

**ULSTER  
COUNTY  
TRANSPORTATION  
COUNCIL**

**RETHINKING  
TRANSPORTATION:  
PLAN 2040**

**EXECUTIVE SUMMARY  
NOVEMBER 2015**

# RETHINKING TRANSPORTATION PLAN 2040

The Ulster County Transportation Council (UCTC) serves as a Metropolitan Planning Organization for the Kingston Urbanized area. Programming transportation improvements is one of the UCTC's most important functions. UCTC will prioritize projects identified in the 2040 Long Range Transportation Plan for placement in the five-year Transportation Improvement Program.



## TRANSPORTATION'S ROLE IN THE FUTURE OF ULSTER COUNTY

Transportation is part of what we do, every day. Everyone who lives or does business in Ulster County. A child going to school. A dad dropping his child at day care and going on to work. A businesswoman arranging just in time delivery. A senior citizen walking to the market. A tourist traveling to a summer fair. A university student riding the bus to class. Freight moving by truck, rail, water.

Transportation provides a foundation of our lives and the way we use our land. It provides the foundation of our economy. In order to do the best job of investing public resources in maintaining and improving the condition and performance of our multimodal transportation system, UCTC started by asking the question "What do you want Ulster County to be in 2040?" With input from many sources including the public, stakeholder groups, and the Technical Advisory Committee, this Vision Statement was created.



### 2040 VISION STATEMENT

In the year 2040, Ulster County has vibrant communities that are attractive to people of all ages and stages of life. There is a robust economy, with diverse businesses. The County has an affordable transportation system that provides safe access by all modes of travel, efficient freight and personal transportation service, seamless connections within the region and beyond, and is viewed by all as an economic and environmental asset and a major contributor to quality of life.

## GOALS

The first step in translating the Vision into the actions that will help achieve it is defining the goals of the plan. UCTC decision makers adopted these goals:

### SYSTEM PRESERVATION

Invest in transportation system infrastructure to bring all facilities and modes into a state of good repair.

### ECONOMIC VITALITY

Invest in transportation system improvements that are necessary to support the current regional economy and future proposals for economic development.

### SAFETY

Improve the safety of all users of the transportation system by responding to identified safety deficiencies and proactively addressing future safety needs.

### SECURITY

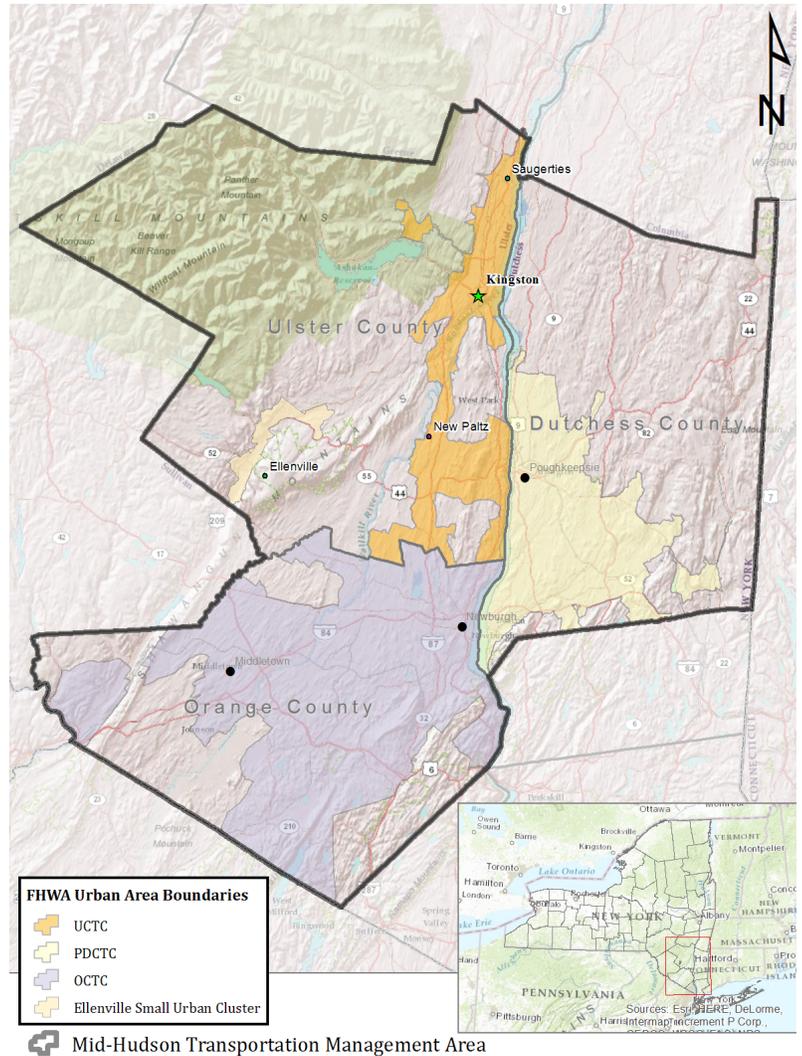
Ensure that transportation system users have a secure environment and that the transportation system provides residents of Ulster County with adequate service in the context of severe weather events.

### MOBILITY & RELIABILITY

Provide for efficient and reliable travel by all modes by investing in strategies that mitigate both recurring and non-recurring congestion.

### ACCESSIBILITY & CONNECTIVITY

Create and maintain a well-connected transportation system that provides access throughout Ulster County for people and goods travelling by all modes.



## PROTECT & ENHANCE THE ENVIRONMENT

Make Ulster County a sustainable place by protecting and enhancing the natural/ built environment, reducing greenhouse gas and other motor vehicle emissions, supporting sustainable construction and maintenance practices, and coordinating land use and transportation plans.

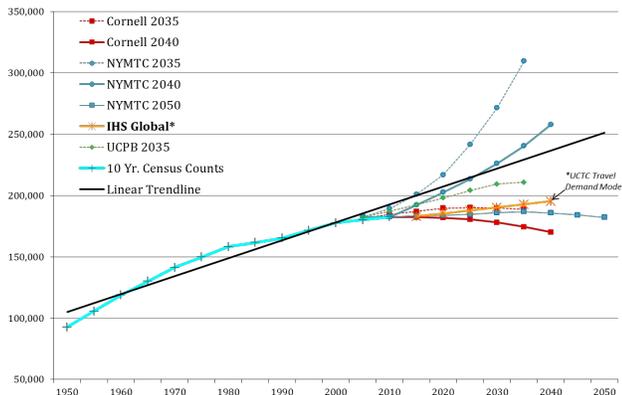
# RETHINKING TRANSPORTATION PLAN 2040

## SOCIOECONOMIC CONDITIONS

Travel during the busiest times of day is mostly a result of where people live and where they work.

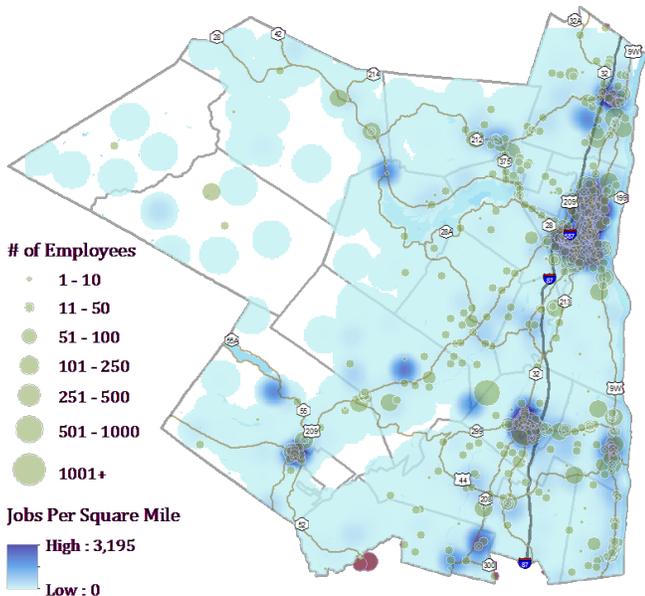
### POPULATION

Forecasting changes in population is as much art as science. The chart below shows that different methods result in different conclusions. UCTC's travel forecasting model uses the relatively conservative data from IHS/Global Insight.



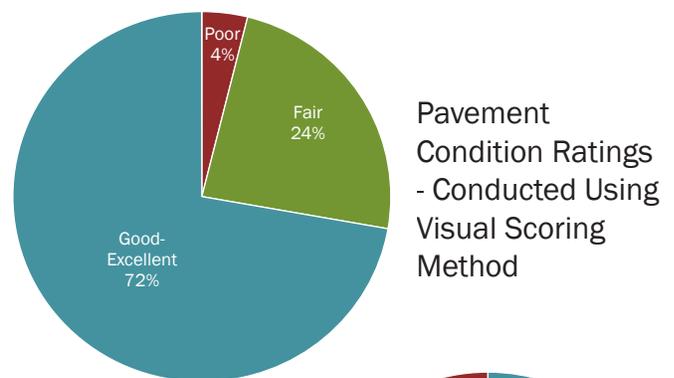
### EMPLOYMENT

As one would expect, jobs in Ulster County are concentrated in the more urbanized locations.

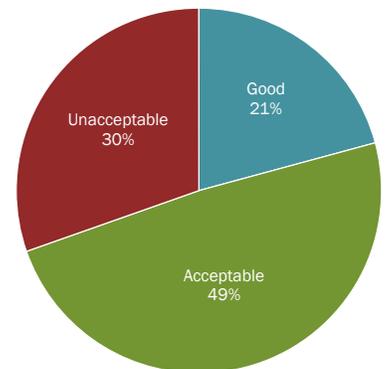


## TRANSPORTATION CONDITIONS

The current condition of the roads and bridges in Ulster County is an important planning consideration. Achieving a state of good repair requires continuous investment in preventive maintenance, rehabilitation, and replacement. Page 7 provides a description of pavement and bridge measures.

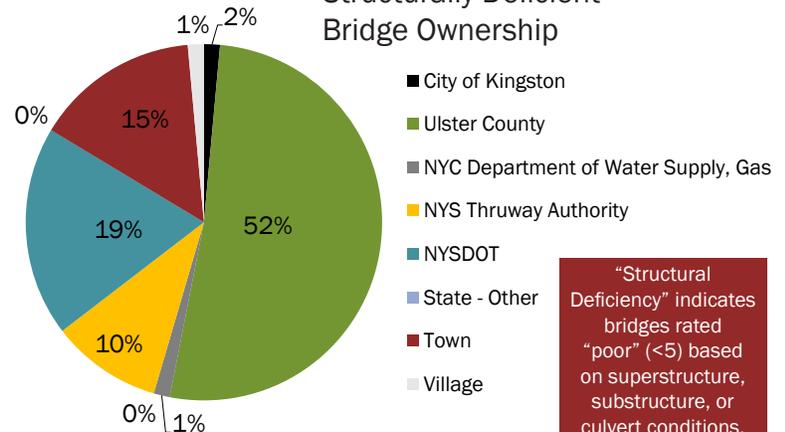


International Roughness Index (IRI) - Measures Smoothness of the Roadway Surface



### BRIDGES

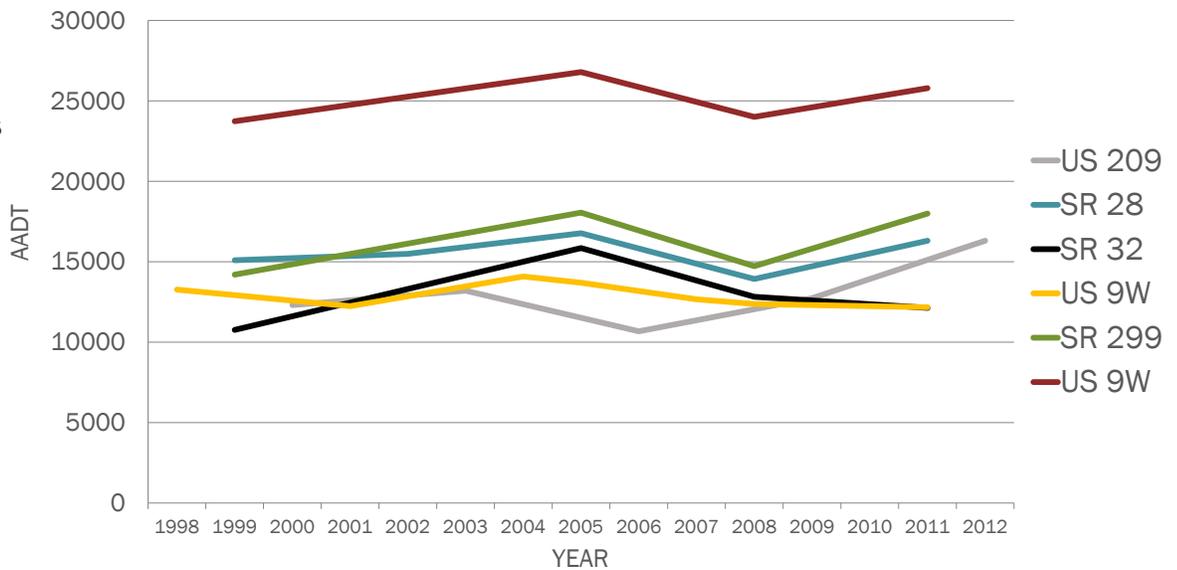
Structurally Deficient Bridge Ownership



# TRANSPORTATION PERFORMANCE

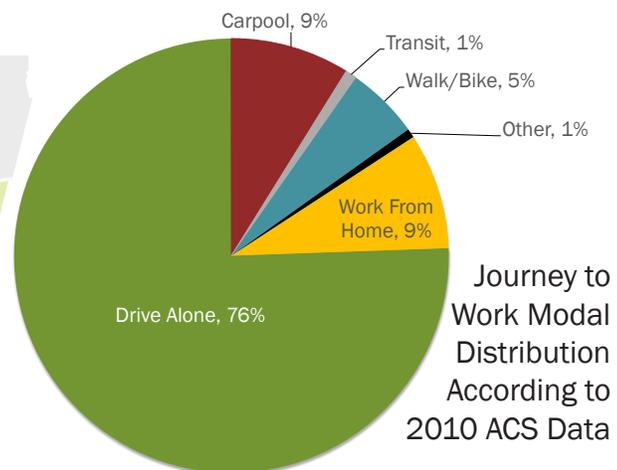
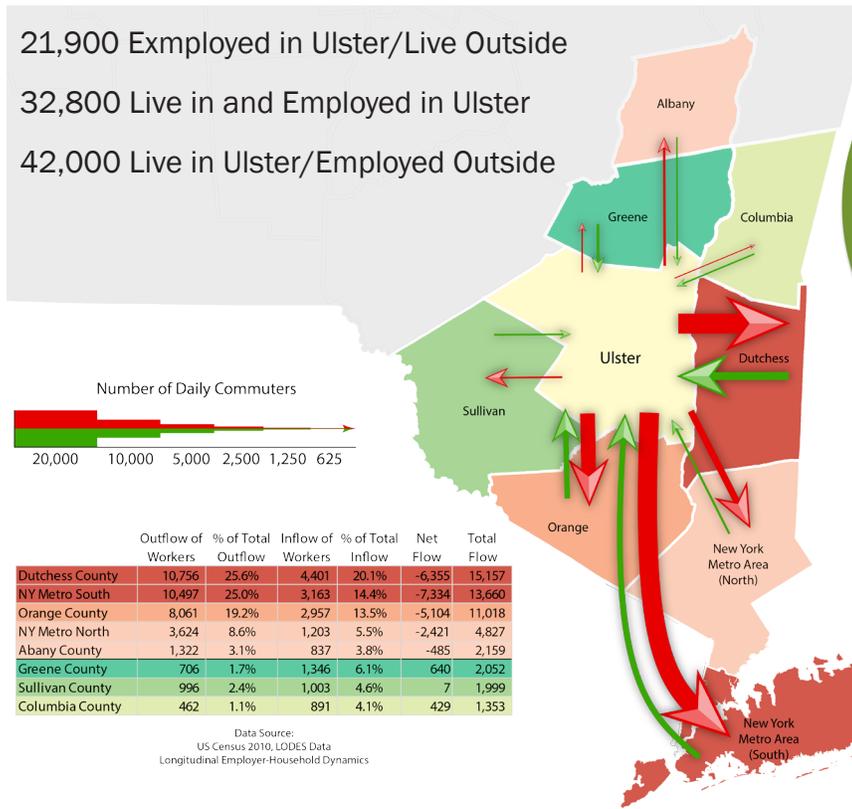
## CRITICAL CORRIDORS

The chart at right illustrates the variation in volume on critical corridors over time. Most volumes fluctuate similarly throughout the 1998 to 2012 timeframe, while US 209 observed a slight increase in traffic and SR-32 saw a decline, proportionally.



## COMMUTATION PATTERNS

21,900 Employed in Ulster/Live Outside  
 32,800 Live in and Employed in Ulster  
 42,000 Live in Ulster/Employed Outside

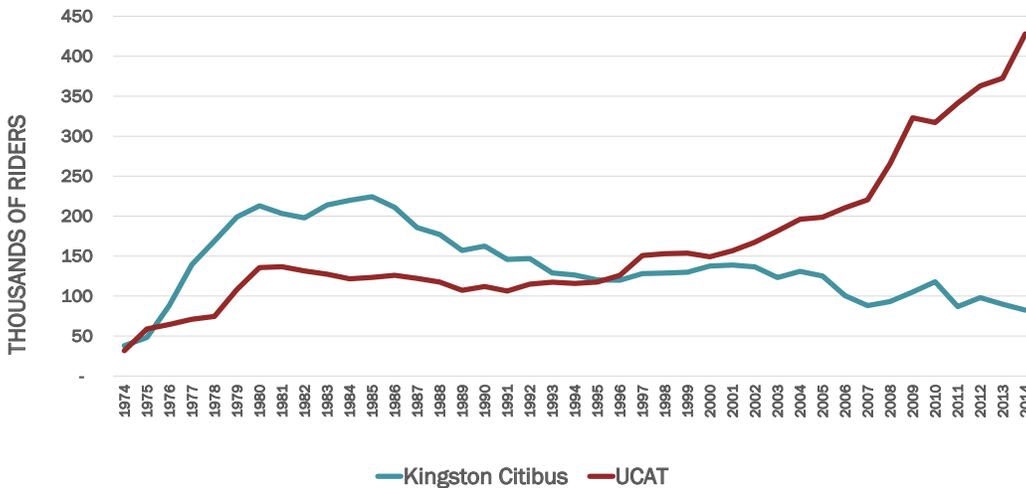


Commuting is regional. More people leave Ulster County to go to work than come in. There is a large flow to the job market of the New York City metropolitan area. This affects travel both within the county and beyond.

Data Source:  
 US Census 2010, LODS Data  
 Longitudinal Employer-Household Dynamics

# RETHINKING TRANSPORTATION PLAN 2040

## TRANSIT SYSTEM USAGE

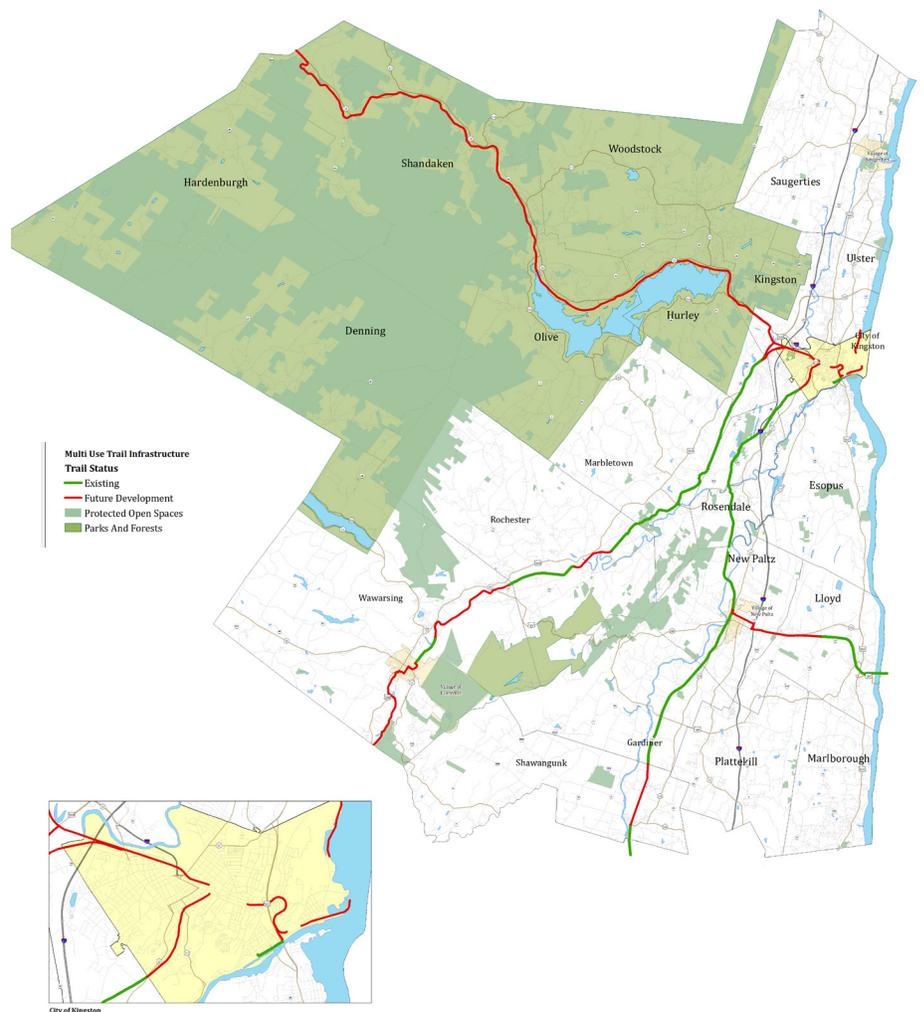


The figure at left illustrates the fluctuation in number of passengers from 1974 to 2014. Ridership data illustrates extensive growth on the UCAT system, with a 118% upswing in passengers in the past decade. The Kingston Citibus data, on the other hand, illustrates a steady decline in ridership, with an overall loss of 37% of riders since 2004.

## NON-MOTORIZED SYSTEM

While trail use is often predominantly recreational, trails are also used for commuting and other travel needs. Ulster County currently has a robust trail network, consisting of:

- The Hudson Valley Rail Trail
- The Wallkill Valley Rail Trail
- The Wallkill to Walden Rail Trail
- The O&W Rail Trail/ D&H Heritage Corridor (Including the Hurley Rail Trail and Marbletown Rail Trail)



## DEFINING TRANSPORTATION SYSTEM NEEDS

Knowing what UCTC wanted to accomplish over the next 25 years to achieve our goals, and knowing what the starting point is, the next step is define our needs in a way that shows the gap.

When we talk about transportation needs, we reflect on that the fact that transportation serves a wide range of societal needs, so solutions are complex. That means that one project may address more than one goal, fulfilling multiple needs.

Our needs must be understood in a way that ensures that Ulster County has an affordable transportation system. With financial resources limited at all levels of government, we need a system that is the right size to meet the needs of residents and businesses without being too expensive to maintain and operate.

Moving Ahead for Progress in the 21st Century (MAP-21), the transportation funding law passed by Congress in 2010 asked us to look at transportation system needs and investments through the lens of the user. This is done by measuring performance across a number of dimensions to better understand the outcomes of our projects and programs. This changes both the questions we ask and the answers we give in the planning process.



### FORMER PERFORMANCE ASSESSMENT

Q: How many safety projects did you do, and what did they cost?

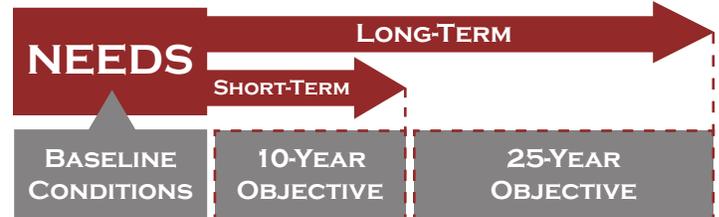
A: We completed 3 safety projects in 2013 at a cost of \$8.4 million.

### PERFORMANCE ASSESSMENT UNDER MAP-21

Q: What was the outcome of our safety projects in terms of reduced crashes, injuries, and fatalities?

A: We finished 3 projects in 2013. In 2014 and 2015 to date, the number of right-angle injury crashes at the intersection of Here St and There Ave has declined by 4 compared to 2012-2013; the improvement to the off-ramp curvature at Exit 292 resulted in 3 fewer truck rollover crashes; and there have been no head-on crashes after we installed the centerline rumble strip on Route 2345.

## PRIORITIZING NEEDS



## CONSIDERATIONS & STRATEGIES

Reconstructing an arterial street to include Complete Streets elements can (1) improve pavement conditions, (2) enhance pedestrian safety, (3) add bicycle lanes, (4) improve signal timing to reduce congestion, and (5) preserve the environment by adding green infrastructure techniques and electric vehicle charging stations.

Upgrading an incident management system can improve travel time reliability by clearing crashes more quickly, reducing the delay from closing travel lanes, and improving traveler safety by reducing the likelihood of secondary crashes.

Building new roadway capacity to relieve congestion during the holiday shopping season, or the summer tourism season, may not be an affordable option when the ongoing maintenance costs are considered.

Providing transit service that runs long hours everywhere in the county would increase accessibility, but UCAT cannot afford to operate a system of that capacity.

# RETHINKING TRANSPORTATION PLAN 2040

## NEEDS: SYSTEM PRESERVATION

Improve pavement conditions using a preservation first approach that extends the service life of deteriorating roads. Only the State Highway System is subject to routine pavement scoring, although many locally owned roads are eligible for projects funded by FHWA. Based on NYSDOT's visual scoring methodology, nearly one-quarter of the mileage is in fair condition, and only 4% poor. A different measure, called the International Roughness Index, measures the quality of the ride, something travelers are more concerned with. The IRI shows 30% of the roadways are rated "unacceptable". There is a need to show continuous improvement over the life of the plan until all federal-aid eligible roads achieve a state of good repair.

As of the last bridge inspection summary, 68 of 351 bridges in Ulster County are considered structurally deficient. These bridges, while remaining safe for travel, need repair or replacement. The type of work will vary by location, depending on the type of bridge construction and the specific problems found when it was inspected. Of note is that Ulster County owns 40% of the bridges in the county, and just over half of those that are deficient.

UCTC also funds bus purchases by UCAT and Kingston Citibus. The Federal Transit Administration establishes service life standards for buses purchased with FTA funds. These range from 12 years for a full size transit coach to 7 years for a smaller bus to 5 years for a van. The need is to maintain these bus fleets within FTA standards.



## NEEDS: SAFETY & SECURITY

Safety data is collected over a period of years to avoid skewing the results. The analysis period for this plan is 2011-2014. During that period there were 64 fatal crashes and 7,196 crashes that resulted in injury. Of these, there were 3 bicycle and 4 pedestrian fatalities; and 169 bicycle injuries and 304 pedestrian injuries. While these numbers are generally in the New York State average range on a per capita basis, the need exists to demonstrate continuous reduction over the life of the plan in crashes, injuries, and fatalities.

There are some transportation system users that are particularly vulnerable: children and the elderly. UCTC has identified the need to develop projects and programs to proactively protect pedestrians, and older drivers.

Different parts and functions of the Ulster County transportation system can raise security concerns. These can be as simple as "Do I feel secure waiting at a bus stop, or riding the bus?" or as complex as "How can I meet my family's basic needs if a flood takes a number of bridges and roads out of service?" UCTC will embark on development of a Resiliency Plan to take a systematic approach to addressing the need of providing basic services to Ulster County residents during and after an extreme weather event.

### GUIDING PRINCIPLE: NEW YORK STATE DOT "FORWARD FOUR"

- PRESERVATION FIRST
- SYSTEMS, NOT PROJECTS
- MAXIMIZE RETURN ON INVESTMENT
- MAKE IT SUSTAINABLE



### NEEDS: MOBILITY AND RELIABILITY

Ulster County does not experience high levels of recurring traffic congestion. Most of its commuting congestion is limited in location and duration. There is often congestion related to seasonal travel from the New York State Thruway through New Paltz and to Woodstock. Some of this is related to second home ownership. That shows us the importance of making land use decisions that do not result in creating congestion. Compact mixed-use development is preferable to sprawl. Focused growth in existing centers and along designated corridors is preferable to greenfield development.

Travel time reliability has become increasingly important to many people. They want a higher level of certainty about their travel time. Variation is caused by non-recurring congestion: a crash or other highway incident; an unexpected work zone; bad weather; a special event. Improving traffic management and incident management can reduce the impact of non-recurring congestion.



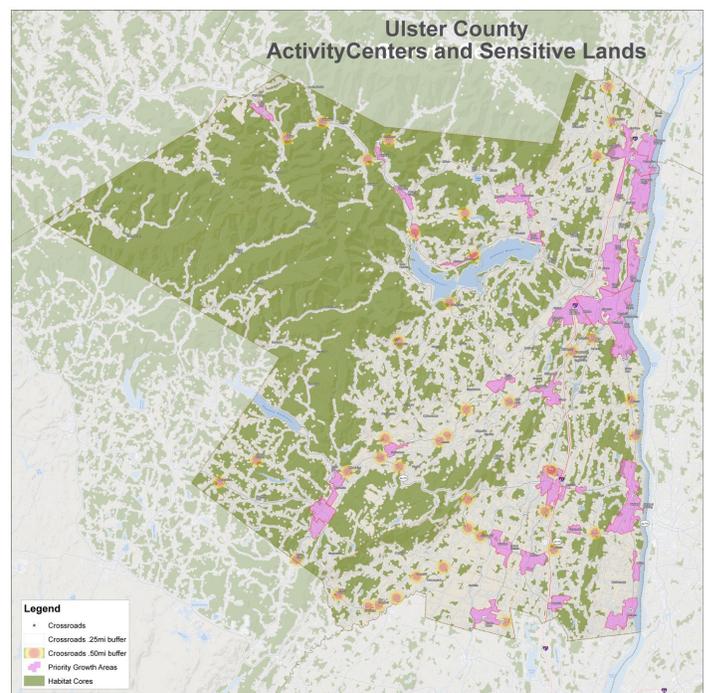
### NEEDS: ACCESSIBILITY AND CONNECTIVITY

It is important that people be able to reach key destinations by whatever mode of travel they choose or need to use. The need to improve accessibility is most often related to physical gaps or barriers in the transportation system. This highlights the value of completing a trail connection, or constructing a sidewalk to make walking safer or more convenient. Accessibility gaps can also be the result of a time barrier. For example, when transit stops running in the early evening, that means people cannot use the bus to return home from a second shift healthcare job, or a late night retail position.

### NEEDS: ENVIRONMENTAL PROTECTION

Ulster County and UCTC are committed to protecting and enhancing the environment. Transportation is often viewed as an environmental detractor: vehicles create emissions, roads and parking lots consume space, stormwater runoff results in water pollution and erosion. This plan includes methods by which transportation can instead contribute in a positive manner to quality of life.

Ulster County currently has a robust trail system with the potential of diverting more trips from auto to bicycle. Another means of reducing auto emission is to encourage use of alternative fueled vehicles including plug-in hybrids and electric vehicles (EV). Ulster County has begun installing public access EV charging stations, but there will be a need for a more widespread network to support EV car owners. There is also a need to support and grow a range of shared-ride modes, from transit to carpooling. UCAT has grown its bus system in response to demand, but recognizes that serving low-density rural areas of the county is not practical for transit. Other types of shared-ride services must be investigated.



# RETHINKING TRANSPORTATION PLAN 2040

## AVAILABLE FUNDING

Federal law requires that long range transportation plans include a forecast of federal, state, and other revenues that are reasonably expected to be received over the life of the plan. The total of proposed project expenditures cannot exceed this amount. This is a sensible approach that results in the plan recommendations being realistic, not an unaffordable wish list.

UCTC and NYSDOT cooperated in developing the revenue forecasts, which show a very modest growth in resources over the life of the plan. This exercise is loaded with uncertainty. Much of the money UCTC relies on for projects comes from programs of the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA). After a decades-long history of six year transportation authorizations, Congress has been unable to agree on how to raise the revenue necessary to support the transportation program they want. As a result, MAP-21 was a two year bill; having expired on September 30, 2014, it has been extended by Congress 3 times as of the adoption of this plan. This makes it very difficult to predict how much FHWA and FTA money will be available. Compounding that uncertainty is the fact that MAP-21 changed and consolidated a number of FHWA and FTA programs, making specific projects eligible under new fund sources, or not eligible for funding at all.

Understanding the uncertainty, UCTC has adopted a Financial Plan as in these 2015-2040 estimates:

Fund Sources	\$ Millions
FHWA	\$192.237
FTA	\$97.442
NYS Dedicated Highway & Bridge Fund	\$49.771
NYS Consolidated Highway Improvement Prog.	\$190.628
NYS Transit Operating Assistance (Match)	\$33.775
<b>TOTAL</b>	<b>\$586.820</b>



There are some important points to make about this revenue forecast. First, while more than a half billion dollars may seem like a lot of money, it averages to only a bit more than \$23 million a year. Given the high cost of road and bridge construction, and even the cost of purchasing a new bus, this level of funding will not meet Ulster County's needs.

One way that UCTC is addressing the shortfall that is not reflected in the revenue table, is to look for other sources of money to pay for transportation work. Examples include the New York State Energy Research and Development Authority, which may pay for energy saving projects from EV charging stations to traffic signal optimization; US Department of Housing and Urban Development Sustainable Communities planning grants; and funding from public health sources to support active transportation projects that encourage walking and cycling. Moving forward, it will be incumbent upon UCTC to continuously look for non-traditional fund sources to close the gap between transportation system needs and available revenues.



## PROJECT RECOMMENDATIONS

UCTC established its goals and priorities, evaluated the needs of the regional transportation system and the people that use it, measured available resources to address those needs, and developed a list of project and program recommendations.

Recommendations are divided into long-term, mid-term, and short-term strategies. Long-term focuses on goals rather than identifying specific projects. Mid-term projects were considered for inclusion in UCTC's current Transportation Improvement Program (TIP) but were excluded due to lack of available funding. Short term projects are financially-committed in the TIP and include:

### BRIDGES

- Greenkill Ave/Broadway Bridge Replacement, City of Kingston
- Sawkill Rd/Bridge Replacement, Town Of Ulster
- Mud Tavern Road (Cr 9)/Dwaarkill: Bridge Replacement. Town of Shawangunk
- Route 213 Extension (Cr 4)/Tongore Creek: Bridge Replacement, Town Of Olive
- Denning Road/East Branch of Neversink River: Bridge Replacement, Town of Denning
- Route 213 over Rondout Creek, Eddyville

### ROADWAYS

- Tillson Ave: Rte 92 to Rte 44/55: Safety Work, Hamlet of Highland/Town of Lloyd
- South Putt Corners Repaving: SR 299 To SR 32: Town of New Paltz
- Washington Avenue Signals at Schwenk Drive/ North Front Street, City of Kingston
- I-587 Reconstruction at Albany Avenue & Broadway, City of Kingston

### RAILROAD

- Boices Ln Crossing Improvement, Town of Ulster
- Rustic Rail Replacement on Routes 44, 52, 55



### TRAILS/BICYCLE/PEDESTRIAN

- Kingston Rail Trail, City of Kingston/Town of Hurley
- D&H Canal/O&W RR Trail: Town Of Rochester Line to Town of Warwarsing
- Hudson Valley Rail Trail West & Tony Williams Park to Town Line Road
- Construct New Sidewalks/Curbing, New Paltz
- Walkill Hamlet Sidewalks, Town of Shawangunk
- Safe Routes to School, City of Kingston
- Safe Routes to School, Village of Ellenville
- Construction of Pedestrian/Bicycle Facilities on Broadway Corridor, City of Kingston
- Rte 209 Sidewalk Improvements, Hamlet of Kerhonkson/Town of Wawarsing

### TRANSIT

- Park & Ride Lot: Route 32, Town of Rosendale
- Park and Ride Lot Expansion, City of Kingston
- Park and Ride Lot Expansion, Town of Saugerties
- UCAT & Citibus Project Administration
- UCAT & Citibus Operating Assistance
- UCAT & Citibus Preventive Maintenance
- UCAT & Citibus Capital Funding to Replace/Rehabilitate/Purchase Buses and Equipment
- UCAT Normal Fleet Replacement 4 Low-Floor Medium Duty Buses
- UCAT Normal Fleet Bus Replacement 1 Bus
- UCAT Fleet Replacement/Electronic Fair Collection
- Section 5310 Program – Vehicles to Provide Transportation for Elderly/Persons with Disabilities by Private Not-For-Profit Agencies

# WHAT WILL THE FUTURE BRING?

When looking out to 2040, UCTC understands the importance of recognizing uncertainty and talking about “Game Changers.” We live in a world of rapidly changing technology, much of which affects the demand for and provision of transportation services. We also see evolution in the policies that underlie transportation choices; for example, few MPOs talked planning for sustainable communities or complete streets just a couple of decades back.

## CONNECTED VEHICLES

There are two technologies that have the potential to change everything about how we drive. (1) Connected Vehicle is a program initiated by USDOT in which cars communicate with each other and with the transportation infrastructure. It offers great potential for increasing safety and avoiding collisions. (2) The use of smartphone apps has made drivers smarter about choosing the time, route, or mode of travel. 511 travelers information systems, primarily provided by state DOTs, are now supplemented by apps. For example, Waze uses crowdsourced information to provide a realtime travel conditions, and Google Traffic continuously monitors traffic to optimize routes of travel.

## AUTONOMOUS VEHICLES

Many cars on the road currently have low-level autonomous features - from parking assist to lane departure warning to rear-end collision warning and active braking systems. Google and other technical manufacturers are in testing stages of fully-autonomous cars, with over one million miles of test-miles traveled. Predictions vary as to when autonomous cars will be commonplace in the vehicle fleet, but we must anticipate drastic impacts on both the roadway system and society. Children, the elderly, and others who cannot drive will have a new level of mobility. Drivers will no longer need to depend on parking, since the car can drop them off and pick them up later. The need for personal cars may dwindle, as transit operators or other services like Uber provide cost effective alternatives.

## MICRO-MANUFACTURING

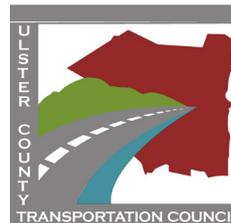
The use of 3D printers is becoming commonplace in the industrial setting. While home devices will be limited in terms of the size and available feedstock materials, consider the development of neighborhood micro-manufacturing centers with larger printers. This has the potential to change aspects of retail purchase and delivery models.

## EDUCATION

Internet- based classes have become commonplace at the college level, and some distance learning opportunities are available at secondary level. If this trend continues, will there be reduced travel to campuses like SUNY Ulster, or smaller student bodies at SUNY New Paltz?



There is current research on application of new technology and materials to road and bridge construction. One such idea is “self healing” concrete that uses bacteria to repair internal cracks and voids. With the potential to greatly extend the life of pavements, what might that do to road construction budgets. Other research is using 3D printing of non-metallic structural materials to create bridge elements.



WITH ALL OF THIS UNCERTAINTY OF FUNDING AVAILABILITY AND NEW TECHNOLOGY, REMEMBER THAT UCTC WILL REVISIT THIS PLAN IN FIVE YEARS, AND REEVALUATING THE STATE OF EVERYTHING.

FOR MORE INFORMATION PLEASE GO TO:

[HTTP://ULSTERCOUNTYNY.GOV/PLANNING/ACTIVE-STUDIES/YEAR-2040-LONG-RANGE-TRANSPORTATION-PLAN-LRTP](http://ulstercountyny.gov/planning/active-studies/year-2040-long-range-transportation-plan-lrtp)