

Bicycle & Pedestrian Primer Handbook for Local Communities









The Ulster County Transportation Plan



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Ulster County

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Ulster County Bicycle and Pedestrian Primer

Purpose of this Primer

The Ulster County Bicycle and Pedestrian Primer (the **Primer**) provides information that municipalities and citizens can use to make their communities more bicycle and pedestrian friendly. It was prepared as a companion document to the Ulster County Transportation *Plan* (the *Plan*). While the *Plan* will present the findings and recommendations on a range of transportation issues including bicycle and pedestrian transportation, the Primer provides specific information on how to most effectively plan for bicycling and walking facilities. It offers some basic information on a vision, goals, bicycling and walking issues, approaches to improve the bicycle and pedestrian travel environments, means of funding these projects, and contacts for further information.



1.0 Introduction

The Importance of Bicycle and
Pedestrian Transportation to
Ulster County

Walking and bicycling are means of transportation that are energy efficient, generate no pollution, provide the health benefits of exercise, and are consistent with compact quality communities. They are important components of Ulster County's developing multi-modal transportation system because walking or biking instead of always driving for short trips, reduces congestion, conserves energy, reduces air pollution, and improves health.

It is worth bearing in mind that there is not a simple dichotomy between "those who drive" and "those who cycle or walk". We all do both. Everyone is a pedestrian. Whatever the trip purpose, commuting, traveling to see a friend or to the store, for transportation, recreation and/or exercise, everyone has a stake in the quality and safety of the bicycle and pedestrian travel environments

Public Participation Demonstrates the Need for Improvements

During the public participation efforts for the Ulster County Comprehensive Transportation *Plan*, local officials and the public emphasized the need to improve bicycle and pedestrian facilities in Ulster County. Comments at four (4) public meetings and responses to a survey of municipal officials recorded 250 suggestions, of which 70 (28%) recommended pedestrian and bicycling facility and related safety improvements. Discontinuous or otherwise incomplete sidewalk systems, the need to provide safe street crossing opportunities and the benefits of complete, wide and well-maintained road shoulders were the most frequently raised items.



Benefits of Walkable and Bikeable Communities, Streets, and Developments

Bicycle and pedestrian friendly communities are more livable, have a sense of place, and are safe places to walk and bike. Communities that are attractive and have made bicycle and pedestrian facility investments are places that have thriving economic centers with lots of pedestrians. In addition to yielding important benefits to transportation system efficiency, air quality, and basic mobility, there are other benefits to enhancing cycling and walking including:

• From an **economic** standpoint, walkable and bikeable business areas – whether downtowns or suburbs - promote economic development and are social centers of communities. To be successful requires not only providing the facilities for walking and biking but also includes amenities such as landscaping, street furniture, and bicycle parking. Once in place the historic character and pedestrian scale downtowns and hamlets available in Ulster County can provide a significant attraction to visitors, new businesses, and residents. Bicycle and pedestrian friendly areas open new avenues for tourism to these sites. Particularly for "first-time visitors" unfamiliar with an

area, walking or cycling can be far more engaging way to experience a community.

Ulster County's noteworthy rail and canal trails and scenic roads can be marketed as well. The Wallkill Trail is designated as one of "Ten Terrific Rail Trails in New York"¹, and the Kingston Urban Cultural Park offers an attractive pedestrian atmosphere in an historic context. As these bike routes and enhanced urban attractions are improved, more people will come to bike, stroll, and enjoy the attractions of Ulster County.

• From a **community development** standpoint, walkable and rideable developments are attractive to potential homebuyers and renters. The bulk of people looking to purchase homes at present grew up in urban or older suburban communities with sidewalks where walking was a natural part of life. As for bicycling, lower levels of traffic congestion and less sources of conflict with motor vehicles can make cycling a more leisurely, safe activity. New developments whose designs facilitate these activities are attractive to people who look for homes where they and their children can bike and walk safely and to older citizens looking for convenient retirement communities.



¹ New York Parks and Conservation Association, 2000 publication (www.nypca.org)

2. Pedestrian and Bicycle Facilities in Ulster County

Pedestrian Facilities

The main pedestrian facilities in Ulster County are generally found in the City of Kingston and the villages and hamlets. Many parts of the pedestrian system are not currently in compliance with the standards set forth in the Americans with Disabilities Act (ADA). Safe walking routes are often missing in developments that have occurred in the last 30-40 years, creating problems of finding routes to schools and other nearby destinations. Consequently, as is the case in communities across the country, even short trips tend to be made by motor vehicles. Every community in the County needs improved pedestrian facilities.



Bicycle Facilities

Bicycle facilities in Ulster County consist mainly of shoulders on existing roads and sharing the road. There is however an emerging system of bicycle facilities, paths and trailways in the County. A number of rail trails have been developed by trail groups. local municipalities, volunteers, and others. The Town of Lloyd has the only paved bike trail. There is a system of State designated bike routes (including State Routes 28, 55A, 199, 208, 213 and 299, US Routes 9W, 44 and 209) which are being improved by adding 4'-6' shoulders over time. Several County Roads have also been designated as bicycle routes (County Road 1, 10, and 37), and improvements are being made where possible.

The three major trailways in the County: the Wallkill Trail, the Hudson Valley Rail Trail, and the D&H/O&W, all need additional work but have the potential to become major destinations for, recreation, and tourism as well as provide important transportation links. There are issues of the consistency and *continuity* of bicycle facilities from end to end along any given route, e.g., instances in which shoulders abruptly narrow or end completely or where the buffer areas between cyclists and motor vehicles are greatly reduced as routes enter more densely-developed settings. A more detailed discussion of opportunities for bicycle facility development in the County is provided in the *Plan*.

Significant Issues and Barriers

During the public outreach efforts, a number of general comments were raised regarding barriers to cycling and walking.

<u>Issues</u>

- High motor vehicle traffic volumes and/or speeds
- Lack of or poor condition of sidewalks
- Maintenance of shoulders and roadways
- Absence of dedicated bicycle facilities

<u>Barriers</u>

- Discontinuous sidewalks and/or lack of sidewalks accessing specific sites (e.g., SUNY College at New Paltz, Ellenville Shop Rite, Stone Ridge Hamlet, etc.)
- Trails not allowing complete trips (e.g., bridge over Wallkill to County Pool and Park, missing sections of the Wallkill Valley Trailway, Hudson Valley Trailway, and D&H Canal O&W Trailways, etc.)
- Limited river access



Safety

Given the vulnerability of cyclists or pedestrians relative to motor vehicles, enhancing bicycle and pedestrian safety is of paramount importance. Data from the New York State Department of Transportation compiled for a four-year period from January 1995 to January 1999 showed that there were pedestrian and/or bicycle crashes in nearly every Town or Village in the County. Kingston had the highest proportion of hospitalizations.

These numbers only begin to indicate the magnitude of this issue. The length of pedestrian hospitalizations attendant to crashes, for example, is on average nearly double that of automobile occupants involved in crashes.

One of the most important factors affecting bicycle and pedestrian safety is the speed of the motor vehicles. A study of the impact of speed found a 2 to 3 times increase in the probability of a pedestrian fatality for each 10 mph increase in speed. Clearly reducing speeds along main streets and in residential areas can drastically reduce fatalities and injuries. Measures such as traffic calming, increased education, and increased enforcement can improve bicycle and pedestrian safety.

Bicycle and Pedestrian Crashes (01/01/95 – 01/30/99)				
Total	Bicycle		Pedestrian	
	Ulster County	Kingston	Ulster County	Kingston
Deaths	1		4	2
Hospitalizations	127	73	151	93

One important factor 85% in pedestrian crashes is SPEED ... The probability of a pedestrian being severly injured and/or killed when struck 45% by a vehicle increases as the motorist speed increases. Figure 1 shows the correlation of vehicle impact speed and pedestrian death rates. As vehicle speeds increase the ability of the driver 15% to stop in time for crossing pedestrians also significantly decreases. 50 km/h 65 km/h 32 km/b 20 MPH 30 MPH 40 MPH Figure 1: Pedestrian's chances of death if hit by a motor vehicle me uson Reducing traffic speeds not only reduces the severity of pedestrian crashes, but may reduce their occurrence. Faster vehicle speeds result in increase breaking distance, and also an increase in the distance a vehicle will travel during the 2.5 second perception/reaction time as shown in Figure 2. Wetracile care shop in 50 % (11" m) on well paytement from 25 MPH (40 km/h) Annula Insueia 100 % (28 m) during 2.5 associed p iprior to applying brakes At 25 MPH (40 km/h) traffic 150 B (48 ---- Total auto stratiling distance al 25 MPH (40 km/h) in the remaining 10 ft (5 m validity carl rest along and only has showed to the lateral child behavior

Terrola Isovia 140.6 (KI m) during 2.0 and At 38 MPH (60 km/h)

Figure 2: Relationship between safe stopping distance and travel speed

3.0 The Four E's -Engineering, Education, Encouragement, Enforcement

The traditional approach to bicycle and pedestrian planning is the "Four Es": engineering, education, encouragement, and enforcement concept. It is important to integrate all four E's. In addition a fifth E - Evaluation is often overlooked. It is crucial to include an evaluation component to determine whether an effort works, or is only providing a sense that "something has been done." Lessons learned from evaluation help fine tune the Four E's.



The Four E's

- Engineering is the design and development of facilities for walking or biking, such as sidewalks, curb ramps, pedestrian signals, crosswalks, bike routes, bike lanes, shared use paths/trailways, traffic calming, and signage. With good engineering practices, pedestrians and the disabled should be able to get to their destinations comfortably and safely, and to cross traffic at convenient crosswalks. Bicyclists should be able to either travel safely in areas designed to handle slow, mixed traffic, or have sufficient, marked space for travel.
- Education of drivers, pedestrians, and bicyclists is an important element of any bicycle/pedestrian planning effort. Municipalities, County Traffic Safety Boards and the New York State Governor's Traffic Safety Committee have sponsored numerous educational efforts. In addition, the New York State Education Department recommends a discussion of bicycle and pedestrian safety at the elementary school level, although coverage by schools is variable. Education also includes adequate signing for example, "Yield to Pedestrians in Crosswalk" signs just before a crosswalk.
- Encouragement involves promotion of bicycling and walking on many fronts. It is critical in raising the importance of these modes in the transportation system. At the county and/or regional level, efforts to promote alternatives to single-occupant car travel encourage not only carpooling but also bicycling and walking. Communities can work with other programs such as the State Department of Health's "Healthy Heart" program, which promotes exercise benefits of walking and cycling.
- Enforcement reminds motorists, bicyclists and pedestrians of their responsibilities. Law enforcement agencies need to dedicate resources to this type of enforcement. Citations should be issued for serious or repeated violations but "reinforcement rather than enforcement," should be applied as well (e.g., young bicyclists and pedestrians rewarded with free ice cream cone coupons by police officers observing them following the relevant laws). Many local police forces have Bicycle Police, a very cost-effective way to perform community policing. It is also important for law enforcement agencies to fully document crashes, good data may suggest a solution for problem locations.

Typical Problem Evaluation – Stone Ridge

Problem.

community.

*no separation between road and adjacent property.

room through this area for both.

residential to the commercial core.

ROAD

"no green buffer or sidewalk, although there is ample



(2) Problem: "intersection does not provide a well defined pedestrian crossing. "lack of curb and road edge treatment. "utility lines create a sense of clutter and detract from any aesthetics.



(3) Problem "lack of curbs allows road to encroach on green strip buffer and sidewalk. *existing sidewalk is narrow and over grown. "there is no visual separation between residential property and the road due to the lack of road edge plantings.

4) Problem "lack of sidewalk and buffer plantings. "road edge is not clearly defined. "low utility lines prohibit the oportunity for trees or other large scale plantings.

Suggested Solutions - using the Four E's

-	Element	Possible Actions
1	Engineering	Construct sidewalk, install crosswalks, consider lowering speed limit
	Education	Bicycle/Pedestrian Safety Programs, Install "Yield to Pedestrians" or "Share the Road" signs
	Encouragement	Post a "leave your car at home, bike and walk instead" poster in the Post Office
	Enforcement	Advise police of new facility installation(s), encourage regular checks during peak business periods, Routine speed and crosswalk enforcement by local Police
	Evaluation (a fifth "E")	Compliance survey; counts of pedestrian traffic accessing Post Office, monitor crash reductions

Bicycle & Pedestrian Handbook

4.0 Planning for Bicycle and Pedestrian Friendly Communities

Planning and Investment Principles

The following principles, developed for the Capital District Transportation Committee for its long-range $plan^2$, should be utilized as Ulster County plans its bicycle and pedestrian systems.

These principles will be reflected in a number of the discussions in the remainder of the *Primer*.



Proposed Sidewalk and Streetscape Improvements in Marlboro

² Capital District Transportation Committee, <u>Making the</u> <u>Capital District More Bicycle- and Pedestrian-Friendly: A</u> <u>Toolbox and Game Plan</u> (report of the CDTC Bicycle and Pedestrian Issues Task Force, 1995), pp. 29-31.

Planning & Investment Principals

- <u>Full Partners</u>: Bicycling and walking should be recognized as *full partners* with motor vehicles in the transportation system; project development should facilitate expansion of cycling and walking in the system.
- <u>Mobility Enhancement</u>: Better accommodation of cycling and walking will enhance mobility for those Ulster County residents with the fewest travel choices.
- <u>Partnership with Transit</u>: Better accommodation of cycling and walking can enhance transit use by making it more accessible.
- <u>Systems Emphasis</u>: Possible bicycle/pedestrian-related improvements should be considered from the perspective of developing a *system* -- not just based on whether a particular facility is currently used.
- <u>Simple Fixes</u>: Barriers to bicycle and pedestrian travel can often be removed quickly and inexpensively.
- <u>Appropriately-Focused</u> <u>Maintenance</u>: Cyclists and pedestrians are vulnerable to travel surface conditions and motor vehicles; maintenance practices should insulate them from danger.



Context – The Relevance of Setting

Pedestrian and bicycle facility decision-makers must be aware that there is a range of choices for these facilities. As illustrated in the "Implementation" section of this *Primer*, several questions need to be answered prior to selecting the type of facility. A particularly critical question is the effect of *setting* on project design. Setting affects project development because the characteristics of the area either present opportunities for or impose constraints on facility design types. Clearly, setting presents both opportunities and challenges, in some cases both from the same group of people. For example, in the "Suburban"/"Pedestrian" box below, the same people who are likely to use sidewalks may not want them going across their front lawns. This balancing act illustrates why *public input* is critical to the planning process. A complete discussion of public input is provided in Appendix B.



Setting (Ulster County Examples)	Bicycle Opportunities (+)/ Constraints (-)	Pedestrian Opportunities (+)/ Constraints (-)
Urban (Washington Avenue, Kingston)	 many destinations grid system → high connectivity potential curb-to-curb limitations on pavement use emphasis on traffic operations ("moving cars") 	 good starting point in sidewalk system development many destinations within walking distance older sidewalks may be in poor condition, "heaved" by large trees, not accessible with few curb ramps close-in development may limit space available for new sidewalks
Suburban (Route 9W, Ulster)	 roads without curbs → no "curb to curb" limitations building setbacks tend to be greater ("space to widen") development tends to be car-oriented few existing facilities from which to start 	 nearby residents more likely to use ped facilities building setbacks tend to be greater ("space to build") development tends to be car-oriented tendency for residents to oppose sidewalks ("taking my front lawn")

CONTEXT OPPORTUNITIES AND CONSTRAINTS

CONTEXT OPPORTUNITIES AND CONSTRAINTS

Setting (Ulster		
County Examples)	Bicycle Opportunities (+)/ Constraints (-)	Pedestrian Opportunities (+)/ Constraints (-)
Rural (Route 28. Shandaken)	 roads tend to be lower volume few curbs, large building setbacks space to build wider shoulders special vehicle safety issues (e.g., farm equipment) open drainage ditches increase needed right-of- way for road widenings 	 shoulders are considered acceptable for pedestrian use in some cases often great deal of building setback ("space to build") few origins or destinations can be accommodated with shortlength projects difficult to accommodate entire trips
Hamlet (<i>Route</i> 209, <i>Stone Ridge</i>)	 traffic volumes/speeds tend to be low once off "main street" change in area character can reduce traffic speeds through traffic speeds and volumes tend to be high on main street roadway cross-section typically maintained through the hamlet, while more driveway movements and other distractions may necessitate more of a buffer between motor vehicles and bicycles limited right of way to build shoulders of sidewalks 	 destinations on either side of roadway allows establishment of specific crossing points tend not to be very long, making it possible for linear treatments to access many of the hamlet's offerings roadway right of way limited and must accommodate highway shoulders, sidewalks, utility poles, and trees requiring careful planning and balance historic structures may require added design attention
Village (Route 299, New Paltz)	 often a fairly well-defined "village center" from which to trace out bicycle routes villages generally have some redundancy in street system villages with significant utility installations may face difficult utility relocations area character may limit widenings 	 often already have sidewalks newer development often on "edge" of Village, allowing for reasonably clear approach to connection to "downtown" existing sidewalks may be substandard (i.e., not ADA- compliant) design utility relocations issues

Policies and Laws Supporting Cycling and Walking

There are a number of laws and regulations promoting cycling and walking. At the Federal level, the Surface Transportation Program (STP) requires that states use at least ten percent of their flexibleapplication Federal transportation fund allocations for designated "transportation enhancement" projects, including bicycle and pedestrian projects. The Program further grants states and Metropolitan Planning Organizations (MPOs) the flexibility to use even *more* of their funds for these purposes, should they wish. The "net effect" is that accommodations for pedestrians, bicyclists and the disabled can be included on nearly all projects on the State and County highway system.

The Consolidated Highway Improvement Program (CHIPS) and other funding sources which support local infrastructure maintenance and renewal also allow for inclusion of pedestrian and bicyclist facilities in local highway projects. The New York State Vehicle and Traffic Law establishes the legal rights and responsibilities of motorists, cyclists, and pedestrians to share the public roads. It is the responsibility of the municipality holding jurisdiction over a road to establish the rules, signs and enforcement that implement these laws in a practical but safe manner. Zoning statutes, highway standards, design guidelines, and comprehensive plans can all play a role in enabling local decisionmakers to implement bicycle and pedestrian facilities.



<u>New York State Department of</u> <u>Transportation Supporting</u> <u>Standards:</u>

- Chapter 18 of the *Highway Design Manual*, deals specifically with bicycle and pedestrian facilities, presenting a potential treatments which can be incorporated into projects by NYSDOT and by those municipalities choosing to work from the NYSDOT standards.
- Pedestrian and Bicycle Facility Scoping Guide presents methodologies for use in determining what treatments are most appropriate in given situations.
- Chapter 25 of the *Highway Design Manual* deals specifically with Traffic calming techniques that can be utilized on State, County, and Local Roads.

Enhancing the Pedestrian and Bicycle Travel Environments

Principles that should be included when bicycle and pedestrian facilities are added in a municipality are described below.

Crosswalks:

Crosswalks should be provided where significant numbers of pedestrians wish to cross the road. They should: a) connect logical crossing points, such as street corners, that have been determined to have adequate sight distance, b) be straight and as short as possible using curb extensions (bulbouts) where appropriate, c) use colored pavers with painted areas before and after the crosswalks to designate safe crossing areas, d) have advanced warning signs for motorists, e) be re-painted regularly, and f) use lighted overhead pedestrian crossing signs in problem areas. High Visibility Crosswalks (HVCs) which consist of two parallel lines, usually six to eight feet apart, with additional lines connecting them in a "ladder" pattern are preferred over the older method of only two parallel lines. Paint is preferred over tape for crosswalks because tape is more expensive and it is difficult to apply. Snowplows and trucks often tear the tape as well. Wider roads with four or more lanes may require raised safety islands to allow slower pedestrians to cross in stages, rather than all at once.

Sidewalks:

Sidewalks are needed in most urban, suburban, commercial strip, residential, and school areas. They should be provided on both sides of arterial and collector streets where there is commercial, public service, multi-family residential or other development that attracts or generates significant numbers of pedestrians. Sidewalks on only one side of the street may be sufficient on streets with lower density (houses >100' apart) or development only on one side. Communities should consider the following guidelines when considering sidewalks:

- Subdivision regulations should specify that the provision of sidewalks is a responsibility of the developer in new developments.
- The best long lasting material for sidewalk and curb ramp construction is concrete.



Bicycle and Pedestrian Facility Design Guidelines

- The Americans with Disabilities Act (ADA) standards specify a five footwide section so that two people can pass each other in opposite directions when one or both are using wheelchairs. Exceptions can be made where encroachments on one or both sides of the proposed sidewalk (e.g., steep slopes or existing buildings) preclude use of a five foot-wide section.
- Sidewalks in downtowns, main streets, and commercial areas with heavy pedestrian traffic need to be wider than five feet. In these high activity areas, sidewalks are gathering spots for community life and commerce and extra width allows for street vendors, cafes, landscaping, and multiple uses.
- A vertical clearance (the height above the sidewalk with no structures, hanging tree branches, signs or other obstructions) of 8.5 feet is recommended.
- It is desirable to include a two foot or more grass buffer (*utility strip*) separating the sidewalk from the roadway. A four to six foot buffer is better to allow for snow storage, landscaping and aesthetic treatments.
- On street parallel parking adds a safety buffer for pedestrians.

Pedestrian Signals and All Red Traffic Signal Phases:

Pedestrian signals are needed where multiple turning movements and traffic volumes make it unsafe for pedestrians to cross. In areas with high pedestrian volumes or heavy vehicle turning movements, right-turn-on-red prohibitions and an all-red traffic signal phase can be utilized to add additional measures of safety.

Curb Cuts:

Curb ramps are required for ADA compliance and increased sidewalk access for all users. Curb cut guidelines are provided by the Federal Highway Administration in Designing Sidewalks and Trails for Access: Review of Existing Guidelines and Practices. Two perpendicular curb ramps with level landings are generally needed at each intersection corner accommodate separate crosswalk to movements. Diagonal curb ramps should be avoided, as they force pedestrians into the intersection and not across the crosswalks. If possible, where space allows, sidewalks should cross driveways at uniform height so pedestrians and the disabled do not have to constantly ramp up and down. With this design motorists cross up and down and are more alert to pedestrians.

Shoulders:

Shoulders are multipurpose facilities, used by pedestrians and cyclists, as breakdown lanes for disabled cars, for staging roadway repairs, for utilities and deliveries, and for temporary snow storage. The New York State Department of Transportation has a four-foot minimum shoulder policy for highway work and a six foot shoulder on state roads. Ulster County and its Municipalities should provide four-foot shoulders on higher volume roads and a minimum two-foot shoulder on low volume roads where possible. Shoulder construction also benefits pavement life by providing lateral pavement support. Konski Engineers has estimated³ that in Upstate New York, a road with adequate shoulders will last 25 percent longer before repaving is required.

Paved Pedestrian Rights-of-Way:

Paved pedestrian ways (paths) use lower cost materials in areas were funds are limited but there is a need for a pedestrian facility. These paths can link parking lots, playgrounds, shopping centers, schools, and other sites to sidewalks or roadways. They are often created by "making official" those worn strips in grass where walkers are taking shortcuts to destinations. Developments should include these shortcuts in their initial designs, recognizing that residents will walk if these paths are provided. Establishment of these routes may require negotiations and agreements, but they stimulate short pedestrian trips in lieu of driving. Utility line right of ways may also be used as pedestrian travel routes, although there may be liability issues.

Two-Way Left-Turn Lanes vs. Raised Medians (TWLTL's):

Two-way left-turn lanes have become a popular traffic engineering solution in denser areas. From a pedestrian's point of view, there is exposure to moving vehicles from two directions simultaneously and no safe place for refuge. A two-way turning lane where motor vehicles can quickly enter from any direction is a very unsafe place for pedestrians. Raised medians with turn lane bays where needed is a much safer design for pedestrians. They simplify crossing by allowing pedestrians to cross in stages without adversely affecting arterial flow. Other benefits of raised medians include access control, aesthetics and reduction in accidents.



Refuge Islands:

Refuge islands should be considered as a solution to spot pedestrian crossing problems. They need to be clearly delineated and lighted.

³James Konski, PE, <u>Bicycle Transportation Planning</u> (1995 collection of unpublished articles and data).

Shared Use Path :

Shared use paths are paved or unpaved facilities on exclusive right-of-way with minimal motor vehicle crossings. Most shared use paths, also referred to as bike paths, trailways, rail trails and multi-use paths, are for non-motorized travel only. Users include bicyclists, in-line skaters, rollerskaters, wheelchair users, walkers, joggers, runners, hikers, people with baby strollers and carriages, people walking dogs, cross-country skiers, equestrians, and others. The functional reality tends to be that if a path is constructed, it will be used by both cyclists and pedestrians. Key planning and design principles to consider for multi-use paths include the following:

• **Cross-Section:** Multi-use paths should be a minimum of ten (10) feet wide, allowing patrons using different modes to pass in opposite directions or overtake one another.

- **Surface Type:** Multi-use paths are general paved with either stone dust or asphalt. A solid surface is better for narrower bicycle tires and it avoids the problem of rutting when cyclists ride through puddles after rains. Gravel is not a stable enough surface for cyclists, particularly younger riders but stone dust construction is a viable alternative that costs less.
- **Clear Zones:** It is desirable, where possible, to provide space four to six feet wide on *both* sides of the paved surface within which there are no trees, large rocks or other fixed impediments.
- Access Point Visibility: Activity can be complex at access points. People will be entering, leaving and continuing along the trail; loading and unloading bicycles or picnic supplies from their cars; wandering around looking for restrooms and trash cans; and standing on the trail conversing. To maximize safety at these points, it is important to remove obstacles and otherwise manage lines of sight.



- Signs: Both long-distance bicyclists and local users will benefit from strategically-placed signs to either communities (e.g., KINGSTON 1.5 →) or destinations along the trail (e.g., ← WATERFALL 0.5).
- Furniture/Fixtures: Amenities such as benches, picnic tables and trash cans should be provided. In addition, if possible, comfort stations (porta-johns, if there are no tie-ins to sewer systems) should be considered.



Typical Cross-Section of Trail Near Sensitive Areas

• Bicycle/Pedestrian Bridges : In some locations, bicycle and pedestrian travel will be encouraged through the use of bridges over Interstate highways, other major roads, or waterways. Potential waterway crossings in Ulster County could be over the Esopus Creek in Mount Tremper and over the Wallkill River near New Paltz linking sections of the Wallkill Trail to the County Fairgrounds and Park. While cost tends to be the dominant issue in discussions of bridges, opportunities to reuse existing bridges should be explored. In many cases, when the timing is right, bridge structures are available "free" on a "haul away" basis.



Potential Bicycle/Pedestrian Crossing

Bicycle Lanes :

Bikeways are usually divided into Shared Roadway (No Bikeway Designation), Shoulder Bikeway, Bike Lane, and Shared Use Path (Bike Path or Trailway). The AASHTO 1999 "Guide for the Development of Bicycle Facilities" provides more detail in designing bikeways. Bicycle lanes are one-way travel lanes five or six feet wide, occupying the outermost section of a roadway and delineated by a six inch-wide solid white line parallel to the motor vehicle lane. Where the bike lane is situated between a travel lane and a parking lane, there is typically a second four inch-wide solid white line separating it from the parking lane. The bike lane space is frequently marked by a stenciled image of a person on a bicycle or by BIKE LANE lettering on the pavement. Arrows are sometimes added to indicate the correct direction of travel. Difficult design issues arise when bike lanes cross intersections, particularly where there is a need to designate where left-turning bicycles will leave a given lane.



Key issues associated with successful bike lanes are:

- Signage: Installing signs is an official action *sanctioning* the legitimacy of cyclists' and pedestrians' use of the road. Signs can go beyond advising system users of the rules of the road or of special conditions (e.g., "narrow shoulder ahead") by providing *at-the-scene education*. They can signal the existence of special conditions warranting extra awareness (NO SHOULDER and SHARE THE ROAD, for example). Signs such as BIKE ROUTE reinforce the message that motorists are not the only road users.
- Traffic Calming: Bike lane or crosswalk markings can reduce motor vehicle speeds by conveying the sense that motor vehicles have less space (as for bike lanes) or have travel "disrupted" (as with crosswalks). In addition, pavement markings can be more explicitly intended to calm traffic (traffic calming is discussed in detail in Chapter 25 of the NYSDOT Design Manual). Textured crosswalks. stenciling SLOW or other messages on the street, chevrons which decrease in spacing as one travels down a street. and other such treatments can also be installed to influence driver behavior. Additional information on traffic calming is provided in the **Transportation** and Quality Communities Primer.

Traffic Calming Techniques

- □ Narrowing the street reduces the speed that most drivers find reasonable and comfortable (the design speed). Reducing the pavement width, adding onstreet parking, or adding a median is actual narrowing. Speed reduction (the effect of narrowing) can be accomplished with street trees along the curb, a tree canopy in the median, and buildings placed closer to the street.
- **Deflecting the vehicle path** causes drivers to slow and pay more attention to the task of driving. Deflection is done through changing the automobile's route slightly. Some measures apply at mid-block locations, while others are appropriate for intersections.
- Changing the pavement surface demands attention from drivers and reduces speed. Speed humps, speed tables, and special pavement materials are common methods for changing the pavement surface.
- □ Sharing the pavement with other vehicles slows vehicles and raises the attention level of drivers. Long a feature of traditional local streets, shared-use can be reintroduced into other streets by selective short sections of narrow pavement, either at mid-block locations or near intersections.
- **Diverting the driver's route** makes vehicular access more difficult, and encourages the driver to use another route. Diagonal street closures, one-way streets, median closings, and turning movement restrictions are primary examples.
- **Traffic control devices** slow traffic through regulation. STOP signs, traffic signals, and posted speed limits are frequently used to calm traffic. Intensified enforcement of traffic regulations can calm traffic, generally by reminding drivers of posted speed limits and by enforcing STOP signs.

Deflecting the





Narrowing

the Street

































Destination Treatments: Barriers to choosing cycling or walking alternatives may go beyond the travel route to difficulties specific to accessing or otherwise ending the trip at its destination. sidewalk may end across a busy highway from a workplace, or there may be no place at the destination to store a bicycle. Destination treatments range from pedestrian overpasses or a separate traffic signal for pedestrians to having a sidewalk from the roadway fronting an office development or shopping mall to the development's buildings. The key make sure that trip can be easily "finished" for cyclists and pedestrians, by removing any barriers. In some cases, this will involve private property owners, but in most, relatively simple actions in public spaces are the solutions.

Physical Protections/Exclusive Use: While signage improvements encouraging behavior that will keep cyclists and pedestrians safe are useful, there will clearly be cases in which some sort of barrier is needed to physically separate different modes of travel. For example, where a bike route or sidewalk is very close to a high-speed roadway, protections need to be designed from the perspective that it is *likely* that, an out-of-control vehicle will careen toward the area reserved for more vulnerable travelers. While Jersev barriers are not aesthetically pleasing, it is prudent to consider alternatives that provide a comparable level of protection or to consider separate rights of way for bike and pedestrian facilities. Colormatched concrete bollards or low walls are examples of alternative treatments that might serve the same functions as Jersey barriers without creating such a sterile streetscape. Where a bike/hike trail is roughly the width of a private road or smaller subdivision road, bollards or wooden barriers with "NO MOTOR VEHICLES" or other signage should be used to prevent use by unwanted motor vehicles.

Maintenance: Bicycle and pedestrian facilities are not "build it and forget it" installations. They require maintenance, including mowing of clear zones, periodic sweeping, tree and debris removal, patching or other spot repairs, trash removal and sanitation at any picnic areas and access points, and fence repairs. Facilities oriented along creeks or rivers may need special cleanings after floods or spring thaws leave soil or sand on their surfaces. It is also critical that the condition of bicycle and pedestrian facilities be checked and repaired regularly when deficiencies are found. In addition to the direct safety benefit, good maintenance will meet pedestrians' and cyclists' expectations. If a facility is known by "regular users" to be in poor condition, they may take another route or choose to drive.



Better Maintenance Required



Continuation of sidewalk needed

<u>Opportunities for Expanding Ulster</u> <u>County Bicycle and Pedestrian</u> <u>Facilities</u>

The *Plan* provides recommendations on expanded facilities for bicycles and pedestrians. The DOT designated bike routes⁴ in Ulster County, Routes 9W, 28, 44/55, 55A, 199, 208, 209, 213, and 299 should be priorities for shoulder improvement. These routes must be made continuous and dependable to serve their role of facilitating access to neighborhoods and recreational routes.

Major sections of State Routes 32 and 52 and County Routes 1 (Lucas Turnpike), 7 and 10 (Milton Turnpike), plus selected other County and municipal roads should also be considered for addition to a regional network of collector bike routes. These routes should be linked to destinations such as the State Parks and Preserves, County Park and Fairground, SUNY at New Paltz, and Ulster County Community College. Communities including Rosendale, High Falls, Stone Ridge and Olivebridge have important bicycle and pedestrian transportation needs to address; doing so could also advance tourism-related programs.

Special Designations or Areas of Emphasis

To this point, this section has concentrated on what can be done at either a spot location or along a single linear facility. There will be cases where resolution of bicycle and/or pedestrian travel problems will require areawide solutions such as pedestrian zones and major destination zones.

Recommended Improvements for Stone Ridge



⁴NYSDOT Region 8 (Russell Robbins), <u>Pedestrian / Bicyclist Safety Program</u>, draft of March 9, 1998.

Pedestrian Zones

In the *Dutchess County Bicycle and Pedestrian Plan*, the Poughkeepsie-Dutchess County Transportation Council (PDCTC) defines pedestrian zones as

"areas where more formal accommodation of pedestrians is appropriate. These zones occur in the cities, villages, larger hamlets and other activity centers where walking is common. These pedestrian zones are areas where walking is а means of transportation rather than a recreation activity."5

A number of areas in Ulster County meet this definition, and have been identified in the *Plan* as pedestrian zones. In these zones targeted improvements over time can be made, particularly where limited, sub-standard⁶ or otherwise incomplete sidewalk systems and lack of pedestrian facilities exist. Pedestrian zones should be extended as needed to include growth at the edges of urban areas. Where possible, comprehensive sidewalk systems should provide access to schools, religious and cultural destinations, active recreation facilities, group

⁵ Poughkeepsie-Dutchess County Transportation Council, <u>Dutchess County Bicycle and</u> <u>Pedestrian Plan</u>, draft of June 1995, Page 22. ⁶ Historic districts such as that in Hurley, with sidewalks and landscape that contributes to the SHPO listing but do not meet standards, will

have to be specially assessed to determine appropriate sidewalk designs.

homes, residential areas, centers of employment, and shopping. As the pedestrian zones transition to adjoining rural or light density areas, wide shoulders should be added where needed to connect seamlessly into the sidewalk systems. This will accommodate pedestrians, in addition to serving bicyclists, who require more protection on open roads than on lower speed urban streets.

The pedestrian zones are:

- US Route 9W corridor zones: Saugerties, Kingston, Port Ewen, Highland, Marlborough and Milton.
- US Route 209 and County Route 1 Corridor zones: Hurley, Stone Ridge, Accord, Kerhonkson, Ellenville, Napanoch.
- State Route 213 Corridor zones: High Falls and Rosendale.
- Wallkill River Valley zones: New Paltz, Clintondale, Gardiner and Wallkill.
- Catskill zones: Woodstock and Phoenicia.



Major Destination Zones

Major destination zones are area-specific pedestrian zones that will accommodate bicycle travel as well as pedestrians. The goal is to ensure multi-modal access to larger sites through site-specific treatments and provision of safe bicycle and pedestrian facilities in the surrounding area.

One approach to planning for enhanced access to major destinations would be to apply a "trace-out" methodology where the most heavily utilized bicycle and pedestrian routes leading *away from* a site are examined. Obstacles to travel using these modes are inventoried and an area-level plan consisting of a range of "simple fixes" to higher-costs projects would be developed.

The *Plan* describes the major destination zone concept and offers a number of locations where it might apply; such as the Hudson Valley Mall, SUNY at New Paltz, and Ulster County Community College.

5.0 Implementation

The Importance of Establishing Long-Term, Bicycle/Pedestrian Plans

To this point, the *Primer* has presented a basic discussion of what the bicycle and pedestrian transportation issues are and what can be done about them. In practice, moving from the problem to the solutions requires a plan.

A long-term strategic plan provides a consistent direction for subsequent actions and investment decisions. This is important because enhancing bicycle and pedestrian facilities will continue and evolve over time. As communities grow the magnitude and location of needs change but resource constraints remain. Thus, the approach has to be to work from a long-term plan that provides:

- a) A fiscally-constrained progression with a budget for short-, medium- and long-term projects and
- b)sufficient information on types of problems, solutions, and projects to take advantage of opportunities as they arise.



Recommendations for Local Government Actions

- Create a local Transportation Committee that will address bicycle/pedestrian needs.
- Inventory existing conditions, identify needs, involve the community in decision making through public meetings, and prioritize needs and projects in a plan.
- Establish municipal programs that include the construction, repair, and maintenance of good road shoulders, sidewalks and bike facilities as a routine part of highway and land use development work. Designated bike routes or pedestrian zones, should be priorities for public works and highway departments.
- Review and amend Site Plans, Local Ordinances, Subdivision and Zoning requirements to make it clear that sidewalks and other bicycle/pedestrian improvements are included and that land use developers know their responsibilities to provide these facilities. Subdivision review should include checks for easy walking routes to schools, shopping, parks and other services. In commercial centers, business improvement districts (BIDs) are often set up to fund landscaping, street furniture, and maintenance. If local initiatives such as these are routinely advanced, State, County and other entities are more likely to assist with larger projects

Prioritizing Projects (by need and financial requirements)

Limited funding means communities will need to prioritize projects using criteria such as:

- Safety First: While bike/hike trails, sidewalks and other facilities are quite popular because they improve general quality of life, the highest priority should usually be for safety-oriented projects bridging gaps, addressing known high accident locations, and restoring the integrity of the existing infrastructure (e.g., replacing sidewalks sections in poor condition). Without these actions, *existing* cycling and walking will not be maintained, in turn making it harder to promote *additional* use of these modes.
- Think Small: Much of what is covered in "Early Wins" could be pursued quickly at relatively low cost.
- **Revenue Management:** The section of the *Plan* dealing with long-term funding issues, noted that agencies and municipalities need to be more sophisticated *entrepreneurial*, in fact in obtaining and managing resources. Monitoring revenue streams, identifying the optimal timing of transportation investments, and seeking opportunities to achieve economies of scale in joint project implementation will become keys to success.
- Staging: Careful *staging* of projects within • a strategic plan is also critical. For example, the cost of a complete project (for example, a new bike/hike trail) might mean that it would have to be assigned a long-term priority so that funding could be allocated over a number of years. However, if the goal of the project is really to create a connection, it could be possible to break the project into stages - the first stage, for example, consisting of basic leveling and clearing, with such things as hard-paving, street furniture and other components deferred to the future – so that the basic connection would be developed in a much shorter time.



Critical Questions

- What is the setting for the potential project, and how does it affect the list of alternatives?
- What physical constraints or considerations affect the project?
- What is the projected level of use of the facility?
- What are the hours or types of activity in the area? Do they suggest a need for any complementary treatments?
- Is there an unusually short time frame for completion of an action?

"Early Win" Concepts

While implementing many of the actions discussed in this *Primer* will take a number of years, there is much that can be done in the short term to improve the travel environment. These short-term actions promote the safety and attractiveness of these modes, while also creating a *credibility* benefit by demonstrating the importance of this issue. The key premise is that efforts can be undertaken in the very near term through either existing programs or with minimal cost. Early wins need to be *visible*, to demonstrate commitment to the bicycle and pedestrian safety issue, and they need to be significant in their effects.

Some examples of early win efforts are as follow:

- **Pavement Markings:** Routine programs to replace worn crosswalks, centerline and shoulder stripes should be continued or initiated. All municipalities need to ensure that designated bike routes and crosswalks are clearly defined. High Visibility Crosswalks should be utilized.
- Install Bike Racks: This will encourage more bicycling to downtown or destination locations. Multiple unit racks can typically be purchased for \$300 to \$800, providing storage for two to five bicycles.

- Bike Route Designation: Bike route • designations already exist on State routes but they should be extended to county and local roads. Town or Village Boards or City Councils should vote on official designations of appropriate routes. It is important to note that bike route designation does not necessarily impose any greater liability on the municipality. If there is a crash involving a bicyclist, the legal obligation to maintain a facility for safe cycling already exists, if it is known that people are cycling on a road. While it is certainly desirable to ensure that designated bike routes are as safe and comfortable as possible, it is reasonable to designate the routes and then take steps to improve them.
- Sidewalk Spot Repairs or Short-Cut ٠ Installations: There is typically some amount of sidewalk repair or installation work completed as part of routine maintenance by Public Works or Highway Departments. It is important to prioritize this work based on need. Locations within a pedestrian or major destination zone, development of safe walking routes to schools, or specific needs identified by citizens should all be considered in local Creating a Transportation actions. Committee in your community to inventory and develop a plan for needed sidewalk improvements is highly recommended.

• Revise Traffic Signal Timings: Traffic signal timing and pedestrian signals at major intersections have a major impact on pedestrian safety. Sometimes, retiming of existing signals or adding an all-red phase can greatly improve pedestrian safety. Signal timing requires balancing motor vehicle and pedestrian movements. In busy pedestrian areas, additional motor vehicle delay is an acceptable trade-off to ensure public safety.





- **Speed Studies:** Speed studies can determine whether areas require additional signage or other traffic calming treatments to reduce motor vehicle speeds.
- Signage: NYSDOT Region 8 supplies BIKE ROUTE signs on State Designated Bike Routes and on selected local designated routes. SHARE THE ROAD and other cautionary signage can be requested for locations of known conflict on State Highways or Federal Aid Highways. Ulster County Department of Highways and Bridges and Local Municipal Agencies could install signage at selected locations on their roadways. Improved pedestrian crossing signs are also needed in most communities.
- Add-ons to Existing Projects: There are opportunities to include bicycle and/or pedestrian accommodations in Federal, State, County or local capital programs and projects. Bicycle and pedestrian projects can often be included in larger site development, highway, bridge or other types of projects already programmed if community input is given and municipalities take an interest.

- Solicit Community Input: Municipal newsletter mailback forms, "public discussion" items for Board meetings, and special meetings are inexpensive ways of soliciting input on bicycle and pedestrian travel issues. These must be tempered with the reality of the transportation funding process, but it is possible to follow up on the input received by pursuing some of actions outlined in this section.
- Hold a Pedestrian Safety Road Show: • The Road Show is a workshop developed by the Federal Highway Administration (FHWA) to help individual communities identify the key pedestrian safety issues they face and make commitments to work on these issues. Successful Road Shows include participants from various municipal departments (e.g., highway, police, planning), outside agencies (e.g., NYSDOT and transit property staff) and stakeholder groups (e.g., schools, neighborhood associations, pedestrian safety advocates, business owners). Communities typically hire a USDOTtrained facilitator for a Road Show, but the only other expenses are municipal and agency staff time spent at the half-day event. Successful Road Shows lead to (1) continued periodic meetings to prioritize projects and discuss safety concerns and (2) in-the-field improvements. The NYSDOT can also provide trained personnel to assist or conduct these workshops

6.0 Funding Opportunities

Sources of Funding for Projects

There are a considerable number of programs that can help fund bicycle, pedestrian and trail projects. These programs change as different funds become available and application requirements are revised. It is important to know when to apply, and to complete the project and municipal planning ahead of time to take advantage of funding cycles. Most grants will require a local match or "force account" contribution (in-kind services) and with some programs, the agreement of the municipality to maintain the project. In addition, some grant programs have strict implementation standards that may limit where the program is applicable. It is best to contact the agencies involved ahead of time regarding the eligibility of potential projects. Many programs have a "preapplication" process and informational meetings, which are designed to discuss program eligibility and other proposal submission requirements.

A sample list of grant sources is provided below. The list is divided into small and large projects to help the applicants, and not as an absolute program limit.

Grants for Large Projects (\$50,000 or greater total value)

• **TEA-21 Programs:** NYSDOT administers funding available from the Federal Surface Transportation Act, which is enacted by Congress every five years. The current Federal 5-year program is called the Transportation Equity Act for the 21st Century (TEA-21) and is scheduled to be renewed in 2003.

-Surface Transportation Program (STP) The STP requires states to use at least ten percent of their flexibleapplication Federal transportation fund allocations for designated "transportation enhancements". including bicycle and pedestrian projects. The Program further grants states and Metropolitan Planning Organizations (MPOs) the flexibility to use even more of their funds for these purposes, should they wish. Funds may be used for either the construction of bicycle transportation facilities and pedestrian walkways or non-construction projects (such as maps, brochures, and public safety announcements) related to safe bicycle use and walking. TEA-21 adds, "the modification of public sidewalks to comply with the Americans With Disabilities Act" as an activity that is specifically eligible for these funds. It is important to note that bicycle and pedestrian-related projects can also compete for regular STP funds. These funds are assigned to rehabilitate highways and bridges. promote mobility, and for other purposes.

For large projects, the federal funding cycle typically takes five years from when a project is selected for funding until its implementation begins. NYSDOT's Region 8 Office has staff assigned to work with Ulster County communities on potential federal and state funded projects. They can be contacted at (845) 431-5750.

Transportation Enhancements Program (TEP) - The "ten percent" level required by TEA-21 is referred to as TEP and the deadline for the final TEA-21-era round has expired. The success of the TEP makes it appear quite likely that there will be a TEP-type program under the new transportation funding law. TEA-21 provides a specific list of activities that are eligible for TEP funding including "provision of facilities for pedestrians and bicycles, provision of safety and educational activities for pedestrians and bicyclists", and the "preservation of abandoned railway corridors (including their conversion and use for pedestrians and bicycle trails)."

- Ulster County Transportation Council (UCTC): Recently formed, UCTC is an Metropolitan Planning Organization (MPO) and once certified will allocate federal transportation funds to projects (see Federal Aid Highway Program below) Contact the Ulster County Planning Office or NYSDOT for more information. These funds can be used for most bike and pedestrian projects.
- Federal Aid Highway Program: Bicycle and pedestrian projects are broadly eligible for funding from most of the major Federal Aid highway, transit, safety, and other programs. Municipal leaders and citizens should request these funds and provide input during the project development process. Bicycle projects must be "principally for transportation, rather than recreation, purposes" and must be designed and located pursuant to the transportation plans of State, MPO, or a planning agency.



- National Highway System (NHS) Funds (Section 1006): Funds may be used to construct bicycle and pedestrian transportation facilities on land adjacent to any highway on the National Highway System, including Interstate highways. These facilities must be located and designed pursuant to an overall plan developed by an MPO, a planning agency, or the State.
- New York State Funds: State transportation funds, such as CHIPS and Multi-modal monies.
- Other Transportation Grants: There are other programs that may be applicable in unusual situations. Job creation incentives can occasionally leverage key transportation investments including bicycle and pedestrian components. Specialized programs such as the Congestion Mitigation and Air Quality Improvement Program (CMAQ) may also be available for problems faced by some Ulster County communities. NYSDOT Region 8 staff are the first points of contact for these programs.
- Utility and Brownfield • Cleanup **Programs:** The New York State Department of Environmental Conservation (NYSDEC) administers brownfield cleanup related programs, along with projects to design, build and administer wastewater treatment facilities. These projects will only be considered if other larger issues require them; however, as part of mitigation elements of these projects, walkways, trails, and other amenities may be considered. For

more information, NYSDEC's Region 3 office can be contacted at (845) 255- 5453.

- Stormwater and Flooding: Stormwater, wastewater and floodplain management efforts can present opportunities for trail and walkway development, since these efforts typically involve low-lying, relatively flat corridors in which construction of structures of any kind is discouraged if not explicitly prohibited. While a number of Federal agencies may be involved, including the US Army Corps of Engineers and the United States Department of Agriculture's Soil Conservation Service, NYSDEC Region 3 would be the first point of contact for information.
- **Ouality Communities and Waterfront Revitalization:** The New York State Department of State (NYSDOS) has a number programs supporting quality communities that could be utilized throughout the County. Waterfront revitalization programs provide opportunities for Ulster communities within the Hudson River "Coastal Zone". In addition to their own programs, NYSDOS is a point of contact for information regarding funding opportunities with the Empire State Development Corporation and the US Department of Housing and Urban Development. Projects supported through these agencies which address broader economic, housing or community presservation issues may also include a component for pedestrians.

Grants Suited to Small as Well as Some Large Projects

- New York State Environmental Protection Act: This program, administered by the New York State Office of Parks, Recreation and Historic Preservation's (OPRHP) Staatsburg regional office, covers projects for such facilities as walking and bicycling trails. Grants for projects within the Catskill Park are administrated by NYSDEC's Bureau of Preserve Protection and Management, located in Albany. The Federal Land and Water Conservation Funds are managed by the same OPRHP and NYSDEC staff, as is the National Trails Act, which is designed for smaller projects. Note that there is the opportunity for some sidewalk projects to be included as "contributing elements" in historic districts, and appropriate improvements may be eligible for preservation-oriented program titles handled by OPRHP.
 - State and Not-For-Profit Programs Supporting Hudson Valley Projects: Trails, walkway and bike route systems near the Hudson are aided by the Greenway Conservancy for the Hudson Valley, which can be contacted at (518) 473-3835. The private group Scenic Hudson can acquire properties for their scenic and ecological values and establish trails on these properties. They can be contacted at (845) 473-4440.

- Other Not for Profit Organizations: The New York/New Jersey Trail Conference arranges for the maintenance, mapping and some construction and acquisition efforts attendant to trail systems in the mountains, and could help with similar projects in the Catskills and Hudson Valley. They can be contacted at (201) 512-9348. Other organizations working on specific trail corridors in Ulster County include the Wallkill, D&H Canal/O&W and Maybrook rail trail organizations. Finally, the Marlborough Library on Route 9W is a repository for foundation grant information.
- NYC Department of Environmental ٠ Protection (DEP) Watershed Program: The DEP Watershed Program offers a unique opportunity for some Ulster County communities. Watershed Program funds are available for planned and approved trail projects. DEP may also participate in trail projects that include land acquisition elements. The applicant will need to requirements including meet establishment of a management plan and securing insurance coverage. DEP's Kingston office can be contacted for information. New York City's efforts to protect its reservoirs and watersheds are well known in the County. DEP also owns and administers roads, causeways and aqueducts that must be periodically repaired or

replaced. Parts of Route 28A, Spillway Road and Reservoir Road and bridge are DEP administered. These projects are advanced through five-year capital programs, or as added efforts to achieve security and silt or pollution control. It will be important for NYC DEP and the communities in which these facilities are located to design these projects to safely accommodate permitted bicycle and pedestrian travel.

- Utility Companies: They often allow trail uses on their rights of way, similar to the DEP approach; however, policy changes implemented after the attack on the World Trade Center may change the levels of access to these rights of way and/or these companies' procedures for granting access.
- Safety Education Programs: The New York State Governor's Traffic Safety Committee ((518) 474-3135) and the New York State Department of Health's Bureau of Injury Prevention ((518) 474-8985) both operate funding programs supporting safety education. These agencies are also sources of accident data for planning and project development efforts.

CHECKLIST FOR MAKING YOUR COMMUNITY MORE BICYCLE- AND PEDESTRIAN-FRIENDLY

1. Immediate Steps to Improve Existing Bicycle / Pedestrian Facilities

- Clear roadway shoulders of glass and other sharp objects that could puncture bicycle tires or cause injury to pedestrians.
- Keep roadway shoulders clear of seasonal hazards such as snow, ice, raked leaves, tree limbs, etc.
- ____ Devote greater attention to repairing potholes. These holes are even more detrimental to bicycles than to autos.
- ____ Maintain existing striping on roads; clearly distinguish between road shoulder and auto lane.
- ____ Repave road shoulders as roads are repaved.
- ____ Add informational signs to heighten awareness of other transportation means: "Bike / Pedestrian Crossing", "Share the road ...", etc.
- Improve signal timing to allow adequate time for persons to cross the road; Devote special attention to areas with children and senior citizens.

- ____ Repair and maintain existing traffic control devices, especially walk lights.
- Crosswalk improvements: Repair and maintain vehicular stop lines and crosswalk stripes.
- Prohibit "right on red" turns in high-density pedestrian crossing zones.

2. Low-Cost Steps to Improve Bicycle / Pedestrian Facilities

- ___ Create advanced "bicycle stop lines" at intersections to increase rider visibility and safety.
- ___ Create bicycle "safe zones" for non-turning cyclists in areas with vehicular right-turn lanes.
- ___ Remove existing circulation barriers. Reposition poles, signs, etc. off sidewalks & crosswalks.
- ___ Replace slotted storm drain grates with safer, non tire-eating storm drain grates.
- ___ Crosswalk improvements: Install distinctive road textures/paving in crosswalks and include highly visible striping.
- Create textured and striped pedestrian islands in wide roadways as pedestrian-safe zones.

Moderate-Cost Steps to Improve Bicycle / Pedestrian Facilities

- Improve existing roadway shoulders during general maintenance, scheduled improvements and new construction to accommodate cyclists and pedestrians.
- Level off storm drains. Much safer for ALL - pedestrians, cyclists, autos, and transit.
- Provide bike racks and benches at major population, employment, and shopping centers.
- Crosswalk improvements: Install traffic control devices - walk/don't walk lights, etc.

CHECKLIST FOR MAKING YOUR COMMUNITY MORE BICYCLE- AND PEDESTRIAN-FRIENDLY

3. Moderate-Cost Steps to Improve Bicycle / Pedestrian Facilities

- Improve existing roadway shoulders during general maintenance, scheduled improvements and new construction to accommodate cyclists and pedestrians.
- ___ Level off storm drains. Much safer for ALL - pedestrians, cyclists, autos, and transit.
- Provide bike racks and benches at major population, employment, and shopping centers.
- Crosswalk improvements: Install traffic control devices - walk/don't walk lights, etc.

4. New Bicycle / Pedestrian Facility Construction

- Construct bike lanes to appropriate specifications and include adequate signage and directional striping.
- Construct bike lanes and paths with "continuity and linkages" in mind. Build new sidewalks and bikeways to connect to existing pathways.
- Actively preserve available "rights of way" for future construction of bike and recreational paths.
- ___ Enhance bicycle / pedestrian linkages from residential areas to employment centers and

shopping centers through the additional construction of sidewalks.

- Build additional sidewalks and bikeways with particular attention to transit boarding zones and areas with high levels of bicycle/pedestrian activity (schools, libraries, playgrounds, ballfields, shopping areas, etc.)
- ____ Reinforce natural pedestrian thoroughfares when constructing new walkways. Footpaths generally show the most direct route between 2 points.
- ___ Improve street lighting to enhance bicycle/pedestrian safety and security.
- ___ Install bicycle lockers or "bicycle safes" at highly used bicycle activity areas.
- ___ Develop bicycle parking facilities in existing automobile garages.
- ___ Develop landscaping designs with attention to safety and security as well as aesthetics.
- ___ Incorporate facilities to safely accommodate pedestrians and bicycles on existing automobile bridges.
- Construct separate pedestrian/bicycle bridges and tunnels where no safe alternative exists.

Planning Future Investments in Bicycle / Pedestrian Facilities

5.

- ___ Identify specific routes to link existing pedestrian- and bicycle-generating activity centers via sidewalks, bicycle paths and bicycle lanes; develop these routes as part of an ongoing Capital Improvement process.
- ___ Develop a community-wide Pedestrian and Bikeway Plan to integrate and enhance non-motorized access to future activity centers.
- ____ Plan for the construction sidewalks and bikeways to enhance access to general points of interest.
- ____ Adopt performance standards, including a policy for maintenance responsibilities,

requiring the installation of sidewalks based upon street classification and intensity of development.

- ____ Require that pedestrian/bicycle circulation considerations be part of any road-widening improvements.
- ____ Allow for the flexible placement of sidewalks and bikeways to preserve topographic or natural features.
- ___ Promote the inclusion of bicycle parking facilities in the design of new automobile parking facilities.
- ___ Design new residential subdivisions that effectively incorporate adequate pedestrian and bicycle access to major business, retail and activity centers.

CHECKLIST FOR MAKING YOUR COMMUNITY MORE BICYCLE- AND PEDESTRIAN-FRIENDLY

6. Planning Future Investments in Bicycle / Pedestrian Facilities

- Identify specific routes to link existing pedestrian- and bicyclegenerating activity centers via sidewalks, bicycle paths and bicycle lanes; develop these routes as part of an ongoing Capital Improvement process.
- ____ Develop a community-wide Pedestrian and Bikeway Plan to integrate and enhance nonmotorized access to future activity centers.

- Plan for the construction sidewalks and bikeways to enhance access to general points of interest.
- Adopt performance standards, including a policy for maintenance responsibilities, requiring the installation of sidewalks based upon street classification and intensity of development.
- ___ Require that pedestrian / bicycle circulation considerations be part of any road-widening improvements.

- ____ Allow for the flexible placement of sidewalks and bikeways to preserve topographic or natural features.
- Promote the inclusion of bicycle parking facilities in the design of new automobile parking facilities.
- ___ Design new residential subdivisions that effectively incorporate adequate pedestrian and bicycle access to major business, retail and activity centers.

<u>APPENDIX A</u> <u>RESOURCES AND REFERENCES</u>

Texts - Reports, Analytic Tools, Guidelines, Standards, Books

"21st Century Mobility", The Transportation Plan for the Hudson Valley, June 1992, New York State Department of Transportation, Region 8, Planning and Program Management, 4 Burnett Boulevard, Poughkeepsie, NY 12603. (845) 431-5723.

AASHTO Guide for the Development of Bicycle Facilities, 1999, American Association of State Highway and Transportation Officials, 444 North Capital Street, NW, Suite 249, Washington, DC 20001. (202) 624-5800.

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Federal Highway Administration's recommended transportation planning process: <u>www.fhwa.dot.gov/planning/citizen/index.htm</u>
New York Bicycling Coalition: <u>www.nybc.net</u> (has a report funded by NYSGTSC on line <u>Improving Bicycling and Pedestrian Safety</u>)
New York Parks and Conservation Association: <u>www.nypca.org</u> (information on trail planning, funding programs)
New York State Department of Health: <u>www.dealth.state.ny.us</u> (program information, national injury data, contacts)
New York State Department of State: <u>www.dos.state.ny.us</u> (includes information on the Quality Communities and Waterfront Revitalization Program)
New York State Department of Transportation: <u>www.gw.dot.state.ny.us</u> (program information, guidance, bike/ped program)
Oregon Department of Transportation: <u>www.odot.state.or.us/techserv/bikewalk/obpplan.htm</u> (includes typical bicycle/pedestrian design options with suggested dimensions)
Scenic Hudson: www.scenichudson.org

US Centers for Disease Control: www.cdc.gov/ncipc/bike (national bicycle injury data)

<u>APPENDIX B</u> <u>PUBLIC INPUT AND PARTICIPATION</u>

Planning is intended to be responsive to the needs of the community rather than simply being a prescriptive process. As such, when planning the projects or regulations for bicycle and pedestrian transportation systems, decisions need to be based not only on sound technical foundations but also on sufficient knowledge of public concerns to ensure that the communities needs are truly being addressed.

Targets of Public Input

A well thought-out public outreach effort can yield critical insights in several areas, including the following:

- Basic Knowledge: It is extremely difficult, if not impossible, for even the most diligent public official or community volunteer to be aware of all of the problems of his/her constituents on the topics of bicycle and pedestrian travel. In a county of several hundred square miles, very localized barriers to cycling and walking need to be described to decisionmakers through direct sharing of personal experience. Thus, it is advisable that future bicycle and pedestrian planning and project development efforts in the county begin with diligent efforts to solicit public input.
- **Understanding of Community Desires:** ٠ While constituents' experiences in trying to bicycle or walk around their communities are important inputs to the planning process, it is also true that people will tend not to use these modes in particular areas unless they feel certain that they are reasonably safe. For example, cyclists will tend not to travel along a busy suburban thoroughfare unless there is some amount of a buffer between them and motor vehicles. Thus, it can be helpful to solicit input on where people would *like to* cycle or walk, if the proper accommodations were in place.
- Confirmation of Priorities: A recent survey by Zogby International found evidence that residents of the Upper Hudson Valley area (which as defined included Ulster County) see investments that achieve such ends as enhancement of downtown environments, promotion of economic growth and *encouragement of cycling and walking as alternatives to driving* as desirable.⁷ Further, there was a clear willingness to accept some level of traffic congestion if alternatives to driving were also accommodated. These results were surprising because the likely

⁷ Zogby International<u>, Statewide Attitudinal</u> and Preference Survey for New York State <u>Metropolitan Planning Organizations</u> (Zogby International, 2000), e.g., Table 37, Page 76. assumptions is that the first order of business for transportation investments would be concentrating on projects that "keep traffic moving," and that bicycle and pedestrian transportation are not viable alternatives worthy of much investment. The point to bear in mind is that over the years people have become quite sophisticated on matters of public policy and thus there is a real opportunity to go to the general public to get their input on where a community's priorities should be on transportation issues.

Planning and programming efforts, that • include a significant public input process results in enhancements a logical progression from needs to plans and actions. Thus decision-makers will also be confident in the foundations for the future set by these efforts. Finally, in the area of mobilizing the *community* to participate in efforts to carry out plans developed in this manner, it is more likely that individual members of the community will feel a sense of ownership of the product, for they will also be able to trace the progression from their ideas to products.

Sample Public Outreach Mechanisms

Various means of soliciting public input are available, each of which have their advantages and disadvantages. The key in deciding what approach or format to use tends to be the desired level of discussion or personal interaction – the greater the need for followup or elaboration on comments or for specificity on concepts, the more important face-to-face discussions become. Here are a few public outreach tools, with their key positives and potential negatives shown.

- Surveys (mailback or phone) pose predefined questions to respondents, with the results tabulated and typically reported in the context of "general tendency", e.g., "the majority of respondents approve of building a bike trail along this road" or "80 percent of respondents favor building more sidewalks." Positive aspects: tightly structured, time requirements of interaction are minimized; processing of results generally expeditious. Negative aspects: limited potential for followup, questions need to be rigidly worded, resulting in limited ability to clarify meanings.
- **Design Workshops** bring people together to work on a particular problem either for a particular area or for a sample area within a community. **Positive aspect:** Emphasis on getting people to "put ideas on the map" and critically review them so as to work toward a preferred solution. **Negative aspects:** Use of sample areas can prompt "why aren't we looking at *my* neighborhood" complaints; can raise questions such as will decisionmakers actually use the results. Getting the right people involved to best represent community consensus is important but may be difficult.
- Discussions ٠ Topic are somewhat unstructured discussions, usually facilitated. in which the goal is to gather ideas, raw data and other inputs that can be used to either frame an issue or provide a basis for evaluating potential concepts. Positive **aspect:** allows people to speak unconstrained by structure about what they think on the topic at hand. Negative aspect: Can "get off topic" if people are allowed to ramble, repeat themselves or take the opportunity to air gripes rather than lend constructive suggestions on the topic.
- Facilitated Workshops or Meetings start with a statement of the structure and goals of the meeting and rely on a facilitator who ideally does not have a direct stake in the outcome of the meeting who keeps the meeting on course. Positive aspect: facilitator can bear in mind the goal for the meeting and "cloud seed" or otherwise prompt the discussion toward answering the key questions. Negative aspects: facilitator has to be prepared to take control of the meeting, including cutting people off when necessary; it must be kept clear in participants' minds how the meeting discussions are progressing toward answering the key questions at hand.
- Advisory Committees are formed to meet more than once to provide technical input on a given topic (e.g., "bicycle and pedestrian safety") to a legislative or administrative body. The agency or governmental unit they serve often formally charters such committees. Positive aspect: Focus on a particular topic can in turn give the committee focus and keep their discussions on track. Negative aspects: some initiallyinterested participants may become disenchanted with attending meetings month after month of planning, while change "in the field" may take years; committee must have both formal sanction and in-practice influence on their topics over the bodies to which they report.

Who Should Be There?

Usually only the most interested people show up, some thought should be given to extending invitations to particular people or groups of people whose views will be critical to getting a complete picture of the cycling and/or pedestrian needs of a community. That is, while the input of the local cycling or Road Runners club is certainly valuable, looking at these matters from a *transportation* perspective raises issues for other participants, including:

- Business owners / Chamber of Commerce members
- Highway / public works departments
- Municipal planning, traffic safety, zoning boards
- Neighborhood associations
- Citizen groups
- Public Meeting participants
- Bicycle and walking groups
- Public Officials
- Police
- School officials
- Senior citizens services / advocacy groups
- Social service agency staff
- Tourism / promotional groups
- Transit operators
- Planners
- Engineers
- Youth groups
- Other interested parties / groups / citizens
- Federal / State / County agencies

In short, the approach should be to think about who really *benefits or can benefit from* efficient bicycle and pedestrian transportation systems.

Pointers on Public Input

- **Prime the Pump:** Generally, people do not respond well at public meetings to "blank sheets of paper." It is appropriate and effective to provide a few starting points, such as a map with a couple of known problem locations identified, or a handout with the beginnings of a list of possible actions shown.
- **But Don't Overdo It:** Conversely, people do not feel ownership of an effort or product when there appears to be a complete plan in place by the time of the first public meeting. If there appears to be a need to provide some level of detail on what the full contents of a plan or project may turn out to be, it is advisable to indicate possible alternatives for each element.
- Less Formality, More Participation: Particularly when the aim is to generate input from the general public, it is important to keep the formality of the event to a minimum. People are less likely to participate if most of the meeting involves being "talked at." While there is, of course, the need to keep the meeting enough on track to ensure that it does progress to a worthwhile conclusion, a balance between facilitating ("shepherding") and rigidity ("cracking the whip") must be struck. Tools for getting people involved in the meetings should be explored; as one example, putting a map on a wall with a supply of pens and sticky notes or markers and

- encouraging people to "put (their) gripes on the map" before the meeting begins can get the thought processes going. When the meeting focus moves to the facilitator's asking questions of the audience, there is a greater likelihood of multiple responses.
- Move Meetings Around/Hold Multiple Meetings: Holding meetings at multiple locations (e.g., a series of four public "kickoff" meetings at locations around the County) or at least rotating the locations of meetings can help ensure that as many people as possible get the opportunity to participate.

Organizing for Success - Players, Roles and the Need for Coordination

In addition to an understanding of issues and developing a slate of projects for enhancing the cycling and walking environments over a period of several years, progressing toward enhanced rideability and walkability requires considerable planning of the *human resource* elements of the effort.

Roles – Agencies, Elected Officials and Advisory Committees

It needs to be recognized that "turf" is indeed a reality in implementing plans and projects. It is important to educate and get municipal and agency buy in to successfully implement projects. For example, traffic engineering or highway departments may control highway related design decisions but through adequate municipal and public input projects can better incorporate all modes including bicycles and pedestrians.

Advisory committees composed of a broad range of interested citizens are essential to successful project planning and implementation. These committees need to be given *sufficient responsibility and genuine input to the investment decisionmaking process* to justify their efforts. Two elements of human nature make this critical to the overall success of the effort:

• only through buy in by members of the committee can a project be successfully implemented and • people must feel that their participation is having some sort of impact.

Thus, the key at the outset of an extended effort such as implementing the *Plan* is a clear articulation of each entity's roles and responsibilities, their exclusive "domains," and how they will be expected to receive input from the other parties involved in the process. Equally important to success will be the setting of some *milestones* for plan implementation, so that the involved players can relate their responsibilities to where the overall effort stands in working toward its goals.

The General Public and Public Participation

The Advisory Committee is not the only mechanism for input from the general public. The public at large needs to be kept informed of the progress of the effort through the newsletters, media reports, Board meetings and the like. Input could be channeled through the Advisory Committee, to ensure that (1) the Committee is kept aware of whatever input does come in from the general public and (2) there is the opportunity for the Committee to "filter" the input through its own efforts before it reaches decision makers. Well publicized and attended Public meetings are also essential for project design, community understanding, buy-in and implementation.

Tips for Conducting Community Meetings

- Acknowledge the Timing and Seriousness of the Issue. For example, controversial projects are that perceived as a threat to the quality of life in a neighborhood will draw good attendance at a community meeting. In situations where a place-orientated approach is being used, it may be necessary to initiate the process on a very small scale in people's living rooms, for instance, or at a downtown business.
- Choose a Meeting Place that is Convenient for the Community. This helps to ensure a good turn-out. For example, a meeting about a proposal to build a community center in a park should be held in the park if possible, or in a building directly adjacent to it. If the meeting is in city hall, or an unofficial place set apart from the community, it probably will not be nearly as well attended.
- **Choose a Convenient Time**. If the meeting mainly concerns residents of an area, evening is best, whereas a time right after work is better for meetings about a downtown plaza or park in which businesses are involved.
- **Provide Food and Beverages**. Food and drink is a sure attraction, especially if the meeting is held during a mealtime. It also helps create a comfortable atmosphere and can get strangers talking to one another.

Managing Expectations

A final point concerns the need to manage expectations regarding how the effort will progress, what forces will affect this progress, and what impact it will ultimately have. Some basic points can be made on how expectations can be managed for each "stakeholder group."

Elected officials need to let the designated experts do their investigations and come up with recommendations, and then give the recommendations serious consideration.

Agency or department staff need to genuinely listen to concerns raised by the Advisory Committee and the general public, and not simply preconceive their own notions regarding problems and solutions and then restate outside input in terms fitting their notions. Advisory Committee participants need to understand the process, particularly regarding transportation investments. It needs to be made clear that these processes take time, that there is not the sort of "discretionary" funding available that one might think, and that their role in the process does not include superseding decision makers on where funding will go.

The general public needs to be aware that the process of implementing the plan is ongoing, and that progress is taking place, albeit slowly. They must also be made aware of just how far bevond their own neighborhoods or "personal trouble spot" the challenges to cycling and walking go, so that even if there is complete awareness of a particular deficiency, there is a logic at work to prioritizing projects that needs to be respected. Citizens also need to understand the importance of getting involved, attending meetings and voicing their ideas and opinions. Attendance at public meetings is generally low and a few thoughtful people can add greatly to the richness and good design of a project or to identify local needs and solutions