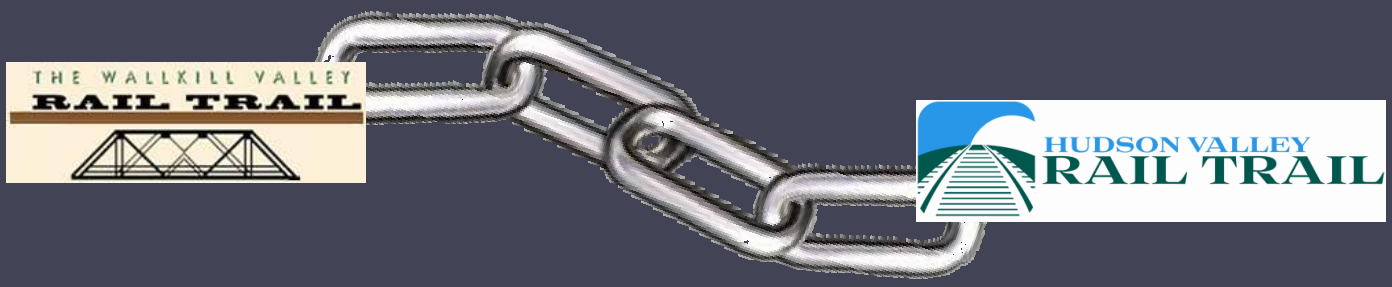
Wallkill Valley Rail Trail
& Hudson Valley Rail Trail
Link Feasibility Study



Prepared for the

Southern Ulster Alliance

Final Report - August 2011

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Executive Summary

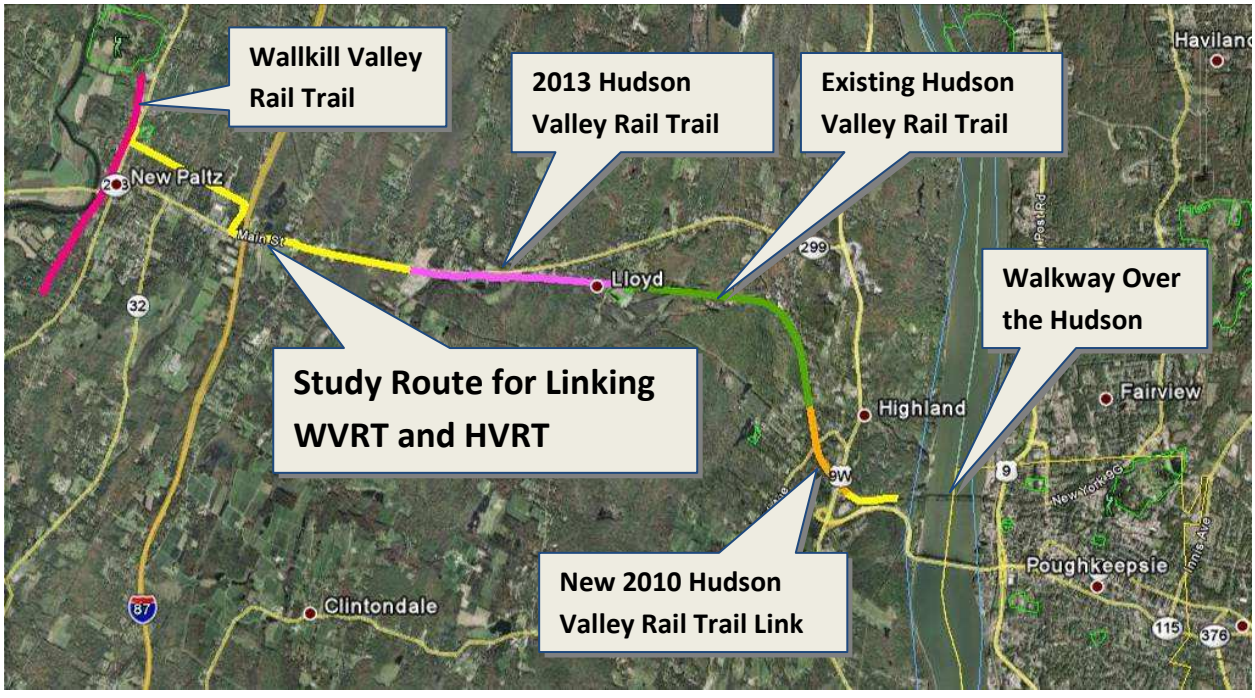
1.0 Introduction

1.1 Project Background and Purpose

The Southern Ulster Alliance (SUA) is a voluntary collaboration of five municipalities including the Towns of New Paltz, Gardiner, Lloyd, Marlboro, and Plattekill; and the regional chamber of commerce, founded in 1998 with the following mission:

> *"To create a structure for regional cooperation and economic development that is broadly based and inclusive and that has within it a public process that will lead to the implementation of the goals, ideas and policies established by the membership of the Alliance."*

In 2006, with the financial assistance from the Hudson River Valley Greenway, the SUA completed a "Southern Ulster Trails Report" as a regional approach to the design and planning of recreational paths for non-motorized transportation methods, such as walking and biking. One of the main priorities listed in this report, was the creation of a "connection trail" to join two existing "Designated Greenway Trails", namely the Hudson Valley Rail Trail, which is located in the Town of Lloyd and the Wallkill Valley Rail Trail, which is located in the Towns of Gardiner, Rosendale and New Paltz, and the Village of New Paltz. Both rail trails are multi-use paths which can accommodate hiking, biking and horseback riding; and offer amenities for the physically impaired.



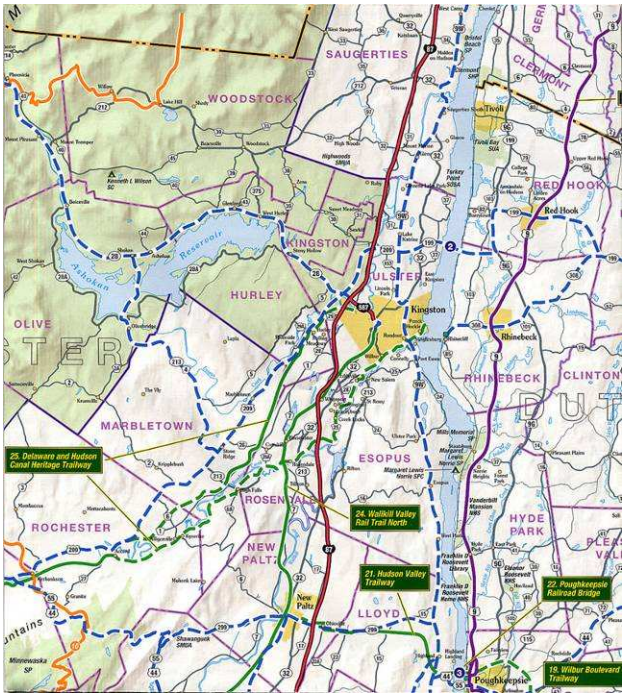
These rail trails have both been listed as "Designed Greenway Trails" in the June 2004 Draft Greenway Trails Vision Plan and the completion of the linking segment between them is specifically identified as an important "potential connection" in that document. This connection has also been cited in other planning documents including the 2035 Ulster County Long Range Transportation Plan; the New Paltz Transportation Plan; the 2008 Ulster County Non-Motorized

Transportation Study; the 2009 New Paltz Draft Comprehensive Plan; the 2006 New Paltz Open Space Plan; and the 2005 Town of Lloyd Comprehensive Plan.

These planning documents consistently state that this potential connection would foster economic development, increase recreational opportunities, and increase the movement of non-motorized traffic from points within Ulster County to locations outside of the County. With the recent completion and opening of the Walkway Over the Hudson in October 2009, Ulster County now has a direct link with Dutchess County. The 1.3 mile "Walkway" pedestrian bridge, crosses the Hudson River, connecting the City and Town of Poughkeepsie, in Dutchess County with the Town of Lloyd in Ulster County. The Town of Lloyd has recently completed a trail connection between the Walkway Over the Hudson and the HVRT, thus making another important connection and extending the flow of pedestrian traffic into and out of Ulster County. The Town of Lloyd is currently working on extending the HVRT from its current ending point at Tony Williams Park on South Riverside Road, to the intersection of NYS Route 299 and South Street. This is the point where the Southern Ulster Alliance is proposing to create the conceptual design for the linkage between the two rail trails.

1.2 Project Relationship with Other Multi-Use Trails

The proposed connection between the Wallkill Valley Rail Trail (WVRT) and the Hudson Valley Rail Trail (HVRT) will encourage economic development and promote regional recreational opportunities. The ultimate goal of completing the connection between these two rail trails is to provide safe access for residents and visitors to these two Greenway Trails, to the Hudson River and the new Walkway over the Hudson. This connection will provide abundant recreational opportunities, such as hiking, biking, horseback riding, and other non-motorized transportation methods. This link will connect the Towns of Shawangunk, Gardiner, Rosendale, Lloyd and New Paltz, and the Village of New Paltz to the surrounding counties within our region.



Portion of a Map of the Dutchess and Ulster County Regional Trails Network Map

Currently, the Hudson Valley Rail Trail and the Wallkill Valley Rail Trail encompass approximately 16 miles of paved and non-paved surfaces. With this link between the two trails and the western extension of the Hudson Valley Rail Trail, a link to the Dutchess County Rail Trail network will be established creating a complete trail system to the Hudson River of over 25 miles, where no trail connection currently exists. This system will eventually be linked to the Harlem Valley Rail Trail, thus creating a continuous recreational trail system covering over 50 miles.

This exciting opportunity not only meets economic development and recreational goals, but also opportunities for trail users to benefit from the environmental and cultural resources of the SUA

communities. Many historical sites exist directly accessed by these trails including, and other recreational facilities such as the Mohonk Mountain House, Minnewaska Lake can be easily access nearby. The Mohonk Mountain House alone provides over 85 miles of some of the most scenic hiking trails in this region and there are over 60 miles of footpaths and carriage lanes throughout the Minnewaska State Park.

These trails will provide a matrix of interconnected pathways which will allow users to access different points of interest in both counties by way of non-motorized transportation methods.

Mohonk Mountain Preserve and Minnewaska State Park Preserve will be prominent features along the new linking trail, inviting trail users to also visit these important sites.

2.0 Existing Conditions & Needs

2.1 Site Location and Description

The study area is located in the Towns of New Paltz and Lloyd in Ulster County between the WVRT terminus (New Paltz) and the existing HVRT Phase 3 terminus (Lloyd). Beginning in New Paltz at the existing WVRT, the corridor moves eastward through an urban and residential environment to the NYSTA overpass and Interchange 18. New Paltz is also home to the State University of New York New Paltz, founded in 1828, which has an approximate enrollment of 8,000 undergraduate and graduate students. Continuing east along NY 299, the corridor becomes more rural with bordering wetlands and wooded areas until the intersection with South Street, the existing HVRT terminus. NY 299 is a shared use roadway with cyclists utilizing the shoulders.

Main Street, New Paltz

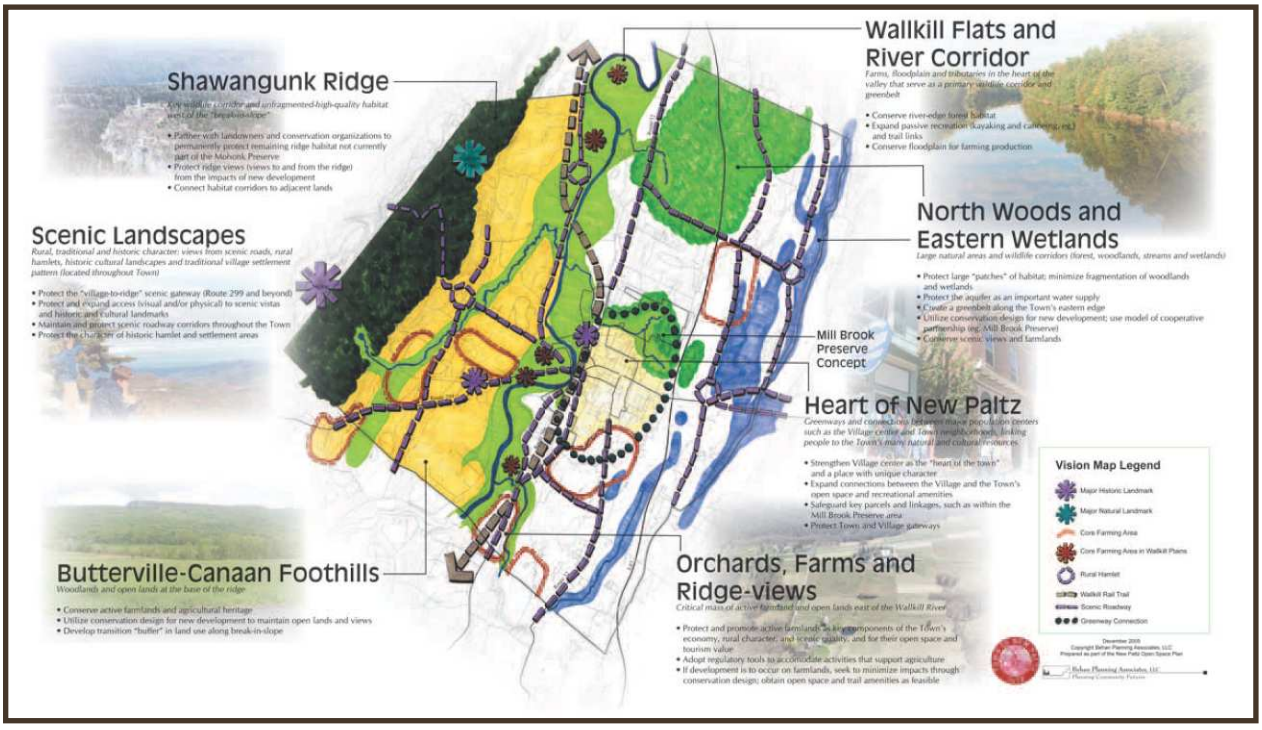
NY 299 Corridor

2.2 Current Planning Initiatives

***New Paltz Open Space Plan*, May 2006**

The Plan, subtitled '*A Framework for Conservation'* was prepared for the Town and Village of New Paltz to inventory, analyze and suggest ways to implement conservation of significant open spaces in the Town and Village. With public outreach forming the basis for recommendations, the Plan suggested conserving additional acres in several regionally important landscapes in the Town and Village including the Shawangunk Ridge; Butterville-Canaan Foothills; Wallkill Flats and River Corridor; North Woods and Eastern Wetlands; Village of New Paltz; and Orchard and Farms Ridge-views. Several valuable thematic maps were developed for the plan including Protected Lands, Agricultural Resources, Cultural Resources, Natural Features; and Important Habitats.

Among the actions recommended for implementation, the conservation strategies were: the establishment of a local land conservation program; development of a conservation financing mechanism; and the further outreach, planning and development of appropriate mechanisms for carrying out the conservation.



New Paltz Community Open Space Vision Map

***New Paltz Transportation/Land Use Project*, November 2006**

This comprehensive multi-modal transportation and land use study was prepared for the Town and Village of New Paltz to evaluate the growing congestion of Main Street (NY 299). This study was completed in three phases that included evaluating existing land use and transportation conditions, projecting a number of future land use growth scenarios and their transportation impacts, and developing a range of transportation solutions to meet future growth needs.

Within the context of the HVRT/WVRT Link feasibility study, the New Paltz Transportation/Land Use project identified existing and future congestion problems, as well as high accident rates at the signalized intersections where the trail will pass through. Improvements recommended in the Project include widening the NY 299 intersections with Ohioville Road, NY Thruway Interchange 18 Access, and N-S Putt Corners Road for turn lanes and further evaluation of a double lane roundabout at the intersection of the NY 299/NY Thruway Interchange 18 Access.

***Crossroads at New Paltz Traffic Study*, February 2007**

The Crossroads at New Paltz was a controversial multi-use development that consisted of apartments, multi-family units, hotel rooms, retail space, and a restaurant. The project was to be located between the Thruway Interchange 18 Access Road and Ohioville Road, immediately south of NY 299. Access to the site was proposed from the intersection of NY 299 at Paradies Lane and from two new driveways along Ohioville Road.

While it is unlikely the project will move forward, the traffic study prepared for the project recommended several transportation improvements that might be required should some similar multi-use project be built on the site in the future. Transportation improvements recommended included installation of a traffic signal at the NY 299 at Paradies Lane intersection, as well as prohibiting westbound left turns into Paradies Lane. Other were required improvement were the widening of Ohioville Road for a turn lane at NY 299, the widening of Ohioville Road for a southbound deceleration lane into the site, and the widening of NYS Route 299 for an eastbound deceleration lane to Paradies Lane.

UCTC Ulster County Non-Motorized Transportation Plan, December 2008

UCTC's objective was to develop a county-wide NMTP that recommended strategies for promoting and implementing non-motorized transportation solutions. The plan included the recommendation to construct more than 30 miles of shared use paths, along with on-road bikeways, pedestrian improvements, and supporting programs.

The plan identified 93 potential projects to complete the envisioned interconnected non-motorized transportation system within the County. Through public involvement and project team suggestions, 15 "Next Phase" projects were selected and ranked to represent the next phase implementation of the NMTP for Ulster County. The WVRT & HVRT Link was identified (termed the NY 299 Bike Demonstration Corridor) as one of the 15 selected Next Phase projects (Project #4).

***Hampton Inn Hotel Traffic Study*, February 2009**

A Hampton Inn Hotel is proposed to be developed on the former Frito-Lay property on the east side of South Putt Corners Road. The project traffic study recommended extending the left-turn lane on South Putt Corners Road further south to the hotel driveway. Minimal impacts from the hotel were anticipated at the intersection of NY 299 at N-S Putt Corners Road. The project is unlikely to move forward, however given the proximity to Interstate 87 and similar uses nearby, a development of this type is likely.

***UCTC 2035 Long Range Transportation Plan (LRTP)*, August 2010**

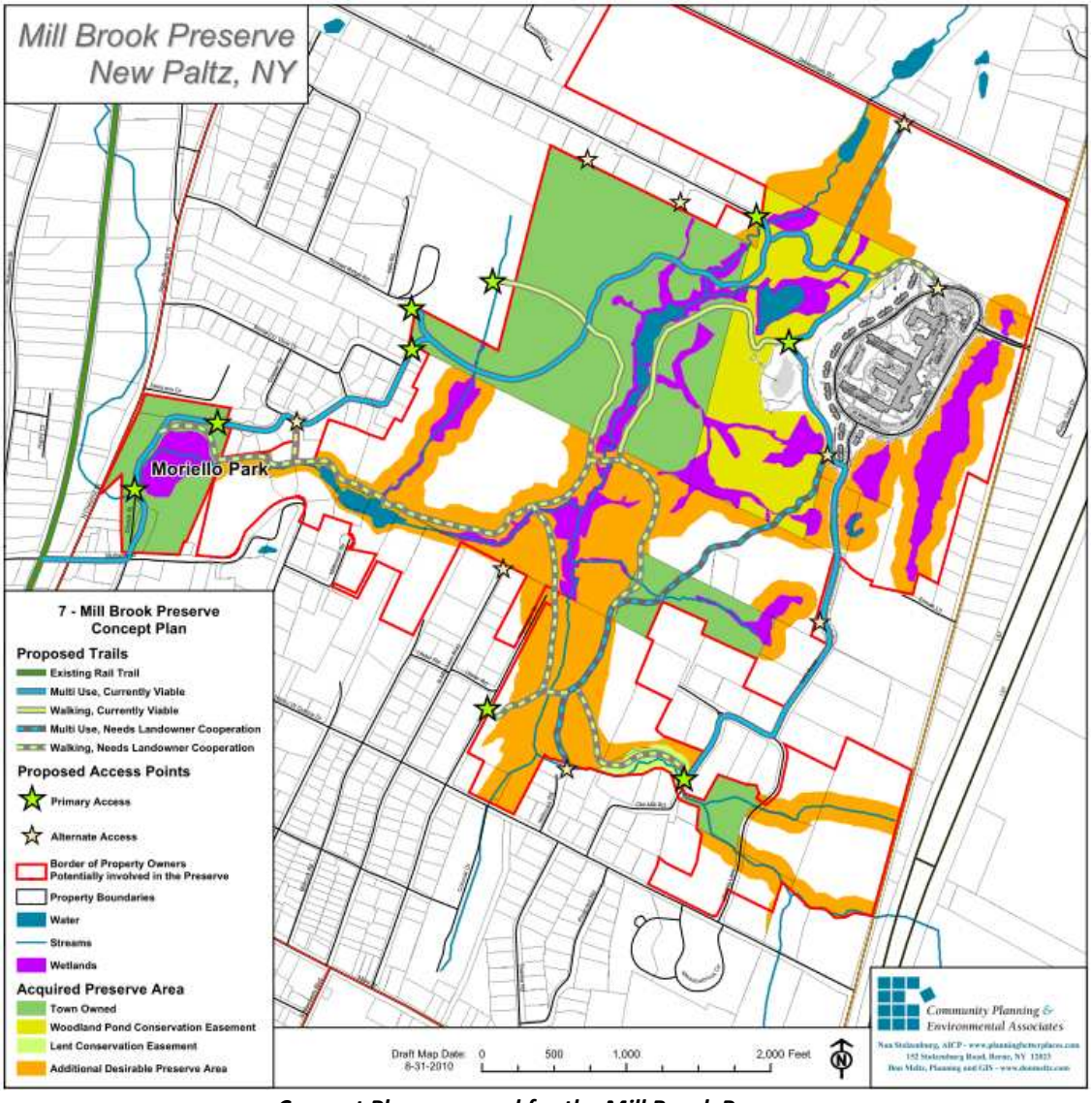
UCTC's adopted LRTP is a comprehensive, performance-based, multi-modal and coordinated regional plan covering the period from Federal Fiscal Year 2011 through 2035. It covers all major modes of transportation from a regional perspective, including highways, streets, bridges, public mass transit, airports, bicycles and pedestrian facilities, goods movement, and special needs transportation. It also addresses transportation demand management, system management, safety, security, and air quality conformity issues.

As with the *New Paltz Transportation/Land Use Project*, the LRTP identifies roadway congestion on NY 299 in the Town and Village of New Paltz. The LRTP recommends intersection improvements in the short-term and long-term to be made in this corridor with NYSDOT as the sponsoring agency. The LRTP also identifies the Ulster County regional trail network as being fragmented whereby trails abruptly end/begin at various locations. This trail feasibility project builds on the LRTP's recommendations to continue efforts to link trail segments for a seamless non-motorized transportation network.

Mill Brook Preserve Management Plan (Draft), 2010

The Town and Village of New Paltz have developed a Management Plan for the proposed Mill Brook Preserve located just north of Henry W. Dubois Drive in the Town of New Paltz. The preserve will include 126 acres of lands already purchased or protected by permanent easements. In addition, the Plan estimated that additional land would be included in the preserve up to a total of 400 acres. A "…watershed approach to long-term preservation of the lands in order to preserve ecological functioning of the Mill Brook" is recommended along with acquisition of these lands. The plan calls for the establishment of watershed management practices to reduce urban pollution of Mill Brook, creation of trails and interpretive facilities is also recommended.

Two primary trail access points to the Preserve are proposed from streets that intersect with Henry W. Dubois including Old Mill Road via Harrington Street and at Millbrook Road. The plan suggests limiting bicycle access to designated bicycle trails, one of which is proposed to utilize the Millbrook Road access point.



Concept Plan prepared for the Mill Brook Preserve

2.3 Existing Corridor Conditions

Wallkill Valley Rail Trail (WVRT) Connection Points

The WVRT is accessed in the vicinity of the study area primarily from crossing streets including Mulberry Street and Broadhead Avenue; as well as by way of a narrow pedestrian bridge from the Chestnut Street Park and Ride lot. Access at the Park and Ride Lot is currently somewhat constricted by the narrow bridge and a lack of delineation of pedestrian space in and around the parking lot. The site does offer a bus stop, bike racks and other amenities and a crosswalk is provided adjacent the lot which provides a safe way to reach the Stewart's (convenience) Shop on the opposite side of Chestnut Street.

Access through the Chestnut Street Park and Ride lot from the Wallkill Valley Rail Trail currently lacks a clear delineation of pedestrian space.

North Chestnut Street

NYS State Route 32 is a designated bicycle route that enters the Village of New Paltz on North Chestnut Street. The roadway includes two 12' wide travel lanes and two 8' wide shoulders. Pedestrian improvements made in the recent past include access management accomplished through new vertical curbs, a narrow green strip and a 5' wide concrete sidewalk on both sides of the street. Striped crosswalks exist along North Chestnut at the Park and Ride lot, Mulberry Street, and Henry W. DuBois.

North Chestnut Street looking south towards Henry Dubois Drive from the Park and Ride Lot.

Henry W Dubois Drive

Henry W Dubois Drive runs east from North Chestnut Street for 1.1 miles to North Putt Corners Road, paralleling Main Street through the Village of New Paltz. The road corridor is primarily residential with several stop-signed intersections and a steadily ascending from west to east, rolling terrain. Shoulder and travel lane widths vary with pavement edges being bordered by grass lawns, trees, fences, mailboxes, utility poles and driveways. Sidewalks exist on portions of

Henry W Dubois Drive Looking West

the corridor, primarily at the western end near North Chestnut Street.

Main Street, New Paltz

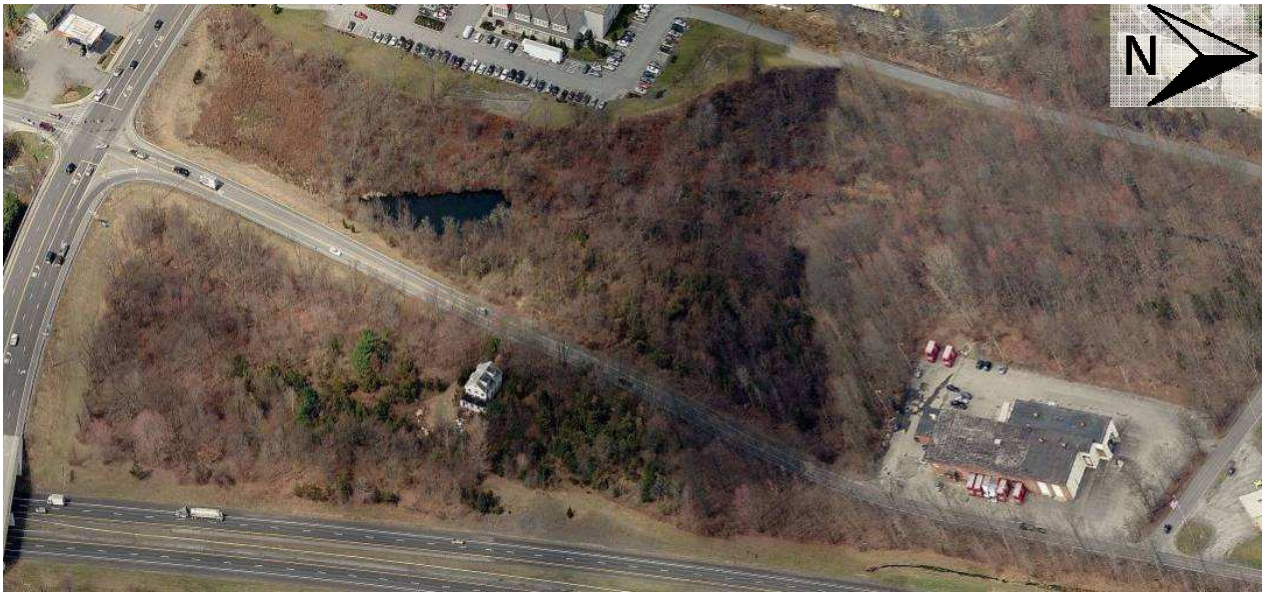
Main Street in New Paltz (NY 299/32) extends from the intersection with N. Chestnut St. (NY 32) for 1.1 miles to N Putt Corners Road. Main Street is a congested area with many commercial driveway crossings, road intersections and adjacent businesses. Lane configuration varies but is generally 2 travel lanes with turning lanes at major intersections and on street parking on the north side until the intersection with Millrock Road. There are existing sidewalks on both the north and south sides for almost the entire corridor with varying buffer widths and curbing.

Main Street, New Paltz, Looking West

Main Street, New Paltz, Looking East at Westbound

North Putt Corners Road

North Putt Corners Road parallels the NYS Thruway and the segment relevant to this study stretches for 0.3 miles from Henry W. Dubois Drive to NYS Route 299. There is guiderail on both the east and west sides for approximately 500 ft. beginning at the intersection with NY 299. Ulster County has a planned project from the intersection of NY 299 south to the intersection of NY 32 funded through the Ulster County Transportation Council's Transportation Improvements Plan. The project will include repaving the entire road and adding a six foot shoulder on both sides to be used as a bike path. This was the preferred alternative to installing sidewalks along the road. Project completion is expected for 2014 -2015.



N Putt Corners Rd from NY 299 to Henry W Dubois

NYS Route 299

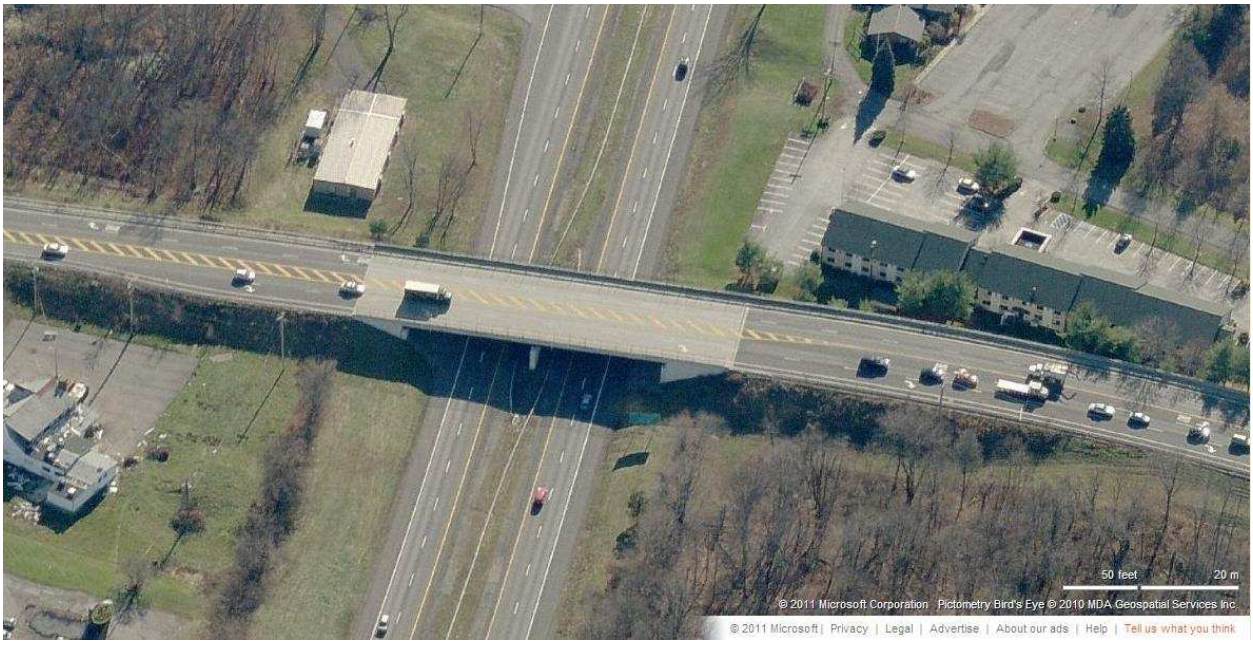
This 1-mile segment of the NY 299 corridor is comprised of two 11 foot lanes with paved shoulders ranging from 4'-8'. A gently to moderately sloping ROW is available on both sides; bordering wetlands delineate the ROW width with some short stretches directly abutting the roadway. There are crossings with commercial driveways and roadways on both the north and south sides. NY 299 also crosses over I-87 and intersects interchange 18 on the south side.

NY 299 Corridor and I-87 Interchange

NYS Route 299 Thruway Bridge

The existing bridge carrying NYS Route 299 over the NYS Thruway is approximately 78' wide, out-to-out and carries five lanes (turning and thru), shoulders, concrete barriers with fencing and an eastbound 5' wide sidewalk. The structure consists of two precast concrete spans, supported on steel I-beams and concrete piers. Approaches on either side of the bridge are supported by concrete wing walls and steeply graded embankments.

Route 299 - NYS Thruway Bridge looking east



Aerial Perspective of the NYS Route 299 Thruway Bridge. The north façade is visible.

Intersections

The WVRT/HVRT Link would have to path through four signalized intersections along NY 299. A summary of each intersection is provided below.

North/South Putt Corners Road

This 4-leg intersection includes left-turn lanes on all approaches and a westbound right-turn slip ramp controlled by a yield sign. Pedestrian accommodations include a sidewalk on the south side of NY 299 through the intersection and a crosswalk across the South Putt Corners Road approach. Paved shoulders are provided on NY 299 with minimal shoulder width on North/South Putt Corners Road. There are no pedestrian signals or pushbuttons at this intersection.

Previous transportation studies of this intersection indicate that vehicles experience very long delays during peak hours. The intersection is also within a high accident area of NY 299. The need for future improvements has been identified and includes a northbound right-turn lane on South Putt Corners Road and a second westbound left-turn lane on NY 299. This second left-turn lane would require widening of South Putt Corners Road. These improvements will require longer crossing distances for pedestrians and bicyclists.

Intersection of 299 with North/South Putt Corners Road

Interchange 18

Prominent movements at this T-intersection include the relatively high-speed, free-flow, right-turn lanes to/from the Interchange 18 travel plaza. Large grass islands separate the right-turn lanes. Pedestrian accommodations include a sidewalk on the south side of NY 299 that ends on the eastbound approach to the intersection. Wide paved shoulders exist at the intersection. There are no crosswalks, pedestrian signals, or pushbuttons.

Vehicles at this intersection also experience very long delays during peak hours. The intersection is also within a high-accident area of NY 299. The need for future improvements has been identified and includes addition of a second northbound right-turn lane from the toll plaza to NY 299 westbound, which would require widening of NY 299. An alternative improvement presented in previous studies would be to convert the signalized intersection to a roundabout.

Intersection of NY 299 with Thruway (I-87) Interchange

Ohioville Road

This 4-leg signalized intersection includes left-turn lanes on NY 299 and a separate southbound right-turn lane on Ohioville Road. Paved shoulders exist at the intersection. There are no sidewalks, crosswalks, pedestrian signals, or pushbuttons. Vehicles at this intersection experience very long delays during peak hours. The intersection is also within a high-accident area of NY 299. The need for future improvements has been identified and includes a northbound left-turn lane on Ohioville Road.

Intersection of NY 299 with Ohioville Road

Intersection of NY 299 with South Street

South Street/South Elting Corners Road

This 4-leg intersection includes left-turn lanes on NY 299 and separate westbound and southbound right-turn lanes on NY 299 and South Elting Corners Road. Paved shoulders are provided on NY 299 with minimal shoulder width on South Street and South Elting Corners Road. There are no sidewalks, crosswalks, pedestrian signals, or pushbuttons. This intersection was widened as part of the construction of the Lowe's Home Improvement Store.

Paradies Lane

This unsignalized T-intersection between Interchange 18 and Ohioville Road would become signalized should construction of a major multi-use development between Paradies Lane and the NYSTA Exit 18 Ramps become a reality.

2.4 Environmental Conditions

During the field investigations, B&L noted several potential issues that could be relevant to the construction of the trail link. The establishment of a multi-use path at a width of 12 feet plus 2 foot wide shoulders on both sides would require light clearing and drainage improvements along with the placement of suitable trail material. While several areas along the NY 299 corridor are designated as State Freshwater Wetlands, federal wetlands or potential federal wetlands, there is sufficient upland area adjacent to the highway to accommodate the trail without extensive disturbance. Several minor crossings of drainage ways connected to wetlands will be needed, but the crossings are narrow and can be accomplished without extensive disturbance. The WVRT/HVRT Link corridor crosses another state -designated wetland on Henry W. Dubois Drive, and the trail can be accommodated within the road embankment with disturbing the wetland at this crossing as well.

The trail is unlikely to pose a threat to threatened and endangered species, because it is being built primarily in a highway corridor. Screenings should, however, be conducted during preliminary design as alternatives may develop that would warrant further study, such as more extensive clearing, or an alternative that requires extensive earthwork.

Storm drainage conditions vary along the corridor. Along the NY 299, drainage currently is routed in open swales east of Ohioville Road. West of Ohioville Road, runoff from the highway sheets off through the heavy turf shoulders into the wetlands on either side.

Grades are relatively gentle along NY 299 and North Putt Corners Road, except for embankments near the NY 299 over the Thruway Bridge approaches. Henry W. Dubois Drive is moderately sloping, especially within the Village. Steep sideslopes exist in isolated areas between Ohioville Road and the Thruway Exit 18 Ramps (upslope) and along North Putt Corners Road (downslope).

2.5 Surrounding Land Uses

The trail link will traverse through a variety of land uses and settings including commercial, residential and open space. In spite of the busy and congested nature of the proposed route, the trail will offer an interesting variety of landscape vistas, natural areas, and attractive neighborhood settings throughout.

Beginning at the WVRT the short connection along Chestnut to Henry W. Dubois will feature a typical highway commercial and retail setting. Traveling up Henry W. Dubois, the land uses become residential with multi-family residential transitioning to mainly single-family, then back to multi-family nearing North Putt Corners Road. The short multi-use trail segment on North Putt Corners Road is light commercial and undeveloped, with occasional views of the NY Thruway a few hundred feet to the east. The trail meets NY 299, at the beginning of the main suburban highway strip-mall section of eastern gateway into the Village. The primary pedestrian route continues to Main Street where it travels the Main Street corridor through downtown New Paltz, eventually following the gradual transition along Main Street to suburban strip-mall developments near Putt Corners where it reconnects with the multi-use trail. The trail then continues east on NY 299, crossing the Thruway into a lower density commercial area

adjacent Thruway Exit 18. Once past the exit, the trail enters the hamlet of Ohioville, at present a typical commercial retail crossroad. This land use continues with spotted small commercial and retail uses approaching the town line. The last segment of the trail link passes through mostly undeveloped area dominated by the Swarte Kill Watershed and Plutarch Wetlands.

2.6 Relationship with Existing Transportation Network

NY 299 has a wide roadway right-of-way (approximately 165 ft.) to accommodate a separate trail facility and generally 8 ft. wide shoulders and is designated as a shared-use roadway. Marked crossings of NY 299 are located at intersections and could easily be upgraded for pedestrian related signal equipment. Near the Village of New Paltz, an existing sidewalk leads into the Village eastbound on NYS Route 299 to the intersection of North Putt Corners Road, however the westbound sidewalk does not begin for 200 feet past the North Putt Corners intersection. The short section of N Putts Corners Road envisioned for the multi-use path use is narrower than NY 299 but can accommodate a trail path separated from the roadway. Henry W Dubois Drive is a typical residential street where bicycle and pedestrian activity is considered normal and is expected.

Constructing this link connects two vital regional trails where opportunities for mode choice will be increased as well as the potential reduction in vehicular travel. Safety improvements will be made at intersections related to the construction of the Shared-use Path, thus creating a visibly safer multi-modal corridor and further encouraging use by non-motorized travelers. The creation of the link system will fill gaps in the modal transitions for pedestrians at several intersections and most notably will fill gaps in the sidewalk system on NYS Route 299 entering the Village of New Paltz.

2.7 Agency Coordination

As part of this planning process the Southern Ulster Alliance reached out to several non-profit and governmental agencies which will be affected by this project including the local rail trail associations and recreational committees within the Towns' of Lloyd and New Paltz; the Ulster County Planning Department, Transportation Council and Department of Tourism; the New York State Departments of Transportation Region 8 Engineer's Office; the New York Bridge Authority and the New York State Thruway Authority.

3.0 Trail Design Guidelines and Standards

3.1 American Association of State Highway and Transportation Officials (AASHTO) and NYSDOT Guidelines

This project would be designed to meet or exceed the guidelines contained in the AASHTO, *Guide for the Development of Bicycle Facilities* (1999) and the NYSDOT *Highway Design Manual* (HDM), Chapters 17 & 18.

In addition, this project would also reference the following additional design standards:

- AASHTO *Policy on Geometric Design of Highways and* Streets, 2004
- NYSDOT *Bridge Manual* (BM) 4th ed., 2006
- Federal Highway Administration (FHWA) *Manual on Uniform Traffic Control Devices* (MUTCD), 2009
- NYS Supplement to the MUTCD
- Design standards established by the HVRT Association
- Cycle Track: Lessons Learned, 2009 by Alta Planning & Design
- Fundamentals of Bicycle Boulevard Planning & Design, 2009
- Innovations… Ulster County Non-Motorized Transportation Plan

3.1.1 Shared Roadway and Bike Lane Design Guidelines

A shared roadway is defined by AASHTO as "a roadway which is open to both bicycle and motor vehicle travel. This may be an existing roadway, street with wide curb lanes, or road with paved shoulders." A shared roadway may be signed to designate it as a preferred route for bicycle use.

Paved Shoulders
Paved shoulders should be at least 4 feet wide to accommodate bicycle travel. The measurement of usable shoulder width should not include the width of a gutter pan, unless the pan width is 4 feet or greater. Shoulder width of 5 feet is recommended from the face of a guiderail, curb or other roadside barriers.

On-Street Parking
Bicyclists are subjected to opening car doors, vehicles exiting parking spaces, extended mirrors that narrow the travel space, and obscured views of intersecting traffic. Therefore, 12 feet of combined bicycle travel and parking width should be the minimum considered for this type of shared use.

Drainage Inlet Grates
Bicycle-safe grates should be used, and grates and covers should be located in a manner which will minimize severe and/or frequent maneuvering by the bicyclist. Curb opening inlets should be considered when possible to minimize the number of potential bicycle conflicts.

Bicycle Safe Grate

Bike Lanes
Bike lanes can be incorporated into a roadway when it is desirable to delineate available road space for preferential use by bicyclists and motorists, and to provide for more predictable movements by each. For roadways with no curb and gutter, the minimum width of a bike lane should be 4 feet. If parking is permitted the bike lane should be placed between the parking area and the travel lane and have a minimum width of 5 feet. Where parking is permitted but a parking stripe or stalls are not utilized, the shared area should be a minimum of 11 feet without curb face and 12 feet adjacent to a curb face. If the parking volume is substantial or turnover is high, an additional 1 to 2 feet of width is desirable. The recommended width of a bike lane is 5 feet from the face of a curb or guardrail to the bike lane stripe. This should be sufficient in cases where 1-2 foot wide concrete gutter pan exists, given that a minimum of 3 feet of ridable surface is provided. Bike lanes should be delineated from the motor vehicle travel lanes with a 6-inch solid white line (8-inch can be used for added distinction). An additional 4-inch solid white line can be placed between the parking lane and the bike lane encouraging motorists to park closer to the curb.

3.1.2 General Bicycle and Shared Use Path Design Guidelines

A shared use path is defined by AASHTO as "a bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users."

Shared Use Path
Shared use paths are facilities on exclusive right-of-way and with minimal cross-flow by motor vehicles. Shared use paths should not be used to preclude on-road bike facilities, but rather to supplement a system of on-road bike lanes, wide outside lanes, paved shoulders and bike routes.

Separation Between Shared Use Paths and Roadways
When two-way, shared use paths are located adjacent to a roadway, wide separation between a shared use path and the adjacent highway is desirable to demonstrate to both the bicyclist and the motorist that the path functions as an independent facility for bicyclists and others. When this is not possible and the distance between the edge of the shoulder and the shared use path is less than 5 feet, a suitable physical barrier is recommended. The barrier should be a minimum of 55 inches high.

Width and Clearance
A recommended paved width for a two-directional shared use path is 10 feet. In rare instances, a reduced width of 8 feet can be adequate. This reduced width should only be used where the following conditions prevail:

- Bicycle traffic is expected to be low, even on peak days or during peak hours
- Pedestrian use of the facility is not expected to be more than usual
- There will be good horizontal and vertical alignment providing safe and frequent passing opportunities

A minimum 2-foot-wide graded area with a maximum 1:6 slope should be maintained adjacent to both sides of the path; however, 3 feet or more is desirable to provide clearance from trees, poles, walls, fences, guiderails, or other lateral obstructions.

3.1.3 Bicycle Boulevard Design Guidelines

Bicycle boulevards are shared roadways that are adapted for bicycle travel by traffic calming, redirection, signage and pavement markings, and intersection crossing treatments. Low-volume streets are an appropriate setting for bicycle boulevards and should serve major origins, destinations and travel corridors (often paralleling an arterial) but are typically residential and an inconvenient though-route for automobiles. When properly implemented, they are comfortable and attractive to cyclists with a wide range of abilities and ages.

Guidelines for designing bicycle boulevards are as follows:

- prioritize bicycle movement by turning stop signs to favor the bicycle boulevard.
- reduce vehicle speeds through traffic calming measures.
- reduce vehicle volumes through traffic diversion measures.
- provide crossing improvements at intersections with major streets (including median refuge islands, signalization, and/or curb extensions).
- help cyclists find and use the facility (through pavement markings and signs that provide directional and destination information).

Traffic calming is the combination of physical measures to reduce the impact of motor vehicle use, alter driver behavior, and improve the conditions for pedestrians and bicycle users. There are a variety of traffic calming measures that can be utilized to establish a bicycle boulevard, including curb extensions, refuge islands, raised intersections, Roundabouts (and Mini-Roudabouts), speed tables, chokers, medians, and many others.

Bicycle boulevards offer many advantages, such as substantial safety benefits (due to reduced exposure to vehicles and speeds); their appeal to inexperienced cyclists, families and seniors; and a calmer riding environment. Most tools used to create bicycle boulevards are inexpensive in terms of capital costs, but crossing treatments can be expensive (particularly where the cross street is a major arterial and/or state highway).

Bicycle Boulevard with striped 'Sharrows' – Wilmington, NC

3.1.4 Cycle Track Design Guidelines

A cycle track blends the user experience of a separated path with the on-street infrastructure of a traditional bike lane to create a hybrid bicycle facility. Cycle tracks are divided from travel lanes, parking lanes and sidewalks as they are intended to provide space exclusive to or primarily for bicycles. Delineation of cycle tracks is conveyed by pavement markings or coloring, bollards, curbs/medians or a combination of these elements and can be either on one or both sides of a street and one-way or two-way.

Separated Cycle Track

3.1.5 Roundabouts

Bicycles at Modern Roundabout

The three general ways to accommodate bicycles at roundabouts are as follows:

(1) In mixed flow with vehicular traffic
(2) Along separate bicycle paths
(3) On bicycle lanes along the outside diameter of roundabouts (not recommended)

The appropriate treatment of the bicycle facility at roundabouts shall be determined based on the specific restrictions of the project site.

3.1.6 Intersections

Bike Lanes at Intersections

- Bike lane striping should not be installed across any pedestrian crosswalks and should not continue through any street intersections.
- At signalized or stop-controlled intersections with right-turning motor vehicles, the solid striping to the approach should be replaced with a broken line with 2-foot dots and 6-foot spaces. The length of the broken line section is usually 50-200 feet.
- At T-intersections with no painted crosswalks, the bike lane striping on the side across from the T-intersection should continue through the intersection area with no break.

Through Bicycle Lane at Intersection

Midblock Crossings
Midblock crossings should be far enough away from the existing intersections between roadways to be clearly separate from the activity that occurs as motorists approach these intersections. A minimum 45-degree angle may be acceptable to minimize right-of-way requirements.

Complex Intersection Crossings
Some suggested treatments which may be considered include:

(1) Move the crossing
(2) Install a signal
(3) Change signalizing time
(4) Provide a refuge island and make a two-step crossing for path users

Other helpful tools:

- "Zebra-style" or colorized pavement crosswalks, which are far more visible than traditional designs
- Raised platform crosswalks, which can be useful to define roadway space for non-motorized users and stress the need for motorists to yield to that space
- Pedestrian-friendly intersection crossings, which incorporate appropriate signal heads and infrared motion detectors, pressure mats and other technologies
- Midblock neck-downs or intersection curb-bulbs at the crossing to shorten the crossing distance

3.1.7 Bridges

Minor Bridges
In addition to a potential large pedestrian bridge over the Thruway, some smaller bridge structures will be required to cross small waterways along the NY 299 Corridor with the trail. These bridges will be adjacent to state and federal wetlands and should be carefully designed to minimize impacts on the wetlands. One approach that should be considered is the mounting of small timber structures onto pilings.

Examples of boardwalk systems that could be used to cross small streams along NY 299.

Major Bridge Crossings
"Bridge Shared Path Markings" are currently in use to accommodate bicycle crossings on existing bridges such as the Route 299 Thruway crossing bridge. This consists of a system of pavement markings and warning signage intended to clearly delineate bicycle lanes and pedestrian space over the bridge. A shared path width of 12' wide is generally striped with separate pedestrian and bicycle paths. Guiderails are required to be a minimum of 42" high, and the shared path is generally separated from the vehicular traffic by sturdy barriers.

Bridge Shared Path and Markings

Trails are often mounted on outriggers attached to existing bridge structures. A minimum clear width of 12’ is recommended. A minimum 42” guiderail height is required; however it is a common practice to use a standard bridge rail height of 54” for guiderails.

Pedestrian only bridges are most commonly used to replace existing structures, or when a path cannot feasibly be accommodated on the existing bridge. Share path bridges should provide a minimum horizontal clearance of 12’ and a minimum vertical clearance of 10’. Guiderails are required to be 42” high, but it is generally accepted to provide a 54” bridge railing height. Safety fence is sometimes required where bridges cross roads, railroads, or waterways.

4.0 Research & Analysis

The Ulster County Non-Motorized Transportation Plan (UCNMTP) included an extensive analysis of data collected for the study from census data, field observation and an online survey which received over 450 responses. The information presented provides an excellent basis for development of conservative estimates of economic impacts resulting from the establishment of the New Paltz trail link. In addition, extensive research has been conducted on other significant rail trail and multi-use trail projects relevant to the New Paltz link. A more detailed analysis would be beyond the scope of this feasibility study; moreover, some of the economic impact research currently underway, most notably related to the Walkway over the Hudson will provide more focused and useful data. A follow-up economic impact study should be undertaken focused on this particular trail link once data is available, and a more local level demand analysis should be prepared based on 2010 Census data.

4.1 Trail Economic Factors Analysis

There are multiple levels of economic impact factors to consider with regards to this linkage trail. These levels include:

- Local commuters, including pedestrian and bicycle users in and near New Paltz;
- Regional commuters, who may utilize the link to access work or travel beyond New Paltz;
- Local recreational users who will use the New Paltz link for fitness or to access local recreation opportunities;
- Non-local recreational users, who will use the New Paltz link as part of a recreational visit.

Spending habits will be most relevant for the non-local users and regional commuters who will bring new spending from outside of the local users, since it is assumed that local users would be spending in the area whether the trail was located there or not.

The survey conducted as part of the UCNMTP provides some insights into the trail use preferences of those who participated on a county-wide basis. In addition, the UCNMTP provided estimated demand for bicycle and for pedestrian facilities based on 2000 Census data and assumptions from other studies both on county wide levels.

4.1.1 Potential Impacts

The trail will be classified as a multi-use trail linking two existing multi-use trail systems. Use of the trail is likely to be affected by several factors:

- 'Base flow' generated by the 3.25 mile multi-use link;
- Additional flow generated from users of the WVRT;
- Additional flow generated from users of the HVRT and cyclist shared use of NY 299;
- Additional flow generated from users of the Walkway over the Hudson Bridge.

In addition to the above trail related factors, other factors will have a strong influence on use of the New Paltz link including:

- The proximity of the SUNY New Paltz Campus;
- Proximity of multi-family housing to the New Paltz link;

- The potential for bike and ride commutes to the Amtrak station in Poughkeepsie that would utilize the New Paltz link;
- Recreational opportunities such as the Mohonk Preserve which caters to local recreational hiking, biking, and rock climbing;
- Environmental education destinations including the Mill Brook Preserve, the Black Creek Forest Preserve, and an interpretive wetland area along NY 299;
- Other generators as discussed in the UCNMTP including schools, grocery stores, and employers.

For the purposes of this analysis, since localized information based on 2010 Census data is not available, a simple analysis based on other similar studies will be used to project potential economic impacts. This estimate is likely to be fairly conservative as it cannot anticipate some of the local factors discussed above.

Estimate of Existing Daily Bicycling Activity in (T/V) New Paltz			
Variable	***Figure***	***Subtotals***	***Calculations***
Employed Adults, 16 Years and Older			
a. Study Area Population	18,864		
b. Employed Persons	10,121	(2000 Census Website Info)	
c. Bicycle Commute Mode Share	0.2%		
d. Bicycle Commuters	20		(b*c)
e. Work-at-Home Percentage	4.8%		
f. Work-at-Home Bicycle Commuters	243		[(b*e)/2]
School Children			
g. Population (ages 5-17)	3,466	(Ages 5+ - 17)	
h. Estimated School Bicycle Commuter Mode Share	2%		
i School Bicycle Commuters	69		(g*h)
College Students			
j. Full-Time College Students	6,890	(Fall 2010 full-time student)	
k. Bicycle Commuter Mode Share	5.0%		
l. College Bicycle Commuters	345		(j*k)
Work and School Commute Trips Sub-Total			
m. Daily Bicycle Commuters Sub-Total		677	(d+f+i+l)
n. Daily Bicycle Commute Trips Sub-Total		1354	(m*2)
Other Utilitarian and Discretionary Trips			
o. Ratio of "Other" Trips in Relation to Cummute Trips	2.73		(ratio)
p. Estimated Non-Commute Trips	3,696	3,696	(n*o)
Total Estimated Daily Bicycle Trips		**5,050**	**(n+p)**

Estimate of Existing Daily Pedestrian Activity in (T/V) New Paltz			
Variable	*Figure*	*Subtotals*	*Calculations*
Employed Adults, 16 Years and Older			
a. Study Area Population	18,864		
b. Employed Persons	10,121 (2000 Census Website Info)		
c. Pedestrian Commute Mode Share	3.8%		
d. Pedestrian Commuters	385		(b*c)
e. Work-at-Home Percentage	4.8%		
f. Work-at-Home Pedestrian Commuters	0		[(b*e)/2]
g. Transit Commute Share Mode	2.2%		
h. Transit Pedestrian Commuters	167		[(b*g)*0.75]
School Children			
i Population (ages 5-17)	3,466 (Ages 5+ - 17)		
j. Estimated School Pedestrian Commuter Mode Share	11%		
k. School Pedestrian Commuters	381		(g*h)
College Students			
l. Full-Time College Students	6,890 (Fall 2010 full-time student)		
m. Pedestrian Commuter Mode Share	5.0%		
n. College Pedestrian Commuters	345		(j*k)
Work and School Commute Trips Sub-Total			
o. Daily Pedestrian Commuters Sub-Total		1,277	(d+f+h+k+n)
p. Daily Pedestrian Commute Trips Sub-Total		2555	(o*2)
Other Utilitarian and Discretionary Trips			
q. Ratio of "Other" Trips in Relation to Cummute Trips	2.73		(ratio)
r. Estimated Non-Commute Trips	6,974	6,974	(p*q)

4.1.2 Economic Benefits Assessment

Once completed, the Wallkill Valley Rail Trail to Hudson Valley Rail Trail link will create 9.2 miles of continuous trail on the HVRT including the Walkway. Combined with the 12.2 miles of trail on the WVRT, this represents a total length of 21.4 miles of contiguous trails, which would create a 42.8 mile loop. The 40 mile trip is frequently mentioned as a cutoff distance between 'family' trips and the length of trip serious bike trekkers make, meaning this new loop system would have a wide range of potential users.

A recent case study completed for ADKAction.org by Camoin Associates compared monthly users per mile of several rail trails and found an average of about 270 trail users per mile every month. This estimate was for a combination of rural, suburban and urban trails and the actual counts ranged from 195 to 345 users per mile per month. Since it is likely that the trail would be used 12 months of the year, the completed system would be capable of generating about

141,000 new users per year. In the context of almost 800,000 visitors to the Walkway in the first year, this number of users appears to be valid, if not conservative.

According to a user survey and study of 10 NY State trails titled 'Every Mile Counts: Economic Analysis of 2008 New York User Surveys", prepared by the NYS Office of Parks, Recreation and Historic Preservation, between 25% and 70% of trail users will be from out of town depending on the available continuous route length. Each 'out-of-town' user was estimated to spend $150 to $300 per day. As a result, a significant annual economic impact would be derived as a result of the trail link ranging from:

Estimated Trail-User Spending Per Year

Range	Out of Town Pct.	Spending per Visit	Estimated Annual Users	Approximate Annual Spending
Low	.25	$150	141,000	$ 5,300,000.00
Mid	.50	$225	141,000	$ 15,900,000.00
High	.70	$300	141,000	$ 29,700,000.00

The Camoin Study also estimated trail related jobs would be created at a rate of one job per $100,000 of spending. Based on a similar ratio of jobs versus spending, this new trail link could create between 53 and 297 new jobs.

4.2 Environmental Factors

The project will require an environmental review under the State Environmental Quality Review Act (SEQR) and if funded by a federal program will also require a National Environmental Policy Act NEPA review. Several permits may also be required for related to impacts from construction of the trail link. In support of these reviews and permits, several additional screenings and detailed studies may be required.

NEPA Classification

The project will likely need to be progressed as a D-list Categorical Exclusion with Documentation, Class II Action under the provisions of the National Environmental Policy Act (NEPA), as defined by the Federal Highway Administration (FHWA) in 23 CFR 771. If a separate pedestrian bridge is not included in the project, the project might fit the description of a C-list Categorical Exclusion with Documentation.

SEQR Project Classification and Review

The project classification under the New York State Environmental Quality Review Act (SEQRA), Part 617, Title 6 of the Official Compilation of Codes, Rules, and Regulations of the State of New York (6 NYCRR Part 617) is likely an Unlisted Action. The project is likely to require review and preparation of either a long or short environmental assessment form for review by the lead agency. Additional documentation summarizing agency coordination and environmental screenings should be referenced or attached to the EAF.

State Freshwater Wetlands

A review of New York State Department of Environmental Conservation (NYSDEC) Freshwater Wetland mapping on the Ulster County GIS indicated that mapped wetlands CD-5, CD-6 and CD-39 are located immediately adjacent to the proposed trail route, along route 299 (CD-5, CD-6)

GIS Mapping from Ulster County Planning illustrates State Freshwater Wetlands in blue.

and along Henry W. Dubois Drive (CD-39). It is assumed that, at a minimum, the proposed trail project will be located within the 100-ft. regulated buffer of these wetlands. Final design plans will be reviewed during the final design process to ensure that no impacts to these wetland areas will occur. It is assumed that an Article 24 Freshwater Wetlands Permit will be required from the NYSDEC prior to project construction.

Federal Wetlands

National Wetland Inventory (NWI) mapping from the Ulster County GIS was reviewed to determine whether any wetland polygons are depicted along the proposed trail corridor. Freshwater forested/scrub-shrub wetlands are depicted in the areas is associated with the NYSDEC mapped wetlands CD-5, CD-6, and CD-39. A wetland site visit should be completed to confirm the mapping results displayed by the NYSDEC and NWI freshwater wetland resources. The project site should be reviewed for wetlands in accordance with the criteria defined in the 1987 US Army Corps of Engineers (USACE) Wetland Delineation Manual and 2009 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Northcentral and Northeast Region.

Executive Order 11990

Executive Order (EO) 11990 may apply to this project, depending on whether any federally jurisdictional wetlands will be impacted as a result of the proposed project. Once final design plans are generated for the project, the applicability of this EO will be determined. All identified wetland areas will be avoided to the extent practicable.

Surface Waterbodies and Watercourses

Depending on the final design and scope of work, the proposed project may require temporary or permanent fills in Waters of the U.S. It is anticipated that any such work would be authorized under the USACE Section 404 Nationwide Permit Program, specifically under a #14 permit for linear transportation projects. Nationwide Permit #14 requires the submission of pre-construction notification to the USACE prior to initiating project construction. All applicable environmental permits should be obtained once the location and the extent of potential impacts are determined and the project design is finalized. Work should not commence until all required permits are authorized; and project construction should then adhere to all applicable permit conditions. In addition to a USACE Section 404 permit, a Section 401 Water Quality Certification (WQC) from NYSDEC will also be needed for this project. An analysis will be required to determine whether the project complies with all conditions allowing for a blanket issued WQC, or whether an individual WQC will need to be obtained for the proposed project.

Surface Water Classification and Standards

The proposed project will span two NYSDEC mapped streams along the proposed trail alignment. The Swarte Kill, Water Index No. H-139-13-2, is listed as un-assessed. The Mill Brook (and Tributaries), Water Index No. H-139-14-20-2 are designated as a Class A stream with A (T) Standards (6 NYCRR Part 862) requiring verification. According to 6 NYCRR Part 608 Use and Protection of Waters, Class A waters can be used as a source of drinking water. The (T) Standards indicates that the water quality of this stream is sufficient to support trout populations. Mill Brook meets the NYSDEC's definition of protected water; therefore, a NYSDEC Article 15 Stream Disturbance Permit will be required for any disturbance to the bed or banks of this water resource. Due to the classification of the Mill Brook, in-stream timing restrictions may also apply to disturbance to the bed and banks of this waterbody. No other mapped or

unmapped streams were observed within the project limits. The project area is located in the Lower Hudson Drainage Basin.

Stream Bed and Bank Protection
Within the project limits, Mill Brook is recognized as a state protected stream. Mill Brook is the 139th tributary to the Hudson River. As a protected water body, an Article 15 Stream Disturbance Permit must be acquired for any work that will be performed within the bed or banks of Black Creek.

Mitigation Summary
All appropriate measures will be taken to avoid and minimize any impacts to the bed and banks of Mill Brook and the Swarte Kill. Appropriate erosion and sediment control measures will be implemented as part of this project to ensure that potential stream impacts are minimized, to the extent possible.

Floodplains
State Flood Insurance Compliance Program and Federal Floodplain Management-
The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Mapping (FIRM) for the project area shows that a portion of the proposed trail corridor lies within mapped 100-year flood zone (Zone A). This flood zone area is associated with the Swarte Kill and is located at the where the proposed trail will cross the stream. No impacts are anticipated to occur to these mapped flood zones since the trail will be located on top of fill areas that were associated with the Route 299 Right-of-Way.

Executive Order 11988
Executive Order 11988 requires that projects avoid and/or minimize, to the extent possible, any short-term or long-term impacts to mapped floodplain areas. Though the proposed project is currently not expected to impact such areas due to historic filling activities, portions of the proposed trail alignment are mapped within 100-year flood zones. Adjacent property owners should be notified of the proposed actions that will occur in the mapped floodplain areas of Swarte Kill.

Stormwater Management

This project will disturb over one acre of land and will therefore require a State Pollution Discharge Elimination System (SPDES) permit. While this project may not be required to assess the requirements for stormwater management practices, such practices will be considered where reasonable and feasible. All appropriate erosion and sediment control measures will be implemented as part of the project design.

A SPDES General Permit for construction activities (GP-0-10-001) will be required as the project results in more than one acre of soil disturbance. A Stormwater Pollution Prevention Plan (SWPPP) with the appropriate sediment and erosion control measures will be developed. The project corridor is not adjacent to or discharging runoff to a TMDL Watershed or a listed 303(d) water body.

Fish, Wildlife, and Waterfowl -
The NYSDEC Natural Heritage Program (NHP) should be contacted for information regarding the reported presence of any NYS endangered or threatened species or significant habitats located

within or adjacent to the project area. Other project in close proximity to the proposed project have received reports from the NHP that one natural community and that historical records or one endangered vascular plant may exist near the proposed trail corridor. Prairie wedgegrass (Sphenopholis obtusata) was reported within the Town of New Paltz in 1957. Detailed location information for this record is not available. The project will have very minimal impacts to areas of damp soil, the only habitat information provided for this vascular plant species. In addition, the Appalachian Oak-Hickory Forest community is noted north of the project corridor. Though this community type is documented as being diverse, it is afforded no legal protection within NYS. No impacts to this community will occur as part of the project since this forest type is located north of NY 299, beyond the road right-of-way. Observations should be made on-site to determine if other state protected plants or animals may exist on the project site.

An information search regarding federally endangered and threatened species should also conducted for this project. The Department of the Interior (DOI) U.S. Fish and Wildlife Service (USFWS) NY Field Office website should be consulted for a list of federally-protected species reported within Ulster County. This database search on other nearby projects resulted in the identification of the following species: the delisted bald eagle (Haliaeetus leucocephalus), the endangered bog turtle (Glyptemys muhlenbergii), the threatened Northern wild monkshood (Aconitum noveboracense), historic records of the threatened small whorled pogonia (Isotria medeoloides), winter and summer populations of the Indiana bat (Myotis sodalis), and the endangered shortnose sturgeon (Acipenser brevirostrum).

A field survey should be completed to determine if the above listed species do, in fact, occupy the proposed project area or if suitable habitat for these listed species is located within the disturbance limits of the project. Indiana bat populations are known to inhabit many areas of Ulster County. The proposed project corridor is predominantly absent of standing trees, and any trees that remain are small in diameter at breast height (DBH). Certain sections of the trail route will require minor tree clearing activities. The extent of these tree clearing activities will be reviewed once final design plans are completed. If determined to be required, the USFWS' preferred tree removal timeline (October 1 – March 31) will be followed to complete all tree removal activities and minimize potential impacts.

Invasive Species

Wetland invasive species such as common reed (Phragmites australis) and purple loosestrife (Lythrum salicaria) were noted within wetland areas along NY 299 and at culvert crossing along the project corridor. Soils excavated from areas where invasive species populations are noted should be removed from the project area and disposed of at a location where the spread of such species will be restricted (example, landfill disposal). Care should be taken to prevent the introduction of additional invasive species during project design and construction by ensuring the construction equipment is clean and that any plantings incorporated into the project design are not recognized as invasive species.

Invasives.org Photo of Phragmites

Roadside Vegetation Management
Existing roadside vegetation consists primarily of maintained grassed areas and roadside ditches,. The management of roadside vegetation will adhere to guidelines established by the NYSDOT and Ulster County. No impacts to any roadways within or adjacent to the project corridor will be adversely affected.

National Heritage Areas Program
The proposed project is unlikely to adversely impact areas identified as National Heritage Areas and would likely be beneficial.

National Historic Preservation Act
Section 106 / State Historic Preservation Act – Section 14.09 - According to the National and State Registers of Historic Places, there are no historic properties, structures, districts, or sites listed, or eligible to be listed, within the project's area of potential effect. The east end of the proposed trail route is mapped within a sensitive archaeological area which is centered near the Old New Paltz Road and South Street intersection. The Henry W. Dubois Drive segment of the trail passes just north of the New Paltz Downtown Historic District and the connection to the WVRT will be just north of the Huguenot Street Historic District. A query letter should be submitted to the New York State Office of Parks, Recreation, and Historical Preservation (OPRHP) asking if any historical or archaeological sites or properties are located within the project corridor. In order to complete review of this project and issue an effect determination, OPRHP will likely request that a Phase 1 archaeological survey be completed for the proposed project. An analysis of Impacts to resources protected under Section 106 and Section 14.09 may be needed depending on whether the project includes federal funding.

Architectural Resources
The proposed project does not involve federally owned, jurisdictional or controlled property that is eligible for inclusion in the National Register of Historic Places. Therefore, Section 110 does not apply.

Archaeological Resources
A Phase I archaeological study should be completed and the results reviewed and coordinated with OPRHP. A 4(f) determination regarding archaeological resources may be required for the project if federally funded.

Effects Assessment
The proposed project is located in Ulster County, in the Town and Village of New Paltz. The project area contains a handful of adjacent residential and commercial buildings that appear to have been constructed during the 20th Century. The surrounding land is mostly rural, consisting of forested and wetland areas. The proposed project proposes to incorporate additional recreational opportunities within the Town and Village. Therefore, no adverse impacts are anticipated to occur to this resource. Quality views of wetland complexes and the Mohonk Mountain House and Shawangunk Mountains are featured along the proposed trail alignment.

The major visual features of the project corridor are the; 1) roadways, 2) grassed area (highway right-of-way), 3) wetlands, and 4) forested area.

There will be three (3) primary viewer groups of the proposed project; highway traffic users (commuters, tourists, bicyclists, delivery trucks), residential area occupants and business workers, and pedestrians/cyclists.

Overall, the execution of the proposed project will be a benefit to the surrounding community and will enhance the visual landscape. No adverse impacts to the visual quality of the proposed project corridor are anticipated, in fact, the visual quality and the public's enjoyment of the surrounding visual features are expected to improve.

State Farmland and Agricultural Districts

New York's Agricultural District Law was created to encourage the continued use of farmland for agricultural production. The proposed project corridor does not pass through any NYS designated agricultural districts. The closest Agricultural district to the proposed project area is ULST002, located approximately 0.25-miles south of the proposed NY 299 and South Putt Corners Road intersection. No impacts to this agricultural district will occur as a result of the trail project. No active farmlands will be impacted by the proposed trail.

5.0 Alternatives and Options Considered

5.1 Null Alternative

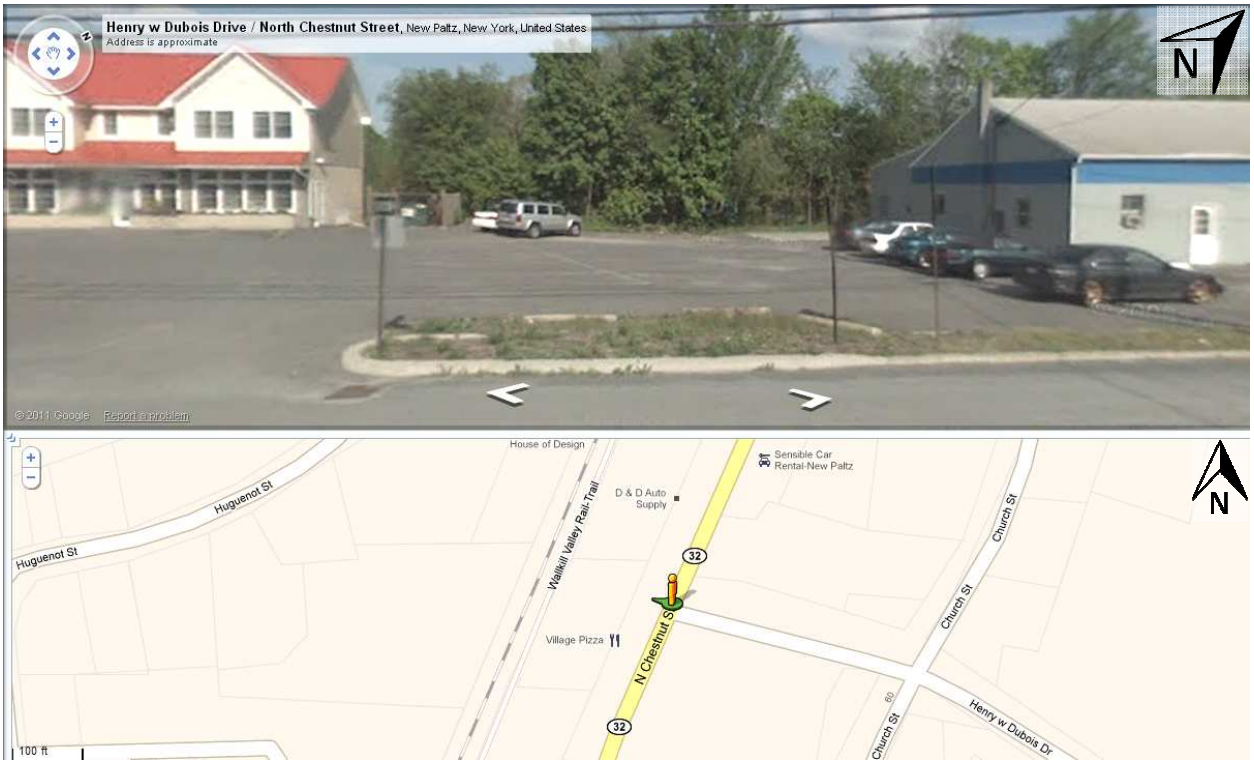
Under this alternative, a trail corridor would not be delineated or established. The Null (no action) Alternative does not meet the identified project objectives and is not consistent with the vision of the Towns of Lloyd and New Paltz; therefore, it is not considered feasible and is removed from any further project consideration.

5.2 WVRT Link Options

WVRT Link Options

5.2.1 Direct from Henry W Dubois Dr.

This option would cross N. Chestnut St. (NY 32) directly between Henry W Dubois Dr. and an existing parking lot between Village Pizza and D & D Auto Supply. The construction of this link would require the acquisition of private property to create the multi-use path corridor between the WVRT and N. Chestnut St., as well as an extensive amount of excavation and fill in order to meet the existing grade difference between the parking lots and WVRT.



WVRT Link Direct from Henry W Dubois Dr.

5.2.2 Via Mulberry

This alternative would follow Mulberry St. from the existing WVRT crossing east to N. Chestnut St. (NY 32) and south to Henry W. Dubois Dr. This link could be accomplished within the existing ROW through the implementation of a shared-use roadway route.

Mulberry St Looking West, towards WVRT crossing

WVRT at Mulberry St

5.2.3 Via North Chestnut Street Park & Ride Lot

This alternative would create a connection to the WVRT through the existing DOT Park & Ride Lot. At the back corner of this parking lot is a small pedestrian bridge connecting to the WVRT, this bridge should have bollards installed to prohibit motorized vehicle access and be evaluated for conformance to pedestrian bridge design standards. From the bridge a path will be constructed around the Park & Ride Lot to connect to N. Chestnut St. (NY 32). A shared-use path roadway will be implemented to complete the connection to Henry W. Dubois Dr.

Looking from WVRT North to Park & Ride

Looking East Along WVRT at Park & Ride

5.3 Village Main Street

This segment would begin at the intersection of NY 32 (N. Chestnut Street) and continue 1.1 miles to the intersection with NY 299 and N Putt Corners Road.

5.3.1 Cycle Track Section

5.3.2 Main Street Cycle Track Segment

Cycle track provides a space-saving approach to incorporation of a bicycle track in a constricted downtown setting. Previous studies evaluated the implementation of cycle track on Main Street in the Village and each scenario involved significant reconfiguration of on-street parking, walks and building access. This alternative was not evaluated for this project as there is potential need for land acquisition and short term negative economic impact on businesses that may not be acceptable at this time.

Cycle Track in Cambridge, MA

5.3.2 Primary Pedestrian Route

The purpose of this route would be to encourage direct pedestrian access to businesses on Main Street. Bicycle lockers and racks should be conveniently located to provide safe and secure bicycle storage areas. Additional signage will be needed to help direct pedestrians to facilities, assist with wayfinding along the route and direct them back to bicycle storage.

5.4 Henry W Dubois and North Putt Corners Segment

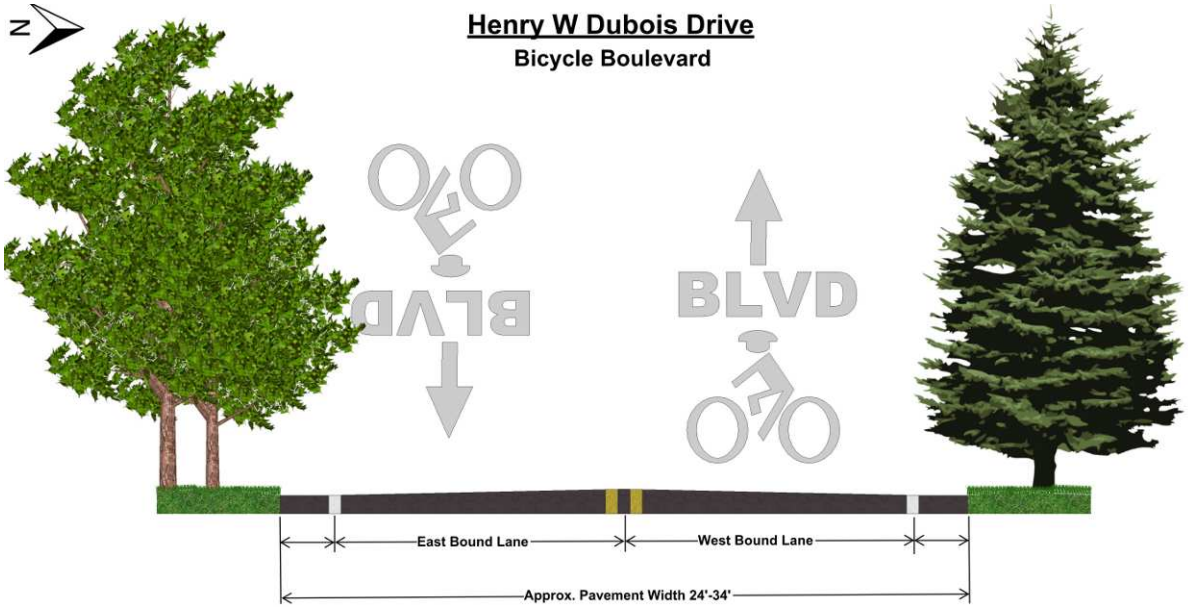
Henry W Dubois was evaluated as the primary bicycle route alternative to routing bicycles on the Village Main Street. Only the bicycle boulevard option was evaluated.

5.4.1 Roundabout at Chestnut Street

This improvement is a recommendation of the RSG Town and Village Transportation Plan. The construction of the roundabout would function to calm traffic and improve the safety of the intersection for vehicles and trail users.

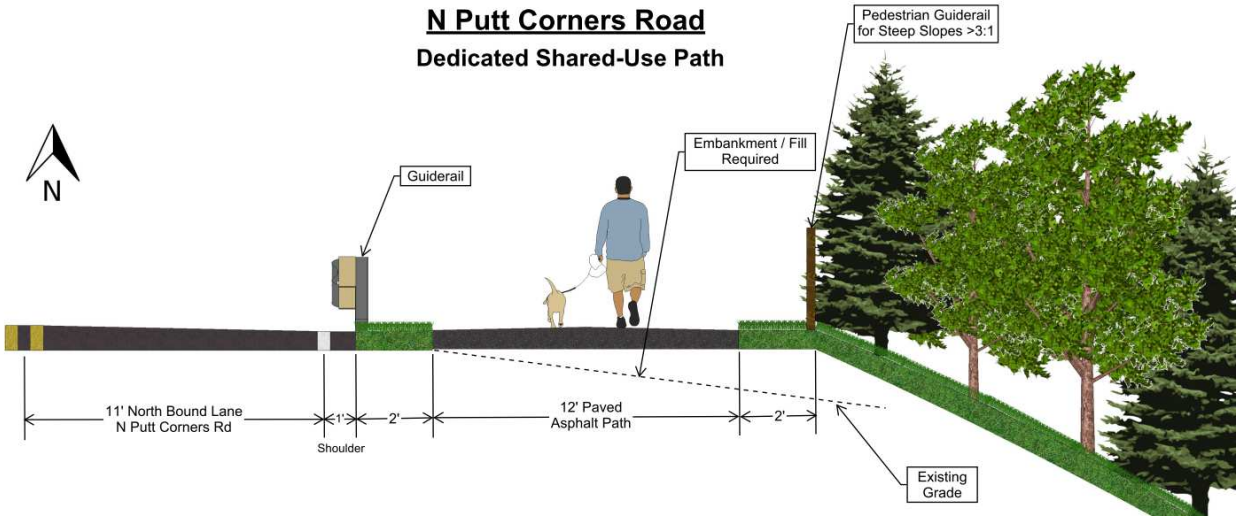
5.4.2 Bicycle Boulevard Section

The creation of a bicycle boulevard on Henry W. Dubois was suggested in the Ulster County Non-Motorized Transportation Plan. This option will be cost-effective to implement and is the preferred alternative for Henry W. Dubois. No major changes in the roadway will be required as the bike boulevard implementation will primarily be striping, placement of 'Sharrows' on the pavements and signage. The RSG studies also recommended use of mini-circles at two intersections to calm traffic.



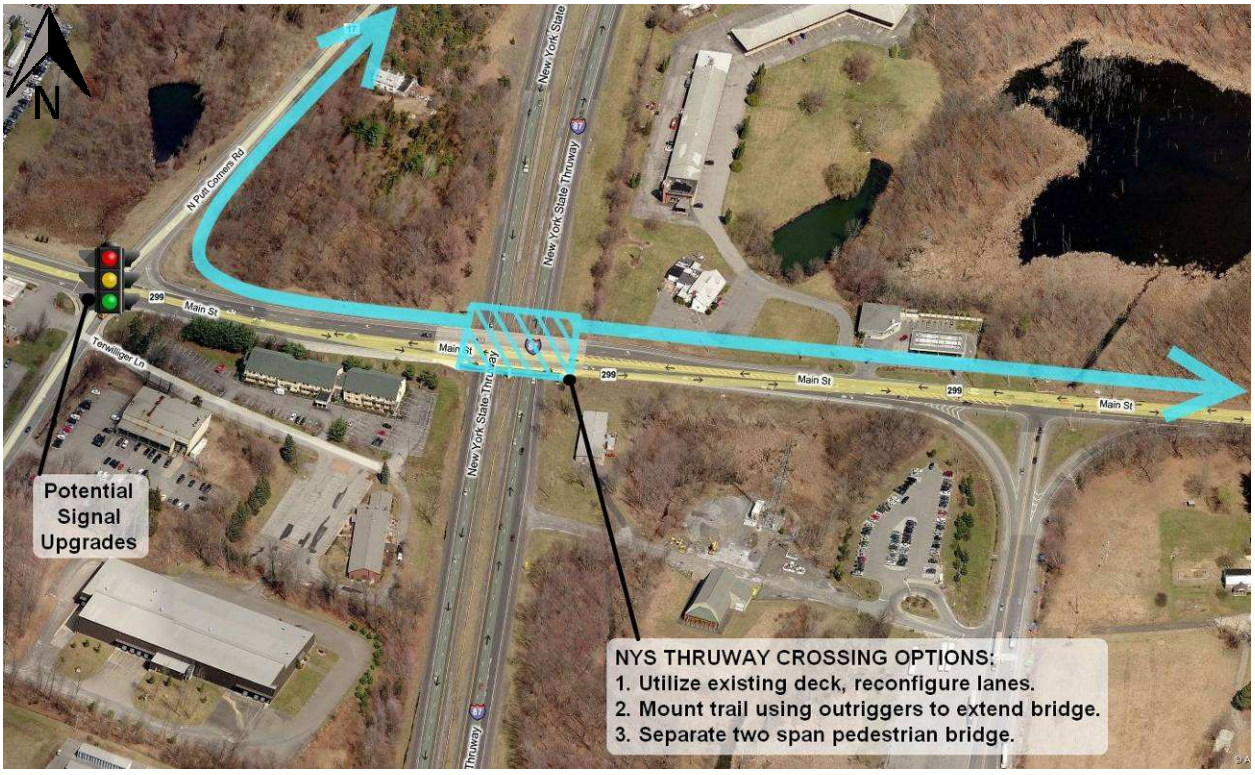
5.4.3 North Putt Corners Road Shared Use Path Section

The only option considered on North Putt Corners was to locate a separated path on the northbound side of the road. There is adequate right-of-way and vacant land available for this alternative.



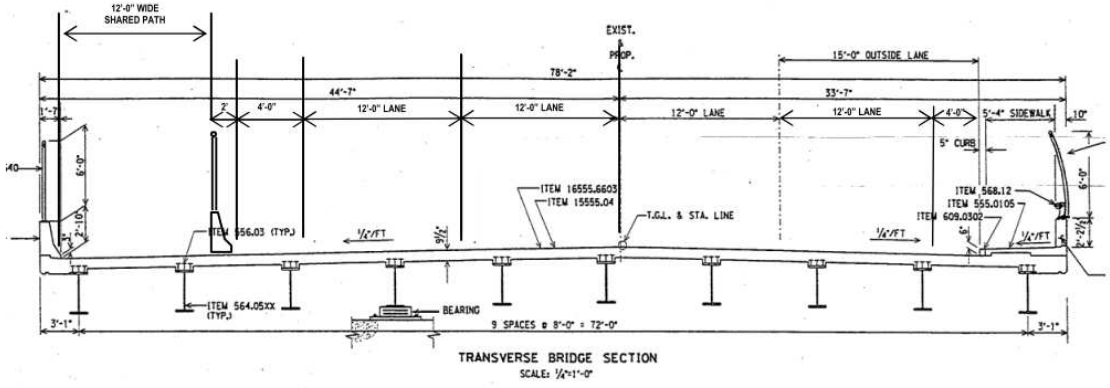
5.5 Route 299 NYSTA Bridge Crossing

All three options discussed in Section 3.0 for the crossing of the NYS Route 299 Bridge over the NYS Thruway were evaluated including reconfiguring the existing lanes, mounting outriggers to the existing structure, and a separate pedestrian bridge. Two of those options were considered for the preferred alternative. Several factors lead to the conclusion that the proposed path should be located along the north shoulder including fewer conflicts with vehicles and available public right of way. The selection of two preferred alternatives for the bridge crossing was made because the functional effect of creating roundabouts on either side of the bridge would eliminate the need for the center turn lane on the bridge. This would result in sufficient added deck area to accommodate the shared-use path. Should the roundabouts be determined not to be feasible, the preferred option would be to create a separate two-span pedestrian bridge on the north side of the existing bridge as discussed further below.



5.5.1 Reconfiguring Existing Lanes and Pedestrian Systems for Shared-Use Path.

A. Without Roundabouts - The existing structure carries an out-to-out width of 78.2 feet with curb-to-curb width of 70 feet (exclusive of the existing concrete barriers and sidewalk). The 70 foot curb-to-curb width currently consists of three 12 foot wide travel lanes, two 11 foot wide turn lanes, one 8 foot wide shoulder (north side) and one 4 foot wide shoulder (south side). One option for reconfiguring the existing lanes would be to reduce the existing travel lane widths from 12 feet to 11 feet and reduce the shoulder widths from 4 feet and 8 feet to 1 foot on both sides. These reductions in lane /shoulder widths would yield an additional width of 13 feet to be used for the shared use path. This additional width would allow for creation of an 11



CROSS SECTION A: RECONFIGURE EXISTING LANES

foot wide shared use path across the existing bridge with a 2 foot wide provision for new concrete barrier and fencing to separate the shared use path from the adjacent highway. The resulting configuration would not meet standards for travel lane/shoulder widths for NYS 299 or the standard width of the shared-use path. This sub-alternative was not considered feasible due to the potential impacts on traffic flow and safety concerns related to narrowing the existing lanes.

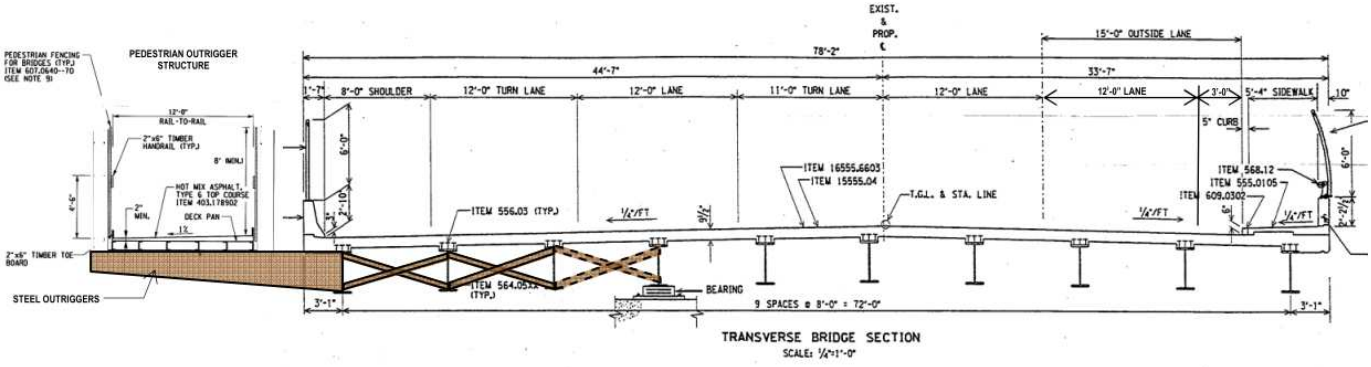
B. With Roundabouts - Another option that would allow for creation of 12foot wide multi-use path with standard vehicle lane widths could be accomplished by the elimination of the two left turn lanes and reconfiguration of the remaining lanes/shoulders across the bridge. This option can be accomplished if roundabouts, as recommended the Resource Systems Group report, replaced the NYS Route 299 signalized intersections at Thruway Exit 18 and Putt Corners Road, located immediately adjacent to each end of the bridge. The lane reconfiguration across the bridge under this alternative would include eliminating one 11 foot wide turning lane and providing for uniform 12 foot wide lanes and 4 foot wide shoulders across the bridge. This lane/shoulder reconfiguration would yield an additional 14 feet of width that would be used for a 12 foot wide shared used path and 2 feet for provisions for new concrete barrier and fencing to separate the shared use path from the adjacent highway. This solution can be accomplished cost effectively, but is reliant on the construction of the roundabouts on each end of the bridge.

Construction of Roundabouts at the Putt Corners and Exit 18 Intersections eliminates the need for center turn lanes on the bridge. As a result, the shared use path can easily be accommodated within the existing deck width.

5.5.2 Attach Cantilevered Outriggers to Accommodate a Shared-Use Path

A second feasible option would involve widening of the existing bridge on the north side to accommodate a shared use path. The bridge widening would be accomplished by constructing steel outriggers that would be attached to and cantilevered out from the existing steel bridge girder at the north fascia. The steel outriggers would support

additional steel framing (stringers and diaphragms) carrying an asphalt or timber deck to carry the shared-use path. The outrigger structure would carry a total width of approximately 16 feet to allow for a 12 foot wide shared used path and provisions for fencing and railings in each direction. This option would also require the installation of additional crossing bracing between the existing bridge beams to stabilize the beams and bridge deck from rotation due to the additional cantilever load from the pedestrian outrigger structure. The figure that follows illustrates a conceptual section for this option (Cross Section B). The actual design, sizing, spacing of outriggers; and requirements for cross bracing would be further evaluated during final design of the structure. Construction of the outrigger structure would be labor intensive and would likely require multiple temporary lane closures on the Thruway and Route 299. The cost of additional work zone traffic control and the temporary impacts to the traveling public should be considered when evaluating the feasibility and probable construction budget for this option.

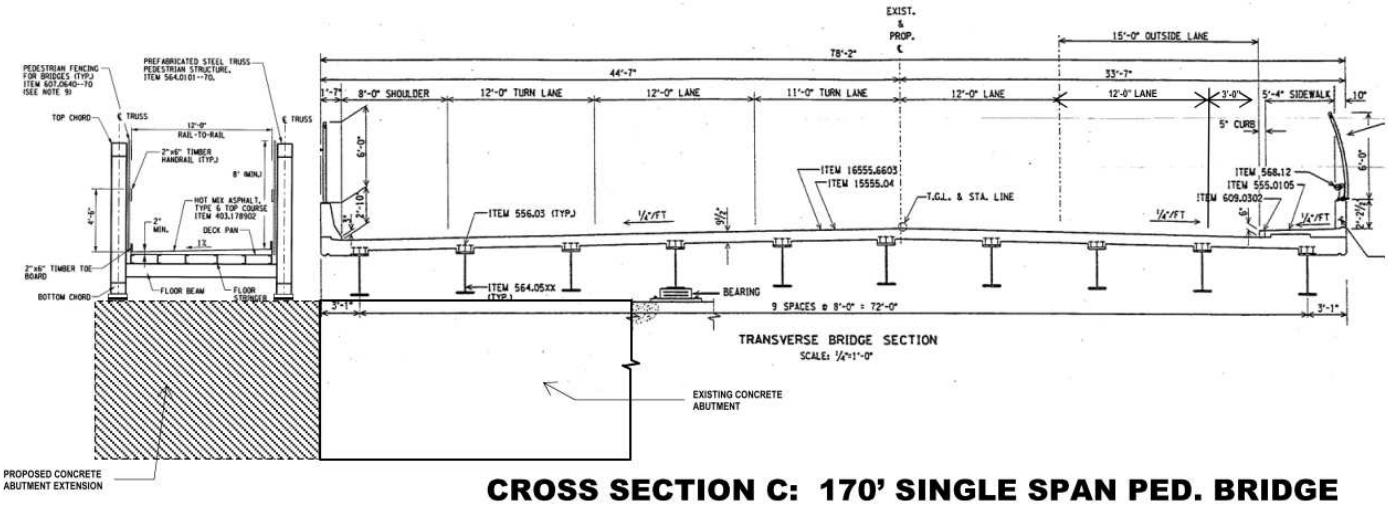


CROSS SECTION B: MULTI-USE PATH ON OUTRIGGERS

5.5.3 Stand Alone Pedestrian Bridge

This option would involve construction of a new pedestrian structure to carry the shared-use path over the NYS Thruway. The new structure would be located immediately adjacent and parallel to the existing NYS 299 Bridge over the NYS Thruway. This option would require extension/widening of the existing bridge abutments to create new abutments which would support a single span (170 foot span) pedestrian bridge as shown in the figure that follows (Cross Section C). The pedestrian bridge would carry a total width of approximately 16 feet to allow for a 12 foot wide shared use path and provisions for railing in each direction. While the new pedestrian bridge would be supported on the same substructure as the NYS 299 Bridge, the new superstructure would be offset approximately 3 feet and be completely separated from the existing NYS 299 Bridge. The low chord elevation of the pedestrian bridge would be at or above the elevation of the existing low chord of the NYS 299 Bridge so as not to reduce the minimum vertical clearance over the NYS Thruway. This option would require the creation of approaches on both sides of the bridge to properly tie into the adjacent trails. The pedestrian bridge could be built on either the north or south side of the NYS 299 Bridge; however, the north side fits the current preferred location for the linking trail. A pre-fabricated pedestrian truss structure would be preferred structure

type due to ease of construction and minimal installation time. This overall height of the structure would be limited so as not to contrast with the existing bridge or create a distraction for motorists. This option would likely be the most expensive; however, it could be accomplished with the least structural and operational impacts to the existing NYS 299 Bridge. Also, this structure would provide for minimal disruption to the traveling public and the least impact to the adjacent highways as the placement of the new pedestrian bridge would likely be accomplished in one or two days.



CROSS SECTION C: 170' SINGLE SPAN PED. BRIDGE

5.6 NY 299 Intersections

The Transportation Plan for the Town and Village of New Paltz by Resource Systems Group recommended roundabouts for the intersections of North Putt Corners/South Putt Corners Road and the Thruway Exit 18 Exit. These roundabouts would be two lane roundabouts and would eliminate dangerous slip ramps and center turn lanes. There would be a minor inconvenience for a limited number of local businesses due to the elimination of left turns, but, as outlined in the Transportation Plan function and safety would be greatly improved on Route 299. In addition, the construction of these roundabouts and resulting elimination of the left turn lanes would allow for creation of a shared-use path on the existing Route 299 bridge deck without significant modifications.

Sketch of NYS Route 299/Putt Corners

Sketch of the NYS Route 299/Exit 18 Ramp Roundabout

5.7 NY 299 Corridor

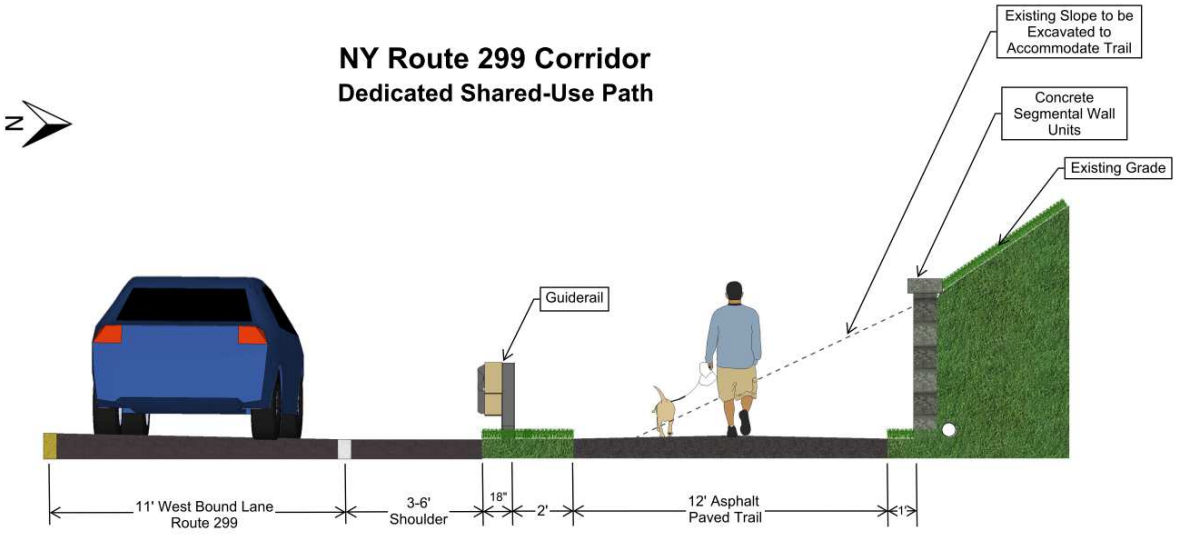
The NYS Route 299 corridor east of the Village of New Paltz is primarily two lanes with wide shoulders and provides a nearly 150' wide right-of-way offering great flexibility in locating the shared use path off road. In order to avoid crossing Route 299 at the busy and congested Putt Corners and Exit 18 intersections, the preferred location for the path is on the north side of NYS Route 299. Further to the east, there are greater environmental constraints in the existing right-of-way on the north side and the connection to the Hudson Valley Rail Trail will be on the south side of Route 299.

5.7.1 Shared Use Path Sections

Adequate space exists in the NYS Route 299 right-of-way for preferred trail cross of 12' wide with 2' wide shoulders on each side. A buffer strip of varying width will be provided to separate vehicles from trail users.

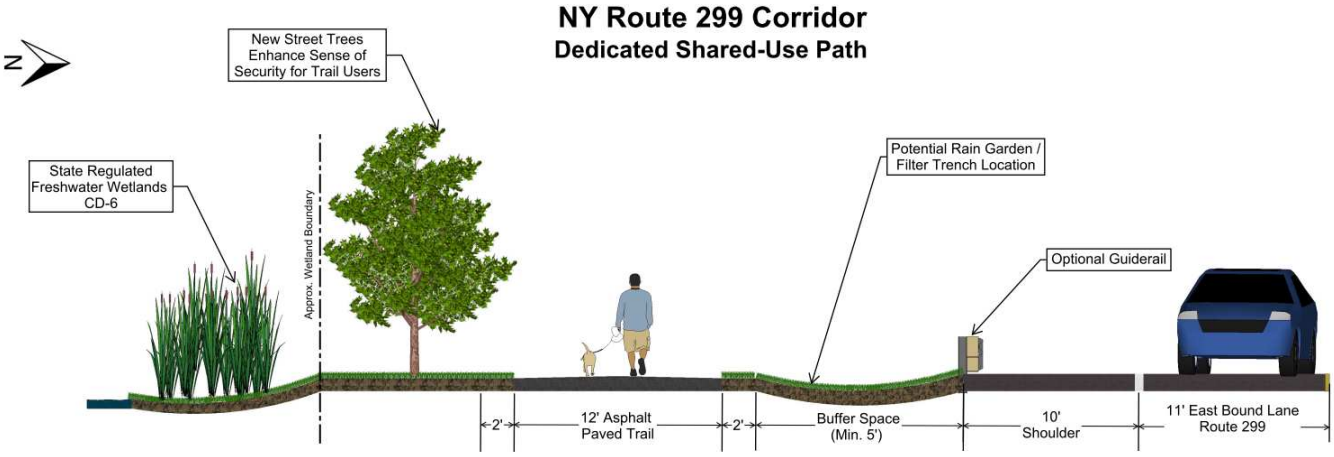
5.7.1.1 North Side

The preferred route for the shared use path along the north (westbound) side of the NYS Route 299 ROW was investigated and determined to be feasible between North Putt Corners Road and the existing signalized intersection of Ohioville Road. This segment of the shared use path will be constructed adjacent to the existing roadway providing as much buffer space between the trail and travel lanes as feasible with the adjacent topography. Where the buffer space is not feasible, a guiderail will be required. Routing of this segment should take into account the space requirements of future roundabouts at Putt Corners and the Exit 18 Ramp.



5.7.1.2 South Side

The preferred location for the shared use path from Ohioville Road east along the south side of the NYS Route 299 ROW. This will provide a safer corridor, provide access to a future Town of New Paltz wetland interpretive facility and provide for a connection to the Hudson Valley Rail Trail in Lloyd without an additional crossing of Route 299.



5.7.2 Crossing of NYS Route 299

Several potential crossing locations were considered to transition from the north side of Route 299 to the south side. The Exit 18 intersection was eliminated from consideration as potentially large mixed use developments have been proposed that could impact a trail in the east bound ROW, while environmental constraints make it unlikely any development will occur on the north (westbound) side. South Street was also eliminated from consideration as there are considerably more environmental constraints on the north (westbound) side of Route 299 and the Hudson Valley Rail Trail connection will be on the south (eastbound) side of the road. Ohioville Road provides a signalized intersection and a crossing can be made that will not be impacted by future development.

6.0 Recommended Implementation Measures

6.1 Recommended Alignment, Trail Sections and Related System Modifications

6.1.1 North Chestnut Street Park and Ride Lot Improvements

A short segment of shared use path should be constructed beginning at the existing pedestrian bridge connecting the WVRT to the Chestnut Street Bike Route. New signage indicating the bicycle route and striping should be provided at the WVRT and North Chestnut Street.

6.1.2 North Chestnut Street Shared Use Roadway

N. Chestnut St. will be signed as a shared use roadway between the NYSDOT's Park & Ride lot and Henry W. Dubois Dr. in order to make the connection to the WVRT.

6.1.3 Roundabout at Henry W. Dubois Road and North Chestnut Street

Construction of a modern roundabout at the intersection with special accommodations for the trail link is recommended. This project is not critical to the establishment of the link; therefore it is not a high priority.

6.1.4 Henry W. Dubois Bicycle Boulevard

Along Henry W. Dubois a bicycle boulevard utilizing signage, striping and traffic calming is recommended. Traffic calming would be accomplished by constructing bicycle mini-circles in accordance with the recommendation of the RSG studies.

6.1.5 North Putt Corners Road Shared Use Path

A 12' wide asphalt paved shared-use path with 2' shoulders is recommended for the 0.3 mile segment along N. Putt Corners Rd. from Henry W. Dubois Dr. to NY 299. Moderate clearing and earthwork will be required in the road right-of-way. A guiderail will be required as adequate buffer space from the roadway is not feasible.

6.1.6 Roundabout at Putt Corners and NYS Route 299

Construction of a modern roundabout at the intersection with special accommodations for the trail link is recommended. This project is not critical to the establishment of the link; however it will provide the most desirable cost-effective method for crossing the NYS Thruway. For these reasons it is a medium priority.

6.1.7 NYS Thruway Crossing along Route 299

Option A - Reconfigure lanes or eliminate the center turn lane by constructing roundabouts at the adjacent intersections to provide 12' wide shared use path.

Option B- Construct a separate pedestrian bridge in two 80' spans over the NYS Thruway by extending the support piers of the existing bridge.

6.1.8 Roundabout at NYS Thruway Exit 18 Ramps and NYS Route 299

Construction of a modern roundabout at the intersection with special accommodations for the trail link is recommended. This project is not critical to the establishment of the link; however it will provide the most desirable cost-effective method for crossing the NYS Thruway. For these reasons it is a medium priority.

6.1.9 NYS Route 299 Shared Use Path

A 12’ wide asphalt paved shared-use path with 2’ shoulders is recommended for the 1-mile stretch along NY 299 from N. Putt Corners Rd. to the HVRT at South St.

6.2.10 Ohioville Road Intersection

Signal upgrades are recommended to improve safety for the trail crossing, in addition to colored and textured crosswalks and new trail warning and directional signage.

6.2 Trailhead and Parking Locations

Trailhead and parking facilities including informational and directional signage, benches and bicycle racks adjacent to 8 to 10 parking spaces should be provided at key points along the trail. There are several existing lots that could be utilized including the Chestnut Street Park and Ride lot and some commercial parking lots that encroach into the NY 299 Right-of-Way. New trailheads with parking could be created at the Proposed Town of New Paltz interpretive park on NY 299 and at the intersection of Putt Corners Road and NY 299. Both locations would utilize existing parking areas with designated spaces for cyclist use.

6.3 Recommended Trail Design Standards

Signage and Striping
All signage and striping will adhere to the MUTCD and the NYS Supplement to the MUTCD.

Shared-Use Path
On shared-use path segments signage will be placed at commercial driveway crossings and road intersections.

Adequate signing and marking alert bicyclists to potential conflicts and communicate messages to both bicyclists and motorists at roadway intersections. Warning signs should be used in areas where the recommended design criteria cannot be met due to physical constraints.

Pavement markings at a crossing should assist in channeling path users to cross at a clearly defined location and providing a clear message to motorists that this particular section of the road must be shared with other users. For the path user, stop signs, stop bar pavement markings, yield signs, caution signs or other devices should be used as applicable.

For a roadway user, a clear message must be presented in a location where it will be seen by that user. Traditional treatments should include the bicycle crossing sign, the pedestrian crossing sign, the pedestrian crosswalk lines, or flashing yellow lights at the crosswalk.

Bicycle Boulevard

Signage on bicycle boulevards should identify routes to both bicyclists and motorists, information on destination and distance should be provided, and user cautions about changes in road conditions should be provided as needed. Types of signs utilized on bicycle boulevards are regulatory, identification, wayfinding and warning. In addition to serving these roles, signage also helps to "brand" the bicycle boulevard network, fostering familiarity among cyclists and motorists with traffic conditions that are to be expected on these facilities.

Pavement markings should serve as a supplement to signage, reminder to cyclists and motorists that bicycle travel has priority, and promote proper positioning by bicyclists while sharing the lane with motor vehicles. It is recommended that the 'Sharrow' be applied to the roadway at a minimum of near every intersection. Design recommendations include supplemental arrows indicating approaching turns, markings just after each intersection and in intervals of approximately 200 feet, install near high volume driveways or other conflict points to alert drivers, and do not use bicycle boulevard markings or shared lane markings within bicycle lanes.

Access and Access Control

Access for pedestrians and bicyclists should be provided for shared-use path portions of the connection at termini at South St. and N. Putt Corners Road by way of drop curbs if none are provided. At the South St. and NY 299 intersection the proposed trail will make a connection to the existing segment of the HVRT by an existing crosswalk and pedestrian signal.

At the project termini and at driveway crossings, access control gates should be installed to prohibit vehicular access to the trail.

Drainage Improvements

All new shared use multi-use path pavement for the corridor will be designed and constructed with a minimum 2% cross slope to achieve positive surface drainage. Existing drainage swales and patterns within the project limits will either be maintained or the proper accommodations will be installed as necessary to convey the positive flow of any existing or proposed runoff. Open channel flow will likely be incorporated through ditches and swales that will outlet to the existing drainage outfalls throughout the corridor.

A grass-lined swale and underdrain system should be provided in areas where surrounding terrain slopes towards the trail and/or the surrounding area is wetlands or has poor existing drainage patterns.

New culverts will be installed where the trail crosses existing drainage patterns, ditches, or creeks, and as necessary at proposed low points in the trail profile.

7.0 Stakeholder Outreach Summary

7.1 Agency Coordination

Several local, state and other agencies will have a stakeholder interest in the development of the trail link in addition to the communities of Lloyd, and the Town and Village of New Paltz. These stakeholder agencies include the Ulster county Department of Public Works, Ulster County Planning, the New York State Department of Transportation, and the New York State Thruway Authority. While this project is focused on establishing the feasibility of the link trail, it was considered an imperative to involve those stakeholder agencies early in the development of this feasibility study.

A preliminary coordination meeting was held in February 2011 to introduce the project to agency representatives. The preliminary route for the linking trail was discussed and agency representatives were invited to comment. The results of the meeting were:

- Establishment of key contacts and agency representatives moving forward.
- Discussion of related projects currently programmed for highway funding.
- Discussion of legal mechanisms for creations of a shared use path crossing of the NYS Thruway.

A second informational agency stakeholder meeting was held after the project committee authorized preparation of the final draft of the study.

7.2 Public Information Meeting

The project committee scheduled two public information meetings, one each in the Town of Lloyd and Town of New Paltz at the respective Town Halls. The meeting in Lloyd was held on May 4, 2011, immediately following a public presentation on the westward extension of the Hudson Valley Rail Trail. Comments at this meeting were generally positive with some concerns expressed about the safety of trail crossings over private commercial driveways. The second meeting held in New Paltz on May 19th was generally positive and most attendees were supportive of the trail.

8.0 Implementation

8.1 Phasing and Probable Costs

Location	Feature/Treatment	Cost*
Via Park & Ride	Shared-Use Roadway	$70,000
H W Dubois	Bicycle Boulevard	$39,000
N Putt Corners	Shared-Use Path	$300,000
NY 299	Shared-Use Path	$1,000,000
NYSTA Bridge	Separate Pedestrian Bridge	$575,000
NY 32 & H W Dubois	Roundabout	$1,800,000
HW Dubois	Mini Circles	$123,000
N Putt Corners & NY 299	Roundabout	$3,200,000
Interchange 18	Roundabout	$3,500,000
	TOTAL:	**$10,610,000**
**** As projected out to 2014***		

8.2 Sources of Funding

Funding sources include the following:

- NYSDOT – Transportation Enhancements Program (TEP)
- NYSDOT – Surface Transportation Planning (STP)
- NYSDOT – Hazard Elimination Program
- Governor's Traffic Safety Committee – Section 402 Highway Safety Funds
- Safe Routes to Schools (SR2S)
- Consolidated Local Street & Highway Improvement Program (CHIPS)/Municipal Streets and Highway Program
- Environmental Protection Fund (EPF) – Title 7, Title 9
- Land and Water Conservation Fund/Municipal Parks Matching Grant Program
- Hudson River Valley Greenway
- NYS Canal Corporation
- Empire State Development Corporation (Metropolitan Economic Revitalization Funds (MERF)
- Empire State Development: Economic Development Fund
- Division of Housing and Community Renewal (Community Development)
- NYS Department of Health, Healthy Neighborhoods Program
- NYS Department of Health, Healthy Heart Program
- "No Child Left Indoors"

Appendix – is taken from the Ulster County Non-Motorized Transportation Plan and illustrates in more detail the "Funding Sources for Non-motorized transportation and Trails."

8.3 Schedule

Submit Initial Project Proposal	2011
TIP Amendment	2012
Design	2013
Construction	2014
Trail Completion	2015

8.4 Implementation Matrix

Recommended Implementation Measures

Item	Action	Description	Priority	Agency	Funding	Probable Cost
6.1 Recommended Alignment, Trail Sections and Related System Modifications						
6.1.1	**Chestnut Street Park and Ride Improvements**	Construct a short segment of shared use path connecting the WVRT to the Chestnut Street Bike Route.	1	Town of New Paltz	DOT, DOS, Greenway	$ 20,000.00
6.1.2	**North Chestnut Street Shared Use Roadway**	Provide additional signage and striping to strengthen delineation of bicycle route.	1	Town of New Paltz	DOT, DOS, Greenway	$ 50,000.00
6.1.3	**Roundabout at North Chestnut Street and Henry W Dubois Road Intersection**	Construct a modern roundabout at the intersection with special accomodations for the trail link.	3	Town of New Paltz	DOT, DOS, Greenway	$ 1,800,000.00
6.1.4	**Henry W. Dubois Road Bicycle Boulevard**	Provide bicycle boulevard signage, sharrows, traffic calming measures and striping to delineate the bicycle route.	1	Town of New Paltz	DOT, DOS, Greenway	$ 162,000.00
6.1.5	**North Putt Corners Road Shared Use Path**	Provide an off-road 12' wide asphalt shared use path from the intersection of Henry W. Dubois Road to the intersection of NYS Route 299.	1	Town of New Paltz	DOT, DOS, Greenway	$ 300,000.00
6.1.6	**Roundabout at NYS Route 299 and Putt Corners Road**	Construct a modern roundabout at the intersection with special accomodations for the trail link.	2	NYS DOT	DOT, FHWA	$ 3,200,000.00
6.1.7	**Option A - Provide Shared Use Path on Existing Bridge Deck**	Reconfigure lanes or eliminate the center turn lane by constructing roundabouts at the adjacent intersections to provide 12' wide shared use path.	1	NYS DOT	DOT, FHWA	
	Option B - Provide a Separate Pedestrian Bridge over the Thruway	Construct a separate pedestrian bridge in two 80' spans over the NYS Thruway by extending the support piers of the existing bridge.	2	Town of New Paltz	DOT, FHWA	$ 575,000.00
6.1.8	**Roundabout at NYS Route 299 and the Exit 18 Ramp**	Construct a modern roundabout at the intersection with special accomodations for the trail link.	2	NYS DOT	DOT, FHWA	$ 3,500,000.00
6.1.9	**NYS Route 299 Shared Use Path**	Provide an off-road 12' wide asphalt shared use path from the Thruway Bridge Crossing to the connection with the HVRT at South Street in Lloyd.	1	Town of New Paltz, Town of Lloyd	DOT, DOS, Greenway	$ 800,000.00
6.1.10	**Ohioville Road Intersectino Improvements**	Upgrade the existing signal for pedestrian crossing, install special crosswalk pavements, and add new signage to delineate bicycle route.	1	Town of New Paltz, NYS DOT	DOT, DOS, Greenway	$ 200,000.00
6.2 Trailheads and Parking Improvements						
6.2.1	**North Chestnut Park and Ride Lot**	Install new kiosk with mapping, new bicycle racks and benches	3	Town of New Paltz, SUA, WVRT		
6.2.2	**Henry W. Dubois at North Putt Corners Road**	Install new kiosk with mapping, new bicycle racks, drinking fountain and benches	1	Town of New Paltz, SUA, WVRT		
6.2.3	**Town of New Paltz Wetland Interpretive Area**	Install new kiosk with mapping, new bicycle racks, drinking fountain and benches; formalize parking for 8-10 cars.	3	Town of New Paltz, SUA, WVRT		