

## V. IMPLEMENTATION

This Sustainable Development Plan recommends that actions be taken in five interrelated but distinct categories — major road construction, intersection reconstruction, transportation services, land use management and regional coordination. As the study process demonstrated, the solutions for resolving traffic congestion issues cannot be sought only in making highway changes. Land use, access to land use and broader aspects of mobility can both hinder and improve traffic flow. Further, traffic does not stop at municipal borders nor is it confined to roads under any one government's jurisdiction.

The Sustainable Development Study partners understand the need for a comprehensive approach to transportation and land use in the three community area. The City of Peekskill, the Town of Cortlandt, the Town of Yorktown, Westchester County, the New York State Department of Transportation, the New York Metropolitan Transportation Council and the Federal Highway Administration will share responsibility for implementation of the Plan's recommendations. They will continue to meet and work cooperatively.

As stated in **Chapter I**, because this Plan was the result of a partnership of governments at four levels, the opportuni-

ties for the study area to qualify for state and federal funding and financing of the Plan's recommendations are greatly enhanced.

The key recommendations of the Sustainable Development Plan are highlighted in **Figure 32**.

Some recommendations can be enacted by one partner only, such as an amendment of a zoning ordinance by a town board or city council. Other projects may require the consent and cooperation of private property owners. In all cases, the study partners can provide vital support through technical assistance or the securing of funding. The Sustainable Development Plan was accomplished through coordinated teamwork. Effective and timely implementation requires the same approach.

### A. MAJOR ROAD CONSTRUCTION

The Sustainable Development Plan recommends that six major transportation system improvements be pursued for implementation:

#### 1. Route 202/35 Center Left-Turn Lane

The Plan recommends the construction of either a center turn lane or a wider median that could contain left turn bays on Route 202/35 extending between the Bear Mountain Parkway terminus in Cortlandt and the Taconic State Parkway in Yorktown. The center turn lane would allow unrestricted access to all driveways (presumably reduced in

number through an access management program). Elimination of turning traffic from through lanes would improve movement of through-traffic.

The median/turning bay option offers an opportunity to improve community character while providing safety and efficiency for left turns at heavy demand locations.

Under either scenario, bike lane striping or shoulder treatments for biking should be provided. This improvement has already been placed on the regional multi-year Transportation Improvement Program, a necessary step for the use of federal funds.



*A new center lane on Route 202/35 would alleviate congestion from traffic making left turns in to businesses.*

## **2. Bear Mountain Parkway Connection**

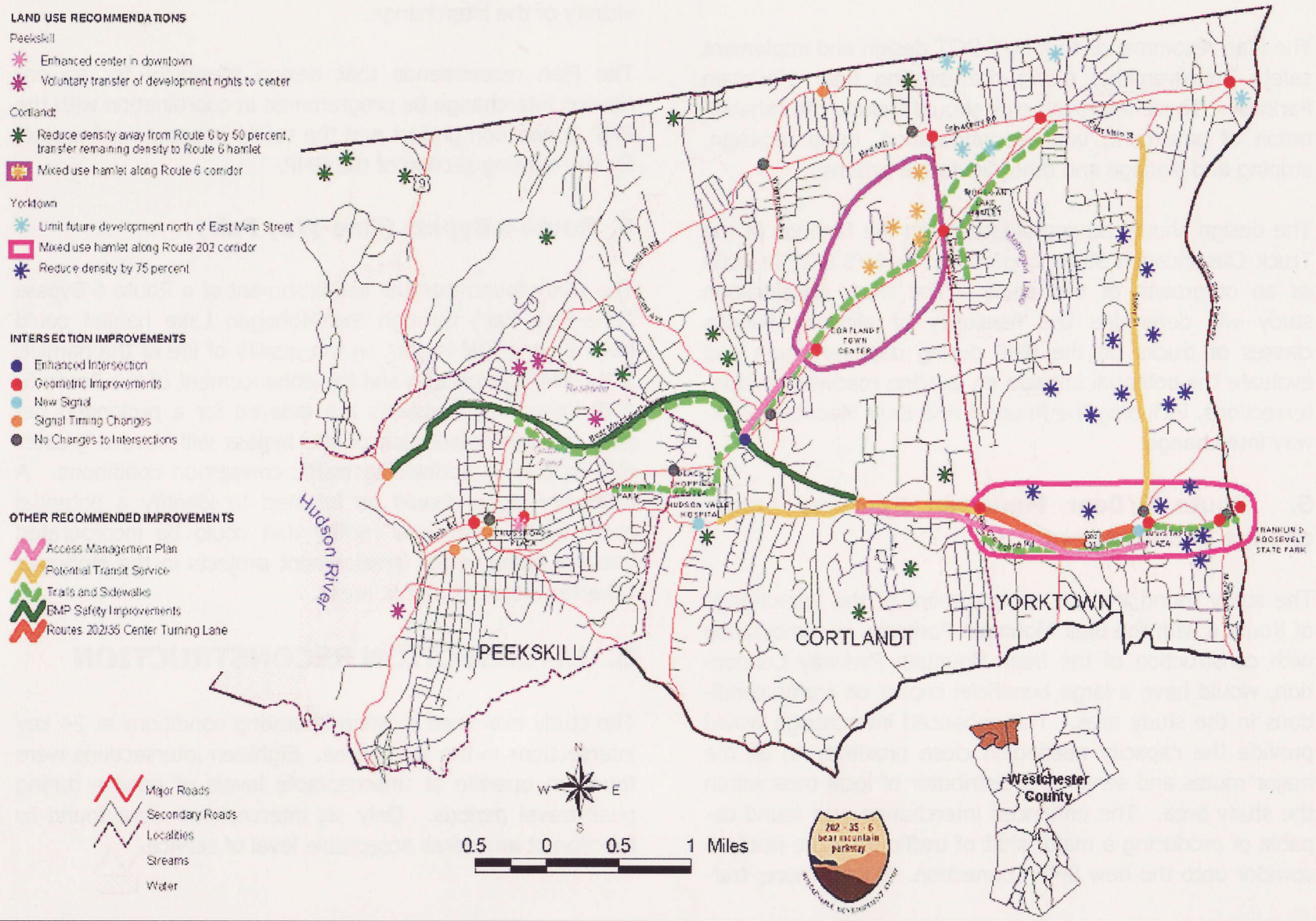
The Plan recommends the design and construction of a limited access two-lane Bear Mountain Parkway Connection to be located parallel to Route 202/35. Access to this 1.7 mile roadway from other roads would likely be limited to two points – near the current terminus of the Parkway at Route 202/35 in Cortlandt and at current terminus at Route 202/35 of the Parkway Extension link to the Taconic State Parkway in Yorktown. The required environmental review for this project will identify the need to consider alternative alignments to avoid and minimize adverse environmental impacts.

## **3. Lexington Avenue Extension**

The Plan recommends that a study be undertaken of evaluate the feasibility of constructing a road in the vicinity of Strawberry Road and Foot Hill Road north to the vicinity of Peekskill Hollow Road in Putnam County. This improvement has the potential to reduce traffic on local roads in North-east Cortlandt although a new direct route to Route 6 may also be a growth inducement and result in adding traffic on Strawberry Road. The study needs to asses all potential consequences so that actual benefits and costs of an extension are understood.

The design of the new segment of roadway should provide only limited access to adjacent properties so as to preserve the purpose of the connection to serve through traffic.

**Figure 32. Key Plan Recommendations**



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#### **4. Bear Mountain Parkway Safety Improvements**

The Plan recommends that NYS DOT design and implement safety improvements along the existing Bear Mountain Parkway. These improvements should include the rehabilitation of pavement, lane reconfiguration, ramp redesign, striping and signage and other advisable actions.

The design should be coordinated with the findings of the Truck Classification Study undertaken by NYS DOT in 2003 as an outgrowth of this study. The truck classification study will determine the feasibility of allowing various classes of trucks on the BMP during daytime hours and evaluate the potential impacts on existing roadways and intersections, including the Route 6 and Bear Mountain Parkway interchange.

#### **5. Route 6/Bear Mountain Parkway Interchange Enhancement**

The study found that an enhancement of the interchange of Route 6 with the Bear Mountain Parkway, in combination with construction of the Bear Mountain Parkway Connection, would have a large beneficial impact on traffic conditions in the study area. The enhanced interchange would provide the capacity needed in close proximity to all the major routes and serve as a distributor of local trips within the study area. The enhanced interchange was found capable of producing a major shift of traffic from the Route 6 corridor onto the new BMP Connection. Furthermore, traf-

fic congestion and unsafe traffic conditions will be mitigated resulting in less delays on adjacent roads in the immediate vicinity of the interchange.

The Plan recommends that design feasibility for an enhanced interchange be programmed in coordination with the BMP Connection project and the safety improvement project for the existing section of the BMP.

#### **6. Route 6 Bypass (One-Way Pair)**

The study found that the establishment of a Route 6 Bypass (One-Way Pair) through the Mohegan Lake hamlet could have a beneficial impact on the quality of life of the hamlet. If the BMP Connection and the enhancement of the Route 6/BMP interchange projects are delayed for a prolonged period, the implementation of the bypass will have a greater role to play in addressing traffic congestion conditions. A feasibility study should be initiated to identify a potential route for a westbound facility that could be incorporated into the planning for development projects in the Mohegan Lake/Northeast Cortlandt areas.

### **B. INTERSECTION RECONSTRUCTION**

The study examined existing operating conditions at 24 key intersections in the study area. Eighteen intersections were found to operate at unacceptable levels of service during peak travel periods. Only six intersections were found to function at an overall acceptable level of service.



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Each intersection was studied to determine what type of improvements would be needed to improve all levels of service at all lane groups for all time periods to Level of Service (LOS) D or better for current conditions.

It was found that geometric improvements, possibly with signal timing adjustments, would be required at 12 intersections. As part of the study, preliminary geometric improvement plans were prepared for these 12 intersections.

It is important to note that the feasibility of making these changes has not yet been determined. Environmental or other site constraints may limit the options for improvement. In addition, some of the recommended geometric improvements, such as additional through lanes and additional left turn lanes, may be classified as "smaller scale" physical projects. Signal timing changes are recommended for some of the intersections. In all situations, detailed design studies are required to determine the actual geometric changes to each intersection.

With the exception of Intersections 2, 5 and 16, the intersections are the responsibility of the NYS DOT. Intersections 2 and 5 are under the City of Peekskill's jurisdiction and Intersection 16 is under the joint jurisdiction of the Towns of Cortlandt and Yorktown.

***Intersection 1 - Annsville Rd/Bear Mountain Parkway***

Geometric changes are needed for the eastbound and southbound approaches. The eastbound approach would

gain another left turn lane and the southbound approach would gain another through lane. In addition, the signal timing should be adjusted.

***Intersection 2 - Route 6/Nelson Avenue***

Geometric changes are needed for the westbound and northbound approaches. The one left-through-right lane at each approach would become one left and one through-right turn lane. No signal timing adjustments are recommended.

***Intersection 5 - Route 6/Broad Street***

Changes are needed to the left-through-right lanes at the westbound, northbound and southbound approaches to accommodate one left and one through-right lane. Signal timing should be adjusted. In addition a left turn phase for northbound/southbound traffic should be incorporated into the timing plan.

***Intersection 11 - Route 6/Westbrook Drive***

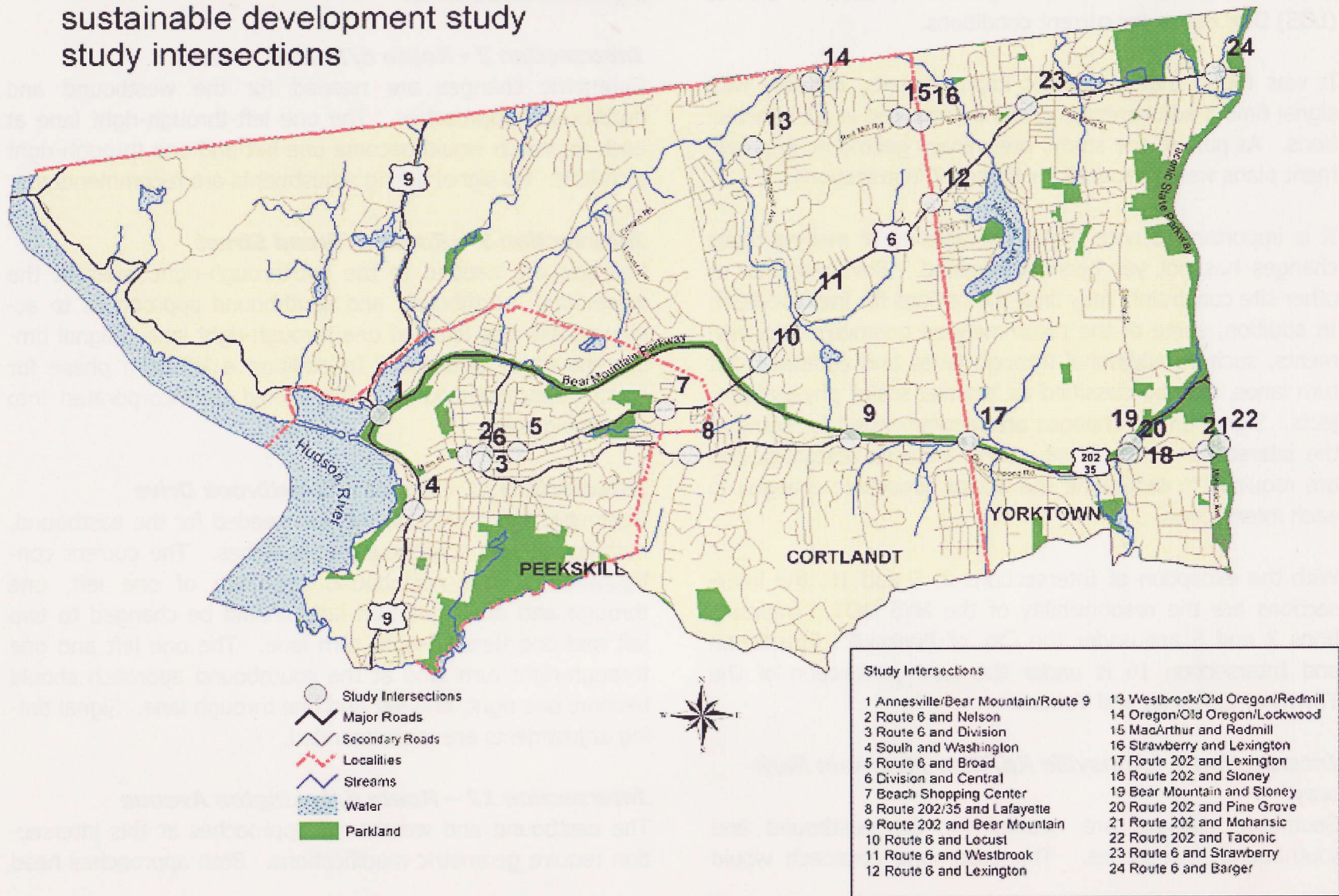
Geometric and other changes are needed for the eastbound, northbound and southbound approaches. The current configuration at the northbound approach of one left, one through and one right turn lane should be changed to two left and one through-right turn lane. The one left and one through-right turn lane at the southbound approach should become one right, one left and one through lane. Signal timing adjustments are recommended.

***Intersection 12 - Route 6/Lexington Avenue***

The eastbound and westbound approaches at this intersection require geometric modifications. Both approaches need

**Figure 33. Study Intersections**

routes 202/35/6 bear mountain parkway  
 sustainable development study  
 study intersections



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a dedicated right turn lane.

***Intersection 16 – Lexington Ave/Strawberry Road***

The westbound approach of this 'T' intersection that currently operates with one lane needs to be changed to two lanes (one left and one right turn lane). Cortlandt and Yorktown officials will meet to discuss separating traffic with traffic barrels as a test.

***Intersection 17 – Route 202-35/Lexington Avenue***

Geometric changes are needed at the westbound, eastbound and southbound approaches. The east and southbound approaches currently have one lane and need a second lane to allow through and right-turning traffic to bypass the left-turners. The westbound approach needs another lane to accommodate left turns in the gas station. Signal timing changes are recommended.

The Plan recommends that this intersection be realigned on the south side to include left turning lanes from Route 202/35 to Lexington Avenue and the Hess Station. The entrance of the Hess Station at the intersection of Lexington Avenue should be converted to a two-way ingress/egress and all vehicles traveling west from the station should be required to exit through the signalized intersection. The access point to the east causes major traffic conflicts and safety issues and should be converted to a right turn only. As a result of the Sustainable Development Study, NYS DOT has set aside funding for this improvement and is currently completing design plans.

***Intersection 18 – Route 202-35 /Stoney Street***

The eastbound approach of this intersection requires the addition of an exclusive right-turn lane. Signal timing changes are recommended

***Intersection 21 – Route 202-35 /Mohansic Avenue***

Geometric changes are needed. Both the eastbound and westbound approaches will require a second through lane. Signal timing changes are recommended.

***Intersection 22B – Route 202-35/Taconic State Parkway NB***

Geometric changes for the eastbound and westbound approaches are needed. The eastbound approach will need a second left-turn lane and the westbound approach will require another through lane in addition to the existing one through-right turn lane. The northbound approach currently operates with a left-turn lane and a right-turn lane. Operations for this approach can be improved simply by removing the exclusiveness of the left turn lane and allowing through traffic to utilize that lane when left-turners are not present. Signal timing changes are recommended.

***Intersection 23 – Route 6/Strawberry Road***

The northbound approach will need a lane utilization modification to disallow left turns from the center through lane thereby providing an exclusive lane for through traffic. Signal timing will also need to be adjusted.

***Intersection 24 – Route 6/Barger Road***

The westbound approach needs a second left-turn lane and



the northbound approach needs the addition of an exclusive left turn lane. Signal timing and phasing changes are recommended.

## C. TRANSPORTATION SERVICES

### 1. Traffic Operations

As discussed above, the study examined existing operating conditions at 24 key intersections. The study found that acceptable conditions can be achieved at six intersections with:

- Signal timing adjustments at 4 intersections
- Installation of traffic signals at 2 intersections

In addition to addressing existing problems, the recommended improvements will create reserve capacity for future development, at the reduced levels recommended as part of this Plan's land use recommendations. However, it is important to note that the traffic operation improvements will not provide enough time-savings for drivers to change their routes. Therefore, areas such as the Oregon/Red Mill/Strawberry Roads corridor will continue to experience high peak hour traffic volume levels.

**a. Signal Timing Changes.** Four intersections could be improved in the near term by simple changes in the signal timing. A proposed signal timing plan has been prepared and submitted to the state or local agency responsible for the signal. These agencies are identified in parenthesis.

The intersections are:

- Intersection 4 – South St/Washington St (City of Peekskill)
- Intersection 9 – Route 202-35/Bear Mountain Parkway (NYS DOT)
- Intersection 10 – Route 6/Locust Ave (NYS DOT)
- Intersection 14 – Oregon Rd/Lockwood Rd/Old Oregon Rd (Town of Cortlandt)

While Intersection 14 does not require geometric improvements to increase the Level of Service, it is recommended that a geometric improvement plan be developed to enhance motorist and pedestrian safety.

Further investigation of the traffic signals in downtown Peekskill found that adjusting and synchronizing the signals from Decatur Avenue to Broad Street would have a significant impact on reducing traffic congestion. This multiple-intersection approach should be defined as a single project and be pursued for funding and implementation.

**b. New Signals.** New traffic signals are proposed for two intersections:

- Intersection 8 - Route 202-35/Lafayette Ave
- Intersection 20 - Route 202-35/Pine Grove Court

### 2. Access and Driveway Retrofits

The location, configuration and design of driveways and de-



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velopment roads in a number of areas, together with the proliferation of signs, creates confusion for drivers in accessing businesses and unsafe and inefficient driving conditions in heavily developed areas. Access improvements in developed areas should be pursued as one means of improving traffic safety and flow.

In general, changes to existing access cannot be required except where: (i) there is an explicit safety/accident problem related to a specific driveway or (ii) or where there is a change of use or an increase of use at a specific property and a conditional permit is required from a state or local government. In the first case, the driveway can be reconfigured at the cost of the entity having jurisdiction over the road. In the second case, the driveway can be reconfigured at the cost of the business. Local governments should evaluate opportunities to improve access as changes of use or redevelopment occurs.

There are two conditions where substantial improvements to access at multiple properties are possible and should be pursued in the future. First, changes should be incorporated when major road projects are anticipated. Second, changes should be implemented when major developments are proposed that directly affect abutting properties. Both occasions present opportunities to negotiate desirable access changes with properties affected by the project, as well as to reduce the cost of access retrofits by linking them to other sources of financing and scale efficiencies.

### 3. Transit

The Plan does not recommend the immediate establishment of new bus routes nor an increase in transit service on exist-

ing routes. Stakeholders had suggested that new bus service be considered between the Route 202/35 and Route 6 corridors via Stoney Street in Yorktown. Currently, such service would not be financially viable.

An objective of the Sustainable Development Plan is to make the study area more suitable for transit services in the future.

The new hamlets envisioned in the Plan's land use recommendations will provide excellent opportunities for creating land use patterns and roadway designs that encourage transit use. For example, each of the hamlets should incorporate a park-and-ride facility that could be linked with jitney or bus service to/from the Metro-North Railroad stations in Peekskill and Cortlandt.

As of March 2004, Cortlandt is discussing the establishment of a jitney service with the developer of a proposed senior housing development on Route 6 near the Bear Mountain Parkway. This type of specialized service may have immediate potential in the study area.

To best accommodate transit service in the future, site developments and road projects along Route 6 and Route 202/35 should incorporate provisions that improve bus stop transit facilities. Transit design considerations should also include: minimum lane widths and corner radii, bus stop spacing and placement at intersections and turnout bays and bus shelters. Where feasible, transit accommodations should be provided within shopping centers and office parks. The Westchester County Department of Transportation publication, *Bus Ser-*

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*vice Guidelines for Westchester County Municipalities*, should be used as a reference guide when considering design requirements.

#### **4. Pedestrian and Bicycle Considerations**

By providing a continuous, safe network of sidewalks and bike lanes linking origins and destinations, walking and biking can become a preferred transportation choice on short trips. Both Peekskill and Cortlandt require sidewalks on an "as needed" basis through the development application review process. Yorktown requires sidewalks as part of new developments unless waived by the town agency approving the application. The towns and city should target the construction or improvement of sidewalks wherever possible, especially within hamlets and within reasonable walking distance of the hamlets.

Stakeholders and public workshop participants highlighted a number of bicycle and pedestrian facility improvements that they would like to see implemented. Other types of improvements, such as the installation of bicycle racks, were suggested. All planning for transportation projects, as well as the review of development applications, should consider and incorporate the recommendations of the *Mid-Hudson South Region Bicycle and Pedestrian Master Plan* (2001).

#### **5. Truck Routing**

As a result of this study, NYS DOT initiated a Truck Classification Study in the study area to examine the feasibility of

allowing trucks on the Bear Mountain Parkway. The study results will be used to determine which, if any, classes of trucks will be allowed to operate on the Parkway during day-time hours. (Trucks of all classes are currently allowed to operate on the Parkway during evening hours.) The recommendations of the truck classification study will be considered by the Steering/Implementation Committee and be incorporated as appropriate in this Plan.

#### **D. LAND USE MANAGEMENT**

Participants in the study from the three communities concurred that land use policies and implementing regulations are important tools to manage transportation demand. If the study area was to continue to develop to build-out under current regulations, traffic congestion would worsen. The type of development that would continue to occur would emphasize auto-oriented and segregated land uses. Commercial development along highways could exacerbate traffic congestion without effective access management.

The land use pattern recommended by this Plan emphasizes mixed use development in downtown Peekskill and reshaping into hamlet centers existing and new development along Route 6 in Cortlandt and in the Bear Mountain Parkway Triangle along Route 202/35 in Yorktown.

Since hamlets typically integrate different land uses, they have a variety of advantages. These include the capturing of trips that would otherwise end up on external roads as well as providing options for walking, biking and possibly even

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transit services. Hamlets may also create a sense of community and neighborhood.

Some areas distant from the proposed and existing hamlets should be considered for a lowering of maximum permitted development density.

Several tools can be utilized to achieve the land use management recommendations of the Plan.

## 1. Comprehensive Plans

As the sustainable development study proceeded, the towns of Cortlandt and Yorktown began work on updating the local comprehensive plans. As town-wide plans, each plan incorporates land areas larger than the sustainable development plan. However, the process followed in each town has been sensitive to the SDS work effort and has included consideration of the SDS products at each step in the update process. Each town released a draft plan in winter 2003-2004.

The final draft of the Cortlandt Comprehensive Plan (February 2004) seeks to reduce development outside of the target areas identified by this Plan by placing a heavier emphasis on protection of wetland buffers, critical environmental areas and other environmentally sensitive areas. Furthermore, the draft comprehensive plan address the potential for higher density in the Route 6 corridor through Planned Village Development. Even though the "reduce and transfer" option discussed in **Chapter IV** will likely not be implemented, in the opinion of the Town's comprehensive

plan consultants, the modeling results for the transportation improvement bundles will not change significantly relative to vehicle hours and miles saved.

As of March 2004, a generic environmental impact statement was being prepared for the draft Yorktown Comprehensive Plan (2003). The draft Plan incorporates the land use and transportation recommendations of this Plan.

The two draft town plans are consistent with the consensus objectives set forth in this Plan as well as with the following more specific objectives outlined by the Stakeholders Committee and participants in public workshops:

### Neighborhood Design

- Establish neighborhood centers that are distinct pedestrian and transit oriented communities that would include a mix of uses and civic facilities.
- Reconfigure linear shopping around public squares and plazas.
- Establish architectural guidelines that balance architectural variety with continuity and promote aesthetically pleasing hamlets.

### Transportation

- Establish street patterns that promote efficient and continuous circulation and maximize the options to connect east/west routes with north/south routes.
- Establish shared parking and driveway arrangements.
- Establish an interconnected pedestrian and bikeway sys-

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tem for transportation and recreation purposes.

### **Environment**

- Protect lands that contain wetlands and steep slopes.
- Concentrate higher density development in areas with minimal environmental constraints.
- Ensure that new development and roads minimize impacts.

In terms of land use, this Plan and the draft local comprehensive plans recommend the following:

**Cortlandt.** The eastern portion of Route 6 and the area along Lexington Avenue north of Route 6 may be appropriate locations for the Town's Planned Village District, which is consistent with the hamlet concept presented in this Plan.

**Yorktown.** The new hamlet would evolve as the Bear Mountain Triangle area is developed. Plus, as current uses become obsolete or as sites are redeveloped, a hamlet pattern and style of development will be encouraged and a strip development pattern will be avoided. The potential development of parcels larger than five acres located south of East Main Street in the target area may be considered for a reduction of 75%.

## **2. Internal Subdivision Roads**

As vacant parcels are proposed for subdivision or site plan approval, the municipalities of Peekskill, Cortlandt and Yorktown should seek to provide new connections between ex-

isting roads. Road connections will help relieve congestion at major intersections by diffusing traffic. New connections will also provide choices for motorists and allow them to avoid already congested intersections. An area where new connections from an existing subdivision might be possible is bounded by Lexington Avenue, Route 6, Armstrong Road and Red Mill Road in Cortlandt. Opportunities should also be sought to provide road connections between adjacent properties in new and proposed developments.

The creation of new official maps can be used to help achieve this recommendation. The maps can be used by local municipalities to lay out new streets or to indicate widening or closing of existing streets. The three communities should consider preparing and adopting a collaborative official map, taking into account the anticipated location, timing and type of growth as identified in their comprehensive plans.

## **3. Access Management**

The Plan recommends that access management plans be prepared and implemented for three roadway segments: for Route 6 through the Mohegan Lake hamlet, for Route 202/35 between the Bear Mountain Parkway end point in Cortlandt and the Taconic State Parkway in Yorktown and for Route 6 between the Bear Mountain Parkway and Lexington Avenue.

Access management is a comprehensive review of property access (for example, driveways, property interconnections and sidewalks), traffic safety, road capacity and vehicle

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speed. Implementation of an access management plan can improve traffic operations, reduce traffic delay, increase safety and improve community character.

A presentation should be prepared to educate municipal boards on the importance of access management as a consideration in the site design of new development.

The plans for the three corridors should incorporate specific design requirements to limit curb cuts, require shared driveway and parking arrangements, provide for secondary or service road access and accommodate pedestrians, bicyclists and transit service. Development of access management guidelines should follow established good design practices. The *Best Practices in Arterial Management* is one useful reference tool published by the NYS DOT.

As a vital hamlet with a wide mix of land uses, new development pressures and a large residential population, Mohegan Lake is an ideal area to be considered for access management. A study should result in findings and recommendations that can be used by the local planning board in the review of development applications and by other agencies in the design of road, transit, bicycle and community improvement projects.

Along Route 202/35, the access management plan should be coordinated with the recommendation for creation of a center turn lane or median/left turn bay. The installation of a continuous left turn lane or several left turn bays for west-bound vehicles to access the commercial development along

the south side of the corridor would provide a means for left turning vehicles to get out of the traffic stream. This will eliminate the long queues that now result behind vehicles making left turns.

Along Route 6 in Cortlandt, the Town has encouraged shared parking or driveway access arrangements under its Planned Village Development provisions. Cortlandt has also required a shared access through a parking lot as part of its approval for a commercial site plan along Route 6. The sharing of driveways between the Wendy's and Mobil gas station on Route 6 adjacent to the entrance to Cortlandt Town Center is one such planning example. Another example is the new Circuit City and Shop Rite shared parking lot configuration. An access management for this corridor could serve to advance Cortlandt's interest in creating an attractive and functional "Cortlandt Boulevard," as previously discussed in this Plan.

This Plan encourages all three communities to continue to give more consideration to access management tools during the site plan review process.

Implementation of access management techniques can be achieved through amendment of subdivision and site plan regulations, application of requirements through subdivision and site plan review and requiring mitigation by developers as part of planned new or redevelopment projects.

#### **4. Zoning Tools**

**a. Planned Village Development District.** The Town of



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Cortlandt has Planned Village Development provisions in its zoning code to encourage the development of mixed-use villages and communities. The minimum land area is 25 acres. Creation of a Planned Village Development requires the issuance of a Special Permit by the Town Board after the appropriate reviews by the Planning Board. As of March 2004, the Town was considering reducing the 25-acre minimum requirement and reducing the permitted density of housing units so as to encourage a more cohesive planned development area for the Route 6 corridor.

**b. Setback/Height Requirements.** The Plan recommends the use of a maximum setback standards, especially in the hamlets. Cortlandt and Yorktown have minimum setback requirements in all zoning districts with no maximum setback. When buildings line up along a street, they create a defined edge to the public space, which is typical in traditional hamlet design. The building alignment with the street edge combines with the sidewalks and the trees to create an attractive look. Reduced or no front or side yard setbacks also encourage pedestrian traffic since it is easier and safer to enter the commercial facility without crossing a parking lot.

The Plan recommends that consideration be given to establishing a minimum building height standard in the hamlets. Each of the communities has maximum height requirements in their commercial zone but none has a minimum height requirement. Buildings that have a minimum height of two stories could best accommodate mixed uses with, for example, stores on the ground level and offices or apartments above.

**c. Design Guidelines.** The Plan recommends the development and use of design guidelines for new uses along Route 6 and Route 202/35 as well as within the hamlets. Design guidelines provide criteria for a design review process. The emphasis is not on requirements, but on guidance. Design guidelines serve to document standards for architectural design, sign placement, building materials, development patterns, historic preservation, site design and streetscape design. The draft comprehensive plans in both Cortlandt and Yorktown place strong emphasis on design.

## **E. REGIONAL COORDINATION**

### **1. Implementation Committee**

Implementation of the Sustainable Development Plan should be overseen by an Implementation Committee. This committee should have the same membership as the study's Steering Committee. The committee will represent the ongoing partnership of the three municipalities, Westchester County, NYS DOT and NYMTC. The committee will track, evaluate and implement the recommendations of the Plan and encourage regional consideration of significant development proposals.

It is recommended that the Stakeholders Committee continue to meet on a periodic basis.



## 2. Operations and Simulation Model

As part of the implementation phase of the Sustainable Development Plan, a traffic operations and simulation model is being developed to assist in the refinement of the short-term action projects, the implementation of the recommended intersection reconstruction proposals and the planning for the recommended major road construction concepts. The model will produce animations of traffic flow on the transportation system. It includes more than 100 intersections, all state and county roads, downtown Peekskill and major connecting local roadways in the study area.

The model will provide municipal officials, as well as the public, with a visual tool to observe the operations of the transportation network. The model will also allow for the direct visualization of land use decisions and the effect of those decisions on the transportation system.

Scenarios that are being simulated include:

- Existing conditions
- Short term action project improvements
- Mid-term improvements
- Long-term improvements
- Access management scenarios
- Design alternatives at bottlenecks

In another valuable role, the model will be used by the three municipalities as a tool in the review of traffic impact statements prepared for development proposals. In conjunction with the travel demand model, the simulations will permit testing of the impacts on traffic flow as well as air quality parameters. Use of the model will ensure that potential



*Example of visual image created by simulation model showing vehicles on roadways.*

traffic impacts are being considered at both the local and full study area level, as appropriate. In addition, having one model in use in all three municipalities will permit consistency in reviews of major development proposals.

A protocol for use, management and maintenance of the model will need to be developed and included as part of an intermunicipal agreement.

## 3. Financing Transportation Improvements

This Plan proposes or anticipates a variety of improvements to existing state and local roads, the construction of new links between existing roads and the construction of new roads. The financial requirements for these improvements will be significant. It is likely that financing for these improvements will have to be drawn from traditional federal, state and local financing resources and from non-traditional sources.

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**a. State and Federal Sources.** The transportation improvements recommended in this Plan may be eligible for federal funding when implemented through the metropolitan transportation planning process as established under federal transportation legislation. As a precondition for receipt of federal transportation funding, this federal legislation requires a coordinated planning process for metropolitan areas. This planning process is the responsibility of the *metropolitan planning organization* (MPO). In the New York City metropolitan region, the MPO is the New York Metropolitan Transportation Council (NYMTC).

NYMTC's planning process is built around three required planning programs: the Regional Transportation Plan (RTP), the Transportation Improvement Program (TIP) and the Unified Planning Work Program (UPWP). The RTP and the TIP are focused on identifying necessary transportation improvements in NYMTC's region and defining projects and services that are to receive federal funding. The UPWP is required to access federal planning funds necessary to continue the planning process and produce both the RTP and the TIP. The UPWP finances other planning activities as well as specific studies undertaken to identify potential transportation improvements. This sustainable development study is an example of a planning study funded by the UPWP.

The recommended transportation improvements must first be included in the RTP and then be programmed as recommended transportation improvements in the TIP. Once the recommended transportation improvements appear in the TIP, they have been allocated federal funds. As a result of the sustainable development study process, several projects

have already been added to the TIP. A more detailed project-level environmental assessment begins after a project is on the TIP, followed by project planning and design.

Other transportation improvements recommended in the Sustainable Development Plan can follow this federal funding process or can be implemented using Westchester County or New York State funds. **Appendix D** identifies projects that are listed on the 2004-2006 TIP for the study area.

Because this Plan was the result of a partnership of governments at four levels, the opportunities for the study area to qualify for state and federal funding and financing of the Plan's recommendations are greatly enhanced.

**b. Non-Traditional Resources.** There are a variety of non-traditional resources that can be used to meet the financing requirements for future road improvements. Three of the most common of these, which have been applied in the State of New York, are discussed below.

#### DEVELOPER MITIGATION

Major developments have a substantial and direct impact on transportation safety and efficiency and are normally required to mitigate the transportation impacts of their development on "the existing transportation system on opening day", at their cost. The most common forms of mitigation are traffic lights, turn lanes, access roads, and driveway designs; and are normally required at specific locations where a traffic impact study demonstrates safety problems or a decrease in the LOS along the roadway.





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This practice should be continued. Additionally the communities involved should consider augmenting the practice to (i) capture transportation impacts at locations away from the site and (ii) capture the full costs of public infrastructure and, possibly, services impacted by the development. (For example, a development constructing a road to multiple properties which is eventually transferred to local jurisdiction effectively transfers the cost of cleaning, snow removal, striping, maintenance, rehabilitation and reconstruction to the community.)

#### CUMULATIVE DEVELOPMENT MITIGATION

Small, medium and large developments have transportation impacts which are not mitigated because they are not directly and totally attributable to specific individual developments. Over time the cumulative impacts of these many developments are manifest, as shown by the transportation problems that are, in part, the subject of this Plan.

A number of communities in New York have addressed the problem of cumulative development by imposing a system of mitigation fees. The approach in these communities has been relatively similar, as follows: (i) identify and define an area which is the target of cumulative development, often of mixed use development; (ii) evaluate the potential for development and define development limits and rezone to conform to these limitations; (iii) prepare a Generic Environmental Assessment (GEIS) to identify the impacts of this development and specifically the impacts on public infrastructure including transportation; (iv) identify the mitigation improvements that would be required to minimize / reduce these impacts; and, finally, (v) allocate the costs of these improvements to future development(s) based on their proportional contribution to the need for each improvement. Most communities impose the mitigation fee as a one day

fee although it can also be levied on an annual basis as part of the property tax bill.

#### TRANSPORTATION IMPROVEMENT DISTRICT

Traditional transportation financing sources are the dominant source of financing for transportation improvements that stem from past / existing development. A number of communities have, however, financed such improvements through fees imposed within a "special improvement district". There are a variety of these including "sidewalk improvement districts", "business improvement districts" and others, but one of the most common is the "Transportation Improvement District". In New York State, state legislative approval is necessary for the formation of a TID. In addition, the state comptroller must approve projects and fees. A local municipality can initiate an ordinance to establish a TID.

### 4. Intermunicipal Agreements

This Plan recommends the adoption of an intermunicipal agreement (IMA) by the local municipalities as one means to pursue implementation of the recommendations contained in this Plan. The IMA can also be used to foster cooperative planning across municipal boundaries. For example, the communities could develop an intermunicipal review procedure as part of the design guidelines and access management strategies along Route 6 and Routes 202/35. It may be in the form of a joint advisory committee that would be responsible for the review of proposals in each corridor. The final decision would rest with the governing authority where the project is proposed.



for all other cases, it can also be based on an annual basis or that of the property tax bill.

**TRANSPORTATION IMPROVEMENT DISTRICTS**  
Traditional transportation financing sources are the local, state, and federal sources of financing for transportation improvements. A number of other financing sources have emerged in recent years, including the Transportation Improvement District (TID). In New York State, a TID is established by local law and is authorized to issue bonds to finance transportation projects and facilities. A TID is established by local law and is authorized to issue bonds to finance transportation projects and facilities.

#### 4. International Agreements

The New York State Department of Transportation (DOT) is responsible for the administration of the Transportation Improvement Districts (TIDs). The DOT is also responsible for the administration of the Transportation Improvement Districts (TIDs). The DOT is also responsible for the administration of the Transportation Improvement Districts (TIDs). The DOT is also responsible for the administration of the Transportation Improvement Districts (TIDs).

The method shall be considered. Additionally, the developer shall provide for the construction and reconstruction of any necessary transportation facilities and reconstruction of the roadway. The developer shall provide for the construction and reconstruction of any necessary transportation facilities and reconstruction of the roadway.

#### CUMULATIVE DEVELOPMENT MITIGATION

Small, medium and large developments have cumulative impacts which are not mitigated because they are not considered individually. Cumulative impacts of small developments are not considered individually because they are not considered individually. Cumulative impacts of small developments are not considered individually because they are not considered individually.

A number of cumulative impacts of small developments are not considered individually because they are not considered individually. Cumulative impacts of small developments are not considered individually because they are not considered individually. Cumulative impacts of small developments are not considered individually because they are not considered individually.