Acknowledgements

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Special thanks to all the residents, business leaders, the University community, state, regional and local government officials and the many others who participated in the public workshops and meetings, submitted comments on preliminary drafts of this report and shared information throughout the planning process.
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Executive Summary

The Capital District Transportation Committee (CDTC) retained Nelson\Nygaard Consulting Associates as part of a team of consultants to conduct the Harriman Campus – University at Albany Transportation Linkage Study. The project was funded through CDTC’s Community and Transportation Linkage Planning Program and was a joint effort with the Harriman Research and Technology Development Corporation (HRTDC).

The study area included three major campuses: the Harriman Research and Technology Park (formerly the Harriman State Office Campus), the University at Albany (the Uptown Campus and the College of Nanoscale Science and Engineering, formerly Albany Nanotech) and the Patroon Creek Corporate Park. It also included the neighborhoods adjacent to the campuses and considered the wider region.

The objective of this project was to develop a vision for an integrated, multi-modal transportation system over a 10 year period and to identify strategies and projects that would help facilitate connections and linkages between the sites in the study area. The vision and strategies were intended to support natural synergy across campuses and also to ensure that transportation and land use projects enhance the quality of life for everyone living and working in the area.

Research Process

This study was a multi-team and multi-faceted effort. CDTC and HRTDC managed the study, working with the Study Advisory Committee and a group of stakeholders representing the diverse interests in the study area. Working together this group created a series of planning principles that were used to guide the study:

- Improve inter-campus connections, especially for cycling and walking. Connect key points on the campuses, capitalize on existing routes, and develop new routes.
- Improve the interface with surrounding neighborhoods, as requested by local residents.
- Improve linkages within the City of Albany and to the greater region, especially via transit. Increase on-campus densities and massing to support this objective.
- Reduce the number of single-occupancy vehicle trips and the parking supply needed to serve those trips via active transportation demand and parking management policies and programs.
- Maintain access to the regional roadway network.
- Address pedestrian safety and accessibility issues on a site-specific level.
- Coordinate transportation improvements with land use improvements proposed in the Harriman Campus Master Development Plan and other local land use policies.
With these principles in mind, the Study Team conducted extensive field research, including site visits, examination of the motorized, non-motorized and transit networks and evaluated how these systems served area employees, students and residents. Two public work sessions were also held, one in the early stages of the project to collect ideas and another towards the end to review project recommendations.

**Short Term Strategies**

Among the key challenges facing the study area is the lack of connections between the individual campuses, and the impact this has for meeting both study and regional objectives related to managing the demand for transportation. As the Project Team examined the area and considered potential solutions, the emphasis was on providing multimodal connections that included pedestrian, bicycle and transit needs as well as providing transportation resources that are integrated with existing and proposed land uses. The recommendations, therefore, are aimed at creating opportunities for connections that provide safe and attractive facilities for all travelers and build on existing infrastructure to create an attractive, accessible and functional place to live, work, and visit.

The Study Team identified a series of short term strategies to support the development of a multimodal transportation network. While strategies are listed as independent recommendations, projects and programs are mutually-dependent, as each proposed project and program is realized, that project will strengthen existing efforts and likewise be enhanced with the implementation of subsequent projects. These strategies include:

- **Establish an Area Transportation Management Association (TMA)** – The Study Team recommends establishing a TMA to guide the prioritization, funding and implementation of many of the projects and programs developed by this Study. The TMA would be supported and funded by representatives from each of the four major institutions. This group, together with representation from local neighborhood groups, would serve as a steering committee for development of the study area transportation network. (See implementation section on page 8).

- **Create a Transportation Spine** – Several sources identified the idea of a transportation spine as a strategy to link the campuses. While specifics are still under development, the concept is to create a multimodal facility for transit and non-motorized users that will provide connections from Harriman through to the Nanotech campus and potentially through to Crossgates Mall and downtown Albany. A potential alignment for the transportation spine is shown in Figure ES-1. In the immediate-term, it is critical to reserve right-of-way for this facility on the Harriman and Nanotech campuses.
**Figure ES-1 Potential Transportation Spine Alignment**

- **Enhance Existing Transit Services** – In support of the Capital District Transportation Authority’s (CDTA) objectives, transitioning toward trunk routes on Washington and Western Avenues would allow more frequent and efficient transit service in the area. This will require coordination with the individual campuses to ensure that shuttle services are developed (HRTDC and Patroon Creek) or modified (University at Albany) to integrate with the improved trunk route services.

- **Encourage Area Institutions to Develop Transportation Demand Management Programs** – Transportation Demand Management (TDM) refers to incentive programs that support the use of transit, biking and walking, typically by influencing the price and supply of travel options. While some TDM programs are already available at some of the area institutions, these programs (such as parking management programs) could be strengthened across the Study Area, especially with guidance and support from a Transportation Management Association (see implementation on page 8).

- **Enhance Non-Motorized Facilities on Fuller Road** – Fuller Road is the main north-south roadway connecting Stuyvesant Plaza with the University at Albany and the Nanotech campus. Conceptual ideas that improve the multimodal functions without decreasing roadway capacity include:
  - Converting the two-way left turn lane into a series of raised medians and shorter left turn pockets, allowing the medians to become refuge islands for pedestrians;
- Constructing a continuous, concrete sidewalk along the west side and striping crosswalks as necessary, coordinated with the median;
- Narrowing the roadway four feet at the cemetery and realigning it to provide an 8-foot sidewalk on the west side; and,
- Examining the potential to stripe a curb-side bicycle lane or designed shoulder area (by painting the pavement, adding pavement markings, etc.) through much of the corridor.

- **Improve Wayfinding** – Once drivers reach the Harriman Ring Roads from either I-90 and/or NY 85, finding specific buildings or facilities is confusing. In the short-term, developing a series of color-coded or numbered area signs, scaled appropriately for motorized (traveling at the posted speed limit) and non-motorized users that direct travelers to subsets of the campus is recommended.

- **Develop Access Management Programs** – Managing roadway access by limiting the number of driveways or the allowed curb cuts onto a roadway is an effective way to maintain road speeds and free flow traffic conditions. Reducing turnaround movements it also improves safety for motorists, and for bicyclists and pedestrians.

- **Consider Environmental Justice** – The Study Team crafted recommendations to be sensitive to all adjacent residences and other surrounding land uses. Special attention will need to be paid to households in the areas of special concern identified as the planning concepts evolve into specific projects.

- **Create Bike Lanes on Harriman Ring Road** – The Study Team proposes bicycle lanes on both of the Harriman campus ring roads as short term projects. It is suggested that the inside lane of each road be converted to a bike lane, as these have fewer conflicts with high-speed on- and off-ramps.

- **Remove/Close Several Turnarounds on Ring Road** – In order to limit weaving and improve wayfinding on the Harriman ring roads, it is proposed that seven or eight of the turnarounds be closed to vehicular traffic. The turnarounds would remain open for bicycles and pedestrians.

- **Provide Pedestrian Facilities at Washington Avenue Bridge** – The existing bridges over Washington Avenue between the Harriman and Patroon campuses present an opportunity to improve linkages between the two campuses. It is suggested that the guard rails on each of these bridges be relocated so they do not block pedestrian access. The sidewalks would be extended to the ring roads and crosswalks and refuge islands installed.

- **Create a Non-Motorized Access at Brevator and Belvedere** – In the short term, access by pedestrians and cyclists to the Harriman Campus at Belvedere needs to be improved. These concepts include:
  - Bicycle lanes on the ring roads to provide a better bicycle facility as well as the opportunity for refuge islands at crosswalks.
The sidewalks on the bridge across Route 85 would be temporarily designated as shared bicycle/pedestrian facilities and signed accordingly.

Excess roadway can be removed where the exit road diverges from the ring road.

The merge between the Route 85 off-ramp and the ring road can be redesigned to moderate speeds on the ring road and provide a shorter crossing distance.

Refuge islands can be added to the current striped median on Brevator Street. Marked crosswalks should also be added.

Curb extensions can be added in the parking lane at the corners.

Extend sidewalks from Belvedere Avenue to Brevator Street.

**Address peak hour congestion at Harriman Outer Loop and I-90 Exit 3** – There is a yield sign at the bottom of the ramp that carries traffic from the Harriman Campus Outer Loop Road to Exit 3 of I-90. The analysis suggests that the capacity problem on the ramp from the Outer Loop Road to the “Yield” sign would likely be better solved through demand side solutions, such as Transportation Demand Management (TDM) strategies, improved transit connections, and increased non-motorized facilities.

**Improve Vehicular Merge at Harriman Outer Loop, NY Route 85 South off-ramp and Washington Avenue westbound off-ramp** – There are concerns regarding speed and increased merging traffic where the off ramps from Route 85 South and Washington Avenue westbound merges with the Harriman Campus Outer Loop Road. Short-term options include re-striping to narrow the lane width on the exit ramps from NY 85 South and from Washington Avenue westbound in order to slow traffic and better organize the merges.

**Calm Traffic in the Northwest Quadrant of University Drive** – Potential solutions to the conflict between traffic on University Drive and the pedestrians who must cross University Drive on their way to/from the center of campus involve traffic calming to reduce the speed of traffic on this segment of University Drive in conjunction with enhanced pedestrian facilities to create highly visible pedestrian crossings.

**Improve Non-Motorized Facilities along University Drive** – Traffic calming will be supported and achieved, in part, by building on efforts outlined in the UAlbany Purple Path Study, dated fall 2005, which recommends a multi-use path along the interior of University Drive.
Long Term Strategies

In the longer term, this study identifies a series of projects that will help transition the road network from its inward focus to one that re-directs the Harriman campus. The proposed network will create external linkages not only with the regional roadway network, but also with nearby campuses, surrounding neighborhoods and communities, and other regional facilities, such as the proposed Albany Convention Center, that are seeking improved connections. Similar to the short term recommendations, long term strategies are mutually supportive and best implemented in concert. Each project will strengthen and enhance the effectiveness not only of earlier projects as well as short-term projects and programs.

- Complete Transportation Spine and Establish BRT Service – In conjunction with development of a transportation spine between the campuses, planning for BRT service should likewise commence. The BRT service will provide high speed, high quality transit service between downtown Albany and each campus in the Study Area. It should be designed as an integral service in the wider CDTA service network and link to other regional resources such as the proposed Albany Convention Center. This high level of transit service between job centers at the campuses and downtown, and residential neighborhoods in between, will make living and working in the City of Albany a more attractive choice in the future.

- Improve Wayfinding – Once the Master Plan for the Harriman campus is finalized, work can begin to create a strong logo, color and brand for the multi-campus area, establishing an identity for area wide signage and wayfinding.

- Develop Brevator as a “Mini Boulevard” with Non-Motorized Facilities – A median in the center of Brevator Street is recommended between Western and Washington Avenues. Bicycle lanes would be placed between the travel and parking lanes. Crosswalks would be striped at intersections. In addition to more effectively using the existing roadway width and helping to calm traffic, the proposed boulevard would offer an attractive, planted buffer between the neighborhood and Route 85. Conceptual roadway dimensions for a typical cross-section are highlighted in Figure ES-2.
Figure ES-2  Brevator Street with Median and Bicycle Lanes

- **Remove Portions of the Harriman Ring Road** – It is proposed to virtually eliminate the ring roads (and all their attendant problems), reuse the roadways as possible, and reorganize the connections to major arterials. As major changes to portions of the Harriman Ring Road undergo detailed investigation, traffic volumes will need to be re-examined to determine how existing and future volumes will be accommodated on the proposed new street network.

- **Use Roundabouts to “Anchor” Harriman Campus** – Preliminary analysis suggests that the use of multiple, one lane roundabouts would lower vehicle speeds at and between the roundabouts making the roads safer and easier for pedestrian and bike crossings throughout the campus. This concept would also be expected to reduce the likelihood of cut-through traffic and enhance the appearance of the campus. In general, roundabouts also reduce delay while providing a better and more attractive driving experience.

- **Join Harriman and UAlbany Ring Roads** – The idea of connecting the Harriman and UAlbany ring roads at a common north/south boulevard has been suggested to reduce redundancy in the road network and to better connect the two campuses. This type of connection might also provide the University with needed land for expansion. If pursued, the design of this
connection must ensure that the remainder of University Drive does not become attractive to pass-through traffic.

- **Re-develop Washington Avenue as an At-Grade Facility** – In the long term, consideration should be given to raising Washington Avenue, creating an at-grade boulevard between the Harriman Campus and the Patroon Creek Corporate Park. An at-grade facility would facilitate connections between the two campuses and would provide additional land for development.

## Implementation

Implementation of the proposed strategies and programs will be challenging. While three of the four sites are affiliated with the State of New York, individual sites are responding to market conditions and circumstances and each site makes its own decisions about how and when to grow or change. As a result, projects at some campuses will move faster than others and the relative importance of certain strategies proposed in this report will vary at each campus and over time.

In addition, as discussed, the proposed recommendations will have the greatest success when implemented as a complete package, for example, transit systems function best when supported by TDM programs and coordinated with pedestrian and bicycle infrastructure. Successful implementation, therefore, needs to be coordinated and comprehensive.

Because the precise timing of events in this dynamic area is difficult to predict, establishing a mechanism for the ongoing coordination of transportation decisions and investments is the most important, highest priority implementation action recommended in this study. Building from the dialogue and cooperation already established through this process, the first task will be to formalize a structure for advancing the many strategies and programs recommended in this report.

- **Establish Area Transportation Management Association (TMA)** – The presence in this area of four major institutions, as well as significant interest from state, regional, and local governments, suggests that this type of organizational structure could have considerable financial and technical support. CDTA and CDTC may be able to allocate seed money to the TMA with federal funds from the Congestion Mitigation and Air Quality (CMAQ) Improvement Program. A TMA has considerable potential for success in the study area because of the close proximity of the work sites, the increasing emphasis on promoting multi-modal travel, and the limited parking supply and other transportation demand management programs already in place at the University at Albany.

- **Priority Projects** – All the key recommendations from this study have been prioritized in Figure ES-3. Short-term actions should be initiated within the next five years. Longer-term actions should be initiated within 10 years. Primary responsibility for each project is assigned to one or more entities; however all
of these initiatives should be shared and reviewed through the TMA as they move forward to ensure coordination. An order-of-magnitude cost category (low, medium, or high) for each project is also provided.

- **Funding and Financing** – In addition to the various public sources of funding available for transportation infrastructure, there are other potential sources of revenue that should be considered given the magnitude of improvements that will ultimately take place as the Harriman Campus redevelops and Nanotech, UAlbany and Patroon Creek build out. Public-private partnerships should be pursued whenever feasible to leverage public funding sources to the greatest degree possible.
Figure ES-3 Implementation of Proposed Strategies

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Source: Nelson Nygaard Consulting Associates/The Chazen Companies
Chapter 1. Introduction

Overview

The Capital District Transportation Committee (CDTC) retained Nelson\Nygaard as part of a consortium of consultants to conduct the Harriman Campus – University at Albany Transportation Linkage Study. The objective of this project was to develop a vision for an integrated, multi-modal transportation system over a 10 year period and to identify implementation strategies for the suggested improvements. The area is slated for extensive improvements and on-going expansion projects during the next several years, primarily at four key locations:

- Harriman Research and Technology Park, a 330 acre site that is being transformed from a State office campus to a world-class innovation community that creates a live, work, and play environment. Site development is being managed by the Harriman Research and Technology Development Corporation (HRTDC).

- University at Albany (UAlbany), a key research institution in the State University of New York system with over 12,000 undergraduate, 5,000 graduate student and 3,500 employees. It is comprised of several campuses, including two within the Study Area:
  - The UAlbany Uptown Campus, the main UAlbany campus with most of the University’s academic, research, performing arts, athletic and recreation facilities.
  - The College of Nanoscale Science and Engineering (“NanoTech”) a teaching and research facility developing adjacent to the UAlbany campus. Plans for the site include enough space to support 2,000 researchers by the end of 2008 and up to 750,000 square feet of classrooms and facilities in the long term.

- Patroon Creek Corporate Park, an office park built adjacent to the State office complex. The office park’s tenants currently include the SEFCU federal credit union, the Capital District Physicians Health Plan (CDPHP) and medical divisions of the Albany Medical College. Developments at the office park include new tenants for 2007 and construction of another building, which is currently underway.

While each campus represents an independent facility, their proximity to each other is intentional. The campuses share many research and business objectives and will likely share future staff and resources as well. The neighborhoods and communities surrounding these sites are also an essential component of this project; they are composed of residents and/or employees who share a common community with the campuses, thus giving them a stake in area development. Physical connections and
linkages between these sites, balanced with neighborhood quality of life goals, will support and enhance the campus and community connections.

This linkage study is grounded in the CDTC’s long range transportation plan, titled “New Visions Transportation Plan.” The New Visions Plan places a clear emphasis on using transportation investments to enhance the region’s quality of life through such actions as coordinating land use and transportation planning, managing congestion through transportation demand management, supporting alternative modes and improving the performance of the existing transportation system. This linkage study is further supported by the Center for Economic Growth, which seeks to encourage and support the emergence of the Capital Region as a leading regional and national center of technical research and business development activity.

The objective of this study, therefore, is to identify strategies and projects that will help facilitate connections and linkages between these sites, both to support natural synergy across campuses and also to ensure transportation and land use projects enhance the quality of life for everyone living and working in the area. As the Study Advisory Committee and Study Team considered and debated different alternatives, key project goals were agreed upon to guide the project. These goals included reducing reliance on single occupancy vehicle use, improving non-motorized connections, coordinating transportation and land use projects and enhancing the area’s quality of life. These goals are reflected in the project vision statement and planning principles developed by the Study Advisory Committee at its first meeting (see Figure 1-1 Planning Principles Map).

**Vision Statement**

The proximity of the Harriman State Office Campus, the University at Albany’s Uptown Campus, the NanoTech Campus and the Patroon Creek Corporate Park provides unique opportunities to create a cohesive community of campuses, facilitate connections between the campuses, and link them to the surrounding communities and regional resources – in effect, a blurring of the campus edges. Given the negative impacts of single-occupancy vehicle use on traffic, parking and the environment, this project seeks to grow the transit, bicycle and walking mode share for employees, students, residents and visitors. By directing the anticipated growth on the campuses toward a more sustainable transportation system, it will be possible to improve quality of life and mitigate negative impacts in the area.

**Planning Principles**

- Improve inter-campus connections, especially for cycling and walking. Connect key points on the campuses, capitalize on existing routes, and develop new routes.
- Improve non-motorized connections with surrounding neighborhoods.
• Improve linkages within the City of Albany and to the greater region, especially via transit. Increase on-campus densities and massing to support this objective.

• Reduce number of single-occupancy vehicle trips and the parking supply needed to serve those trips via active transportation demand and parking management policies and programs.

• Maintain access to the regional roadway network.

• Address pedestrian safety and accessibility issues on a site-specific level.

• Coordinate transportation improvements with land use improvements proposed in the Harriman Campus Master Development Plan and other local land use policies.
Figure 1-1  Planning Principles

- Improve Non-Motorized Safety & Access
- Regional road access
- Links to Albany and region
- Links to surrounding neighborhoods
- Inter-campus connections
- Quarter mile walking radius

Source: City of Albany, University of Albany
Location: Albany, NY
Research Process

The research process for this study was a multi-team and multi-faceted effort. CDTC and HRTDC managed the study, working with the Study Advisory Committee and a group of stakeholders representing the diverse interests in the study area. A list of the Study Advisory Committee members is included as Appendix A. Combined, these entities oversaw work prepared by the consultant Study Team. The Team worked together throughout the process to identify issues, discuss and evaluate potential solutions and strategies, work with the community and ultimately determine the final plan. The Study Team was primarily responsible for reviewing existing studies, plans, and analysis conducted at individual campuses as well as for the study area. The consultants also conducted extensive field research, visiting the site area, examining the motorized, non-motorized and transit networks and evaluating how effectively these systems serve the employees, students and residents. The background research, field work and dialogue with CDTC and HRTDC staff formed the basis for much of the identified strategies and programs.

Once these strategies and programs were identified, CDTC, HRTDC and the Study Team organized a day-long community workshop, held in October 2006 on the Harriman campus. This workshop offered four sessions held throughout the day to allow members of the wider community an opportunity to learn about the project, participate in a walk of the Washington Avenue area where the Harriman Campus and Patroon Creek Corporate Park meet, discuss transportation issues by mode, consider critical locations and key problem areas, and provide input on potential solutions, strategies and programs. The Study Team used the workshops to identify new ideas and concerns, refine the proposed strategies and programs, and shape the draft final plan.

A second public meeting was held in March 2007 prior to issuing a final project report. The Study Team used this meeting to present and discuss the recommended strategies and projects identified with members of the public. Comments and ideas raised at this meeting were incorporated into the report. In addition, a listing of comments raised at the meeting, together with the Study Team response, is attached as Appendix B.
Report Organization

The remainder of this document discusses the key issues and concerns facing the Harriman Campus, University at Albany and Patroon Creek Corporate Park study area beginning with a report on the existing conditions and assessment of the challenges for improving connections between sites and surrounding neighborhoods. Building on the existing conditions work, the report presents the short and longer term strategies that will work toward achieving the stated study goals. The final section of the report lays out an implementation strategy.

We have organized our report by mode, recognizing that progress is required on all modes for the broader transportation network to effectively develop into a truly multi-modal system. Accordingly, the report is organized as follows:

- Chapter 2: Existing Conditions
- Chapter 3: Transit Improvements
- Chapter 4: Transportation Demand Management and Parking
- Chapter 5: Roadway and Non-motorized Network
- Chapter 6: Wayfinding and Access Management
- Chapter 7: Implementation
Chapter 2. Existing Conditions

Overview

The Nelson Nygaard Study Team conducted an existing conditions inventory to examine and assess key critical challenges facing the study area and developing sites. As discussed, each of the four campuses is undergoing extensive improvements and expansion projects, with the bulk of development planned for Harriman. This site will be developed through partnerships with the HRTDC, Empire State Development, the NYS Office of General Services and by master plan developers who will take responsibility for transforming 330 acres into a world-class innovation community that creates a live, work and play environment. A conceptual plan for the Harriman site is defined in the Market Assessment, Master Plan and Implementation Strategy prepared by Saratoga Associates for the Harriman Research and Technology Park; this study that was finalized in May, 2006. Highlights for the recommended Master Plan include:

- An urban design that reflects the architecture of Albany and creates a dense walkable environment;
- Direct pedestrian and vehicle connections with the university and a learning center to foster collaboration;
- A signature boulevard that provides a gateway from both I-90 and Western Avenue to the new community, framed by buildings with small shops, services and cafes on their first floors, catering to local workers and residents, with offices and loft apartments on upper floors; and
- A public park and “green space” designed to provide passive and active recreation within walking distance of the research and campus residential buildings while also available to residents of surrounding neighborhoods.

A key component of the Study Team’s work, therefore, was to build on the recommendations proposed in the Harriman Master Plan and coordinate the Master Plan proposals with other plans and projects in the study area. Accordingly, the existing conditions process also included reviewing other relevant reports, visiting the site, talking to people while walking, biking and riding transit in the area, working with members of the Study Advisory Committee and holding a public work session. This workshop was an essential step in the project because it created the foundation upon which all recommendations for improvements were made. A full list of reports and studies reviewed is included as Appendix C.

Similar to the overall report, we have organized this existing conditions section by transportation mode, presented in the following order: transit, non-motorized (primarily bicycle and pedestrian), parking and transportation demand management (TDM) and the existing roadway network. Our existing conditions analysis is presented through a series of maps and text. The existing conditions maps include:
“Hot Spot” Analysis

In addition to the figures, the Study Advisory Committee identified 11 locations within the project area that are of greatest concern, i.e., “hot spots” sites. The Study Team, in turn, prepared detailed existing conditions analyses on these locations and identified potential strategies that are applicable to addressing concerns in these particular locations. The 11 locations include:

- Merge between Harriman Outer Ring Road, Washington Avenue westbound exit ramp and Route 85 southbound exit ramp;
- Intersection of Patroon Creek Ring Road and Harriman Outer Ring Road;
- Proposed roundabout at northwest section of Harriman Inner Ring Road;
- Proposed roadways and roundabout at southwest section of Harriman Campus;
- Proposed roundabout at Washington Avenue and Fuller Road;
- Washington Avenue and I-90 Exit 2;
- Intersection of Harriman Outer Ring Road, Route 85, Brevator Street and Belvedere and Melrose Avenues; and
- Fuller Road between Western Avenue and Tricentennial Drive.
- Bridges between Harriman Inner and Outer Ring Roads between Harriman and Patroon Creek Campuses;
- Harriman Inner/Outer Ring Road Merge with I-90 Exit 3; and
- Proposed roundabout at northwest section of Harriman Outer Ring Road.

Additional information on the existing conditions at each location is provided in subsequent chapters as part of the discussions of proposed recommendations. In addition, Appendix D contains detailed background information on each site. These background analyses support recommendations suggested in subsequent sections of the report.
Figure 2-1  Existing Land Use

Land Uses
- Open Space / Parks
- Commercial Office
- Residential
- Civic / Institutional
- Roadway

Source: City of Albany, University of Albany
Location: Albany, NY
Figure 2-2 Existing Transit Service

Source: City of Albany, University of Albany
Location: Albany, NY
Figure 2-5  Location of Environmental Justice Populations in Study Area

The image shows a map of the Harriman Campus-University at Albany-Fuller Road Transportation Linkage Project Study Area, highlighting various population demographics and their locations within the study area. The map includes coding for Environmental Justice Target Populations and the Linkage Project Study Area.

The regional averages for the categories in the map are as follows:

- Minority Population: 11.2%
- Hispanic Population: 7.65%
- Low Income Population: 8.9%

The data is derived from the 2000 U.S. Census, and there are TAZ (Traffic Analysis Zones) within the study area, identified as Environmental Justice Target Areas. These areas are defined as having low income, minority, or Hispanic populations equal to or greater than the regional average.

The map includes areas with percentages of minority and Hispanic populations, as well as areas coded for poverty status.
Existing Transit Services

The Capital District Transportation Authority (CDTA) and the University at Albany provide transit services to the Study Area. As seen in Figure 2-2, the transit network includes four CDTA routes and three UAlbany shuttle routes. The UAlbany shuttles operate primarily within the Uptown Campus and on Western Avenue between the Uptown Campus, Alumni Quad and Downtown Campus. As described below, the CDTA routes extend beyond the Study Area to provide linkages to other parts of the region, while the University routes typically start and end at the main campus. These routes operate along both Washington and Western Avenues and from downtown Albany to Crossgates Mall and Stuyvesant Plaza. The University Shuttle routes are generally not open to the general public, while CDTA services are available to all.

a. **CDTA Route 10-Western Avenue** - Predominantly east-west local service along Western between downtown Albany and Crossgates Mall. The route runs along the southern perimeter of the Study Area between the Harriman Campus and Stuyvesant Plaza, and stops at the Western Avenue entrance to the University. Buses operate seven days per week at the following times:
   - Monday - Friday: approximately every 20 minutes between 5:30 am and midnight (6 am to 11:30 pm within the study area). Every 10 minutes from 7 to 9AM and 3 to 5PM (peaks);
   - Saturday: every 30 minutes between 6:30 to 7 am and 7 pm to midnight. Every 20 minutes from 7 am to 7 pm; and
   - Sunday: every 30 minutes between 7:30 am and 7 pm.

b. **CDTA Route 11-UAlbany Shuttle** – The University and CDTA operate coordinated schedules on a common alignment to provide frequent shuttle service between the University’s Uptown and Downtown campuses. The Routes 11 service operates primarily on Western Avenue with supplemental service on Washington Avenue on Thursday, Friday, and Saturday evenings connecting Draper Hall to Crossgates Mall. When classes are in session, service operates:
   - Monday - Friday: every 20 minutes from the UAlbany library, 7:50 am to 1:10 am. Service from CDTA combined with the UAlbany Western Avenue shuttle provides headways of 10 minutes.
   - Thursday – Saturday: every 20 minutes from 6:30 pm to midnight. The supplemental service coordinates with regular service to provide 10 minute headways at Draper Hall to Crossgates Mall.
   - Saturday – Sunday: every 20 minutes 8 am to 1 am.

- Total Fiscal Year 2006 Riders: 413,269
- Rides Attributable to Contract Service Fiscal Year 2006: 340,915 – 82.5%
The UAlbany Shuttle service does not operate when classes are not in session.

c. CDTA Route 12-Washington Avenue - Operates predominantly east-west service on Washington between downtown Albany and Crossgates Mall. The route runs along the northern perimeter of the Study Area, including Collins Circle at the University. Selected trips deviate from Washington into the Harriman Campus on weekdays with stops at Buildings 1, 8 and 12. Buses operate seven days per week at the following times:
   - Monday - Friday: every 15 to 20 minutes between 6 am and 12:30 am;
   - Saturday: service from 6 a.m. to 1 a.m. Buses every 20 minutes between 8 am and 11 pm. The final drop off at the Collins Circle bus stop occurs at 12:24 am from Crossgates Mall and at 12:06 am from Downtown Albany; and
   - Sunday: every 30 minutes between 8:30 am and 11 pm.
   - Total Fiscal Year 2006 Riders: 1,003,164
   - Rides Attributable to Contract Service Fiscal Year 2006: 404,167 – 40.3%

d. CDTA Route 90–Troy/Latham/Crossgates - Provides regional service between the RPI campus in Troy and Crossgates Mall. The route runs on Washington Avenue between Fuller Road and Crossgates Mall, and stops at Collins Circle on the University Campus. Buses operate on weekdays and Saturdays at the following times:
   - Monday - Friday: every 60 minutes between 7:30 am and 12:30 am; and
   - Saturday: every 60 minutes between 9 am and 11:30 pm.
   - Total Fiscal Year 2006 Riders: 266,361
   - Rides Attributable to Contract Service Fiscal Year 2006: 64,707 – 24.3%

e. UAlbany Apartment Shuttle offers service within the University campus, with stops at the Science Library, Collins Circle, Freedom Quad, and Empire Commons. Buses operate seven days per week at the following times:
   - Monday - Friday: every 20 minutes between 6:00 am and midnight;
   - Saturday: every 20 minutes between 9:15 am and 11:15 pm; and
   - Sunday: every 30 minutes between 9 am and 10:30 pm.

f. UAlbany Grocery Shuttle offers limited service on Monday and Thursday evenings between the University campus, Stuyvesant Plaza and Towne Center Plaza (Price Chopper Grocery store).

**Transportation Demand Management and Parking**

Transportation Demand Management (TDM) refers to a collection of implementation strategies that manage demand for transportation by creating tangible incentives for using alternative modes. TDM also often includes programs that influence the supply and price of transportation resources such as parking, transit and roadway capacity. TDM programs and policies typically offer a more cost-effective way for increasing the
efficiency of the transportation system as opposed to costly supply side methods (such as expanding existing roadway infrastructure or constructing new parking facilities).

TDM strategies are applicable to the four study area campuses because the distinctive characteristics of office parks and university campuses make it possible to encourage transit use, reduce parking demand and lower traffic congestion. Although the Harriman, UAlbany, NanoTech, and Patroon Creek campuses currently resemble typical suburban campuses in many respects, their proximity to mixed-use developments (including shops, businesses, and residences), the future mixed-use development plan at Harriman, and their location along some of Albany’s main transit corridors (Washington and Western Avenues) mean that a portion of travelers may be willing to consider alternative modes. Likewise, experience at other university campuses has shown that students are particularly receptive to TDM because their behavior is especially motivated by cost savings and they have more flexible schedules than the general public.

Existing Programs

There are a variety of programs currently available in the study area that fall under the umbrella of transportation demand management. Additional TDM strategies have already been proposed elsewhere, such as in the UAlbany Parking Study. Existing programs include:

- **Parking Restrictions**: UAlbany currently does not issue parking permits to first or second semester freshmen who live on campus to reduce the demand for on-campus parking.
- **Parking Fees**: The University at Albany implemented vehicle registration fees for all vehicles ($20 for a decal plus $60 as part of a comprehensive fee) and parking fees for all non-union faculty and staff ($75.60 per year) and for members of the Graduate Student Employees Union ($35 per year). Although parking is now free and plentiful at the Harriman and Patroon Creek Campuses, past conditions – more employees and scarce parking – may mean parking fees and/or permit requirements will be relevant at those sites.
- **Shuttle Services**: The University at Albany operates shuttle services at no cost to students and staff (see transit section for more description).
- **Free Access to Transit**: UAlbany students and Staff may ride free on CDTA’s Routes 10, 12, and 90 and UAlbany-CDTA Route 11 by showing their SUNY ID cards. This benefit is not available on other CDTA routes.

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1 This report assumes the future development of the Harriman campus follows the plan outlined by the Harriman Campus Master Plan.
• Ridematching: The Capital District Transportation Committee sponsors a ridematching website that helps anyone commuting in the Capital District find carpools through “advertisement listings” by origin and destination. The website (www.commuter-register.org) also contains information about various bus services within the Capital District.

• Guaranteed Ride Home: Both CDTA (through the Swiper pass program) and CDTC (through the Commuter Register program) currently offer guaranteed rides home (participation in both programs is not permitted). The CDTC Commuter Register program allows 4 emergency rides home per year, not exceeding $150 per year or $60 per trip; commuters are responsible for calling the taxi company directly and obtaining a receipt. Carriers of the CDTA Swiper pass are required to call the Swiper Guaranteed Ride Home hotline and CDTA will arrange a ride; commuters must sign a voucher verifying that they made the trip, and will not be charged.

• Despite these programs, obstacles still exist blocking further TDM initiatives. For example, members of public employee unions are exempt from paying the parking fee due to contractual stipulations; however, vehicle registration and priority parking charges still apply. In comparison, all students who register for courses are required to pay the mandatory comprehensive fee directly to Parking and Mass Transit Services at UAlbany.

Roadway Network

The Harriman - UAlbany - Patroon Creek study area lies between four major roadways that provide the site with excellent regional connections: Interstate 90 and Washington Avenue (east-west routes to the north of the site); New York Route 85 and Brevator Street (to the east of the site); Western Avenue (running east-west to the south); and, Fuller Road and Interstate 87 (New York State Thruway and the Northway) (to the west of the site).

The local internal road network within these four regional routes is primarily defined by two ring roads: University Drive, which encircles the University at Albany, and the Harriman Ring Roads around the Harriman Research and Technology Park. The ring roads have the effect of isolating the campuses from the surrounding environments; they also limit connections to and between the campuses. In both cases, there are only minimal connections from the ring roads to the local road network; most links access only major roads. The Patroon Creek Corporate Park also is accessed via an internal one-way loop road.

Fuller Road at the western end of the site and Brevator Street at the eastern end offer the only direct connections between Washington and Western Avenues. The remaining street network is comprised of short, primarily dead-end streets in the McKownville and Eagle Hill Neighborhoods in the southwestern and southeastern
corners of the site, respectively, and the partially-connected streets in the Melrose neighborhood to the east.

The Harriman ring road consists of two three-lane, one-way roads with 16 connecting “turn-arounds” that allow vehicles to transfer to the parallel ring road and change direction. The road does not have any sidewalks or designated road space for bicyclists. The design not only isolates Harriman but encourages high speeds. The frequent turnarounds mean that vehicles are merging and exiting from the road at multiple locations. In addition, the existing signage makes it difficult for visitors to the site to find specific buildings.

The Harriman ring roads and University Drive have isolated congestion during peak periods (partially due to uniform work and school hours), but otherwise operate at free flow traffic conditions. The ring road is congested where it meets Exit 3 of I-90, especially during the afternoon peak. Our analysis suggests that this is attributable primarily to congestion on I-90, making it difficult for vehicles to egress from the interstate on-ramp, backing traffic up the on-ramp and, during the most congested periods, onto the ring road. University Drive also experiences high traffic volumes and related congestion at the northeast quadrant of the campus, at the intersection of Washington Avenue and I-90 Exit 2. This traffic primarily travels to University Drive. Traffic counts conducted as part of this study and included in Figure 2-3 show that the level of service (LOS) at this intersection was measured as “D” during the AM and LOS “F” during the PM. From the UAlbany’s standpoint, however, a greater concern is the safety of students and faculty that must cross the northwest section of University Drive when walking from Empire Commons or the outer parking lots to the Academic podium at the center of campus.

Non-Motorized Network

The non-motorized network at the site reflects the road network. Within the ring roads surrounding the UAlbany and Harriman campuses, the internal networks allow pedestrians, and to a lesser extent cyclists, to move between sites and buildings. The primary concerns associated with the non-motorized network is that neither system is connected with each other or to nearby neighborhoods.

The existing Harriman pedestrian network is focused on moving people from the external parking lots into the central part of the campus. Narrow walkways along the perimeter of campus connect the furthest parking lots to the internal core of buildings. Once inside the core Harriman open space, the circulation has a pedestrian scale with wide walkways, seating areas, visual linkages to other buildings and a sense of hierarchy. There are no pedestrian linkages from the central Harriman Campus to the State Police Complex parcel and few to the Office of General Services parcel. As

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3 Roadway level of services, or LOS, is an engineering and planning concept used to measure and describe the intersection traffic congestion. LOS is measured as the wait time or traffic delay at an intersection. LOS A refers to free flowing traffic conditions (i.e. no wait) while LOS F refers to an extended wait time required to move through an intersection.
discussed, no bicycle or pedestrian facilities are available along the ring roads and there are currently only three dedicated pedestrian entrances to Harriman originating outside the campus. There are no dedicated points of access for bicycles.

The University at Albany offers similar infrastructure as compared with Harriman. Within the campus, there is access for pedestrians and bicyclists to and between most of the primary campus buildings. University Drive, however, provides only a discontinuous system of sidewalks and dirt paths that follow the inside edge of the ring road and crosses paths with motor vehicles numerous times. Like Harriman, there are limited locations for pedestrians and cyclists to enter and exit from campus. Graduate students at the University at Albany studied pedestrian and bicycle facilities on campus and prepared a “Purple Path Study” which recommends a multi-use path for the University at Albany community.

Fuller Road, the primary roadway linking the UAlbany NanoTech campus with Stuyvesant Plaza, has narrow, discontinuous asphalt sidewalks and a few crosswalks. An unpaved path under the high-tension wires to the west of Fuller Road currently provides an ad hoc route for pedestrians and cyclists traveling between Nanotech and Stuyvesant Plaza. This pathway has been a topic of previous discussions and ideas for improvement.

Pedestrian and bicycle facilities have a community impact; it was noted at the workshops that employees, students and residents frequently use the UAlbany and Harriman campuses for recreational purposes such as biking, jogging, and dog walking. Many users also commented that they like the existing ring road configuration for running and biking as it is a two mile uniform “track” and therefore unique and worth keeping. These users should be taken into consideration when looking at what connections are made and maintained; including consideration of recreational demand will not detract from transportation uses of the facilities.

Another deficiency in the existing non-motorized network is a lack of connections with regional recreation destinations outside of the study area that are logical resources for students, employees and community residents. The Albany Pine Bush Preserve covers 3,010 acres of inland Pine Barrens ecosystem, and attracts thousands of visitors each year. The easternmost parcel of the preserve, which contains Rensselaer Lake, is located just north of I-90 and west of Fuller Road. While the entrance to the preserve is less than a five minute walk from the Washington Avenue and Fuller Road intersection, pedestrian access from the campuses is uninviting because of the dangerous crossing at Washington Avenue and the I-90 underpass. Improved pedestrian conditions along this stretch of Fuller Road (shown as 4 on the non-motorized transportation map) would provide a significant quality of life asset to students, employees, and study area residents.
Environmental Justice

On February 11, 1994, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations". It was created to ensure that federal government activities that may adversely affect human health or the environment do not disproportionately impact minority or low income populations. This Executive Order is closely related to Title VI of the Civil Rights Act of 1964. As a federally funded agency, the Capital District Transportation Committee is required to be in compliance with these federal regulations.

With respect to the Harriman Campus – University at Albany Transportation Linkage Study, demographic data indicates that there are several areas of special concern in the area bounded by Fuller Road, Washington Avenue, Brevator Street and Western Avenue. Environmental Justice Target Population Areas are defined as any Traffic Analysis Zone (TAZ) with low income, minority, or Hispanic populations equal to or greater than the regional average. The regional averages based on 2000 U.S. Census population data are:

- Minority Population = 11.2%
- Hispanic Population = 2.6%
- Low Income Population = 8.9%

Figure 2-6 highlights the locations of the TAZ’s of interest. TAZ 58, which represents the Harriman Campus and housing east of the Harriman Campus driveway from Western Avenue, has a population that is 32.26% Minority and 32.26% Below Poverty. TAZ 60, which represents the University at Albany, has a population that is 7.68% Hispanic and 29.71% Minority. TAZ 57, which represents the neighborhood south of Harriman largely between the Harriman Western Avenue driveway and the University at Albany, has a population that is 3.55% Hispanic. These population groups exceed regional thresholds and are therefore considered Environmental Justice Target Populations. Impacts on these populations will require special consideration in the project development process as specific improvements are advanced through preliminary and detailed design.
Chapter 3. Recommended Transit Strategies

Overview

The individual campuses within the study area act as individual trip generators and existing transit operations serve them as individual sites. As a result, the area is served by several routes, with most CDTA routes linking individual campuses to downtown Albany. Thus, the existing service provides few opportunities for connections within the Study Area. CDTA’s Routes 10, 12 (via scheduled deviations) and the University’s Apartment Shuttle are the only routes that serve more than one campus (Harriman and the University; and the University and NanoTech, respectively).

Connecting the campuses to each other and providing access to the greater region are two of the Planning Principles guiding the Harriman Campus – University at Albany Transportation Linkage Study. In the longer term, it is recommended that an east-west “transportation spine” be developed through the campuses. In the interim, existing services can benefit from reorganization that will both improve near term operations as well as work to support achieving longer term objectives. Proposed interim changes could be implemented in a short-time frame and can serve the Harriman campus as it currently exists while also remaining flexible for future adaptation to redevelopment as proposed by the Harriman Campus Master Plan.

Short Term Recommendations

Short term recommendations for transit improvements include creating trunk routes along Washington and Western Avenue and focusing operational and capital resources along these arterials to create more streamlined and efficient service. The twenty-year vision for transit in the Capital Region is based on a hierarchy of regional, local and shuttle routes to increase ridership and improve overall system efficiency and effectiveness, thus the proposal to focus transit routes along the Washington and Western Avenue corridors with high frequency, highly productive routes is consistent with this vision.

Trunk routes will also require reconfigured shuttle services to take passengers to/from the trunk lines to/from locations on individual campuses. As this configuration of service is established, physical improvements such as covered shelters would also be needed to encourage transfers with internal campus shuttles.
These short term recommendations are presented in the following text and highlighted in **Figure 3-1: Proposed Short Term Transit Service Improvements.**

The proposed changes to service would result in Routes 10, 11, and 12 primarily running along Washington and Western Avenues with a higher frequency and more limited stop schedule. The buses will stop at the entrances to the Harriman and University campuses, with Route 11, which is funded by UAlbany, continuing to access the center of campus at the Science Library and Route 12 to access the center of campus at Collins Circle. Route 90 will also continue to terminate at Collins Circle and turn around.

These changes would decrease travel times on CDTA routes, which makes transit more attractive to new and current customers, but in some cases may require riders to transfer. The riders boarding CDTA vehicles with destinations at the Harriman Campus, Patroon Creek, or NanoTech Campus may transfer from the 10, 11, or 12 to a revamped shuttle system circulating throughout the campuses. Allowing CDTA routes to bypass the Harriman Campus while providing internal shuttles maximizes transit efficiency.

**Inter-Campus Shuttle**

The University at Albany currently provides its own shuttle service within its Uptown and NanoTech Campus. To better interconnect all the campuses and major destinations in the study area a complete inter-campus shuttle is proposed. The actual routing and responsibility of shuttle operations and schedule will be determined prior to implementation:

- **Inter-Campus Shuttles:** Departing from Stuyvesant Plaza (where riders can connect with CDTA Route 10) heading north on Fuller Road west on Tri-centennial Drive past the Nanotech Campus, following Jose Marti Drive around Freedom Quad, east on Tri-centennial Drive to the east side of the academic podium, then around University Drive to Collins Circle (where riders can connect to CDTA Route 12). Continue east from Collins Circle on University Drive East to the proposed new connection to the Harriman Campus Ring Road and on to the Patroon Creek Office Complex.

Upon completion of the first phase of the Harriman Master Plan, the Intercampus Shuttle could be extended to directly link to new development.
Figure 3-1 Proposed Short-Term Transit Service

CDTA Routes
Inter-Campus Shuttles
Existing Features

Source: City of Albany, University of Albany
Location: Albany, NY
Figure 3-2 Proposed Long-Term Transit Service

CDTA Routes
- Proposed BRT
- Possible connections to existing roadways

Intercampus Shuttles
- East-West Route
- South Route

New Roads (Approximate Locations)

Existing Features
- Buildings

Source: City of Albany, University of Albany
Location: Albany, NY
Longer Term Strategies

In addition to short-term operational improvements, a long-term reconfiguration is also recommended. As described below, CDTA service would be similar in both the short- and long-terms, while University services would undergo significant modification (see Figures 3-1 and 3-2). This is based on the premise that direct routing is necessary for line-haul regional transit lines, like those run by CDTA, and penetration of the campuses by such lines would require direct roadway connections and significant investments in passenger waiting facilities that have not been incorporated in the Master Plans for the study area.

The Study Team recommends investigation into Bus Rapid Transit service in the study area which would extend to Crossgates Mall and downtown Albany, including potential connections to the proposed Albany Convention Center. The BRT service may operate along a proposed “transportation spine” through the study area. The transportation spine should be developed with pedestrian and bicycle facilities as well as the BRT. A potential route for the spine might be from Western or Washington Avenues through the center of the Harriman Campus, through the center of the UAlbany Uptown Campus (between its Campus Center and Indian Quad), and past the NanoTech Campus via an extension of Tricentennial Drive to Washington Avenue. Among the key issues that would need to be addressed are security concerns expressed by NanoTech on their site (security of the site through controlled or restricted access is a high priority of some of the NanoTech partners). The exact routing and modal uses of the transportation spine will be examined prior to implementation. Additional detail on the transportation spine concept is provided in Chapter 5 on page 5-17.

Given CDTA’s long-term concepts for regional transit service configuration based on performance standards, this proposal for the region’s second BRT line will likely be justified in the ten year planning horizon as the campuses develop and concentrations of employee and residential populations increase. Ideally the BRT service would also provide connections to the proposed Albany Convention Center in downtown Albany, which is also the proposed site for a future transit facility. These routes would also attract riders from the College of St. Rose located on Western Avenue, as well as University Heights via feeder routes. The changes recommended in the short-term for the CDTA routes serving the Study Area are also relevant to the longer term planning horizon.

Inter-Campus Shuttles

The short-term recommendations for transit service on the University campus accommodates existing buildings and land use proposals. The disadvantage of the short-term plan, however, is that it requires three routes to serve a small geographic area because of missing roadway connections. By allowing buses to travel east-west across the University campus, transit service could operate more efficiently and with
shorter travel times. The following represent conceptual alignments for shuttle services that would support long-term transit recommendations. Actual routings would be determined based on existing conditions at the time of implementation.

- **East-West Route:** Starting at the bus stop at Stuyvesant Plaza, northeast on Fuller Road to Tri-Centennial Drive, stop at NanoTech, east on Tri-Centennial Drive to the bus stop on the west side of the Academic Podium, east on State Drive to Harriman, north through Harriman campus across Washington and terminate at Patroon Creek.

- **South Route:** Starting at the Western Avenue entrance to the University, north on University Drive West to the existing bus stop east of the Physical Education Building, north to the BRT stop near Campus Center (providing a transfer to the East-West Route), west of Center Drive East to Liberty Lane through Empire Commons, south on Capital Hill, west on Tri-centennial Drive into the NanoTech Campus, following Jose Marti Drive around Freedom Quad to terminus.

Note: The exact routing of all services will occur prior to implementation.
Chapter 4. Transportation Demand Management and Parking Programs

The Study Team recommends creating a series of TDM programs and parking management policies that will work in concert with other recommended transit service and non-motorized infrastructure improvements to support the goals of the study.

Short Term Strategies

As discussed, TDM and parking programs offer the advantages of needing shorter implementation time frames and requiring fewer resources; with concerted effort, most of these projects could be implemented within a three to five year time horizon. In addition, they support broader study goals in the short-term and also build the framework of an integrated network of policies, programs and facilities that enhance connectivity and encourage use of the full range of transportation options over the long term. Most of these strategies, over the medium term, should also be revenue neutral.

Employer-Based Universal Transportation Program

Given that the University at Albany currently has several TDM elements, including a parking management program, the Study Team recommends strengthening these programs and creating a multi-faceted university or employer-based transit pass program.

Universal Transportation Programs are typically comprised of a series of incentives and disincentives offered together to give commuters choices. Incentives typically include programs such as free transit passes, financial incentives for using non-motorized modes, improved bike parking facilities, and priority parking for carpoolers. Disincentives recognize the real cost of parking and typically involve new or increased fees for parking. The ultimate program should be designed to complement existing transit and non-motorized infrastructure. TDM programs should also be designed with area employee and resident needs and priorities in mind, so that they are effective and do not create unintended impacts on surrounding neighborhoods.

Such a program would ideally be offered to students, faculty and staff at both the UAlbany main campus as well as at NanoTech. The Universal Pass Program may also be extended to the office park campuses at Harriman and Patroon Creek, especially if a Transportation Management Association is initiated (see below).
Such a program would include most of the following elements, which ideally would be implemented in a coordinated fashion:

- Providing a universal transit pass so that all UAlbany faculty, students and staff can access all CDTA services at all times;
- Increasing parking charges to market rates;
- Offering parking cash out programs\(^1\) to employees currently guaranteed free parking;
- Supporting carpool and vanpool programs, both through pricing and preferential parking;
- Improved and secure bicycle parking facilities;
- On-campus car sharing programs; and,
- Aggressive marketing of the universal transit pass program.

Several other universities as well as private sector institutions throughout the northeast and across the U.S. have implemented similar multi-faceted programs with considerable success.

The universal transportation program may be implemented first at the University at Albany and subsequently expanded to Harriman and Patroon Creek office campuses. Creating such a program would likely be well-received by CDTA since the organization has said it is considering changing its existing transit pass program to introduce a deeply discounted annual pass program that will allow unrestricted free-fare access to the CDTA fixed route system. Significant participation by tenants and employees on the Harriman and Patroon Creek campuses in the form of bulk purchases would also increase CDTA willingness to improve services in the study area.

**Create a Transportation Management Association**

Transportation Management Associations (TMAs) are active across the country and many operate with high levels of success. TMAs are associations of employers, institutions and community groups that work jointly to implement transportation demand management strategies for the benefit of a defined region. A TMA has considerable potential for success in our study area because of the proximity of the work sites, the increasing emphasis on promoting multi-modal travel, limited parking supply and existing programs at the University at Albany. Forming a TMA that includes the Harriman and Patroon Office park campuses also supports the CDTA requirement of institutional and financial commitments for a transit and pedestrian

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\(^1\) Employers offering free or subsidized parking to employees can implement parking cash out. Under a parking cash out program, an employer gives employees a choice to keep a parking space at work, or to accept a cash payment and give up the parking space.
supportive infrastructure prior to the agency committing transit resources to the sites. Other potential participants in a TMA include Crossgates Mall, Stuyvesant Plaza, Western Avenue Merchants, the College of Saint Rose and representatives from the University Heights neighborhood.

The TMA would work together to establish consistent TDM and parking programs, to sponsor and shape on-site transit improvements, to jointly market mobility programs (such as rideshare programs, guaranteed ride home, etc.) and to periodically monitor transportation, parking, and traffic outcomes in the project area. Because the TMA would be an association of institutions, local businesses and community groups, it could implement TDM programs with increased economies of scale and offer greater flexibility and benefits. For instance, a ride-matching service might benefit from economies of scale if it served employers of nearby businesses as well as the three campuses.

Establishing a TMA in the short term helps to establish mobility management programs as part of the baseline expectations for new tenants and employees beginning work in the area. In addition, as the TMA strengthens, the organization could advocate for future improvements in non-motorized and transit facilities.
Chapter 5. Non-Motorized Transportation and Road Network

Overview

As discussed, one of the key challenges facing the study area is the lack of connections between the individual sites. The existing road network isolates rather than integrates the individual campuses and keeps them separate from surrounding communities. Our recommendations for improvements to the roadway and non-motorized network, therefore, are aimed at creating opportunities for new vehicular and non-motorized connections, to include roadway designs that offer safe and attractive facilities to all users and build on existing infrastructure to lay the foundation for an attractive, accessible and functional place to live, work, and visit.

The Study Team has organized the road and non-motorized recommendations into a series of short and long term objectives. Recommendations that address the Harriman campus facilities are presented first, followed by recommendations for the other campuses, as well as those applying to the broader study area. As these ideas were prepared, the Study Team also kept in mind a series of locations identified as needing the most attention. These hot spots are shown in Figure 5-1; each site is addressed in the following text.

After the individual sites are discussed, Chapter 6 presents the non-site specific strategies that will support non-motorized and road network recommendations, such as wayfinding and access management.
Figure 5-1  Hot Spot Locations, Implementation Time Frames and Affected Campuses

<table>
<thead>
<tr>
<th>Location</th>
<th>Implementation Time Frame</th>
<th>Affected Campus(es)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuller Road</td>
<td>X</td>
<td>X  X</td>
</tr>
<tr>
<td>Tricentennial Drive to Washington Ave</td>
<td>X</td>
<td>X  X</td>
</tr>
<tr>
<td>Purple Path</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>I-90 Exit 3</td>
<td>X</td>
<td>X  X</td>
</tr>
<tr>
<td>Harriman Ring Road</td>
<td>X</td>
<td>X  X  X</td>
</tr>
<tr>
<td>Washington Ave between Harriman and Patroon Creek</td>
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<td>X  X</td>
</tr>
<tr>
<td>Outer Ring Road Merge</td>
<td>X</td>
<td>X  X</td>
</tr>
<tr>
<td>Harriman Master Plan Road Network</td>
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<td>X  X X X</td>
</tr>
<tr>
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<td>X  X X X</td>
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<td>Harriman Roundabouts</td>
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<td>X  X</td>
</tr>
<tr>
<td>Brevator-Belvedere-Outer Ringer Road-Route 85</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Raising Washington Avenue</td>
<td>X</td>
<td>X  X</td>
</tr>
</tbody>
</table>

**Short-Term Recommendations – Harriman Campus**

In the short term, the Study Team attempted to create connections and linkages by identifying projects that offer lower cost options and shorter implementation time frames; as a result, most of the recommendations focus on adapting existing facilities and taking advantage of scheduled improvement projects. Short term recommendations are also primarily oriented toward non-motorized connections, reflecting the shorter lead times associated with these projects.

**Develop Non-Motorized Facilities on Harriman Ring Road**

As discussed, the Harriman ring roads do not include pedestrian or bicycle facilities, and have but three crosswalks. As a result it is difficult for cyclists and walkers to travel to and from the Harriman campus. To address this, the Study Team has
identified a series of projects that will create non-motorized facilities and support non-motorized travelers moving between and among the study area. An enhanced bike/ped connection between the Harriman and UAlbany Campuses merits serious consideration as the UAlbany presence on the Harriman Campus receives greater consideration.

**Create Bike Lanes on Ring Roads**

The Study Team proposes bicycle lanes on both of the Harriman campus ring roads as short term projects. These lanes would capture existing use and encourage more cycling in the area. It is suggested that the inside lane of each road be converted to a bike lane, as these have fewer conflicts with high-speed on- and off-ramps. In some locations along the southern part of the ring road, alternative routes could be explored to avoid routing bike lanes through portions of the ring road that merge with NY85.

Currently, both roads are under capacity, so this would have a negligible effect on vehicle flow. In fact, by removing a lane of traffic, safety would improve as there would be less weaving and merging and speeds would be better managed. A 6 to 8-foot wide, one-way bicycle lane against the curb with a striped buffer zone is suggested. At crosswalks and other locations, pedestrian refuge islands would be placed in the buffer zone. Additional measures such as “share the road” and “bike lane” signage, reflective markings, and lighting may also be used to enhance the safety of the bike lanes.

**Remove/Close Turnarounds on Ring Road**

In order to limit weaving and improve wayfinding on the Harriman ring roads, the Study Team proposes closing seven of the turnarounds to vehicular traffic as shown in Figure 5-2. There is potential to close an eighth turnaround in this section, so that only two of the ten turnarounds in this portion of the ring road remain open. The turnarounds would be closed to vehicular traffic only and would remain open for bicycles and pedestrians. In particular, one of the closed turnarounds would be used for bicycle and pedestrian access to the UAlbany ring road (shown in dotted line on Figure 5-2).
Provide Pedestrian Facilities at Washington Avenue Bridge

The existing bridges over Washington Avenue between the Harriman and Patroon campuses present an opportunity to improve linkages between the two campuses in the short term, and offer improved access to existing bus stops. A photo of the bridge is shown in Figure 5-3. Currently each bridge has a travel lane (for U-turns along the ring road), a striped area, and a walkway. While the walkway is in proximity to those on either campus, its utility is limited by guard rails. Tracks in the grass show that people nonetheless use these bridges to cross Washington Avenue.

It is suggested that the guard rails on each of these bridges be relocated so they do not block pedestrian access. They should be placed between the roadway and sidewalk, thus protecting people from errant vehicles. The sidewalks would be extended to the ring roads and crosswalks and refuge islands installed (see discussion on bicycle lanes). Overhead lighting is also suggested to ensure that drivers see pedestrians at night. A more significant crossing between Patroon and Harriman was mentioned during stakeholder interviews and may warrant further consideration as the Master Plan development begins to occur.
Calm Traffic at the Outer Ring Road - Route 85 – Brevator - Belvedere Intersection

The intersection of the Outer Ring Road, Route 85, Brevator Street, and Belvedere Avenue present several challenges. First and foremost, the intersection is excessively wide and poorly designed (see Figure 5-4). It invites speeding, fast turns and poor yielding behavior by drivers. While there is a crosswalk across the outer ring road, it is located on a curve and sight lines are limited. There are no crosswalks across Brevator Street (see Figure 5-5). Residents of the Melrose neighborhood, directly to the east, have expressed concerns about cut-through traffic as Belvedere Avenue connects directly from the ring road to Western Avenue. Finally, cyclists are technically not supposed to access the campus at this point, for the road is one-way eastbound.
In the short term, access by pedestrians and cyclists to the campus at Belvedere needs to be improved. A combination of traffic calming measures, as shown in Figure 5-6 are suggested. These concepts include:

- The bicycle lanes and refuge islands on the ring roads discussed above. The bike lanes serve several traffic calming functions, including reducing the number of lanes pedestrians need to cross; the ability to incorporate pedestrian islands to provide a refuge while waiting for a gap in traffic (see inset of Figure 5-6), and lowering travel speeds by reducing the number of travel lanes.

- The sidewalks accessing the campus, especially on the bridge across Route 85, would be temporarily designated as shared bicycle/pedestrian facilities and signed accordingly. Shared bicycle/pedestrian facilities are only recommended at this location and as a temporary strategy only. In the long term the Harriman roadways are proposed to be two-way.

- Excess roadway can be removed where the exit road diverges from the ring road. Narrowing the road to two lanes makes the crossing distance for pedestrians shorter and safer.

- The merge between the Route 85 off-ramp and the ring road can be redesigned to moderate speeds on the ring road and provide a shorter crossing distance. It may also be possible to incorporate a splitter island to better organize traffic.

- Refuge islands can be added to the current striped median on Brevator Street. Marked crosswalks should also be added as well as curb extension at the corners.
- Belvedere Avenue currently has a generous median and sidewalks one block to the east, see Figure 5-7. These treatments should be extended to Brevator Street, thus calming this block.

- If eastbound cut-through traffic on Belvedere continues to be an issue, then more restrictive traffic management techniques should be considered.

**Figure 5-6** Short term Concept Plan

**Figure 5-7** Belvedere Avenue (note median in distance)
Address Congestion and Vehicular Merge Concerns

Harriman Outer Loop and I-90 Exit 3

There is a yield sign at the bottom of the ramp that carries traffic from the Harriman Campus Outer Loop Road to Exit 3 of I-90. The afternoon (PM) peak hour volume and congestion at this yield sign has been an identified concern. As part of this study, Study Team members collected traffic counts which show that during the peak hour from 4:30 to 5:30 PM, 1,200 vehicles used this ramp. During a 15-minute period, from 5:00 to 5:15 PM, traffic did indeed back-up at this location, but briefly backing up as far as the outer loop road. With traffic volumes expected to increase due to the continued build out of the Patroon Creek Corporate Center and eventual redevelopment of the Harriman Campus, traffic at this location will be a growing problem.

Previous studies suggested that the “Yield” sign is a cause of the backups at this location. While it is somewhat unusual to have a sign restricting flow on the higher volume segment of this type of merge, the analysis shows the “Yield” sign itself plays a minimal role in the backups. The backup occurs when the ramp to I-90 West exceeds its capacity. Not only does the traffic on the ramp approaching the “Yield” sign come to a stop, but the adjacent free flow lane to its left comes to a stop as well. The analysis, therefore, suggests that it is safer to have the sign where it is because of sight distance concerns and because it acts as a traffic calming measure, causing motorists approaching from a steep downgrade to slow down as they near an extremely tight radius turn on the ramp to I-90 West.

As the back-up is caused by the one-lane ramp to I-90 West, supply-side solutions such as increasing capacity are unlikely to be effective. In addition, the cost of widening the I-90 ramp, which must travel over the interstate, would be significant. Furthermore, I-90 westbound is already highly congested in this vicinity during the same timeframe. Adding capacity to move more volume down the ramp would not be effective because it would simply move the bottleneck downstream.

The work of the Study Team also indicates that adding a lane to the ramp from the Outer Loop Road to the “Yield” sign is unlikely to resolve the capacity problem. It does, however, have the potential to provide safety benefits and improvements. Currently, drivers seeking to avoid the queue headed to I-90 westbound drive on the right-hand shoulder to reach the ramp for I-90 eastbound. An additional lane on the right side would formalize this illegal movement. Potential safety benefits must be weighed against the cost of such an improvement, particularly if right-of-way acquisition is necessary. Ideally, these improvements will be considered as future development is pursued at the Harriman and Patroon Creek Office parks.

The analysis suggests the capacity problem on the ramp from the Outer Loop Road to the “Yield” sign would likely be better solved through demand side solutions, such as TDM strategies, improved transit connections, and increased non-motorized facilities
as traffic congestion exists for a limited time (10-15 minutes) and primarily during the PM peak. In the longer term, new ingress and egress locations can help divert traffic to roadways with capacity such as NY 85. In the shorter-term, techniques such as alternative route signage may help encourage travelers away from the Interstate and onto other roadways.

Harriman Outer Loop and Patroon Creek Corporate Center

In November 2006 the Patroon Creek Corporate Center instituted an internal one-way loop access road, with ingress only from the Harriman Campus Outer Loop Road at its western curb cut and egress only to the Outer Loop Road at its eastern curb cut. This has the beneficial effect of reducing the number of turning movements on this busy stretch of the Outer Loop Road.

Harriman Outer Loop and NY Route 85 South and Washington Avenue

There are several concerns where the off ramp from Route 85 South and Washington Avenue westbound merges with the Harriman Campus Outer Loop Road. These include the high number of vehicular movements, the speed of traffic, and the potential for increased volume at this already difficult location. Traffic from the Route 85 South ramp tends to want to move left to the Outer Loop-to-Inner Loop-turnaround or to stay on the Outer Loop, while traffic from the Outer Loop tends to want to move right to the Patroon Creek Corporate Center or to the I-90 ramp. Though the posted speed limit on the Loop Road is 40 mph, vehicles routinely drive much faster due to the generous width of the travel way. Traffic conflicts to the immediate west of this merge are expected to become a greater problem as volumes increase with the build out of the Patroon Creek Corporate Center and the eventual redevelopment of the Harriman Campus.

Two short term options for solving this problem have been identified. Both include simple re-striping to narrow the lane width on the exit ramps from NY 85 South and from Washington Avenue westbound in order to signal drivers to slow down. Both incorporate the bicycle lane previously described.

- **Option 1**

  Beginning south of the bridge that carries Washington Avenue over the Outer Loop Road, the Outer Loop Road would be striped to gradually merge the two travel lanes into one twelve (12) foot lane. The striping would also narrow the inner bike lane to six (6) feet. This option would significantly slow traffic on the Outer Loop Road as it enters the merge. It would also give priority to traffic from Route 85 South and Washington Avenue westbound by extending those two lanes beyond where they currently merge and separating them from the single-lane Outer Loop Road by a solid line. In effect, traffic on the outer loop road would then enter the main flow of traffic when the solid line ends. New signage would reinforce this change in priority. As shown in Figure 5-8, yield signs would be placed on both sides of the single-lane Outer Loop Road as it
completes its westward turn. Traffic from Route 85 South and Washington Avenue westbound would not have to Yield; a lane designation sign would direct this higher-speed priority traffic into appropriate lanes based on destination.

**Figure 5-8  Merge Location on Outer Ring Road - Option 1**

- **Option 2**

This option would retain the two lanes on the Outer Loop Road, and the priority that traffic currently enjoys as it enters the straightaway. Beginning south of the bridge that carries Washington Avenue over the Outer Loop Road, the inner bike lane would be narrowed to six feet and the two travel lanes would be narrowed to eleven feet each and shifted gradually leftward by striping the outer portion of the road. This would allow the two through lanes on the Outer Loop Road to extend further westward before traffic from NY Route 85 South and Washington Avenue westbound could enter from the right. A solid line would divide the two through lanes on the Outer Loop Road from the merging traffic for approximately one hundred (100) feet beyond the existing merge point. This option is illustrated in **Figure 5-9**.
Short-Term Recommendations – Wider Study Area

Enhance Non-Motorized Facilities on Fuller Road

Fuller Road is the main north-south roadway connecting Stuyvesant Plaza with the University at Albany and the NanoTech campus. Currently students and employees travel along and across Fuller Road on foot and by bicycle\(^1\), but there are no continuous road spaces for non-motorized travelers. There is also the potential to create non-motorized connections via enhanced facilities on Fuller Road to the proposed Patroon Greenway Trail. This trail would create links between the study area and downtown Albany.

Fuller Road is 40 feet wide with one travel lane in each direction and a continuous two-way left turn lane between Western Avenue and Tricentennial Drive. There are discontinuous asphalt sidewalks and few crosswalks. The fences of the Beth Abraham

\(^1\) An unpaved path under the high-tension wires to the west of Fuller Road currently serves as an ad hoc connector. There is merit to developing this path; however the project team does not see it as an alternative to improvements on Fuller Road.
Jacob Cemetery severely constrain the right-of-way and there is no sidewalk through this section. Figures 5-10 through 5-13 illustrate existing conditions along Fuller Road.

**Figure 5-10** Two-way Left Turn Lane on Fuller Road

![Two-way Left Turn Lane on Fuller Road](image1)

**Figure 5-11** Discontinuous Sidewalks on Fuller Road

![Discontinuous Sidewalks on Fuller Road](image2)

**Figure 5-12** East Side of Fuller Road at Cemetery

![East Side of Fuller Road at Cemetery](image3)
Funding has been set aside in the Albany County 2007 – 2011 Capital Plan to rehabilitate Fuller Road; preliminary engineering is scheduled for 2007 with reconstruction planned for 2009. As stated in the 5-year capital plan, the Fuller Road project will:

Rehabilitate 1.75 miles of Fuller Road in the Towns of Guilderland and Colonie from Western Avenue to Central Avenue. The roadway would be rehabilitated, curbs would be repaired, drainage improved and pedestrian facilities would be enhanced. Project design is scheduled to begin in 2007 and construction will be completed in November 2009, with a useful life of 15 years. The total cost of the project is estimated to be $12,038,000 and will be financed through bond issue.

The current plans for Fuller Road will enhance the functionality of the facility and provide needed improvements to existing pedestrian facilities. As the Study Team examined Fuller Road and discussed the roadways’ current use and design with members of the community, the Team developed a list of conceptual ideas that offer improvements to the multimodal functions without decreasing roadway capacity; most of these concepts also represent relatively low-cost alternatives that can be implemented as part of the Fuller Road improvements. They include:

- Converting the two-way left turn lane into a series of raised medians and left turn pockets, allowing the medians to become refuge islands for pedestrians. As shown in Figure 5-14, the medians would be located as to not interfere with driveways. Figure 5-15 details a typical left turn lane, refuge island and crosswalk;
- Constructing a continuous, concrete sidewalk along both sides of the street;
• Narrowing the roadway to 36 feet at the cemetery (the total width between the fences is 44 feet) and realigning it to provide a sidewalk on the west side. Figure 5-16 highlights road dimensions and shows how road space would be allocated. The sidewalk would connect directly to the NanoTech campus; and,

• Stripe a bicycle lane or a designed shoulder through much of the corridor. At the cemetery, the bicycle lane would transition to a shared roadway (13-foot travel lane) with share the road signage, potentially in the form of “sharrows” (see Figure 5-17) to mark road space for cyclists in areas where there is not sufficient lane width for bike lanes. Sharrows would likely be used in conjunction with other road signage, in locations with relatively slow speeds, and safety measures and would need to be installed with retro-reflective paint to increase nighttime visibility.

Our preliminary evaluation suggests that medians would serve several purposes along Fuller Road, including improving pedestrian safety, slowing traffic, enhancing area aesthetics and transforming Fuller Road into a “mini boulevard”. The conceptual design for the medians recommends using the existing left hand turn lane to minimize their impact on roadway capacity. The design, however, would need additional analysis and discussion, especially with residents and neighbors so that potential benefits are adequately weighed against potential costs.

**Figure 5-14  Proposed Medians along Fuller Road**

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2 The Study Team suggests a wider (8-foot) sidewalk on the west side as opposed to two 4-foot sidewalks on either side. This is more consistent with the desired line between NanoTech and Stuyvesant Plaza, and will provide a higher quality of service.
Figure 5-15  Sample Detail of Proposed Median, Left Turn Lane and Crosswalk along Fuller Road

![Diagram of proposed median, left turn lane, and crosswalk along Fuller Road]

Figure 5-16  Fuller Road Dimensions

<table>
<thead>
<tr>
<th>Lane</th>
<th>Bicycle</th>
<th>Travel</th>
<th>Median and Left Turn</th>
<th>Travel</th>
<th>Bicycle</th>
<th>Total</th>
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<tr>
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<td>12</td>
<td>14</td>
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<tr>
<td>Proposed Dimension (ft)</td>
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<td>40</td>
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<tr>
<td>Proposed at Cemetery (ft)</td>
<td>--</td>
<td>13</td>
<td>10</td>
<td>13</td>
<td>--</td>
<td>36</td>
</tr>
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</table>
Create a Transportation Spine

Several sources identified the idea of a transportation spine as a strategy to link the campuses. While still under development, the concept is to create a multimodal facility for transit and non-motorized users that will provide connections from Harriman through to the NanoTech campus and potentially to Stuyvesant Plaza. This transportation spine may initially start as bicycle and pedestrian access only and eventually be developed into a transit and non-motorized facility. The concept for transit service is to provide high-quality, high-speed transit service in the form of BRT that would provide reliable, frequent connections from Harriman and Patroon Creek via Western or Washington to downtown Albany, including connections to the proposed Albany Convention Center. The transportation spine would also preserve a right-of-way that has the potential to accommodate a light rail corridor depending on BRT ridership and success and regional priorities.

The Study Advisory Committee proposes two key attributes of the transportation spine: 1) the non-motorized elements of the transportation spine should be on the same alignment as potential BRT service; and 2) a potential alignment for a potential BRT service is shown in Figure 5-18.

This alignment passes between the UAlbany Science Library, Dutch Quad and the podium with the stop being located next to the Campus Center. This stop is the most central location on campus with the athletic complex, podium buildings, and all residential quads being less than a five minute walk away. This alignment shows the potential service extending through the Harriman Campus, using either the inner ring road or other interior road to Brevator and Western Avenue. Ultimately an alignment for the non-motorized transportation spine and its potential expansion to include a BRT or light rail alignment will require on-going examination in light of NanoTech’s security concerns and the redevelopment of the Harriman campus.
While the transportation spine is a longer term concept, there are several steps that can be taken in the short term to preserve flexibility for the idea and ultimately make implementation more feasible and cost-effective. The following short term steps are designed to lay the foundation for the transportation spine.

**Preserve Right of Way on Harriman Campus**

As part of the Harriman Master Planning process, the right-of-way for the transportation spine should be identified and preserved. The right-of-way may be used initially for pedestrians and cyclists but should ultimately be planned to accommodate potential BRT service.

**Preserve Tricentennial Drive Right-of-Way to Washington Avenue**

Tricentennial Drive begins within the UAlbany campus, crosses Fuller Road and ends at the NanoTech campus. Besides linking the two campuses it also provides access to student housing south of NanoTech. The project team recommends that right-of-way be maintained in the immediate term for a possible extension of Tricentennial Drive. It is envisioned that the street be used first to provide bicycle and pedestrian access and in the longer term to create the “transportation spine” as discussed in the transit recommendations. We do not recommend that this new road be used for through traffic; only for bicycle, pedestrian and transit access to NanoTech. As NanoTech develops it is essential that the right-of-way be preserved now to maintain
opportunities for future connections and linkages. Any proposal must also be cognizant of the significant security requirements at NanoTech.

**Prioritize Transportation Spine Non-Motorized Connections**

The current focus of non-motorized improvements on the UAlbany campus is the implementation of the Purple Path, as outlined in the Purple Path Study, dated fall 2005. The primary focus of these recommendations is to create non-motorized facilities along the UAlbany ring road. The Study Team feels these projects are a key element supporting the overall success of this linkage. At the same time, the Study Team recommends that development of the non-motorized elements of the transportation spine also be prioritized to help build momentum and support for this key linkage facility. As soon as the Tricentential right-of-way is preserved, UAlbany can commence planning for the multimodal and non-motorized spine. Complementary planning efforts will help support applications for federal funding.

**Apply for New Starts/Small Starts Funding for Conceptual BRT Planning**

CDTC and CDTA may apply for federal funding as part of the New Starts or Small Starts program to assess feasibility for the BRT system. While funding under these programs is limited, the Capital District has several advantages and on-going projects that create synergistic connections and may make the project attractive to the federal government. In addition, part of the potential alignment includes low income census tracks with the potential for transit improvements, to bring additional economic benefits to the area. These attributes include building on an existing BRT service to create a regional BRT system, using BRT services as part of a transit and non-motorized transportation corridor, and designing BRT services to provide high speed connections between key economic resources (i.e., Harriman Research and Technology Park, the NanoTech campus and downtown Albany, including potential connections to the future convention center).

**Enhance Non-Motorized Environment on UAlbany Ring Road**

**Traffic Calming in the Northwest Quadrant**

The University at Albany community has expressed concern about the impact of traffic that enters and leaves the campus from the intersection of Washington Avenue and I-90 Exit 2. Because this entrance to the campus has direct access to/from the Interstate, a high volume of traffic enters the University Drive from this location. Much of this traffic is headed to the northwest quadrant of University Drive, between this intersection and Tricentennial Drive. Commuter parking and the new Empire Commons residential community, both located on the outer side of University Drive (away from the academic podium at the center of campus), create a considerable flow of pedestrian traffic across University Drive in this quadrant.

The conflict between traffic on University Drive and the pedestrians who must cross University Drive on their way to/from the center of campus has been identified as an area of concern. Potential short term solutions to this problem involve traffic calming...
to reduce the speed of traffic on this segment of University Drive in conjunction with enhanced pedestrian facilities to create highly visible pedestrian crossings.

**Improve Non-Motorized Facilities on Ring Road**

Traffic calming will be supported and achieved, in part, by building on efforts outlined in the UAlbany Purple Path Study, dated fall 2005, which recommends a multi-use path along the interior of University Drive (along with on-street bicycle lanes) to address the needs of bicyclists, pedestrians, and recreational users such as joggers. In addition, UAlbany recently commenced the design process for traffic-calming along the perimeter road.

The interior trail is composed of two components: a paved surface for pedestrians and low-speed, recreational bicycle use and a parallel, non-pervious running surface which would vary in width depending on site constraints. The Study proposes a four-phased approach to the completion of the Path, as follows:

- Phase 1: design and construct walking and running trail components;
- Phase 2: add amenities and landscaping;
- Phase 3: construct regional connections and public spaces; and,
- Phase 4: reconstruct University Drive with bicycle-lanes.

In the short term planning cycle considered as part of this linkage study, it is unlikely that all of the above Phase 1 work would be completed. As Phase 1 is implemented, the location of the off-road trail components needs to be carefully considered to ensure that the bicycle lanes envisioned in the fourth and final phase can be accommodated without the need to redesign earlier phases of the project. The study also recommends specific design treatments for a handful of more difficult locations along University Drive. Along sections of University Drive that are 24 feet wide, the most constrained condition along the loop road, it is assumed that a slight narrowing of existing travel lanes may be necessary to accommodate the additional five feet that would be needed for the bicycle lane on the exterior of University Drive. Any narrowing of travel lanes would also likely have a desired traffic calming effect on motorized traffic.

Additional traffic calming features should be incorporated into University Drive, particularly in the northwestern quadrant of the ring road where pedestrian conflicts occur with greater frequency. Features including curb extensions (at intersection driveways) to shorten pedestrian crossing distance, and textured or stamped crosswalks to better delineate the pedestrian realm should be incorporated, along with on-street bicycle lanes, into the future design of University Drive.

While a funding source to fully implement the Purple Path is not yet in place, the goal of an on-street utilitarian bicycle facility in addition to a multi-use path has significant merit for serving the existing transportation and recreational needs of the campus, as well as contributing to the regional bicycle and trail network. Transportation concepts
proposed as part of this linkage study for the Harriman Loop Road, in conjunction with a short term multi-use connection between the University at Albany and Harriman campuses, create the potential for a significant non-motorized network to serve both recreational and transportation needs. The Harriman Campus Master Plan shows a conceptual transportation network within the Campus which appears to complement the future cross-section of University Drive with on-street bicycle lanes, traffic-calmed street design and intersections, sidewalks, and interior trail connections.

The Golden Grid, a follow-up study to the Purple Path, is currently under development by the University at Albany’s Graduate Planning Studio class. The new study looks at bicycle and pedestrian infrastructure campus wide, including connections to and from the proposed Purple Path. Additional recommendations and implementation strategies will emerge from this study and should be pursued to enhance the area’s overall transportation network.

**Long Term Strategies**

In both the short and long term, many of the strategies and concepts revolve around transitioning the Harriman transportation network from an inward to an outward orientation. Recognizing that most road projects require substantial lead time, the short term strategies focus on adapting existing facilities and taking advantage of scheduled improvement projects to develop non-motorized connections from and to Harriman (and across the study area).

In the longer term, this study identifies a series of projects that will help transition the existing road network into one that creates external links not only with the regional roadway network, but also with nearby campuses and those surrounding communities seeking improved connections.

**Proposed Harriman Master Plan Roadway Network**

The Harriman Market Assessment and Master Plan Study shows the ring roads modified into boulevards and a partial grid system overlaid on the campus. To the west, new roads connect to the University at Albany ring road and the western boulevard extends south to Western Avenue. To the north, Washington Avenue is shown partially at grade and there is a formal entrance at the center of campus. To the east, the ring road has been left intact and a new connection is shown at the southeast quadrant of the campus to Western Avenue.

In the course of this Linkage project a series of concerns about the Master Plan road network arose:

- UAlbany supports connections to its ring road only where traffic analyses illustrate that they will not be used by through traffic;
There has been general consensus supporting the need for the southwest connection to Western Avenue, but its exact location needs to be studied further, especially the impact on adjacent residences.

The future of Washington Avenue either in its current limited-access condition or as an at-grade boulevard appears to be unresolved;

The integration of the future road network design with the potential transportation spine and BRT service.

The inner ring road on the eastern end of the campus is shown as two-way in the master plan, but the on- and off-ramps to Route 85 remain designed for one-way traffic. This would need to be resolved;

There is concern that traffic will be diverted through the Melrose neighborhood to the east, especially at Belvedere Avenue;

There are existing yield and merge issues at the northern outer ring road; and,

The design and location of roundabouts shown in the master plan requires further study and analysis.

The short term recommendation section of this report addresses several of these concerns and offers potential strategies to address them. Other issues that have arisen include:

There is a sense that the existing connections between the Harriman ring roads and I-90 are oversaturated and less than ideal in terms of wayfinding (one has to travel from Exit 3 entirely around the campus to access Washington Avenue);

There is a desire to better utilize the NY 85 connections;

There has been general consensus supporting the possibility of linking the UAlbany ring road with the new Harriman network as long as care is taken to ensure traffic is not able to easily cut through the UAlbany campus; and,

There is general consensus on the need for a north-south connector between I-90 and Western Avenue. This presents new opportunities for transit (BRT) service as well.

The Study Team examined these issues within the resources available for this study and proposes the following conceptual roadway network. This is seen as an opportunity to expand on the Harriman Master Plan and include linkages to the immediate environs, one of the objectives of this Linkage project. The Study Team also believes that many of the issues identified above can be resolved, which will improve overall transportation and wayfinding in the area.

**Remove Portions of the Harriman Ring Road**

The Harriman Master Plan removes parts of the northern, western and southern ring roads, but leaves the eastern end intact. **Figure 5-19** shows the parts of the Harriman ring roads which would be removed in this plan. The Study Team proposes to virtually
eliminate the ring roads (and all their attendant problems), reuse the roadways as possible, and reorganize the connections to major arterials.

At the time when major changes to portions of the Harriman Ring Road are under detailed investigation, traffic volumes will need to be re-examined to determine how existing and future volumes can be accommodated on the proposed new street network. Such proposals will need to examine traffic flow associated with accessing both the local street network (Washington and Western) and the regional highway network (I-90 and NY 85), as well as any spillover impacts to adjacent neighborhoods.
Figure 5-19  Proposed Sections of Ring Roads to be Eliminated
Figure 5-20 shows the reorganized arterial street network, which has the following highlights:

- The western roadway would supplant the outer ring road. The off-ramps from Washington Avenue and I-90 Exit 3 would be brought into a roundabout at the northwest corner. The descending horizontal curves would moderate driver speeds as they approach the campus. Two connections would be made to the UAlbany ring road, thus allowing this section of roadway to function as part of it. The roadway would serve as a direct connection between I-90 and Western Avenue, intersecting at Homestead Street, where there is an existing signalized intersection, University Plaza and other commercial establishments. The effects of enlarging this intersection would need to be studied in greater detail. Specifically, precautions would need to be taken so that additional traffic is not generated on nearby streets.

- Washington Avenue would be raised to grade level and the ring roads eliminated. The Route 85 ramps would remain, but other ramps would come to T-intersections. As shown in the next image, a road connecting these two ramps through the Patroon Creek campus would allow easy access from I-90.

- The southern roadway is the same as shown in the Harriman Master Plan. At the intersection with NY85, the ramps would be modified to create a clear entry-exit point from the campus. The roadway would not continue to Brevator Street, thus eliminating any cut-through traffic. Access for cyclists and pedestrians would remain. Motorized traffic would be directed to the bridge just to the north, which would need to be modified to accommodate two-way traffic.
Figure 5-20  Proposed Primary Roadway Network

Figure 5-21 adds the system of minor streets completing the network. These streets are largely suggestive: some taken from the Harriman Master Plan, some taken from the current Patroon Creek Development, some linking through existing parking lots on the UAlbany campus. The actual number and layout of the streets will require extensive examination before being developed. This examination should reflect the final Harriman redevelopment plan, the progression and effectiveness of non-motorized facilities, current traffic volumes, neighborhood concerns, and need for service roads.
This proposed roadway network, while extensive, addresses some of the major concerns listed by the Study Advisory Committee, stakeholders and residents. It increases access where possible, especially to NY 85 and decreases it where necessary. It reutilizes existing infrastructure where possible and ties into the existing transportation network. It directly links the Harriman Campus to both UAlbany and Patroon Creek. It creates a simpler and more direct street system oriented toward Washington Avenue, which could become a great urban boulevard. This future roadway configuration itself would improve wayfinding without the need for a multitude of signs and maps.

**Figure 5-21 Conceptual Primary & Secondary Roadway Network**
Join Harriman and UAlbany Ring Roads

The Study Team supports the concept of connecting the Harriman and UAlbany ring roads and has included it in the roadway network described elsewhere. It is therefore recommended that the possibility of joining the Harriman and UAlbany ring roads be studied in greater detail to address the following considerations:

- A joint ring road would need to be coordinated with the proposed roundabouts on the Harriman grid;
- Access to the ring roads would need to be coordinated with the proposed road from the Harriman Campus to Western Avenue;
- Because UAlbany opposes additional cut-through traffic on their ring road, this would have to be mitigated by significant traffic calming that would reduce the appeal of using the UAlbany ring road for off-campus destinations; and,
- Some or all of the proposed ring road connections may offer limited vehicle access, connections for bus service only and/or non-motorized access only. As such we have shown them dashed in Figure 5-21.

At the same time, the Study Team recognizes that the creation of a transportation spine (Section 5.3.2) would also provide cross-campus connections and may provide sufficient connections such that joining the ring roads is not warranted. As the sites develop and work on short term recommendations proceed, some ideas such as joining the ring roads may become lower-priority or longer term projects. An additional possibility that could be explored along with the idea of a joint ring road is to transfer the lands currently west of the Harriman ring road from Harriman to UAlbany.

Use Roundabouts to “Anchor” Harriman Campus

The Proposed Master Plan concept for the Harriman Research and Technology Park shows two roundabouts along the proposed boulevard on the western edge of the Park. As discussed elsewhere in this report, the precise design of this boulevard is not yet known. Alternatives, including an idea to bring University Drive eastward to the Harriman Research and Technology Park’s boulevard, must still be analyzed and agreed to by all of the stakeholders. Furthermore, the final design of the Harriman Research and Technology Park’s internal road system, the eventual mix of uses, and the location and size of buildings on the redeveloped campus remains unknown. As a result, it is not possible at this time to analyze the functionality of the two proposed roundabouts.
Still, some suggestions or guidelines can be offered with respect to these roundabouts. If the boulevard is designed with two travel lanes (one in each direction) with bike lanes, on-street parking, and a raised median, a one lane roundabout could be sufficient at one or both of these locations. A one lane roundabout can handle between 15,000 and 20,000 vehicles per day. If the boulevard is designed with four travel lanes (two in each direction) a two lane/one lane roundabout, as shown at right, could be considered. This design would provide added thru capacity (north-south) where it is needed, without creating over capacity for movements to/from the side streets. The southern roundabout illustrated on the Proposed Master Plan concept should be modified so that the east leg is at 90 degrees to the roundabout. This would provide a better design with the necessary deflection and a terminating vista for drivers traveling towards the roundabout.

One lane roundabouts should also be considered at each of the significant intersections on the redeveloped campus. These roundabouts would cost very little over and above the costs for road construction alone due to the fact that left turn lanes are eliminated by roundabouts. The money saved by not building left turn lanes essentially pays for the additional curb and gutter needed for a roundabout. These costs are well below the costs of building an intersection with left turn lanes and signalization either now or in the future.

The use of multiple, one lane roundabouts would lower vehicle speeds at and between the roundabouts making the roads safer and easier for pedestrian and bike crossings throughout the campus. This concept would also be expected to reduce the likelihood of cut-through traffic and enhance the appearance of the campus. In general, roundabouts also reduce delay while providing a better and more attractive driving experience. Some additional thoughts about the use of roundabouts at the Harriman Research and Technology Park include:

- Some of the roundabouts could be elliptical rather than round because an ellipse provides greater opportunities to create attractive landscape features;
- If transit service is routed through roundabouts, it will be necessary to accommodate transit vehicles, including potential BRT vehicles;
- Assuming that the need for four lane roads within the campus is limited, one lane roundabouts would provide a considerable savings in road construction costs and maintenance costs in the future. There would be less pavement area to repair, resurface, and plow. Operation and maintenance costs related to signals would also be lower;
- Because roundabouts are far safer than signalized or stop controlled intersections there would be fewer crashes and a considerable reduction in liability; and,
- The combination of two lane roads with one lane roundabouts would be a deterrent to through traffic because everyone would be controlled by the slowest vehicle within a platoon.
Re-develop Washington Avenue as an At-Grade Facility

In the long term, the Study Team recommends that consideration be given to raising Washington Avenue to at-grade between Harriman Campus and Patroon Creek. As part of this recommendation, redesigning Washington Avenue as a boulevard throughout the study area, continuous with its design to the east of the study area is also proposed. This would likely make Washington Avenue safer and more friendly and accessible to pedestrians, cyclists and transit users.

An at-grade Washington Avenue would also likely help calm traffic as the boulevard design would encourage slower speeds and result in fewer merge-weaves. During the public workshop held as part of this study, participants observed that the street patterns should positively influence land use. Creating a boulevard would encourage new development at Patroon and Harriman facing the street instead of inwards, which would visually, spatially and functionally link the campuses together and to the surrounding community. Creating an at-grade boulevard on Washington Avenue with significant transit services is a long-term strategy that requires additional planning and community outreach. The concept, however, supports several of the study goals by creating connections, improving safety, accommodating all modes of travel, and enhancing the quality of life for residents, workers and visitors to the area.

Develop Brevator as ‘Mini Boulevard’ with Non-Motorized Facilities

In the longer term, the Study Team recommends a median in the center of Brevator Street between Western and Washington Avenues. The median would be fairly wide (14 feet) with trees and other plantings as determined by the community, and as shown in the photomontage in Figure 5-23. Bicycle lanes would be placed between the travel and parking lanes. Crosswalks would be striped at intersections. In addition to more effectively using the existing roadway and helping to calm traffic, the proposed boulevard would offer an attractive, planted buffer to Route 85. Conceptual roadway dimensions for a typical cross-section are highlighted in Figure 5-22. Bicycle facilities (lanes or sharrows) could also be extended north to Westland Hills City Park to create a connection between there and the Harriman Campus.
Figure 5-22  Brevator Street Dimensions

<table>
<thead>
<tr>
<th>Lane</th>
<th>Bike</th>
<th>Travel</th>
<th>Median</th>
<th>Travel</th>
<th>Bike</th>
<th>Parking</th>
<th>Total</th>
</tr>
</thead>
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<td>Existing Dimension (ft)</td>
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<td>5</td>
<td>20</td>
<td>8</td>
<td>53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposed Dimension (ft)</td>
<td>6</td>
<td>10</td>
<td>14</td>
<td>10</td>
<td>6</td>
<td>7</td>
<td>53</td>
</tr>
</tbody>
</table>

Figure 5-23  Brevator Street with Median and Bicycle Lanes

The long term concept incorporates the Harriman campus roadway network, the extension of the Belvedere Avenue median, and the proposed Brevator Street median. Figure 5-24 shows how the Harriman roads would tie directly into Route 85; there would be no motorized access to the Melrose neighborhood. Instead, drivers would be directed to the campus entrance to the north, which would be two-way. Cyclists and pedestrians would continue to enjoy direct access; non-motorized access can be further supported with the creation of bike lanes along NY 85.
Figure 5-24 Long-term Concept Plan
Chapter 6. Wayfinding and Access Management

Overview

In addition to the transit and infrastructure recommendations discussed in the previous chapters of this report, wayfinding and access management, similar with TDM, offer symbiotic support. Wayfinding and access management both help to define and clarify multi-modal traffic and improve route safety for all user groups. Wayfinding does this by providing clear user information and navigational instructions for all user groups; access management, on the other hand, limits access and egress to a road, allowing drivers, cyclists and pedestrians clear travel with minimal intrusions by turning vehicles.

Wayfinding

As the transportation infrastructure in the study area is updated and developed to include multimodal links, wayfinding and signage will be an essential element to bring these individual pieces together visually for people accessing and using the campuses. Wayfinding can also be used to improve safety as clear, visible directional signage serves to avoid confusion on the part of drivers, cyclists and pedestrians. Lastly, coordinated wayfinding can help to promote a broader image and sense of community with common nomenclature and themes used to aesthetically link the study area.

Short Term Strategies

Signs on I-90 currently provide advance notice and clear directions to both UAlbany and the State offices campuses, and the State DOT currently uses variable message signage to direct travelers from Route 85 to the Harriman Campus. While adequate for the short-term, these signs will need to be updated as NanoTech and new development at Harriman are established. Terminology and nomenclature that reflect a cohesive single destination will need to be developed, while maintaining the identities of the separate campus environments. Consistency of this signage across all access points and for all user groups will be critical.

With respect to the Harriman Campus, once drivers reach the ring roads, from both I-90 and/or NY 85, and pedestrians and bicyclists move onto the campus site, finding specific buildings or facilities within Harriman is confusing. While there are signs, these signs are too small and too complex to be read quickly and easily as motorists navigate the ring road. Wayfinding signage to define safe routes for pedestrians and bicyclists does not currently exist. In the short-term, Harriman may develop a series of color-coded or numbered area signs, scaled appropriately for motorized (traveling at the posted speed limit) and non-motorized users that direct travelers to subsets of the
campus. Vehicular drivers could be directed to parking lots scattered throughout the site that relate to a certain subset of buildings. Bicyclists could be directed to locations with secure bike parking. And pedestrian link signage and visible building signage could be easily developed to move users to their final building destinations.

**Longer Term Strategies**

Once the Master Plan for the Harriman campus is finalized, work can begin to create a strong logo, color and brand for the multi-campus site, enabling an identity for area wide signage and wayfinding. “Park and walk” signage will be effective to guide people looking for particular sites to appropriate parking areas, and then direct people from parking facilities to their desired building. Orientation maps located in parking areas will help users orient to the larger 4-campus site and feel confident to walk to their final building destination. This system will directly support the multi-campus shuttle system discussed elsewhere.

Multi-campus signage will create a shared identity across campuses. This signage may include elements of the individual campuses or may be a separate identity, along the lines of a neighborhood designation. The signage would incorporate multimodal components and be used to guide people moving between transit stops, bike and vehicle parking and to and from major pedestrian and bicycle paths.

**Access Management**

Managing roadway access by limiting the number of driveways or the allowed curb cuts onto a roadway can be an effective way to maintain road speeds and free flow traffic conditions. Access management can help manage traffic because as vehicles enter and exit from a roadway other drivers must slow to allow the vehicles to turn in and out of driveways, impeding the free flow of traffic and creating spot congestion.

Multiple driveways (in commercial settings) also have a negative effect on motorized and non-motorized travelers for they increase the number of conflicts with turning drivers. By consolidating driveways the number of conflicts is lessened; however, if those driveways are then designed to facilitate quick turns, then the danger to other users increases. One must balance impacts, but be clear that safety for pedestrians and cyclists is paramount. Similarly, improving conditions for non-motorized travel can decrease vehicle congestion as more people choose to walk, cycle and take the bus.

When new roadways are built, they can be developed with access management in mind and limit curb cuts, driveways and turning points. As new development occurs in the study area surrounding Harriman, UAlbany, NanoTech and Patroon Creek, these projects should be built with access management guidelines in place.

Implementing access management strategies in built up areas, however, can be challenging because property and business owners with road frontage typically value
their road frontage and are often reluctant to give up access. There are, however, strategies that balance property owners’ concerns with the desire to improve traffic and enhance safety. For example, as properties are sold, it is possible to consolidate driveways and curb cuts.

Several recommendations proposed in this study (see Chapter 5) suggest that center turning lanes be limited to locations where turns are required, with the middle lane converted to pedestrian refuge islands. Such a strategy would effectively limit access to some properties by reducing opportunities for left hand turns. To minimize these impacts yet still improve road appearance and traffic conditions, the road may be designed with opportunities for U-turns, to alleviate access concerns.
Chapter 7. Implementation

Overview

This report presents and describes a wide variety of strategies and programs that can be used to improve linkages and connections between the four campus facilities – the University at Albany’s Uptown and NanoTech Campuses, the Harriman Research and Technology Park, and the Patroon Creek Corporate Park. Implementation of these strategies and programs will be challenging for a variety of reasons. While three of the four sites are affiliated with the State of New York and all sites are responding to market conditions and circumstances, each campus makes its own decisions about how and when to grow or change. As a result, projects at some campuses will move faster than others and the relative importance of certain strategies proposed in this report will vary at each campus and over time.

Despite the multitude of stakeholders involved with the Study Area, the Study Advisory Committee and Study Team also recognize the importance of implementing many of the recommendations as a coordinated package of tools. Accordingly, because the precise timing of events in this dynamic area is difficult to predict, establishing a mechanism for the ongoing coordination of transportation decisions and investments is the most important, highest priority implementation action recommended in this study. Building from the dialogue and cooperation already established through this process, the first task will be to formalize a structure for advancing the many strategies and programs recommended in this report.

Establish Area Transportation Management Association (TMA)

As described earlier in this report, Transportation Management Associations (TMAs) are active across the country and have been successful in coordinating capital investments and transportation demand management strategies over diverse settings. The presence in this area of four major institutions, as well as significant interest from state, regional, and local governments, suggests that this type of organizational structure could have considerable financial and technical support.

The TMA should have a Board that includes at a minimum a representative from each of the four campuses as well as a representative from the City of Albany, the Town of Guilderland, Albany County, NYSDOT Region 1, the CDTA, the CDTC, and the neighborhoods adjoining the Harriman and University at Albany campuses. Additional representation from area businesses, the Town of Colonie, or other interested parties could also be considered.

CDTA and CDTC may be able to allocate seed money to the TMA with federal funds from the Congestion Mitigation and Air Quality (CMAQ) Improvement Program. This
would allow the TMA to get started and to hire a strong and energetic staff person to move projects forward and to communicate with the many diverse stakeholders in this area. A staff person, working under the guidance of the TMA Board, will be critical to the success of this effort.

Priority activities for the TMA in its early days would fall under three categories: Programmatic, Educational, and Organizational.

**Programmatic** – There are several items recommended in this plan that will require immediate action to ensure that opportunities for the future are not lost. They include:

- Reserving a right-of-way on the University at Albany’s NanoTech Campus from Tricentennial Drive to Washington Avenue Extension. This right-of-way must be reserved now before rapid development of the NanoTech Campus forecloses the opportunity to establish a multi-modal transportation spine linking the various campuses.
- Identifying a preferred alignment on the Harriman Research and Technology Park campus for the future transportation spine and reserving right-of-way before redevelopment of the campus progresses.
- Working with Albany County to incorporate recommendations from this study into the design of the Fuller Road improvement project. Preliminary engineering for Fuller Road is expected to begin this year (2007).

**Educational** - The TMA must continue to reach out to the community as developments in the area move forward. Just as this study has become a forum for stakeholders to discuss transportation issues related to the multi-campus area, the TMA must establish an on-going process for including the public in future decisions as projects evolve.

**Organizational** – The TMA will need to develop a strategy for becoming self-sustaining within a few years. Among the critical issues to be resolved in the short-term is participation of the Master Developer selected for the Harriman Research and Technology Park. Any agreement with the selected Master Developer should require participation (time and funding) in the TMA. Longer-term, all of the campuses might be asked to contribute to support operation of the TMA.

Alternative sources of funding could also be considered as necessary. For example, some portion of parking revenue generated through parking management activities, should they be undertaken through the TMA, could be returned to support its activities. The establishment of a Transportation Development District (special improvement district) could also help support TMA operations. However, these potential sources of funding might be better utilized to support the costs of capital improvements initiated by the TMA.

Funding for specific projects initiated or supported by the TMA must come from a variety of sources. The TMA should be represented at the regional table as the Capital...
District Transportation Committee (CDTC) allocates federal transportation dollars throughout the region. In addition, the TMA would have representation from NYSDOT, Albany County and local governments; all of whom might be able to provide funding to assist with specific capital projects. As described above, dedicated revenue sources from user fees (such as parking) or special taxing districts could be considered if there is support for such measures. And finally, competitive grant programs from public or foundation sources might provide additional sources of funds for particular types of projects or initiatives.

**Priority Projects**

In addition to the immediate programmatic actions identified above, the other recommendations from this study have been prioritized in Figure 7-1. Short-term actions should be initiated within the next five years. Longer-term actions should be initiated within 10 years. Primary responsibility for each project is assigned to one or more entities; however all of these initiatives should be shared and reviewed through the TMA as they move forward to ensure coordination. An order-of-magnitude cost category (low, medium, or high) for each project is also provided.

As the transportation infrastructure is updated and developed to include multimodal links, wayfinding and signage will be an essential element to bring these individual pieces together visually for people accessing and using the campuses. Wayfinding can also be used to create a broader image and sense of community. By viewing the four campuses and surrounding communities as complementary parts of a unified whole, and ensuring that multi-modal connections address user needs and link them to facilities, open space/recreational opportunities, and public transportation, a strong and vital future can emerge.

**Funding and Financing**

In addition to the various public sources of funding available for transportation infrastructure, there are other potential sources of revenue that should be considered given the magnitude of improvements that will ultimately take place as the Harriman Campus redevelops and NanoTech, UAlbany and Patroon Creek build out. Public-private partnerships should be pursued whenever feasible to leverage public funding sources to the greatest degree possible.

The Harriman Research & Technology Development Corporation is a subsidiary of the Empire State Development Corporation which has the ability to issue bonds for improvements to support economic development. In addition, should changes in local zoning be required for the Harriman redevelopment plan to be fully implemented, it may be possible for the City of Albany to prepare a Generic Environmental Impact Statement for the proposed zoning which could evaluate mitigation costs associated with transportation related impacts. However, this
approach would need to be carefully weighed against concerns related to the timing of local land use approvals.

**Environmental Justice**

Throughout the planning process, recommendations were crafted to be sensitive to all adjacent residences and other surrounding land uses. However, special attention will need to be paid to households in the areas of special concern identified on page 2-13 as the planning concepts evolve into specific projects. The Harriman Research and Technology Development Corporation, the University at Albany, Capital District Transportation Authority and other potential implementing entities will need to ensure that these environmental justice population groups are engaged in the process and that appropriate outreach is undertaken to adequately address their concerns and any potential adverse impacts of projects.