	17.9	58.5	76.4	
Pedestrian & Bicycle Infrastructure	0.0	5.0	5.0	
Mobility & Accessibility	30.5	212.8	243.3	10%
Highway & Bridge Capacity	0.2	38.2	38.4	
ITS & Traffic Improvements	11.2	150.8	162.0	
Transit & Demand Management	2.7	9.8	12.5	
Pedestrian & Bicycle Capacity	16.4	14.0	30.4	
Safety Improvements	21.8	83.4	105.2	4%
Environment & Energy	1.5	10.4	11.9	<1%
Land Use & Economic Growth	20.1	46.9	67.0	3%
Total	138.5	2,343.2	2,481.7	100%

Sources: NYSDOT, DCDPW-Engineering, DC LOOP, and Poughkeepsie Transit

Notes and Assumptions:

- 1) Individual projects may have multiple components and/or fit into more than one category. Projects were placed into a category based on the main objective of the project.
- 2) 2008-2035 (28 years) Estimated Resources-Transit Operations and Capital Funding
- 3) All Regionally Significant or Non-exempt projects identified in the associated air quality are funded. PINs 801030, 806207, and 875739 are included in Post 2012 long-term funding, while the remaining projects are included in the 2008-2012 TIP.

Regional Transportation Authorities

Metropolitan Transportation Authority (MTA) – Metro-North Railroad, a division of the MTA, is a public benefit corporation. Metro-North’s revenues are primarily from passenger collections (ticket sales), rents, and concessions. The Railroad also receives subsidies from MTA and the State of Connecticut to support its operations. In 2003, Metro-North’s system-wide capital needs for 2005-2024 were projected to be \$13.5 billion. The current Capital Program (2005-2009) includes over \$1.3 billion in projects. MTA is in the process of developing its Twenty Year Needs Assessment, from which the next Capital Program will be drawn.

New York State Bridge Authority – the Bridge Authority operates five vehicle bridges over the Hudson River between Bear Mountain and Catskill. It is a wholly self-supporting public benefit corporation, and relies on toll revenues to meet its operational, maintenance, and capital improvement requirements. For the three bridges with landings in Dutchess County, the Bridge Authority’s current 20-year capital program (2007-2027) includes \$28.4 million in short term projects and an estimated \$201 million during the remainder of the plan period.

New York State Thruway Authority – the Thruway Authority is an independent public corporation created by the New York State Legislature in 1950 for the purpose of financing, constructing, maintaining, and operating the State’s now 641-mile highway network. This network includes its mainline facility between New York City and Buffalo, and also major connections to Connecticut, Massachusetts, and New Jersey. In Dutchess County, the Thruway Authority maintains Interstate-84 under contract with NYSDOT, which still owns the facility and is responsible for capital construction and operations. The Thruway Authority estimates that it will cost approximately \$195 million from 2009-2035 to support maintenance and operations activities on the County’s portion of Interstate-84.

Significant Project Commitments

When measuring the future needs of our transportation system against available funding, it should be noted there are several large transportation projects on the horizon. These projects will consume a sizeable amount of available funding as compared to typical highway and transit projects, and may affect the amount of funds available for other projects.

NYSDOT Projects – The following projects include reconstruction of interchanges at two of the Hudson River bridges and intersection improvements on the Taconic State Parkway, the backbone of the mid-County corridor.

- Route 9/44/55 Interchange Reconstruction, City of Poughkeepsie (\$30 million)
- Interstate-84 at Route 9D Interchange Reconstruction, Town of Fishkill (\$29 million)
- Taconic State Parkway at Rossway/Tyrell Road Interchange, Town of Pleasant Valley (\$30 million)
- Interstate-84 East and Westbound Rest Area Improvements, Dutchess County (\$32 million)

These projects are listed on the 2008-2012 Transportation Improvement Program (TIP), the construction phases are expected to occur after 2012. Funding has been included in the Region 8 12-year capital program (2007-2019).

MTA/Metro-North Railroad – As mentioned previously, the Metropolitan Transportation Authority is in the midst of developing its next 20-year Capital Needs Assessment and 5-year capital program. Among the projects currently identified as priorities for Metro-North are improvements to the improvements of the Signal System, and improvements to the Poughkeepsie Yard and Main Line to benefit both passenger and freight rail services. Funding for implementation of these projects has not yet been identified.

New York State Bridge Authority – Among the significant projects contemplated for the next 20 years are deck replacements for both spans of the Newburgh-Beacon Bridge (\$115 million) and the Mid-Hudson Bridge (\$20 million).

Summary

The PDCTC understands the reality that the needs of our transportation system will always outstrip available resources. This has been the case in previous plans and remains with this one. As noted before, the task at hand is to prioritize those needs by consulting with the agencies responsible for maintaining and operating the various highway and transit components of the system. And maintaining is the most operative word, because simply maintaining the system in a state of good repair stands as a major task for the coming years.

Chapter 5

Plan Recommendations

Through the years, the overriding goal of the PDCTC has remained the same: facilitate the safe and efficient movement of people and goods in Dutchess County. Previous transportation plans included a combination of specific project recommendations and broader policy strategies designed to ensure the transportation system would meet the needs of the County's residents, businesses, and visitors. In developing *New Connections*, the PDCTC has reduced the list of specific projects and focused on policies and actions to guide future decisions regarding both planning activities (usually undertaken in the annual work program) and capital projects (included in the transportation improvement program).

Chapter 1 laid out the PDCTC's strategic goal statements to guide transportation planning in Dutchess County. This chapter builds on those goals and adds some detail in the form of policy statements and specific strategies the PDCTC and its member agencies will undertake to implement the transportation plan. Some are a continuation of existing activities, others are new commitments. These recommendations allow the PDCTC to address the intent of SAFETEA and its eight planning factors, while also furthering its own transportation mission.

1) System Management and Preservation: Preserve the existing transportation system through appropriate maintenance, management, and operational improvements.

Recommendations in this strategy seek to ensure the maintenance of the existing transportation system in a good state of repair, adjusting the system as necessary to improve its efficiency and reliability, and analyzing relevant demographic and traffic data to understand how the transportation system might be used in the future.

Key Policy Statements:

- Continue to place a priority on improving the safety, efficiency and reliability of existing transportation facilities (roads, bridges, transit, bicycle, pedestrian).
- Maintenance, rehabilitation and repair of transportation facilities in a cost effective manner is important to protect and enhance user experience, safety, and access.
- Public transit provides benefits to both users and non-users. For some it is an alternative to automobile travel, for others it provides essential mobility, and it can assist the region in efforts to meet important air quality, energy savings, and congestion management objectives.
- Sidewalks, bicycle facilities, and multi-use paths are important components of the transportation system and will be given routine consideration in programming available funding.

Priority Actions:

1. Continue to base funding for transportation improvements on condition and function of facilities rather than jurisdiction or ownership.
2. Maintain all Federal-aid roads and bridges in “fair” or better condition.
3. Expand pavement condition monitoring to include all Federal-aid roads.
4. Maintain traffic count and intersection management programs to aid in identifying future needs.
5. Continue routine replacement of transit vehicles to ensure safe and reliable operation.
6. Support maintenance, rehabilitation, and improvement of transit facilities to ensure efficient operation and to improve customer safety and convenience.
7. Improve quality and availability of customer information for all public transit systems.
8. Develop a process to identify locations for new bus shelters and other passenger amenities (e.g. ticket kiosks, bicycle parking).
9. Cooperate with efforts to promote bicycling and walking as healthy and viable means of transportation.
10. Expand number of transit vehicles that can accommodate bicycles.
11. Standardize the provision of crosswalks and pedestrian count-down signals at key intersections.

2) **Mobility and Accessibility:** Provide reliable, efficient, and cost effective options for movement within the area and to and from other regions.

Increased traffic congestion is a growing concern in Dutchess County, and the traditional solution of additional travel lanes is not always effective or desirable. Most travel takes place on the road system and both capacity expansions and operations improvements will be necessary. This strategy goes beyond the traditional focus of examining each mode of travel in isolation, and looks at strengthening the interconnections among the many modes of travel, and improving connections between communities and to the greater region. An additional objective is to prepare the transportation system to absorb shifts in travel behavior resulting from outside forces, including changes in the economy, energy use, and security climate.

Key Policy Statements:

- Protect capacity of priority transportation facilities.
- Consider significant new highway and transit capacity within the context of the Congestion Management Process (CMP) and county and local development plans.
- Improve and expand links between and among complementary transportation services (e.g. local bus and commuter rail).
- Promote a variety of travel choices by expanding bicycle and pedestrian facilities for shorter trips.
- Consider the needs of older drivers when transportation facilities are maintained and rehabilitated.
- Support the ability of older people to remain independent and age in their communities.

Priority Actions:

1. Ensure the expansion of highway and transit facilities is consistent with the regional Congestion Management Process (CMP).
2. Identify a priority transportation network and develop access management plans in cooperation with local governments.
3. Continue to develop and implement intersection improvements to improve operations and increase efficiency.
4. Expand deployment of appropriate Intelligent Transportation Systems (ITS) on key transportation facilities.
5. Implement operational improvements and demand management techniques, including pricing techniques (e.g. congestion pricing, parking cash out programs), to address congested or overcrowded facilities.
6. Continue to support transit demand management activities (e.g. regional transit services and MetroPool).
7. Complete the Transit Development Plan and support implementation of priority recommendations.
8. Develop a Coordinated Public Transit-Human Services Transportation Plan to identify transportation improvements for the County's seniors, disabled, and low-income residents.
9. Establish, improve, and/or expand parking facilities to serve regional bus, rail, and carpool programs.
10. Explore fare program integration between and among complementary transit services.
11. Implement traffic calming measures to improve walking and bicycling in community and other activity centers.
12. Complete two major rail-trail facilities (Harlem Valley and Dutchess) and provide links to other regional facilities.
13. Provide pedestrian and bicycle facilities as part of new construction, reconstruction and maintenance projects where practical.

3) Land Use and Economic Growth: Integrate land use, economic development, and transportation activities to promote sustainable development in Dutchess County.

Recognizing the direct correlation between land use decisions and their impacts on the transportation system, this strategy seeks to influence the design and scope of County land use patterns so that they support a safe, reliable, and efficient transportation system. The actions are designed to reinforce sustainable land use practices, support economic sustainability, promote efficient and safe use of the transportation system, provide cost effective travel options, and minimize future costs to maintain or redesign the system. The PDCTC supports strong partnerships between local governments and transportation agencies to develop access management plans, transit oriented development (TOD), neighborhood centers, and open space programs.

Key Policy Statements:

- Use *Dutchess County Greenway Connections* and the *Centers and Greenspaces* program as guides for local land use decisions.
- Focus new growth in existing centers and along major transportation corridors (including bus and rail transit corridors).
- Infill development and redevelopment of obsolete uses is preferable to “greenfields” development in most cases.
- Recognize and accommodate the full range of transportation choices in community centers. Cars and trucks will share the facilities with pedestrians, bicycles and transit.
- Consider existing character, quality of life and safety when transportation facilities are reconstructed, maintained or established in community and hamlet centers.
- Pay special attention to locations for new housing and service facilities developed or marketed to the over 55 population. Walking should be an option, and access to and accommodation for bus transit will be important.

Priority Actions:

1. Prioritize investment in new highway capacity in corridors where local communities adopt and enforce access management plans.
2. Support mixed use development (residential, retail, services) to tie housing and job locations more closely to one another.
3. Use corridor management plans, community pedestrian plans, and other studies to identify priority capital, operations and enhancement activities.
4. Design pedestrian and bicycle facilities to connect related uses both internally and externally.
5. Consider transit and pedestrian access in new housing and service facilities developed for or marketed to elderly or handicapped populations.
6. Cooperate with Dutchess County Planning Federation and other organizations to develop and present educational programs for local government officials and the public.

4) **Environment and Energy:** Protect natural and man-made resources to enhance quality of life. Conserve energy resources and improve air quality in the region.

The focus here is to promote a transportation system that minimizes adverse effects on the natural environment and important cultural facilities, and better prepares the system to transition to alternative energy sources.

Key Policy Statements:

- Encourage development of transportation projects that are sensitive to potential environmental impacts, and mitigate negative impacts as much as possible.
- Continue to support and promote non-automobile transportation options.
- Ensure impacts of transportation decisions do not favor or harm various socio-economic groups disproportionately.

- Protect important environmental and cultural resources, including Critical Environmental Areas (CEA), designated Scenic Byways, and other areas known to be important to the county and region.
- Support efforts to reduce energy consumption and vehicle emissions (including those related to greenhouse gases) that are attributable to transportation.

Priority Actions:

1. Use Geographic Information Systems (GIS) technology to identify existing and candidate TIP projects that may have an effect on natural and cultural resources, including recognized Critical Environmental Areas.
2. Continue to evaluate impacts of transportation policies, plans, and projects on air quality and energy use in Dutchess County.
3. Implementing agencies will continue to have responsibility for completing detailed environmental assessment and identifying appropriate mitigation actions through appropriate federal and state procedures (NEPA and SEQRA).
4. Identify opportunities for “stand alone” environmental mitigation projects in the statewide Transportation Enhancement Program (TEP).
5. Explore use of alternative fuels and new engine technologies to reduce emissions on transit vehicles.
6. Continue to support public transit, ridesharing, walking, and bicycling projects.

5) Safety and Security:

- a. Improve safety of the transportation system for all users.

An important strategic pursuit in *New Connections* centers on improving the safety of all travelers whether they are pedestrians, bicyclists, transit users, or motorists, and regardless of whether or not they are residents or visitors. The focus will be on ensuring safety is a key factor in the design and operation of facilities and systems, and behavioral changes through education and enforcement, with a goal of reducing crashes and their severity.

- b. Cooperate with and support county, regional, and state transportation security programs.

Ensuring the security of the transportation system is complicated by the numerous factors outside the control of the PDCTC. However, this does not negate the need to make a good faith effort to address those safety and security concerns that are within the power of the PDCTC to act on. Much of this effort relies on work being done by agencies with a direct need to address transportation security and emergency response efforts.

Key Policy Statements:

- Continue to work with NYSDOT, the Governor’s Traffic Safety Committee and other partners to implement the State Highway Safety Plan (June 2007).
- Support efforts to monitor and maintain key transportation facilities to prevent failures.
- Support NYSDOT efforts outlined in its *Master Plan* to balance security and system reliability with other priorities.

Priority Actions:

1. Continue to identify and correct safety deficiencies on state, county, and local roads.
2. Expand and improve rest areas in the region to improve truck and traveler safety.
3. Continue to work with NYSDOT and other partners to ensure on-going access to crash data and information.
4. Increase use of electronic security and surveillance applications on public transit vehicles.
5. Provide data and technical assistance to county and regional agencies that are responsible for planning responses to potential emergency or disaster related events.
6. Continue to support local traffic safety and STOP-DWI programs.
7. Consider deployment of signal pre-emption technology to assist local emergency response agencies, particularly in congested corridors.

Recent and Current Activities

New Connections is the latest iteration of the PDCTC transportation plan and builds on previous efforts. The 2008-2012 TIP, scheduled for adoption in late-2007, includes \$129 million in highway, bridge, transit, pedestrian, bicycle, and enhancement projects supported by a combination of federal, state, local, and special authority funds. Similarly, the PDCTC and its member agencies have completed or are working on a number of planning projects that may result in new projects and policies. Some highlights include:

System Management and Preservation

1. Route 9 (Hyde Park) Corridor Management Plan (2006) – NYSDOT and Hyde Park worked cooperatively to develop a corridor management plan for the length of Albany Post Road (Route 9) in Hyde Park. The plan recommended establishing uniform features for major intersections along the corridor, restricting the number of driveways, encouraging the use of service roads/alleys and shared driveways, and interconnecting commercial parking lots.
2. Route 22 (Harlem Valley) Access Management Plan (2005) – NYSDOT assisted the towns of Amenia, Dover, North East and Pawling and the Harlem Valley Partnership to complete an access management plan for Route 22. The project consultant developed zoning ordinance regulations for each town to assist in the implementation of plan concepts. None of the four towns have adopted new regulations.
3. Maybrook Multi-Modal Corridor Study (2002) – NYSDOT completed a comprehensive examination of the former Maybrook Railroad right-of-way in Dutchess and Ulster counties. The study recommended constructing a multi-use (pedestrian and bicycle) facility between Hopewell Junction and Highland. Portions of the trail have been constructed or are part of the 2008-2012 TIP: Hudson Valley Trailway (Town of Lloyd), Walkway Over the Hudson, and Dutchess Rail Trail (Dutchess County).

Mobility and Accessibility

1. Dutchess County Transit Development Plan (current) – Dutchess County LOOP, the City of Poughkeepsie, and NYSDOT are cooperating with PDCTC to complete a comprehensive analysis of the two local bus systems. The plan will focus on finding ways to improve the efficiency and effectiveness of the systems, along with extensive outreach to current customers and the public.
2. Route 52 Alternatives Analysis (current) – The Town of Fishkill, the Village of Fishkill, and NYSDOT are examining the potential for continuing West Merritt Boulevard to Route 52 west of the Village Center. The study will look at the feasibility and potential benefits of this connection for an alternate route for through traffic.
3. Pleasant Valley Hamlet Analysis (current) – PDCTC is working with Pleasant Valley to evaluate current traffic patterns to determine if an extension of Maggiacomo Lane to South Avenue and or access management will relieve congestion in the Hamlet.
4. Fishkill Traffic Analysis (2006) – The goal of the project was to identify potential solutions community concerns about congestion, speeding, and cut through traffic in the Village, while minimizing the effects on the performance of the overall transportation system. Recommendations included changes to signal timing, implementation of traffic calming measures, and intersection modifications. The Village and NYSDOT will be responsible for implementation.
5. Coordinated Transportation Services Study (2003) – This project focused on service improvements and potential coordination among several large private human service agencies. Although the analysis showed there were some potential benefits for increases coordination, the involved agencies decided not to pursue implementation.

Land Use and Economic Growth

1. Beacon Station and Connections (current) – MTA/Metro-North Railroad and the City of Beacon, with assistance from the Dutchess County Planning Department, are examining ways to improve linkages between the Beacon train station, Main Street, and the City's cultural attractions. A special transit oriented district has been established to promote transit oriented development principles in the City.
2. Route 9 Land Use and Transportation Study (2007) – PDCTC worked with a diverse group of stakeholders to address concerns about pedestrian safety, congestion, and future development on Route 9 in Poughkeepsie. NYSDOT, Marist College and the Town of Poughkeepsie are collaborating on the implementation of one project recommendation: the construction of a pedestrian bridge over Route 9 to connect Marist East and West Campus facilities.
3. LaGrange Town Center (2005) – LaGrange continues to work with NYSDOT, Dutchess County, private developers, and property owners along Route 55 to create a mixed-use town center in Freedom Plains.

4. Hopewell Hamlet Pedestrian Study (2002) – The project included recommendations for new pedestrian facilities and modifications of Routes 82 and 376 to improve circulation in the hamlet.
5. Wappingers Falls Transportation Plan (2001) – This transportation study looked at the downtown Village center, focusing on the impacts that Route 9D traffic had on local residences and businesses. The study recommended a number of traffic calming measures along Main Street (Route 9D), including high visibility crosswalks, intersection bulb-outs, and new sidewalks.
6. Poughkeepsie Transportation Strategy (1997) – This project examined three key locations in the City of Poughkeepsie, the Waterfront, the Central Business District, and the Northside neighborhood. The City continues to refine and implement many of the project recommendations in cooperation with NYSDOT, Metro-North Railroad and other interests.

Environment and Energy

1. Hudson River Valley Scenic Byways Public Outreach Project (2004) – the Hudson River Valley Greenway initiated a project in 2003 to identify roads within the Hudson Valley that could become part of the New York State Scenic Byway System. In Dutchess County, the portion of Route 9 near the Franklin D. Roosevelt and Vanderbilt historical sites was identified as being a potential scenic route, along with Route 44/Salt Point Turnpike as a Farm-to-Market byway (the Taconic State Parkway is an existing scenic byway).
2. Taconic State Parkway Scenic Byway Corridor Management Plan (1999) – The NYSDOT developed this plan to properly manage the 105 mile Taconic State Parkway. Recommendations covered issues ranging from roadway maintenance, natural resource management, and cultural/historic resource management.

Safety and Security

1. I-84 Commercial Vehicle Parking/Rest Area Study (2003) – PDCTC coordinated this project in cooperation with NYSDOT and Putnam County. The study identified three potential locations for new or improved rest area and parking facilities between Connecticut and the Newburgh-Beacon Bridge. Evaluation of the locations is continuing.
2. Taconic State Parkway Task Force (2002) – NYSDOT initiated this project in response to concerns about the safety of existing at-grade crossings on the Taconic State Parkway in Dutchess County. A series of temporary closings of medians and some turn restrictions were implemented in 2003. NYSDOT continues to develop plans for permanent improvements that balance safety and access.

Future Planning Activities

Congestion Management Process – As required by federal law, the three MPOs of the Mid-Hudson Valley Transportation Management Area (TMA) – the PDCTC, Orange County Transportation Council (OCTC), and Ulster County Transportation Council (UCTC) – adopted a joint Congestion Management Process (CMP) in 2005. The CMP established a four step process to measure and define recurring congestion in the three counties. In accordance with the implementation schedule, the three MPOs completed a joint progress report in June 2006, which identified locations with severe, heavy, and moderate peak hour congestion. The following facilities were identified as having the worst congestion in Dutchess County, with a Vehicle-to Capacity ratio of 1.00 or higher.

- Route 55 between Taconic State Parkway and CR 49 (Titusville Rd.)
- Route 376 between CR 104 (New Hackensack Rd.) and Degarmo Rd.
- CR 44 (Red Oaks Mill Rd.) between Route 376 and CR 49 (Titusville Rd.)
- CR 77 (Vassar Rd.) between Spring Rd. and CR 110 (Jackson Rd.)
- CR 104 (New Hackensack Rd.) from Route 376 to CR 94 (All Angels Rd.)
- Spring Rd. between Route 9 and Kerr Rd. (Town of Poughkeepsie)

Other areas previously identified as having congestion include:

- Interstate 84 between Route 9D and Route 9
- Route 9 between Route 52 and CR 93 (Middlebush/Myers Corners Rd.)
- Route 9D between Beacon Train Station and Interstate 84
- Route 9D between CR 93 (Middlebush Rd.) and Route 9
- Route 44 between Overocker Rd. and Taconic State Parkway
- Route 52 between Route 9 and Route 376
- Route 82 between CR 31 (Palen Rd.) and Route 376
- CR 40A (St. Andrews Road) between Route 9 and Route 9G
- CR 93 (Myers Corners Road) between Route 9 and CR 93 (All Angels Hill Rd.)

All of the above listed locations will receive priority for congestion mitigation activities in the coming years, including intersection improvements, access management treatments, and possibly capacity expansion.

In addition to the areas identified above, smaller areas of congestion exist in and around intersections during peak periods. These areas, when identified, can be evaluated under the PDCTC's Intersection Management program or by the appropriate operating agency. These evaluations may lead to suggestions and or improvements that can be made to improve efficiency.

Centers and Greenspaces Plan – The Dutchess County Planning Department is developing a *Centers and Greenspaces Plan* that encourages new development within walking distance of existing and emerging centers, while protecting outlying natural and agricultural greenspaces. One of the primary policies of the previous *Greenway Connections* was to “focus development more efficiently in and around traditional centers and avoid overdevelopment of the rural surroundings,” which remains the most effective way to combat sprawl and to integrate transportation, land use, and ecological objectives. This new plan builds upon that policy.

The primary goal of the *Centers and Greenspaces Plan* is to identify both priority greenspaces for permanent protection and priority growth centers with redevelopment and expansion potential, which includes strengthening existing and historic centers or establishing a new center. “Emerging centers” include growing crossroad hamlets and clusters of shopping plazas along major roadways, with space for infill mixed-use development and connections to nearby housing. More compact development patterns provide a variety of transportation choices, including walking, biking and public transit. Since over one-third of auto trips are for local errands, traffic can be reduced by a significant percentage in well-planned, walkable mixed-use areas.

A centers strategy also reinforces transit-oriented development patterns, where close-knit new development is within walking distance of a rail station or express bus stop. Consolidating new commercial and residential development in existing or emerging centers will prevent continued strip development with multiple driveways along the primary state highways and help replace the demand for separated subdivisions along outlying roads. Centered development also creates far fewer road extensions and more compact service areas for the public to maintain over the long-term, thus limiting the local tax burden.

Coordinated Public Transit-Human Services Transportation Plan – Upon completion of the Dutchess County Transit Development Plan (TDP) (mid-2008), the PDCTC will initiate development of a formal Coordinated Public Transit-Human Services Transportation Plan. Some issues and concerns have been identified both in the TDP process and by other agencies in Dutchess County.

Data and Information Management – During the past decade, the PDCTC has expanded its data collection and analysis activities. Priorities for the next five years include work on a more comprehensive pavement management system, analyzing crash data, transit route analyses, measures of pedestrian and bicycle use, and development of performance measurements that will assist in project evaluation.

Corridor Planning – The PDCTC will continue its tradition of assisting local communities with managing critical transportation corridors. Two planning studies are currently scheduled to be initiated in 2008: a Route 9G Access Management Plan for the Town of Hyde Park and a CR 93 (Myers Corners Road) Corridor Management Plan for the Town of Wappinger. As in past studies, the PDCTC will not only look at transportation specific issues, but also how land use decisions and practices relate to each corridor.

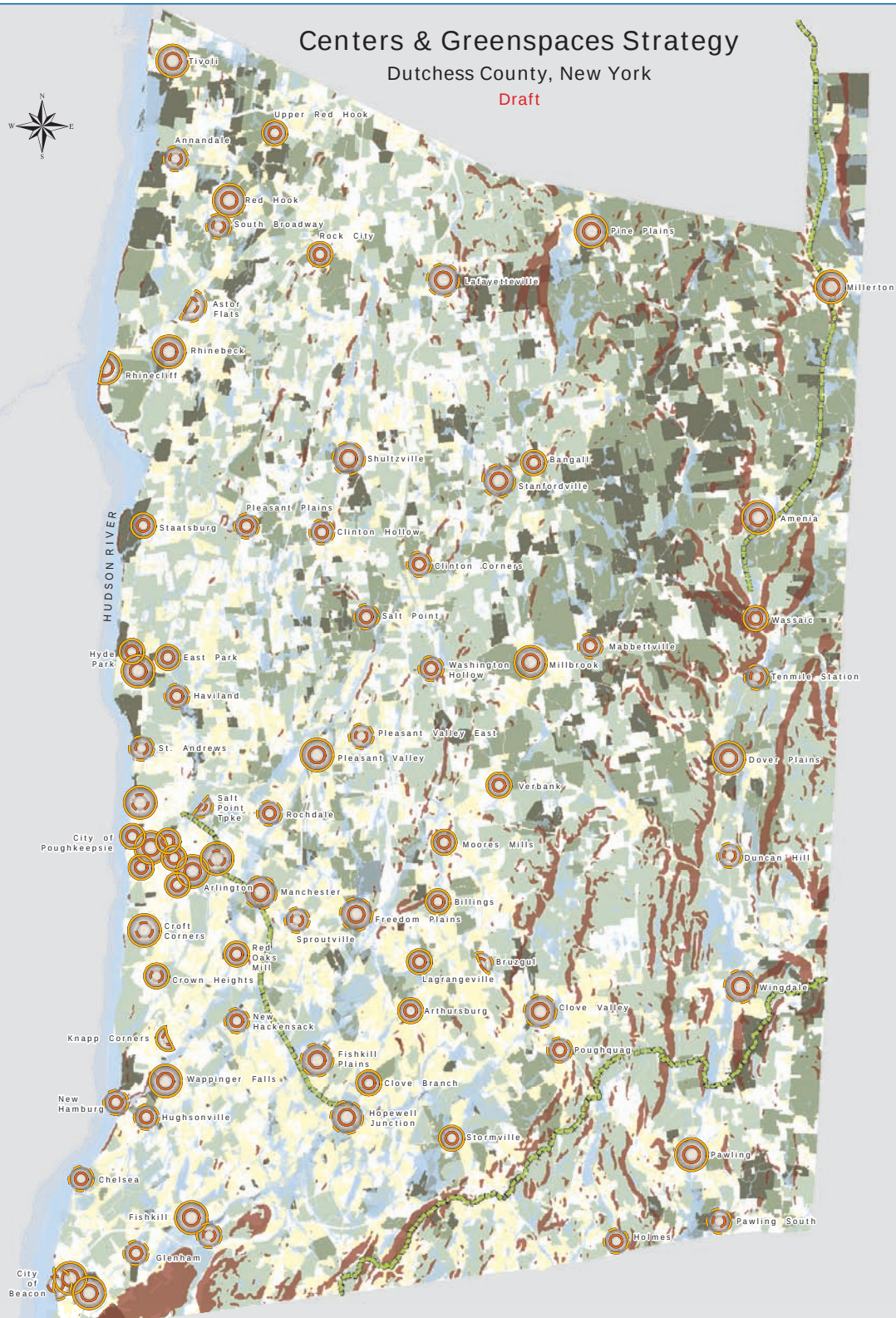
Summary

In a departure from previous plans, the recommendations in this new plan are policy based rather than project specific. The intent of this approach is to better position the PDCTC when making decisions about future transportation projects, by providing the Council with enough flexibility to address changing demands and priorities. *New Connections* is not a static document, and the PDCTC will review and update the transportation plan within the next four years, or if any significant new projects or initiatives emerge from its on-going planning process.

Centers & Greenspaces Strategy

Dutchess County, New York

Draft



Landscape Patterns	Recommended Actions		
Preserved Greenspaces	Continued Protection	Walkable From Edge To Center	City or Village - Scale Centers (Larger 1320'-2640')
Priority Greenspaces	Proposed Preservation	Mixed Use Center	Hamlet or Neighborhood Centers (Smaller 1000'-2000' Radial)
Rural Countryside	Conservation Development	Emerging Centers	
Existing Suburbs	Neighborhood Retrofit		
Major Trails			
Steep Slopes - 20% & Above			
Water / Wetlands / Floodplains			

Dutchess County Department of Planning & Development
 Road Centerline File from Real Property Tax Agency
 Map Is Not To Scale

NEW Connections

Appendix A

Summary of Public Comments

The PDCTC Technical Committee and staff cooperatively developed the Draft *New Connections* between 2006 and 2007. The final “review draft” was prepared in fall 2007, and PDCTC staff developed a Plan Summary for distribution in October 2007. A Public Notice and the Plan Summary were mailed to the Public Information mailing list, the press, and the PDCTC committee members on October 9, 2007. Two Public Information meetings were held on October 18, 2007 at the Dutchess County Planning and Development office and LaGrange Town Hall.

The Air Quality Conformity Analysis was completed in mid-October. A Public Notice of the completion of the Conformity Determination for the Poughkeepsie Ozone Non-Attainment area was mailed to the Public Information list, the press, and the PDCTC committee members on October 25, 2007.

Comments on *New Connections* were due on November 8, 2007. Comments on the Air Quality Conformity were due on November 26, 2007. This report contains all comments received prior to those deadlines. The PDCTC response is outlined immediately following each comment.

Empire State Passengers Association – The following comments were made by email. [Steve Strauss, Board Member]

1. I would like to suggest that PDCTC include Amtrak in its public agency outreach, mailings and e-mails. Amtrak is an important part of the lower Hudson Valley’s transportation network and the MPOs in NYS seem to have a hard time including them.

PDCTC Response – *Amtrak was included in our public agency outreach.*

2. The Empire State Passengers Association is quite interested in PDCTC adding improvements at Rhinecliff station (parking, high level platforms, maybe a self-service ticket machine) to future TIPs.

PDCTC Response – *The PDCTC welcomes an application from Amtrak as part of its Transportation Improvement Process.*

Pedestrian/Intersection Safety – Make improvements for pedestrian safety along Routes 22 and 55 in Pawling and add turning lanes to the intersection of Routes 55 and 82 in the Town of LaGrange [Jane Geisler]

PDCTC Response – *The PDCTC appreciates the suggestions and pedestrian safety in addition to safety of all the users of all modes of transportation users is a priority of the PDCTC.*

Route 22, 55, and 82 are under the jurisdiction of NYSDOT and they therefore need to be involved in any projects along those roadways. We have forwarded your concerns to the Region 8 Regional Planning and Program Manager.

Taconic Resources for Independence, Inc. – The following comments were made by email.
[Bill Quinn, Peer Advocate]

1. I very much appreciate the mention which the plan makes of the growing transportation needs of the elderly and those with disabilities. However, I have a specific concern related to this area. Under its current schedule, the bus system is not able to accommodate those who have regular 9 to 5 jobs due to a lack of evening service. While I understand that fiscal matters are a concern, there are many in the county, particularly those with disabilities, who are unable to drive. Such persons have no other way of accessing employment aside from the public transportation system. Furthermore, this will be a growing need as older Dutchess County residents are required to stay in the work force longer as a result of the raising of the minimum retirement age for future generations.

PDCTC Response – *The PDCTC is currently conducting a Transit Development Plan to identify ways to improve the efficiency and operations of the two local bus systems. The plan will propose and evaluate service improvements, focusing on a combination of operating strategies (e.g. adding/removing routes), schedule adjustments (e.g. reduce deadhead and transfer times), longer service hours, and system changes (e.g. new shuttle routes).*

Appendix B

Air Quality

In recognition of the close relationship between air quality and transportation, Federal legislation – the Clean Air Act Amendments of 1990 (CAAA) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA) – require that transportation activities conform to State air quality implementation plans before receiving federal transportation funding. Specifically, the CAAA establishes air quality standards through the designation of National Ambient Air Quality Standards (NAAQS). These standards set limits on the levels of air pollution (e.g. ozone, Particulate Matter, Carbon Monoxide, and Nitrogen Dioxide) that can exist in a region. In regions where these standards are not met (i.e. non-attainment areas), it must be demonstrated that all future transportation plans and projects do not produce new air quality violations, worsen existing conditions, or delay timely attainment of the NAAQS.

In 1991, Dutchess County, Putnam County, and Northern Orange County were classified as a Moderate Non-attainment Area under the 1-hour ozone standard, while in attainment for all other Clean Air Act criteria pollutants.

On July 16, 1997, the U.S. Environmental Protection Agency (USEPA) concluded that the 1-hour standard did not adequately protect the public from the adverse health effects of ground level ozone. In establishing a new “concentration based” 8-hour standard, the USEPA set the standard at 0.08 parts per million (ppm). Specifically, the design value for 8-hour ozone is the 3-year average of the annual 4th-highest daily maximum 8-hour ozone concentrations. An area attains the standard when the 3-year average of the annual 4th-highest daily maximum 8-hour concentrations is less than or equal to 0.08 ppm.

Effective June 15, 2004, the USEPA designated Dutchess, Orange, and Putnam County to be a Non-attainment Area under the 8-hour ozone standard. Based on 2001-2003 data, the 8-hour ozone design value for the Poughkeepsie Ozone Non-attainment Area was 0.094 ppm, and Dutchess, Orange and Putnam County were classified as a Moderate Ozone Non-attainment Area under the 8-hour ozone standard. The current ozone design value for the area based on 2004-2006 monitoring data is 0.084 ppm.

On December 22, 2006, the U.S. Court of Appeals for the District of Columbia Circuit both upheld and rejected certain aspects of EPA’s framework for implementing the State Implementation Plan (SIP) requirements under Clean Air Act (CAA) Title I Part D for 8-hour ozone non-attainment areas. A key result of the court decision involved the continued implementation of emission control strategies in areas that were previously designated non-attainment for the 1-hour ozone standard under CAA Part D Subpart II and are now designated non-attainment for the 8-hour ozone standard under CAA Part D Subpart I.

Generally speaking, SIP requirements under Subpart I are less stringent than those under Subpart II. The “anti-backsliding” provision, CAA Section 172(e), provides that in the event “[EPA] relaxes a [primary National Ambient Air Quality Standard] after November 15, 1990, [EPA] shall...provide for controls applicable to areas designated non-attainment before such relaxation.”

In the subject court case, the DC Circuit Court specifically concluded that transportation conformity requirements for areas designated non-attainment for the 1-hour ozone standard

under Subpart II constitute “controls” under Section 172(e). The DC Circuit Court decision states that “EPA is required by statute to keep in place measures intended to constrain ozone levels – even ones that apply to outdated standards – in order to prevent backsliding.”

Therefore, the transportation conformity requirements that previously applied to 1-hour ozone non-attainment areas may remain “applicable requirements,” conformity determination and associated analyses must address the transportation conformity requirements that apply to the New York Metropolitan 1-hour severe ozone non-attainment area, the Poughkeepsie 1-hour moderate ozone non-attainment area, and the Poughkeepsie 8-hour moderate ozone non-attainment area.

Three separate Metropolitan Planning Organizations (MPOs) share responsibility for the Poughkeepsie-Ozone Non-attainment Area: the New York Metropolitan Transportation Council (NYMTC), the Orange County Transportation Council (OCTC), and the Poughkeepsie-Dutchess County Transportation Council (PDCTC). All three MPOs have worked together to complete a joint Conformity Determination for their respective TIP and MTP.

To complete the conformity determination, interagency consultation is required. The Interagency Consultation Group (ICG) includes representatives from the USDOT (Federal Highway and Transit Administrations), USEPA – Region 2, NYS Department of Environmental Conservation (NYSDEC) – Main Office, NYSDOT-Environmental Analysis Bureau (EAB), and the Metropolitan Planning Organizations (MPOs). The group provides multi-agency concurrence on the assumptions and methodologies used in the NYMTC, OCTC, and PDCTC Travel Demand Models; the results of which formed the basis of the regional emissions analysis. The model outputs are used to forecast the amount of air pollution created when the projects in the MTPs and TIPs are expected to be operational.

A crucial step in the modeling process involves identifying which projects might affect regional air quality. In most instances, projects such as safety improvements, resurfacing, bridge repairs, and bus replacements, which maintain current levels of service or capacity, are considered **Exempt** from the conformity analysis. Similarly, projects that result in operations improvements, but do not increase capacity - an intersection widening - are also excluded from the analysis. Inversely, there are two types of projects (**Non-exempt and Regionally Significant**) that have the potential to affect air quality:

Non-exempt: highway and road projects that change capacity by at least one travel lane or transit projects that change capacity on a fixed route system. A non-exempt determination is made if the project type is not found in the list of exempt projects derived from “Table 2- Exempt Projects” in 40 CFR Part 93.126, 93.127 and NYCRR Part 240.27.

Regionally Significant: any project, regardless of funding source, on a facility that serves regional transportation needs and that would normally be included in the modeling of a metropolitan area’s transportation network. Includes, at a minimum, all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.

All of the projects in the MTPs and TIPs were first evaluated for applicability using the guidance contained in *Appendices B and C of The Air Quality Conformity Determination Process*, issued by NYSDOT-EAB on December 8, 2003.

PDCTC staff developed the list of Non-exempt and Regionally Significant projects and forwarded it to NYSDOT-EAB on August 28, 2007 for dissemination to the ICG. On September 13, 2007 the PDCTC received concurrence from the ICG on the list of Non-exempt and Regionally Significant projects to be included in the Regional Emissions Analysis.

Non-exempt and Regionally Significant Projects

PIN	Project	Agency
801012	Route 9 - Reconstruction, Route 301 to Interstate 84	NYSDOT
801030	Route 9 - Construction, CR 93 (Myers Corners Rd.) to Mesier Ave.	NYSDOT
806207	Interstate-84 @ Route 9D - Reconstruction	NYSDOT
875739	Route 9 Service road: Construction - Hollowbrook Dr. to Imperial Blvd.	DCDPW
881053	Ozone Action Days	NYSDOT
882382	Enhanced Regional Commuter Choice	NYSDOT
882524	Beacon Train Station - Parking improvements	Metro-North
8TRD42	City of Poughkeepsie Transit Center - Academy St. (no federal funds)	C/Poughkeepsie
8TRD51	LOOP Diesel Retrofit Program - 25 Vehicles	DC LOOP

Completing the air quality analysis on the MTPs and TIPs required analyzing some projects that are still in the conceptual stage. In accordance with the final transportation conformity rules issued by the USEPA, if adequate information was available to produce reasonable assumptions, then forecasts of the project impacts on vehicle miles traveled and average vehicle speeds could be produced.

Future projects with insufficient data to model include those still in the early development stages, such as the Taconic State Parkway and CR 29 (Carpenter Rd.) interchange, and the Route 9-Route 44/55 interchange.

Public involvement in the conformity process is discussed separately in Appendix A (*Public Involvement*).

A SIP-based on-road mobile source emissions budget has not yet been established for the Poughkeepsie Moderate Ozone 8-hour Non-attainment Area. However, 40 CFR Part 93.109(e) requires areas that were part of another 1-hour ozone non attainment area with an emissions budget to be considered separately within a conformity determination for the new 8-hour ozone non attainment area.

Therefore, per 40 CFR Part 93.109(e), a demonstration that 1) the entire area's Volatile Organic Compounds (VOC) and Nitrous Oxides (NO_x) "Action" scenario emissions are less than 2002 baseline emissions, and 2) the area's "Action" scenario emissions are less than the "No-Action" scenario in each future conformity analysis year scenario and 3) the VOC and NO_x "action" scenario emissions in LOCMA are less than those allowed in future analysis years for the LOCMA portion of the former NYMA 1-hour severe ozone non-attainment area, is required the Poughkeepsie Ozone Non-attainment Area Conformity Determination Statement.

The results of the regional emissions analysis demonstrate that the **Metropolitan Transportation Plans** and **2008-2012 Transportation Improvement Programs** of NYMTC, OCTC and the PDCTC achieve and maintain National Ambient Air Quality Standards (NAAQS), as required by the Clean Air Act Amendments of 1990 and the New York State Implementation Plan (SIP) for air quality. The table below details the results for the Dutchess County portion of the Poughkeepsie 8-Hour Ozone Non-attainment area.

Dutchess County Emissions Reduction Test (Build < No-Build and Build < 2002) (tons/day)

	Base Year	Future Analysis Years									
	2002	2009		2015		2025		2030		2035	
PDCTC	No-Build	Build	No-Build	Build	No-Build	Build	No-Build	Build	No-Build	Build	No-Build
VOC	7.52	3.90	3.97	2.41	2.48	1.42	1.50	1.40	1.50	1.56	1.67
NOx	10.82	6.27	6.44	3.30	3.41	1.56	1.66	1.32	1.40	1.37	1.44

Energy Analysis

New York State Department of Transportation requested that the PDCTC complete an analysis of the *2008-2012 TIP* and *New Connections* to determine if they were consistent with the goals and objectives of the New York State Energy Plan. The energy analysis was completed after the required federal air quality conformity analysis, and used some of the same planning assumptions.

The energy analysis included a calculation of four pollutants (volatile organic compounds, nitrogen oxides, carbon monoxide, and carbon dioxide), and energy use (direct and indirect). Completion of the analysis was based on guidance received from NYSDOT Environmental Analysis Bureau (NYSDOT-EAB) and relies on the PDCTC regional travel demand model for the “build” scenario.

A quantitative analysis was also undertaken for those recommendations in the *2008-2012 TIP* and *New Connections* that could not be modeled in the regional travel demand model. This included transit projects, bicycle and pedestrian projects and transportation demand management (TDM) projects. Using information developed by the project sponsors, PDCTC calculated the reduction of VMT. The VMT reductions were then added to the regional demand model outputs in order to reflect a more accurate *2008-2012 TIP* and *New Connections* “build” scenario. This process differs from that used in Air Quality Analysis where only the results of VMT from the regional travel demand model were used.

The results of the quantitative analyses demonstrate that the projects included in the *2008-2012 TIP* and *New Connections* will decrease the emissions of VOC, NO_x, CO, and CO₂, and the amount of direct energy consumed, albeit by small amounts.

Energy Analysis Summary

	Energy	Greenhouse Gas (CO ₂)
Scenario	Direct (BTUs)	Direct (tons)
2035 no-build	55,662,230,970	1,182
2035 build	53,668,828,145	1,140
Change (build-no build)	-1,993,402,825	- 42
% Change (build-no build)	-3.58%	-3.58%

The PDCTC is committed to working with New York State and its other partners to identify other projects and activities that are consistent with the objectives of the *New York State Energy Plan*.

Appendix C

New Connections Glossary

Access Control: The exercise of state and/or local government authority to condition a property owner's right of access to a road.

Access Management: The process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety, capacity and speed.

Accessibility: A measure of the ability or ease of all people to travel among various origins and destinations.

ADA (Americans with Disabilities Act): Federal law that governs the provision of services and facilities necessary to accommodate people with disabilities. The law includes specific requirements regarding transportation services and facilities.

Amtrak: Passenger trains run by the National Railroad Passenger Corporation of Washington, DC.

Arterial: A major thoroughfare used primarily for through traffic and generally characterized by high vehicular capacity and continuity of movement.

Arterial, Unlimited Access: An arterial providing properties abutting the right-of-way with the right to construct driveways to the arterial.

Arterial Management: The application of (state and local) planning, capital, regulatory, and management tools to enhance and/or preserve the transportation function of the roadway.

Bicycle: Every two or three wheeled device upon which a person or persons may ride, propelled by human power through a belt, chain, or gears, with such wheels in tandem or tricycle, except that it shall not include such a device having solid tires and intended for use only on a sidewalk or by pre-teenage children. (New York State Vehicle and Traffic Law)

Bicycle Facility: A general term denoting improvements and provisions made by public agencies to accommodate or encourage bicycling, including parking facilities, bikeway maps, and shared roadways not specifically designated for bicycle use.

Bicycle Lane (Bike Lane): A portion of roadway that has been designated by stripping, signing and pavement markings for the preferential or exclusive use of bicyclists. (New York State Vehicle and Traffic Law)

Bicycle Path (Bike Path): A path completely separated from vehicular traffic and within an independent right of way or the right of way of another facility. Travelways separated from vehicles, but shared by both bicycles and pedestrians are included in this definition.

Bicycle Route (Bike Route): A segment of a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational markers, with or without specific bicycle route number, includes both facilities for exclusive use of bicycles and shared use with motor vehicles.

Bicycle-Sensitive Traffic Signals: Traffic detector loops that are sensitive enough to pick up a bicycle and trigger a change in the light.

Bikeway: Any road, path, or way which in some manner is specifically designated as being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Bulb-out (Pinch Point): A bulge in the curb intended to narrow the travel lane and thereby reduce the speed of vehicles. A variety of designs are possible.

Bus lane: A street or highway lane intended primarily for buses, either all day or at specific times.

Bus shelter: Structure at a bus stop providing seats and protection from inclement weather.

CAAA (Clean Air Act Amendments of 1990): Federal law which stresses the relationship of transportation and air quality and the attainment of National Ambient Air Quality Standards.

Capacity: The maximum volume of traffic that a particular roadway or section of roadway is able to accommodate in a given time period.

Capacity Deficiency: Situation that occurs when the number of vehicles on a roadway exceeds the desired level of service threshold volumes for that roadway.

Capital Costs: Non-recurring or infrequently recurring costs of long-term assets, such as land, guideways, stations, buildings, and vehicles.

CO (Carbon monoxide): Colorless, odorless, very poisonous gas formed by the incomplete combustion of carbon materials, including gasoline. It is a major air pollutant based on weight.

Carpool: An arrangement in which two or more people share the use, cost, or both of traveling in privately owned automobiles between fixed points on a regular basis.

CEMP (Comprehensive Emergency Management Plan): The results of a systematic investigation and analysis of potential hazards that could affect the county, an assessment of the capabilities existing in the county to deal with potential problems and, finally, the development of necessary actions to achieve expected results.

Commute: Regular travel between home and a fixed location, usually a job. The term is often applied only to travel in the direction of the main flow of traffic, to distinguish from reverse commute.

Commuter railroad: Rapid transit services that typically use portions of main-line railroad to carry passengers among a central city and its suburbs.

Conformity (Transportation Conformity): Is a way to ensure that Federal funding and approval is applied to those transportation activities that are consistent with air quality goals. Conformity applies to transportation plans (such as the PDCTC Metropolitan Transportation Plan [MTP]), Transportation Improvement Programs [TIPs], and projects funded or approved by the Federal Highway Administration [FHWA] or the Federal Transit Administration [FTA]) in areas that do not meet or previously have not met air quality standards for ozone, carbon monoxide, particulate matter, or nitrogen dioxide. These areas are known as “non-attainment areas” or “maintenance areas,” respectively. Transportation projects must demonstrate conformity in order to be funded.

Congestion: The volume of traffic at which roadway performance is no longer operating at an acceptable level of service.

CMP (Congestion Management Process): Required for a TMA, institutes a formal process to measure and manage the performance of a transportation system. Such a process must describe methods to collect and analyze transportation network data, with the intent of developing effective strategies to mitigate identified congestion.

Connections 2025: The 2003 Metropolitan Transportation Plan for the Poughkeepsie Metropolitan Area.

CHIPS (Consolidated Local Street and Highway Improvement Program): State funding program that provides counties and municipalities with state aid for operating, maintaining, and rehabilitating local highways and bridges.

CMAQ (Congestion Mitigation/Air Quality program): Federal funding program for projects and programs designed to decrease traffic congestion and/or improve air quality.

Crosswalk: Any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface. (New York State Vehicle and Traffic Law)

Curb cut: Area at which a street curb has been cut and sloped so the sidewalk leads smoothly to street and crosswalk.

Delay: A measure of driver discomfort, frustration, fuel consumption, and lost travel time.

DCDPW (Dutchess County Department of Public Works): Dutchess County department charged with responsibility for county highway, bridge, and building facilities.

Demand-response: Transit service in which passengers request door-to-door or point-to-point service at a specific time. Also called Dial-A-Ride.

EPA (Environmental Protection Agency): Federal agency responsible for implementing the Clean Air Act.

Farebox: Machine that accepts tokens, bills, coins or tickets from passengers for rides on transit vehicles.

Federal-Aid System: Consists of roads which are eligible for either NHS (National Highway System) or STP (Surface Transportation Program) funding. All roads included in the Federal-Aid system are functionally classified in systems higher than local or rural minor collector.

FFY (Federal Fiscal Year): October 1- September 30.

FHWA (Federal Highway Administration): USDOT agency responsible for approval of transportation projects that affect the federal aid highway system. FHWA is a non-voting member of the PDCTC.

FRA (Federal Railroad Administration): USDOT agency responsible for the administering of federal programs concerning rail transportation. FTA is a non-voting member of the PDCTC.

FTA (Federal Transit Administration): USDOT agency responsible for approval of mass transit projects. FTA is a non-voting member of the PDCTC.

Fixed Route: Transit services that run on regular, pre-scheduled routes, usually with bus schedules and designated bus stops.

Functional Classification: Process by which streets and highways are grouped into classes or systems, according to the character of service they are intended to provide. Basic to this process is the recognition that roads do not function independently, rather most travel involves movement through a network of roads.

High-speed rail: System in densely traveled corridors at speeds of at least 124 mph.

Highway: A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

HBRR (Highway Bridge Replacement and Rehabilitation): Federal funding program for rehabilitation and replacement of deficient highway bridges.

Highway Trust Fund: Aid fund administered by FHWA. Most funds for highway improvement are apportioned to states with formulas that give weight to population, area and mileage.

HOV (High Occupancy Vehicle): A vehicle carrying two or more passengers, including carpools, vanpools, and buses.

HOV Lane: Vehicle travel lane designated for use by HOVs.

IM (Interstate Maintenance): Federal funding program for projects and programs on the Interstate Highway System.

ITS (Intelligent Transportation Systems): Uses computer and communications technology to provide information to travelers about road and transit conditions and to monitor, guide, and control the operation of vehicles. The application of ITS technologies offers improved safety, more efficient use of infrastructure, and enhanced user choices.

Intermodal: A transportation system connecting or including different types of transportation (e.g. bus service connecting to a train station).

ISTEA (Intermodal Surface Transportation Efficiency Act of 1991): Pronounced “ice-tea,” Federal law that included \$155 billion in federal transportation funding. Signed into law in 1991, it called for broad changes in the way transportation decisions were made. ISTEA emphasized diversity and balance of modes, as well as the preservation of existing systems before construction of new facilities. Requirements of ISTEA were jointly administered by FHWA and FTA. Succeeded in 1998 by TEA-21.

Local Authorities: Every county, municipal or other local board, body or officer, county park commissioner, parkway authority, bridge authority, bridge and tunnel authority, the office of parks and recreation, the New York State Thruway authority or similar body or person having authority to enact laws or regulations relating to traffic under the constitution and laws of this state. (New York State Vehicle and Traffic Law)

LOS (Level of Service): A measure of congestion relating actual or forecasted traffic volume with the maximum capacity of a particular roadway. A LOS A indicates free flow traffic; whereas, a LOS F denotes a very congested roadway in which traffic flow exceeds the capacity of the roadway.

Match: State or local funds required by the federal government to complement federal money for a project.

Median: The portion of a divided highway separating the traveled way from traffic traveling in opposite directions.

Metropolitan Planning Area: The region in which the MPO carries out its transportation planning responsibilities and is designated as such by the MPO and the Governor in accordance with federal regulations. The PDCTC metropolitan boundary includes all of Dutchess County.

MNR (Metro-North Railroad): An operating affiliate of the Metropolitan Transportation Authority (MTA) that provides rail service to Dutchess County (among others). MTA is a voting member of the PDCTC.

Mode: A particular form of travel, for example, walking or traveling by automobile, bus, or train.

MPO (Metropolitan Planning Organization): Federally mandated organization for coordinating transportation planning in a designated metropolitan area. All urbanized areas over 50,000 population are required to have an MPO. The MPO is responsible for the Metropolitan Transportation Plan and Transportation Improvement Program.

MTP (Metropolitan Transportation Plan): The metropolitan transportation plan for the PDCTC is *New Connections*.

Multi-Use Path: A facility physically separated from the roadway and intended for shared use by bicycle, pedestrian and other non-motorized users.

NAAQS (National Ambient Air Quality Standards): Federal standards that set allowable concentrations and exposure limits for various pollutants.

NEPA (National Environmental Policy Act of 1969): Federal law that requires federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions.

NHS (National Highway System): A nation-wide system of highways and roads designated by the US Congress that serve to link the states, major urban areas, and other important destinations. Also a federal funding program for projects and programs on designated NHS facilities.

OCTC (Orange County Transportation Council): MPO for Orange County.

Nonattainment Area: Geographic area designated by the EPA where the national ambient air quality standards (NAAQS) have been exceeded. The Poughkeepsie Ozone Nonattainment area includes Dutchess, Putnam and northern Orange Counties.

NOx (Oxides of Nitrogen): A chief component of air pollution, caused by the burning of fossil fuel.

NHTS (National Household Travel Survey): Periodic survey of travel behavior of people in the United States.

NYMTC (New York Metropolitan Transportation Council): MPO for the New York metropolitan area that includes New York City, Long Island, and the Hudson Valley counties of Putnam, Rockland, and Westchester.

NYSDEC (New York State Department of Environmental Conservation): NYSDEC is the state air quality agency with primary responsibility for developing and amending the New York State Implementation Plan (SIP) for Air Quality.

NYSDOT (New York State Department of Transportation): NYSDOT is a voting member and Secretary to the PDCTC.

Park-and-Ride Lot: Parking area where passengers drive their cars, leave them for the day, and board transit vehicles or join carpools and vanpools.

PPM (Parts Per Million): The mass of the component in solution divided by the total mass of the solution multiplied by 106 (one million).

PDCTC (Poughkeepsie-Dutchess County Transportation Council): MPO for the Dutchess County portion of the Poughkeepsie-Newburgh Urbanized Area. Established in 1982, the PDCTC is responsible for adopting the Metropolitan Transportation Plan, Transportation Improvement Program, and an annual Unified Planning Work Program.

Pedestrian: Any person afoot or in a wheelchair. (New York State Vehicle and Traffic Law)

ROW (Right-Of-Way): Land corridors needed for the construction of highways, transit, railroads, etc.

Roadway: The portion of the highway, including shoulders, for vehicle use.

SAFETEA (Safe Accountable, Flexible, Efficient Transportation Equity Act): Federal law signed in 2005 that governs how federal transportation funds are spent. With guaranteed funding for highways, highway safety, and public transportation totaling \$244.1 billion, SAFETEA represents the largest surface transportation investment in U.S. history. SAFTEA requirements are jointly administered jointly by FHWA and FTA.

Shared Lanes: Streets and highways with no special provisions for bicyclists. Shared motor vehicle/bicycle use of a standard width travel lane.

Shared Roadway: Any roadway upon which a bicycle lane is not designated and which may be legally used by bicycles regardless of whether such a facility is specifically designated as a bikeway.

Sidewalk: The portion of a highway designed for preferential or exclusive use by pedestrians. A separated, hard-surfaced paved path elevated from the street by means of a curb or other barrier, designed primarily for pedestrian users.

SDF (State Dedicated Fund): Funds collected and allocated by New York to fund highway and transit improvements.

Section 5303: Federal Transit Act section that funds transit planning and research.

Section 5307: Federal Transit Act section that authorizes grants to urban areas under legislated formula.

Section 5309: Federal Transit Act section that authorized discretionary grants for capital projects.

Section 5310: Federal Transit Act section that authorized transportation capital and operating grants for service for the elderly and handicapped.

Section 5311: Federal Transit Act section that authorizes capital and operating grants for non-urban areas.

SEQR or SEQRA (State Environmental Quality Review Act): A process that introduces the consideration of environmental factors into the early planning stages of actions in order to avoid adverse impacts on the environment.

SFY (State Fiscal Year): April 1 to March 31.

SHIPS (Suburban Highway Improvement Program): State funding program that provides counties and municipalities on Long Island and in the Hudson Valley with funds for specified road and highway projects.

SIP (State Implementation Plan): A plan mandated by the Clean Air Act that contains procedures to monitor, control, maintain, and enforce compliance with the NAAQS.

STIP (State Transportation Improvement Program): A statewide compilation of MPO and rural area TIPs that is submitted to the federal transportation agencies for approval, which serves as the basis for the obligation of federal transportation funds.

STP (Surface Transportation Program): The major federal funding program for projects and programs on federal-aid highways. STP funds can also be used for transit capital projects.

STPP (Surface Transportation Policy Project): Diverse coalition whose goal is to develop a better national transportation policy.

TDM (Transportation Demand Management): Activities and programs designed to improve travel by reducing demand. Examples include ridesharing, transit, bicycling, and telecommuting.

TEA-21 (Transportation Equity Act for the 21st Century): Authorized over \$218-billion in Federal surface transportation programs for highways, highway safety, and transit for the 6-year period 1998-2003. Succeeded in 2005 by SAFETEA.

TIP (Transportation Improvement Program): A three-year program of highway, transit, and other transportation capital projects. All federally funded projects must appear on an approved TIP to be implemented.

TMA (Transportation Management Area): USDOT designation used to identify Urbanized Areas with a population of 200,000 or more. The TMA denotation, first instituted by ISTEA, carries with it additional responsibilities for a MPO. These include requirements for a Congestion Management Process (CMP), a system to disburse Section 5307 Federal Transit Administration (FTA) funds, and a formal federal certification review every four years.

TSM (Transportation Systems Management): Activities and programs designed to improve travel by improving overall operations. Examples include signalization and turning lanes.

UCTC (Ulster County Transportation Council): The MPO for the Kingston metropolitan area which covers Ulster County.

USDOT (United States Department of Transportation): The federal cabinet department that includes the Federal Highway Administration and the Federal Transit Administration.

Urbanized Area: An incorporated place and adjacent densely populated area with a combined minimum population of 50,000, as defined by the U.S. Census Bureau.

VMT (Vehicle Miles Traveled): Measure of vehicle travel; one vehicle traveling one mile.

Year of Expenditure: Year of Expenditure dollars are dollars that are already adjusted for inflation.