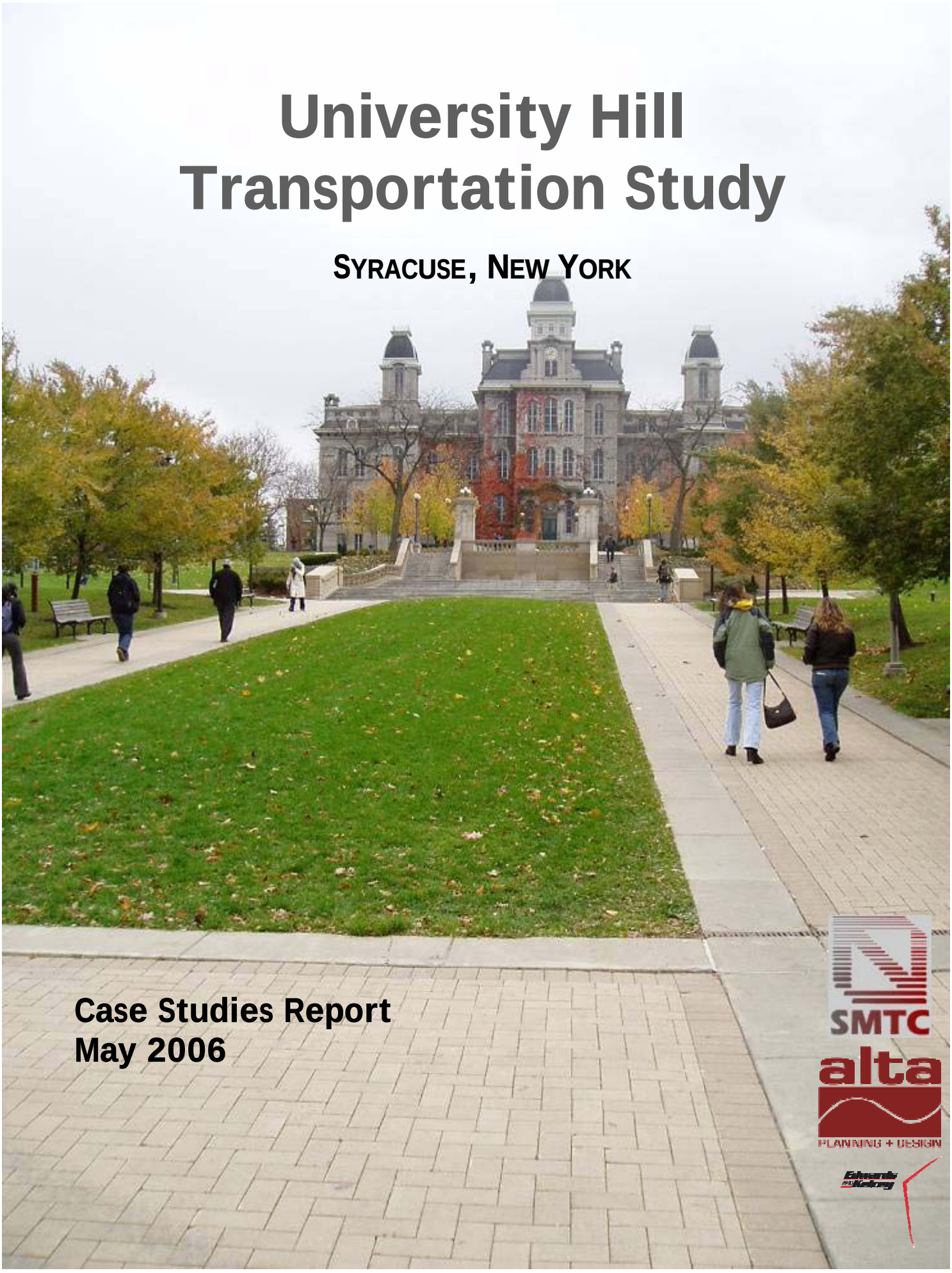
University Hill Transportation Study

SYRACUSE, NEW YORK



Case Studies Report
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1. Introduction

University Hill is challenged with accommodating multi-modal transportation needs. The study area is a mostly developed urban environment, and the current established transportation network does not fulfill the needs of non-motorized travelers. This issue is common in many communities, and various strategies have been used to improve conditions for pedestrians and bicyclists.

To identify potential strategies for increasing bicycling and walking in the University Hill study area, the project team researched efforts in two similar communities: Ithaca, New York and Madison, Wisconsin. These cities are among the top-rated communities in the nation for their quality of life. The project team selected Ithaca and Madison because they have similar physical attributes to Syracuse and also contain a relatively large university as well as other institutions.

Ithaca and Madison are known for having walkable and bicycle-friendly environments, but these walking and bicycling networks did not take shape overnight. The Ithaca and Madison non-motorized systems were the outcome of continuous efforts, including programs specifically intended to promote bicycling and walking; partnerships between municipalities and institutions (e.g., colleges and universities); and bicycle/pedestrian infrastructure projects. The successful programs and projects in these communities (along with lessons learned) could be used to develop strategies for enhancing the bicycling and walking environment in Syracuse and on University Hill.

As a third case study, a series of urban elevated highway projects were investigated as possible models for the Interstate 81 corridor on the west side of University Hill. Interstate 81 is perceived as a physical and visual barrier between Syracuse University and portions of the City on the freeway's west side. The elevated freeway limits pedestrian crossing opportunities and creates a less appealing pedestrian environment. While some approaches to address the issue are unique to certain communities, they provide a starting point for developing effective strategies in Syracuse.

Key issues to be addressed by the Ithaca and Madison case studies include:

- 1990 and 2000 bicycle and pedestrian commute mode share;
- Existing and proposed bicycle/pedestrian policies and programs;
- Existing public, private, and non-profit partnerships;
- Recent, existing, and future bicycle/pedestrian infrastructure projects and funding; and
- Keys to successes in these communities.

Key issues to be addressed by the elevated highway case studies include:

- Project description;
- Project designer, lead agency, and maintenance responsibility; and
- Project cost and funding source (where applicable).

2. Case Study: Ithaca, New York

With a population of roughly 30,000 residents, the City of Ithaca is located in Tompkins County, New York. The City is home to Cornell University and Ithaca College, which has a combined student population of over 25,000. In addition to the universities, major employers include the Tompkins County government, Cayuga Medical Center at Ithaca, and various high-technology firms. The 2000 Census indicates that about 1.8 percent of commute trips in Ithaca were made via bicycle, a slight increase from 1.6 percent in 1990. The city enjoyed a high walking commute mode share of 41.2 percent in 2000 and 44.6 percent in 1990.

There exists approximately 8 miles of bike trails (including the Cayuga Waterfront Trail, South Hill Recreation Way and East Ithaca Recreation Way) and an extensive regional system is under development (including the Cayuga Inlet Trail, Black Diamond Trail and others) in the city. Bike lanes have been striped on the major streets throughout the Cornell University Campus. A traffic calming program was developed for City neighborhoods, and the resulting slow-speed streets are safer for walking and bicycling. Sidewalks are present on the majority of the City's street system.

The following sections discuss adopted strategies used to increase bicycling and walking in Ithaca.

2.1 Bicycle/Pedestrian Programs

The City of Ithaca, Cornell University, Ithaca College and other agencies and organizations have several bicycling- and walking-related programs. Cornell has a group of certified bicycle instructors that hold bike safety courses for students, faculty, and any other interested parties. The "CU Cycles" list serve is an on-line forum facilitating communication between area walkers and cyclists. The University also requires students to register all bicycles in order to use on-campus bicycle parking. The registration program enables the University to trace lost, stolen, or abandoned bicycles to their owners. The University's police department includes a designated bicycle patrol division that monitors "problem areas" where vehicles, bicyclists, and pedestrians interact. Operating year-round, the bicycle patrol also provides bicycling education.

Similar to Cornell's bicycle patrol division, Ithaca's police department includes a bicycle component. The City's bike patrol division carries out traditional police duties while traveling community streets via bicycle. The division effectively provides closer contact between police officers and the community.

Ithaca's public transit provider, Tompkins Consolidated Area Transit (TCAT), provides bicycle racks on all buses. In their ten years of existence, the racks have proven popular among residents and students. Bicycle rack demand regularly exceeds supply, and the agency is currently evaluating strategies to expand capacity. The program's success has helped to address the challenges and barriers created by hilly topography.

2.2 Municipal and Institutional Partnerships

Through a variety of committees and other partnerships, the City of Ithaca, Cornell University and Ithaca College regularly communicate and coordinate to address bicycling and walking needs. Ithaca's mayor designated 2005 as the "Year of the Pedestrian," and formed a volunteer group to review City policies relevant to bicycling and walking. Another group, the Bicycle Pedestrian

Advisory Council (BPAC), includes 11 members appointed by the Mayor. This group reviews all transportation projects to ensure bicycling and walking needs are met. The BPAC also advises the City's Common Council, Public Works Department, Planning and Development Board, and Parks Commission on general bicycle and pedestrian issues.

Cornell's Bicycle/Pedestrian Traffic Safety Advisory Committee serves a similar role to the City's BPAC. This committee promotes bicycling and walking on campus, and meets on an as-needed basis to review City and University transportation projects. Cornell also has a full-time bicycle coordinator that regularly advises University and City staff on bicycle and pedestrian issues. The bicycle coordinator also recently formed a "Brownbaggers for Bikes" committee, consisting of planners and engineers from the University, the City, and the regional metropolitan planning organization. The committee was formed with the intent of bringing officials together to discuss general bicycling and walking issues, and to update fellow members on current projects and planning efforts.

Cornell also has a comprehensive Transportation Demand Management (TDM) program to encourage use of alternative transportation modes beyond bicycling and walking. Under the University's "Rideshare" program, groups of students and faculty may exchange individual parking permits for a combined group permit, providing access to preferential parking spaces on campus. Potential Rideshare members enroll through the "Commuter Connection" program, which enables students and faculty to find additional group members. Other Rideshare and Commuter Connection program incentives include guaranteed emergency rides home and other parking privileges for members with special needs. Cornell's TDM program also subsidizes TCAT transit passes for full-time students. Under the "OmniRide" program, students, faculty and staff receive a free annual TCAT pass if they agree to not purchase a campus parking permit. Omniriders may also receive up to thirty one-day perimeter parking permit for instances when it is necessary to bring a vehicle onto campus.

2.3 Bicycle/Pedestrian Projects

Both the City and the universities have identified projects and policies to improve the bicycling and walking environment. Completed in 1997, the *City of Ithaca Bicycle Plan* identifies two goals: double the current percentage of total trips made via bicycle; and reduce the number of bicycle-related deaths and injuries by 10 percent. The Plan outlines short- and long-term bicycle system improvement strategies. The short-term strategies include a list of "fiscally constrained" projects intended to meet bicyclists' basic travel needs, including bicycle lanes, shared roadways, and signage.

Specific projects include the following:

- Add bicycle lanes and/or shared lane markings to Route 13, Route 79, Route 89 and Route 96;
- Dey Street Bikeway: Replace on-street parking with bicycle lanes;
- North-South City Bikeway: Add shared lane markings, bicycle lanes, and remove on-street parking in some locations; and
- Remove on-street parking or shift street centerline, and add bicycle lanes and/or shared lane markings to East Hill, West Hill, South Hill, and University Bikeways.

The long-term strategy includes a more comprehensive project list, including additional bicycle lanes, shared roadways, multi-use paths, and other street treatments. The City is currently planning several street retrofit projects to enhance existing bicycle/pedestrian facilities and to provide new facilities where none currently exist. When fully implemented, the short- and long-term strategies will provide a comprehensive bikeway network, thus bringing the City closer to achieving the goals set forth by the *Ithaca Bicycle Plan*.

Prepared by the Ithaca-Tompkins County Transportation Council, the *2005–2010 Transportation Improvement Plan* represents the area's short-term transportation plan. The document identifies a list of planned multi-modal projects to be completed within a five-year timeframe. In addition to several street projects that will include non-motorized facilities (e.g., bicycle lanes and sidewalks), the Plan proposes a $677,000 project to construct "Phase 2" of the Cayuga Waterfront Trail. The trail will provide key bicycle/pedestrian connections in Ithaca's northwestern area. Funding for the Cayuga Waterfront Trail's third phase is included in the recently-approved SAFETEA-LU Federal transportation bill. The bill allocates approximately $1.2 million to extend the trail toward the Farmers Market, Northside and Fall Creek Neighborhoods. The extension will provide new connections to several commercial and employment centers.

Ithaca's Cayuga Waterfront Trail

The *Transportation Improvement Plan* also lists several potential projects to enhance non-motorized access to transit. Totaling approximately $12.5 million, specific projects include the following:

- Installing bicycle racks at TCAT bus stops;
- Constructing the Green Street transit stop in downtown Ithaca to serve high volumes of passengers;
- Installing new bus shelters and replacing existing obsolete shelters; and
- Purchasing 25 low-floor buses.

The Green Street project is modeled on New York City's initiative, which includes reducing pavement widths, increasing landscaping and improving non-automotive access along designated streets.

Shared roadways, sidewalks, and multi-use paths generally comprise Cornell's non-motorized network. Colored pavement markings designate corridors for the exclusive use of bicyclists, walkers, or both. In most cases, signs and pavement markers direct bicyclists to low-traffic streets, and direct

pedestrians to parallel sidewalks. The University has committed to incorporate non-motorized facilities on all street improvement projects where conditions permit.

2.4 Urban Redevelopment Projects

Like many communities, the City of Ithaca is embarking on several urban redevelopment projects. In addition to achieving economic development and other objectives, the redevelopment projects could also positively impact the surrounding bicycling and walking environment. For example, the Ithaca Downtown Partnership received grant funding in 2005 for a variety of tourism, preservation, and revitalization projects. Administered by the New York Main Streets Program, the nearly $200,000 grant will be used to improve downtown building facades, construct pedestrian amenities on secondary downtown streets, and add aesthetic features to the historic State Theater.

The City's Common Council recently formed a task force to evaluate redevelopment opportunities in the Collegetown District, situated between downtown Ithaca and Cornell University. Comprised of university students, district residents, business and property owners, and other members, the 12-member task force will prepare recommendations for making Collegetown a "year round" district. Specific areas to be addressed include land use, parking, transportation, and development incentives. The task force's ultimate product will include a 10-year district redevelopment plan.

2.5 References

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Telephone conversation with Lois Chaplin, Cornell University Bicycle Coordinator, March 29, 2006.

Cornell University Bicycle Engineering webpage: www.bike.cornell.edu/Report/reporteng.html.

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Cornell University Commuter and Parking Services webpage: www.parking.cornell.edu/tms3_rideshare.html.

1990 and 2000 U.S. Census webpage: www.census.gov.

3. Case Study: Madison, Wisconsin

With a population of roughly 210,000 residents, the City of Madison is located in Dane County, Wisconsin. The City is home to the University of Wisconsin-Madison, which has a student population of about 40,000. Major employers include the Wisconsin state government, Trek Bicycle Corporation and Graber Products, Inc. In 2000, bicycling accounted for about 3.2 percent of commuting trips, similar to the 1990 share of 3.3 percent. Walking accounted for about 10.7 percent of commuting trips in 2000 and 12.7 percent in 1990. The following sections discuss adopted strategies used to increase bicycling and walking.

3.1 Bicycle/Pedestrian Programs

The University of Wisconsin-Madison, the City of Madison, and other agencies and organizations have a variety of bicycle/pedestrian programs. The University of Wisconsin's Bicycle Ambassadors Program focuses on education. Modeled after programs in Chicago and Toronto, University staff members teach bike safety courses and host campus events to promote bicycling and walking. The Ambassadors Program also operates the campus "bike annex," where students and staff can take advantage of free bicycle maintenance, commuting information, helmet fittings, and other amenities. Similar to other communities, the City of Madison and University of Wisconsin require bicycles to be registered. The registration program enables the City and University staff to trace lost, stolen, or abandoned bicycles to their owners.

At the municipal level, the City of Madison's Bicycles at Work program provides City employees alternative travel options during the workday. The program allows City staff to reserve bicycles from a "bikepool" for work-related trips. Beyond the City and University, other agencies and organizations promote bicycling and walking in Madison. Madison's public transit provider, Metro, provides bicycle racks on all buses. The agency plans to spend over $22 million over the next five years to purchase low-floor buses to ease boarding and alighting for seniors and riders with disabilities. At the State level, the Wisconsin Department of Transportation provides bicycle safety courses.

Madison also benefits from the efforts of advocacy groups. The Bicycle Transportation Alliance of Dane County focuses on various bicycle-related issues, including safety, physical infrastructure, and land use. The organization monitors state legislative activities and also hosts community education courses to promote bicycling and walking. The Bicycle Federation of Wisconsin serves similar functions, and also participates in public hearings and on committees to represent bicyclists' needs. The Federation played a key role in updating the State's bicycle laws in 1995. In addition, the organization is completing a three-year project to educate Dane County college students, middle school students, and motorists about bicycle safety.

3.2 Municipal and Institutional Partnerships

The City of Madison coordinates with the University of Wisconsin and other institutions to address bicycling and walking in a variety of ways. The City's Engineering Division employs a full-time pedestrian/bicycle coordinator to advise City staff on non-motorized issues and to maintain communication with other agencies and organizations. Madison's Pedestrian, Bicycle, and Motor Vehicle Commission is a subset of the City's Transportation Commission. This subcommittee reviews City transportation projects to ensure bicycling and walking needs are met. Agency coordination and partnerships are also addressed in the *Madison Urban Area and Dane County Bicycle*

Transportation Plan. This Plan directs the City and County to work with schools, colleges, and universities to promote bicycle safety through training courses and other programs. The Plan also recommends that training workshops be held to educate planners and engineers on bicycle planning and design issues.

Because Madison is not located within a Federal air quality "non-attainment area", there are no Federal mandates to reduce automobile travel (such as vehicle trip reduction programs for large employers). Consequently, larger institutions such as hospitals and business parks implement TDM programs on a voluntary basis. However, the City of Madison encourages large employers to develop these programs, and also provides implementation guidance when requested.

Similar to the City, the University of Wisconsin employs a full-time bicycle/pedestrian coordinator to address campus non-motorized issues. Because transportation issues affect both the City and University, the bicycle/pedestrian coordinator maintains close contact with City staff. In addition, the University's Transportation Committee includes volunteer members representing non-motorized interests. This subcommittee advises University staff on issues ranging from campus bicycle parking to major transportation projects.

The University's TDM program also provides a variety of transportation options for students and employees. The Flex Parking program provides a limited pay-as-you-go permit system for infrequent drivers when they cannot travel via bicycle, walking or transit. University employees can also form carpool groups and receive a consolidated parking permit as well as preferential parking spaces on campus. Larger commuting groups (7-15 persons) can form vanpools under the Wisconsin State Vanpool program. The program rents vans based on a fixed fare and the fare covers gas, insurance and maintenance costs. Vanpool members can purchase University parking permits using pre-tax income and they also benefit from preferential parking spaces on campus. For transit riders, the University of Wisconsin provides free Metro bus passes to all faculty, staff and students. For its multi-faceted TDM programs, the University received one of 12 U.S. Environmental Protection Agency "Best Workplace for Commuters" awards in 2006.

3.3 Bicycle/Pedestrian Projects

Madison's citywide non-motorized network consists of bicycle lanes, shared roadways, sidewalks, and multi-use paths. Bicycle lanes are provided on approximately 50 miles of city streets, supplemented by 55 miles of multi-use paths. Bicycle route signage is provided on about 130 miles of streets and paths. The Bicycle Federation of Wisconsin partnered with the City of Madison and other organizations to develop a citywide bikeway signage system.

In the 1970s and 1980s, the City completed several street retrofit projects in the vicinity of the University of Wisconsin to improve bicycle and pedestrian facilities. The State Street Pedestrian Mall serves as a notable street retrofit project example. Approximately eight blocks long and lined with commercial, retail, and entertainment venues, the Mall links the University with Wisconsin's State Capitol. Vehicle travel is restricted to buses, taxis, and authorized vehicles.

The *Madison Urban Area and Dane County Bicycle Transportation Plan* recommends an enhanced network of multi-use paths and on-street facilities. In addition to a long list of countywide bicycle projects, the Plan proposes 117 on-street and 103 off-street projects (some of which have been completed). The Plan includes a map that illustrates planned bicycle projects in the Madison urban area and also depicts a comprehensive bicycle network connecting central Madison with the city's periphery. The *Bicycle Transportation Plan* also stresses the need for routine maintenance to preserve existing and future facilities. Other recommendations pertain to end-of-trip facilities (i.e., bicycle parking) as well as educational, encouragement, and enforcement programs. The document indicates that the Wisconsin Department of Transportation's Statewide Multi-Modal Improvement Program provides most funding for off-street bicycle/pedestrian projects, while the Wisconsin Department of Natural Resources also funds recreational trail projects.

The Bicycle Transportation Plan includes a project to add safety enhancements on Madison's Howard Temin Lakeshore Path

The *2006–2010 Transportation Improvement Plan for the Dane County Area* represents the Madison Area Metropolitan Planning Organization's short-term transportation plan. The document identifies a list of planned multi-modal projects to be completed within a five-year timeframe. The Plan lists over $20 million in non-motorized transportation projects, including multi-use paths, pedestrian malls, bicycle/pedestrian overpasses, and education programs, though full funding for several projects has yet to be secured. Specific projects include the following:

- U.S. 151 corridor trail;
- Badger State Trail (Capital City Trail to Belleville);
- Campus Drive Trail (University Bay Drive to Linden Drive);
- East University of Wisconsin-Madison campus pedestrian mall;
- County Highway "M" pedestrian/bicycle underpass near Oncken Road;
- Capital City Trail overpass at County Highway "D";
- Capital City Trail extension (Dempsey Road to Buckeye Road);
- Pedestrian/bicycle safety education and coordination;
- West Branch Starkweather Creek Path, including overpasses at Aberg Avenue and E. Washington Avenue;
- Yahara River Parkway Trail;
- E. Washington Avenue pedestrian streetscape enhancements.

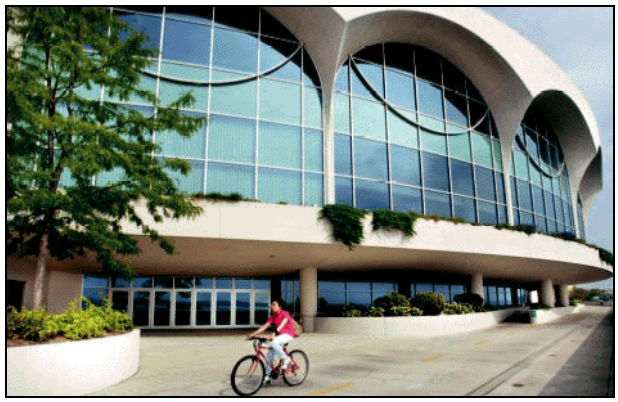
Multi-use paths, shared roadways, and sidewalks generally comprise the University of Wisconsin's non-motorized system. The City of Madison recently completed a rails-to-trails project extending from the University campus to adjacent residential neighborhoods, and the University plans to extend the path through campus. The University also plans to expand its bicycle lane network to

provide greater separation between bicycle and foot traffic. Pedestrian bridges are also being considered to improve non-motorized crossings at major streets on the campus fringe. Like many universities, bicycle parking demand often exceeds supply at the University of Wisconsin. The Campus Transportation Plan identifies a need for more covered bicycle parking and bicycle lockers, and these facilities will be added with new campus development projects.

At the Federal level, the recently-approved SAFETEA-LU Federal transportation bill allocates nearly $6 million for bicycle/pedestrian projects in the Madison area. One project consists of a multi-use trail and park facilities in and near Madison's Central Park. A second project will provide two bicycle/pedestrian bridges over Starkweather Creek. The third project will complete the Glacial Drumlin Trail between Madison and Waukesha.

3.4 Urban Redevelopment Projects

The City of Madison has completed several redevelopment projects to support a healthy downtown and surrounding neighborhoods. A more notable project is the Monona Terrace Convention Center, designed by Frank Lloyd Wright in 1938. Located approximately two blocks from the State Capitol, the facility provides about 250,000 square feet of flexible space. The Convention Center is situated on Monona Lake on the site of a former parking lot, and the site's design includes a multi-use path providing lakeside recreation opportunities. Completed in 1997, Monona Terrace is credited with stimulating nearby development, including restaurants, condominiums, and a hotel.



Monona Terrace Convention Center

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University of Wisconsin-Madison Campus Information and Visitor Center webpage: dir.civc.wisc.edu/view.asp?cat=15&cat1=135.

University of Wisconsin-Madison News webpage: www.news.wisc.edu/12438.html.

University of Wisconsin-Madison Transportation Demand Management webpage: www2.fpm.wisc.edu/trans/TDM/index.htm.

1990 and 2000 U.S. Census webpage: www.census.gov.

4. Relevance to Syracuse

In the past decade, Madison and Ithaca have made significant improvements in pedestrian and bicyclist facilities. Both communities see these efforts as investments in their quality of life, and they have improved their ability to attract and retain sustainable economic development. The projects and programs summarized in these case studies have resulted in higher bicycling and walking rates compared with similarly sized communities, and these cities have managed to generally maintain or increase the level of bicycling and walking among residents.

In Syracuse, the bicycle commute mode share rose slightly (from 0.5 percent to 0.6 percent) between 1990 and 2000. The pedestrian commute mode share declined from 18.6 percent to about 10.1 percent during the same time period. Within the University Hill area, the pedestrians account for a significant amount of the mode share with 36.8%. The following table summarizes existing bicycle/ pedestrian characteristics in Ithaca, Madison, Syracuse and University Hill.

Summary of Existing Bicycle/Pedestrian Characteristics

Characteristic	Ithaca, NY	Madison, WI	Syracuse, NY	University Hill*
2000 bicycle commute mode share	1.8%	3.2%	0.6%	0.9%
2000 pedestrian commute mode share	41.2%	10.7%	10.1%	36.8%

Source: 2000 Census

*University Hill Area includes census tracts 43, 44, 55 and 56.01

4.1 SMTC Bicycle and Pedestrian Plan

Similar to the strategies implemented in Ithaca and Madison, efforts are currently underway to improve walking and bicycling in Syracuse. Completed in 2005, the Syracuse Metropolitan Transportation Council's (SMTC) *Bicycle and Pedestrian Plan* identifies numerous engineering, education, enforcement, and encouragement strategies. The Plan references the 2003 *Greater Syracuse Metropolitan Area Bike Map*, which rates the bicycle "suitability" of roads within the MPO area. The Plan indicates that about 80 percent of evaluated roads are currently suitable for bicycle commuting.

Although the Plan does not identify specific projects for expanding the bicycle/pedestrian network, the document includes general bicycle, pedestrian, trail, and transit access recommendations. These are identified below:

Bicycle Facilities

- Provide additional bike riding facilities.
- Sign a system of on-road routes.
- Increase supply of bicycle parking.
- Maintain roadways for safe bicycle travel (create a spot maintenance program).
- Implement bicycle crash countermeasures as needed.
- Update the SMTC bike map or use a quantitative tool to measure bicycle suitability.

Pedestrian Facilities

- Provide paved shoulder(s) where no sidewalk is available or feasible.
- Incorporate ADA compliant facilities.
- Provide crosswalks/improved crosswalks (appropriate signage, markings/signals).

- Incorporate traffic calming techniques if/where feasible.
- Improve and increase sidewalk maintenance.
- Implement Safe Routes to School programs.
- Work towards development of a 'Complete the Streets' program.
- Require developers to include pedestrian facilities.
- Implement pedestrian crash countermeasures as needed.

Trails

- Develop a regional trail system.
- Increase number of trailheads.
- Trail amenities (signage, benches, etc.).
- Trail connection projects.
- Regional trail promotion program.

Transit Access

- Increase the usage of bicycle racks on buses.
- Increase ADA access at bus stops.
- Improve bicycle access to Regional Transit Center.
- Complete/expand the use of OnTrack.
- Examine the possibility of further expansion of the existing transit system.

The *Bicycle and Pedestrian Plan* also highlights existing bicycle/pedestrian education programs. Onondaga County's Traffic Safety Program completed 32 pedestrian safety programs in 2002–2003, along with 56 bicycle and helmet-fitting presentations. Pedestrian programs generally focus on pre-school children, with an emphasis on teaching basic street-crossing rules. The bicycle presentations usually take the form of "bicycle rodeos" involving younger children. Bicycle/pedestrian presentations are also provided by the non-profit "Think First of Central New York" organization. Dedicated to preventing traumatic brain and spinal cord injuries, this organization sponsors programs reaching approximately 5,000 kindergarten through high school students. The *Bicycle and Pedestrian Plan* includes a strategy to expand these programs to reach more community members in the future.

The *Bicycle and Pedestrian Plan* includes a goal to increase targeted law enforcement efforts and programs, especially during the warmer months when bicycling and walking is most common. Recommendations include enforcing sidewalk maintenance responsibilities, increasing police bicycle patrols, increasing enforcement of specific bicycle/pedestrian laws, and providing a liaison between local law enforcement and the bicycling community.

Syracuse also benefits from the efforts of regional and statewide bicycle advocacy groups. The Onondaga Cycling Club is a Central New York non profit organization that organizes cycling events. The club schedules and conducts bicycle rides, vacation rides, races, and time trials from March through December throughout the Central New York area. The New York Bicycling Coalition is a statewide group working to organize the efforts of local bicycle and pedestrian advocacy groups. Formed in 1992, the coalition facilitates workshops to improve bicycle/pedestrian safety, and also advocates for non-motorized facilities with road expansion projects.

4.2 Potential Actions

Based on a review the *SMTC Bicycle and Pedestrian Plan*, the specific actions that Ithaca and Madison offer as models for Syracuse include the following.

1. On-Street Bike Lanes: Madison has implemented one of the most successful networks of on-street bike lanes in the U.S. They were recently awarded a Gold Medal Bicycle Friendly Communities Award by the League of American Bicyclists.

2. Bikes on Buses: Ithaca was one of the first cities in the eastern U.S. to provide bicycle racks on all of its buses. People use their bicycles to ride downtown, then are able to bring their bikes on the bus if they don't want to climb the steep hill. Most buses in Syracuse are currently equipped with bicycle racks.

3. Bicycle Parking: Madison has one of the nation's most advanced bicycle parking ordinances, with detailed requirements for bike racks and lockers in every land use category. This code has resulted in extensive bike parking at all major destinations throughout the city, including indoor bike parking in parking garages, bike lockers at transit stations, and bike racks as an integral element of streetscape design.

4. Education: Cornell's bicycle safety education program is a national model, and is combined with a TDM approach that encourages college students to live without a car in Ithaca. Students can learn the rules of the road, their bicycles are registered with the police, transit passes are provided, and car parking is expensive.

5. Encouragement: Both Ithaca and Madison have created a bicycle and pedestrian friendly culture in their communities. Events are held annually to encourage health and physical activity for people of all ages and abilities.

6. City Center Investments: The State Street Pedestrian Project in Madison represented a significant investment in the City's streetscape. This project is similar to the proposed Connective Corridor in Syracuse. The urban infill projects in Ithaca's College Town neighborhoods also provide a good example of mixed-use redevelopment, including parking lots with ground floor retail.

7. Reconnecting the Waterfront: The Cayuga Inlet Trail and the Monona Terrace bike path are similar projects to the proposed Onondaga Lakefront and Creekwalk projects in Syracuse. While these projects are not directly related to University Hill, it is important to consider how University Hill can be linked to multiple neighborhoods. One factor in reducing auto dependence is the creation of regional bicycle connections.

Madison and Ithaca have weather and topography conditions that are similar to Syracuse. All three communities have winter snow conditions and limited daylight in winter, along with beautiful weather in the spring, summer and fall. Ithaca has a steeper topography than Syracuse, while Madison is a flatter city. Madison and Ithaca are both lakefront communities. Madison has a routine maintenance program for ensuring that bike lanes are swept on a regular schedule, that paths are clean and safe, and that sidewalks are cleared of snow and ice in the winter. Ithaca developed a

"Bike Spot" on-request maintenance program to handle minor repair projects on sidewalks and bikeways.

4.3 References

Bicycle and Pedestrian Plan. Syracuse Metropolitan Transportation Council. March 2005.

New York Bicycling Coalition webpage: www.nybc.net.

Onondaga Cycling Club webpage: www.onondagacyclingclub.org

1990 and 2000 U.S. Census webpage: www.census.gov.

5. Elevated Highway Enhancements

On the western side of the study area, Interstate 81 serves as a physical and visual barrier between Syracuse University and portions of the City on the freeway's west side. The elevated freeway limits pedestrian crossing opportunities and creates a less appealing pedestrian environment. Elevated highways and bridges create similar problems in many communities. To revitalize these spaces and improve non-motorized connections, a limited number of communities implemented strategies to improve spaces under these features.

Interstate 81 near University Hill

Interestingly, the research indicated that most of the projects focused on creating or improving destinations under the elevated highway or bridge (See summary table below). The project team found limited information regarding improving the walking or biking experience and safety itself. Thus, Syracuse has a real opportunity to be at the forefront of addressing these common issues and concerns. The following table identifies the communities researched, the elevated highway under focus, and general enhancements.

Summary of Elevated Highway Enhancements

City	Highway	Enhancement Treatments
Baton Rouge, LA	Interstate 10/110 interchange	City park
Portland, OR	Burnside Bridge	Skatepark; open-air market
New York, NY	Queensboro Bridge	Public plaza; enclosed market
New York, NY	Metro North Railroad Viaduct	Open-air market
Miami, FL	Metrorail Viaduct	Pedestrian mall
Seattle, WA	Interstate 5 viaduct	City park
Spokane, WA	Interstate 90 viaduct	Skatepark
Oakland, CA	Interstate 580 viaduct	Skatepark

The research included telephone conversations with various agencies, a review of published university reports and other articles, as well as a web-based search. The case studies below include more detailed documentation of the individual projects, including (if available) information regarding the project's impetus for getting started; estimated cost and year of completion; funding source; and agency responsible for facility operations and maintenance.

5.1 Interstate 10/110 Interchange Ramps, Baton Rouge, LA

Located in a predominantly residential area, several elevated ramps and other support structures comprise the Interstate 10/110 interchange in Baton Rouge, Louisiana. Constructed in 1964, the interchange stands above the 25-acre Expressway Park. Baton Rouge's Recreation and Parks Commission developed the park in response to numerous site development concepts and studies. Expressway Park includes basketball courts, tennis courts, a baseball field, a community center, and playground area. The Parks and Recreation Commission provides routine park maintenance and management.

Project Summary

- Size: 25 acres
- Built: 1964
- Cost: Not available
- Funding source: Not available
- Land Owner: Louisiana Dept. of Transportation
- Operations/maintenance: Baton Rouge Parks & Rec. Commission

References:

- Irrizary, Ramon. "Restructuring the Spaces Under Elevated Expressways: A Case Study of the Spaces Below the Interstate-10 Overpass at Perkins Road in Baton Rouge, Louisiana." Louisiana State University thesis, 2003.

5.2 Burnside Bridge, Portland, OR

Spanning the Willamette River, Portland's Burnside Bridge connects downtown Portland with the nearby Central Eastside Industrial District. Under the bridge's east end lies the 10,000 square-foot Burnside Skatepark. After city voters approved funding for a skateboarding facility, city officials worked with a committee to select the Burnside site. The site's industrial setting minimizes impacts on businesses and residents, while the overhead bridge protects park users from adverse weather. Park users have responsibility for site maintenance and management, and funding is made possible by donations from park users, tourists, and nearby businesses. Since its opening, the Burnside Skatepark has proven popular with the skateboarding community while reducing illegal activity near the Burnside Bridge.

Portland Saturday Market is located under the Burnside Bridge's west end, and is surrounded by commercial and residential development. Created in 1973, the market is an open-air venue specializing in handmade food and craft items, and also includes musical and street performers. The market's 400 vendors erect temporary booths under the bridge (and surrounding area) following a defined layout for booths and pedestrian aisles. Attracting 750,000 annual visitors and generating $8 million in annual gross sales, Portland Saturday Market is a non-profit organization funded by member fees. The market serves as a key activity node despite the physical barrier posed by the Burnside Bridge.

Saturday Market Project Summary

- Size: Several city blocks
- Built: 1973
- Cost: Not available
- Funding source: Initial grant from Metropolitan Arts Council
- Land Owner: City of Portland
- Operations/maintenance: Market vendors

Burnside Skatepark Project Summary

- Size: 9,000 SF
- Built: 1990
- Cost: Not available
- Funding source: Not available
- Land Owner: City of Portland
- Operations/maintenance: Park users

References:

- Irrizary, Ramon. "Restructuring the Spaces Under Elevated Expressways: A Case Study of the Spaces Below the Interstate-10 Overpass at Perkins Road in Baton Rouge, Louisiana." Louisiana State University thesis, 2003.
- Portland Saturday Market webpage: www.saturdaymarket.org.

5.3 Queensboro Bridge, New York, NY

Beneath the west end of New York's Queensboro Bridge currently lies a combination of amenities catering to the public. Specifically, the site includes a furniture store, two restaurants, and a public plaza with benches, street trees, and architectural features. The area historically supported an open-air market, and recent redevelopment efforts focused on enhancing public amenities.

Project Summary

- Size: Not available
- Built: Not available
- Cost: Not available
- Funding source: Public and private
- Land Owner: Public and private
- Operations/maintenance: City of New York; private businesses

References:

- Irrizary, Ramon. "Restructuring the Spaces Under Elevated Expressways: A Case Study of the Spaces Below the Interstate-10 Overpass at Perkins Road in Baton Rouge, Louisiana." Louisiana State University thesis, 2003.

5.4 Metro North Railroad Viaduct, New York, NY

Efforts are currently underway to revitalize and expand La Marqueta del Barrio, a public market situated under Harlem's Metro North Railroad Viaduct in New York. A varying number of vendors have occupied space under the viaduct since the early 20th century. Spearheaded by local arts and culture groups, the project will expand the market to 85,000 square feet, and the facility will specialize in fresh and prepared foods.

Project Summary

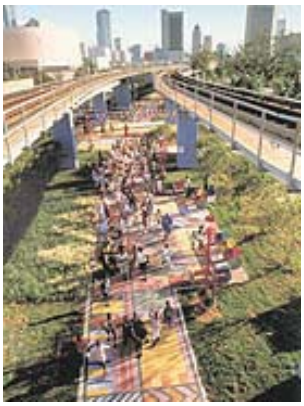
- Size: 85,000 square feet
- Built: Currently being expanded
- Cost: Not available
- Funding source: Not available
- Land Owner: Not available
- Operations/maintenance: Market vendors

References:

- New York City Economic Development Corporation webpage: www.nycedc.com/Info-Opp/City_Properties/Retail_Markets/La_Marqueta.html.
- Project for Public Spaces webpage: www.pps.org/info/newsletter/october2005/markets_economic_development

5.5 Metrorail Viaduct, Miami, FL

A viaduct carrying Miami's Metrorail transit system currently serves as a physical and visual barrier between downtown and the city's Overtown neighborhood. With the goal of enhancing pedestrian connections and stimulating private development, several city agencies partnered with Dade County Art in Public Spaces to develop the 9th Street Pedestrian Mall in 1994. Approximately two blocks long, the 24,000 square-foot mall provides multi-modal connections to a nearby Metrorail station, and enhancements include multi-colored pavers, benches, and lighting features. The Dade County Department of Public Works retains maintenance responsibilities. The 9th Street Pedestrian Mall received a 1995 Merit award from the National Endowment for the Arts, and a 1999 award from the American Society of Landscape Architects.



Project Summary

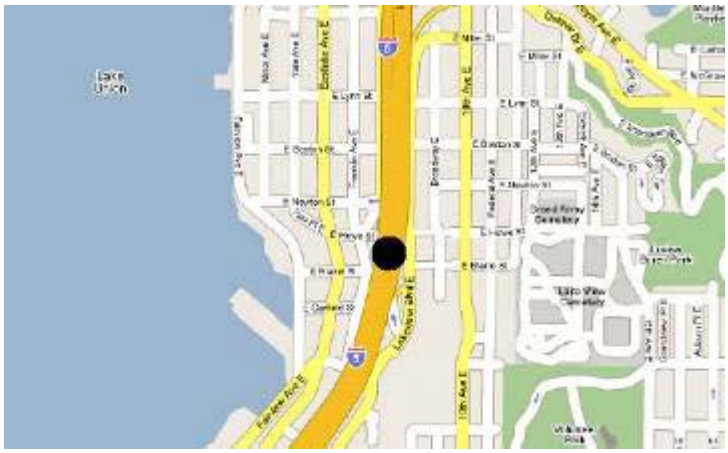
- Size: 24,000 SF
- Built: 1994
- Cost: Not available
- Funding source: Not available
- Land Owner: Not available
- Operations/maintenance: Dade County Dept. of Public Works

References:

- Miami Community Redevelopment Agency newsletter, Volume 2, Issue 1. March 2004.
- Irrizary, Ramon. "Restructuring the Spaces Under Elevated Expressways: A Case Study of the Spaces Below the Interstate-10 Overpass at Perkins Road in Baton Rouge, Louisiana." Louisiana State University thesis, 2003.

5.6 Interstate 5 Viaduct, Seattle, WA

In 2005, the City of Seattle constructed a 7.5-acre park beneath an elevated portion of Interstate 5. Formally known as the "I-5 Colonnade", the park includes bicycle and pedestrian trails, an off-leash dog area, as well as public art features in a predominantly residential area. A mountain bike trail system will also be constructed in 2006. With a goal of enhancing connections between the Eastlake and Capitol Hill neighborhoods, the project first came into focus as part of the 1998 Eastlake Neighborhood Plan. Seattle's Parks and Recreation Department developed a long-term lease with the Washington State Department of Transportation (the land owner), and the City provides park operations and maintenance. Funding for the $1.8 million park was made possible by the "Pro Parks Levy" passed by area voters in 2000.



Project Summary

- Size: 7.5 acres
- Built: 2000
- Cost: $1.8 million
- Funding source: Voter levy
- Land Owner: Washington State Dept. of Transportation
- Operations/maintenance: Seattle Parks and Rec. Dept.

References:

- City of Seattle Parks and Recreation webpage: www.seattle.gov/parks/parkspaces/I-5Colonnade.htm.
- City of Seattle News Advisory webpage: www.cityofseattle.net/news/detail.asp?ID=5678%Dept=14.

5.7 Interstate 90 Viaduct, Spokane, WA

Spokane's "Under the Freeway" (UTF) Skatepark is situated under an elevated portion of Interstate 90 within the city's downtown core. Located adjacent to a high school and the downtown business district, the 15,000 square-foot facility includes lighting and other amenities for park users. The site originally housed basketball and tennis courts, but declining use eventually prompted city leaders and the skateboarding community to develop alternative land uses. With a $175,000 grant provided by the Spokane Parks Foundation (a non-profit entity), the City completed UTF in the late 1990s. The land owner, Washington State Department of Transportation, signed a contract with the City of Spokane, transferring park operations, maintenance, and liability to the City. According to City staff, UTF Skatepark has proven popular with the skateboarding community and nearby high school students.

Project Summary

- Size: 15,000 SF
- Built: Late 1990s
- Cost: $175,000
- Funding source: Grant funding
- Land Owner: Washington State Dept. of Transportation
- Operations/maintenance: City of Spokane

References:

- Telephone conversation with Tony Madunich, City of Spokane Parks and Recreation Department, April 18, 2006.
- UTS Skatepark webpage: www.skateboardparks.com/washington/utf/index.html.

5.8 Interstate 580 Viaduct, Oakland, CA

The California Department of Transportation (Caltrans) recently signed a lease with the City of Oakland to legitimize an illegal skatepark under an elevated segment of Interstate 580. Oakland's skateboarding community built Bordertown Skatepark in 2004 using discarded construction materials from surrounding freeway projects, and the park has been credited with reducing drug activity and other crimes in the surrounding residential, commercial, and industrial areas. The land owner, Caltrans, initially planned to demolish the park in conjunction with a nearby freeway construction project, but the agency encountered resistance from the skateboarding community, nearby business owners, Oakland's Mayor, and a State and U.S. senator. In 2006, the City of Oakland agreed to lease the Bordertown site for 2.5 years at a cost of $100. The land will eventually be subleased to a non-profit group formed by park users. This group is responsible for covering the City's liability deductible payment, as well as ongoing park maintenance.

Project Summary

- Size: 10,000 SF (when completed)
- Built: Currently under construction
- Cost: Not available
- Funding source: Not available
- Land Owner: California Dept. of Transportation
- Operations/maintenance: Non-profit group to be formed by park users

References:

- Zamora, Jim. "Trying to Save their Skatepark". *San Francisco Chronicle*. August 3, 2005.
- Zamora, Jim. "Skatepark Wins Political Backing". *San Francisco Chronicle*. August 4, 2005.
- Zamora, Jim. "State Padlocks Popular Skatepark". *San Francisco Chronicle*. August 5, 2005.
- Zamora, Jim. "Caltrans Spares Illegal Skate Park". *San Francisco Chronicle*. August 6, 2005.
- California Department of Transportation press release. "Caltrans, City of Oakland Clear Way for Bordertown Skatepark". September 28, 2005.
- Lundstrom, Marjie. "Underneath an Overpass, Skateboarders Rise to the Occasion". *Sacramento Bee*. November 5, 2005.

5.9 Summary: I-81 and Elevated Highway Enhancements

Research conducted regarding elevated highway enhancements did not result in examples that are identical to the Interstate 81 situation in University Hill. The Interstate 81 elevated highway has a unique challenge with the presence of Almond Street. Almond Street is a multi-lane, street level arterial running directly under Interstate 81. While the viaduct contributes to the perception of an unsafe pedestrian environment, Almond Street may actually be a more significant barrier to pedestrian crossings in this area. Solutions to improving the viaduct may also need to consider improvements to, or even removal of, Almond Street. If Almond Street remains in place, pedestrian crossings and enhancements should be considered, based on the principles outlined in the Bicycle and Pedestrian Issues and Needs Assessment.

However, the elevated highway case studies described herein each have unique characteristics and offer successful solutions to consider. Each can be related to Interstate 81 in Syracuse and in other communities throughout upstate New York (see below). In all cases, communities were challenged with underutilized spaces serving as physical and psychological barriers. Originally lacking pedestrian-friendly amenities, these areas have transformed into activity nodes, complete with walkable environments.

Although the area beneath Interstate 81 currently lacks the degree of human activity described in the specific case studies, the right mix of strategies and physical improvements could transform this area into a healthy public environment.

Albany's Interstate 787 includes elevated structures with underutilized spaces below.