Fewer Cars in Ithaca!

Recommendations for Transportation Demand Management Strategies for Ithaca, NY

Written by Gloria Lau
Under the direction of Department of Planning & Development, City of Ithaca

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Executive Summary

The purpose of this transportation demand management (TDM) study is to identify the transportation problems, objectives, and strategies for a possible Ithaca program. The study is divided into three phases: research, interviews, and the written report. TDM is a term for a set of various strategies that aim to prevent and solve different transportation problems by moving people and goods in an efficient and cost-effective transportation system, while achieving social, economic, and environmental goals. These strategies can be separated into the following categories: improve transportation options, incentives, land use management, policies and regulations, parking management, education, and marketing. TDM implementation involves the public, employer/employees, municipalities, transit providers, and related organizations.

It is important to first identify transportation problems within the City of Ithaca, and then identify the appropriate objectives for an Ithaca TDM program. The biggest transportation problems in the City are related to congestion, parking, and the cost of transportation projects. During peak hours, there is considerable congestion along the Route 13 corridor, both in the Southwest area and in the West End; the number of shopping trips is also very high on Saturday afternoon. The City has spent a lot of time and money on downtown parking improvements, maintenance, and rehabilitation. Inadequate parking in Collegetown, West End, and Inlet Island also causes problems and inhibits further development. Lastly, several capital transportation projects that the City has adopted are very expensive. The objectives for an Ithaca TDM program should be to reduce congestion, manage parking efficiently, implement cost-effective transportation projects, improve and encourage alternative modes of transportation, and to strengthen the connection between sustainable transportation and efficient land use.

After a month of research and interviews, recommendations were formulated and separated into first and second phases. For the beginning phase, the City should target commuters, since they contribute to congestion at peak hours, have more predictable and homogenous travel patterns, and can be easily reached through their employers. The City has the greatest opportunity to influence employers and employees in the downtown for a number of reasons. The City can work with individual employers to custom-craft suitable incentives, like travel allowances or flextime, and to persuade their employees to commute by alternative modes. A guaranteed ride home program should be set up to provide TDM participants the security to commute without their personal vehicle. An internal audit and set of policies would allow the City to serve as a role model for other employers.

A rideshare (carpool or vanpool) program can also be organized in the early phase of a TDM program, because there is a receptive market (12% of Tompkins County commuters already carpool). A ride matching system can help interested commuters find suitable partners, but other incentives may be needed to make ridesharing more appealing. It is important to weigh the pros and cons of implementation as a City program or as part of an employers’ program.

There is considerable attention to establishing an urbanized area Park & Ride system through the Ithaca Tompkins County Transportation Council, which has created a Park & Ride subcommittee. The City should continue to participate in this group. Park & ride lots should be positioned at critical places where congestion starts to get heavy, as an incentive for people to
exchange their car for a transit ride. For this reason, park & ride lots also need to be at nodes of bus service, where there is frequent and convenient transit. A guaranteed ride home program is essential for both a rideshare and a Park & Ride program.

Excessive or inadequate parking supply leads to different problems in the City. It is very difficult to find the balance between supply and demand, but certainly an oversupply of inexpensive parking is an incentive to drive. From a TDM perspective, the City can look to two strategies to better manage public and private parking facilities. First, the City can encourage more shared parking between new developments or existing buildings. Second, parking pricing can be set at a rate that acts as an incentive to take transit, rideshare, walk or bicycle. However, some limitations will make ideal parking pricing difficult: the City is currently building a new 700 space parking garage, the City does not have a system of remote parking lots, and there is overflow parking available in nearby neighborhoods. More transit-oriented development and bicycle facilities can also encourage people to leave their car behind and ride the bus, bike, or walk to places nearby.

Transit is an integral part of a TDM program and transit improvements can make the system more appealing. The NESTS transit study recommended various modifications to TCAT routes and proposed a transit hub at Pyramid Mall. TCAT has expressed interest in improving service along Route 13 and in the Southwest part of the City, perhaps including a transit hub in the further development of that area. However, since TCAT is under reorganization and capital and operating budgets are tight, these improvements may not take place soon. Besides transit improvements, there is always a need for a strong marketing and educational campaign in order to raise public awareness of TDM and to encourage participation.

Other TDM strategies can be implemented in a later phase. These could include carsharing, evaluation and survey, financial analysis, campus transport management, school transport management, special event management, tourist transport management, telework, and car-free planning. In addition, the City has several existing strategies and programs that fulfill some TDM objectives: the Bike Plan, trail construction, and sidewalk mandates address biking and pedestrians concerns, but more attention and staff time are needed. It is also important to note that other TDM strategies, like High Occupancy Vehicle lanes and distance-base pricing, which can be successful in large metropolitan areas, are not appropriate for small city like Ithaca.

A number of concerns were raised in the interviews, including the potential lack of interest from employers and the impact on downtown commerce (such as reducing the number of people downtown by allowing employees to work from home). Another concern is that targeting downtown employees may not produce a large enough impact to justify the staff or program costs. About 3,500 people work downtown; if 10% or about 350 people were to shift to an alternative mode, this would produce a significant impact, considering that there are about 2,600 vehicles circulating around the Commons on an average weekday morning. Ithaca has a strong potential for a TDM program; therefore, it is important to identify the suitable organizations and funding sources for implementation.
Introduction

Why the Report?
In order to relieve congestion and adapt to increasing development along Route 13, the City of Ithaca Common Council decided in 2002 to employ a series of transportation construction projects to increase road capacity in the southwest section of the city. The Six Point Traffic Plan, as it became known, worked on two strategies at the same time: increasing capacity on arterial streets and distributing traffic on a broader street grid/system. The widening of Meadow Street (Route 13) and the conversion of West Spencer Street to two-way traffic accomplished the first task. The construction of the South Plain Street bridge over Six Mile Creek, the removal of the diagonal diverters, the construction of an east/west connector street and the construction of the Taughannock Boulevard Extension would accomplish the latter. However, with a new Common Council and the progression of some of these projects, concerns have been raised about the high cost, feasibility and/or effectiveness of these road and bridge (re)constructions.

When Common Council redirected staff efforts on the Taughannock Boulevard Extension study in April 2004, they asked staff to pursue three courses of action – develop an access management strategy for Route 13, research and develop ideas for transportation demand management (TDM), and submit the Taughannock Boulevard project to the Transportation Improvement Program for possible federal and state funding. The Department of Planning & Development applied for and was awarded a Robert S. Smith grant to hire a summer intern to study TDM and produce this report.

The nature of the study
The purpose of this study is to identify the transportation problems, objectives, and strategies of a possible TDM program for Ithaca. The study is separated into three phases. The first phase is to research different publications, books, and websites on TDM. One of the main references is the Online TDM Encyclopedia from the Victoria Transport Policy Institute (www.vtpi.org/tdm), which provides comprehensive information on the planning, management, and evaluation of TDM strategies. As a result, potential strategies that are considered suitable for Ithaca are chosen for further discussion. The research also looks at different case studies and small cities (see Appendix A) for which TDM programs may serve as examples.

The second phase is to interview various stakeholders. The purpose of these interviews is to gain different perspectives, comments, and concerns on the potential strategies and the feasibility of a TDM program in Ithaca. The people who were interviewed are Fernando de Aragon from ITCTC; Thys Van Cort, JoAnn Cornish, and Nels Bohn from the City of Ithaca; Jonathan Kanter from the Town of Ithaca; Ed Marx from Tompkins County; David Lieb from Cornell University;
Gary Ferguson from Ithaca Downtown Partnership; Dwight Mengel from TCAT; Marian Brown and Brian Martinson from Ithaca College; and members of the Curb Your Car Coalition.

The last phase of the study is the written report that summarizes the research and various interviews. The report first introduces the essentials of TDM, and then identifies a number of transportation problems and TDM objectives for Ithaca. Recommendations are made for both initial steps and for long-term plans. Various TDM strategies that are inappropriate for Ithaca are also mentioned. The last part of the report raises different concerns and comments from the interviews regarding implementation of TDM in Ithaca.
Transportation Demand Management

What is Transportation Demand Management?
Transportation Demand Management (TDM) is a term for a set of various strategies that aims to prevent and to solve different transportation problems, such as congestion, inequity, or energy overuse. Rather than addressing each specific problem one at a time, TDM employs a series of strategies to address transportation issues while achieving economic, social and environmental goals, such as job creation, better mobility, or cleaner air. TDM emphasizes moving people and goods in an efficient and cost effective transportation system and on managing the demand side of the transportation equation (the number, type or mode of trips taken). By encouraging more travel options and transit-oriented land use, TDM allows more accessibility to everybody, including people who cannot drive or own a car.

TDM programs are a combination of public education, support service, land use design, policy changes, and incentives. They can exist at federal, state, regional, and local levels. Significant attention is given to TDM strategies at the federal level in the Clean Air Act Amendments of 1990, the Intermodal Surface Transportation Efficiency Act of 1994 (ISTEA), and the Transportation Equity Act for the 21st Century of 1998 (TEA-21). They can also play an important part in local zoning and traffic reduction ordinances, development agreements, and regional and local transportation plans. TDM involves everybody: government agencies, employers, private transport providers, community leaders, and the public.
Specific TDM strategies can take a variety of forms, depending on the goals of the program. Below are some general categories of strategies:

- **Improve Transportation Options** – may include more frequent transit service, better sidewalks, bicycle lanes, a rideshare program, vanpool services, better inter-modal connections, park & ride system, or accommodations for people with disabilities.

- **Incentives** – certain incentives and disincentives can make alternative modes of travel more appealing. For example, employers can provide travel allowances instead of free parking passes. Government can establish High Occupancy Vehicle (HOV) lanes.

- **Parking Management** – TDM related parking management strategies aim to maximize parking facility efficiency through pricing, regulation, and urban design to provide access and good walking/biking conditions to other places nearby.

- **Land use Management** – this includes strategies that shape population density, cluster development, mix land uses, and strengthen urban design to create accessible and transit-oriented communities.

- **Policies and Regulations** – various policies can provide institutional, financial, and political support to TDM programs and shift the paradigm of transportation planning.

- **Marketing and Education** – TDM strategies and programs cannot be effective without strong marketing and public education. Public knowledge of programs and benefits is crucial.

Once programs or strategies are in place, data collection and evaluation are needed to understand the effectiveness or impact of TDM and to update transportation plans. It is very important to engage all related stakeholders throughout the process, from establishing goals to evaluating the program. Involving the public, employers/employees, municipalities, public transit providers, related organizations and agencies in the planning process allows more input, better information and a variety of opinions to propose a effective program with suitable choices and incentives for the specific community.
The Ithaca Context

In order to create an effective and suitable TDM program for Ithaca, it is important to first identify the transportation problems within the city limits. The three major issues in the city are congestion, parking, and the high cost of traffic-related construction projects. The objectives of an Ithaca TDM program could thus be to reduce congestion, to manage parking efficiently, and to implement cost-effective transportation solutions. In addition, the City should improve the facilities, conditions, and services of transit, walking and biking in order to encourage the usage of alternative modes of travel. For the environment, health, and the livability of the community, it is also important to have a long-term, sustainable approach to transportation. The encouragement and improvement of alternative modes and sustainable transportation planning are also an integral part of an Ithaca TDM program.

Transportation Problems

I. Congestion
Route 13 runs through the City of Ithaca from the northeast to the southwest using Meadow Street, Fulton Street, and Elmira Road. Everyday it carries between 25,000 and 30,000 motor vehicles that are entering, leaving, or passing through the City of Ithaca. During peak hours of the morning and evening commute, there is considerable congestion along corridor, including the Southwest Area, the West End, and near the high school. Although the traffic is not as bad as that of a major metropolitan area, it creates substantial problems for commuters and residents of nearby neighborhoods.

Moreover, many major retailers and big boxes either currently exist or are under development along Route 13. This situation not only brings large numbers of employees into the area, but also brings in many, many shoppers. On Saturday afternoons, the number of automobile shopping trips can exceed the average number of weekday commute trips. Also, since Route 13 has become one of the major commercial areas in the city, many people, especially commuters from outside Tompkins County, see it as part of the downtown. As a result, people often equate congestion on Route 13 with congestion in downtown. This perception inhibits some people from shopping on the Commons, despite the relative lack of congestion downtown.

II. Parking
Parking is continuously one of the biggest issues in Ithaca; it affects both transportation in and development of the city. Parking issues can be separated into four geographical areas:
- **Downtown**—The City has spent a lot of time and money on downtown parking in the last five years. From the construction of a new parking garage as part of the Cayuga Green project (700 spaces at approximately $19 million) to the rehabilitation of the Seneca Street garage ($2 million over five years) to the discussion around the existing Green Street garage ($400,000 for emergency repairs, potentially $10 million to rebuild), parking is a serious issue. The City has also spent considerable effort on dealing with the impacts of parking improvements on downtown businesses, employees, and residents. Impacts and mitigations have ranged from construction noise and reductions in available parking to shifting construction times and creating a downtown park & ride shuttle. Surrounding neighborhoods also have concerns regarding the situation because they already have many people parking on their streets and because they usually see overflows from the downtown garages and lots.

- **Collegetown**—the area has a large demand for parking space that exceeds the supply. The main users are residents, employees, and visitors in the area. From a 2000 study on Collegetown parking, 95% of the local residents are students. With limited on-street parking and limited spaces in the Dryden Road parking structure, many people occupy metered spaces all day long or park illegally (ex. parking on lawn, widen driveway without permission, or park in a loading zone). The lack of parking also creates trouble for the large number of deliveries in Collegetown. In addition, with only one parking garage and few large parcels, development is inhibited because it is difficult to obtain or construct more parking spaces.

- **West End**—the neighborhood is transitioning from a mainly residential district to more commercial uses along Meadow and Fulton Street. The City aims to encourage more growth in West End and there are two areas that are zoned for three story buildings. The limited number of parking spaces, however, makes development more difficult. Also, when the NYSDOT realigned the Octopus, many on-street parking were removed. This situation has lead to clashes between residents and commercial users and between different businesses themselves.

- **Inlet Island**—it is mainly a commercial area, with a few restaurants and bars, neighborhood-oriented retail, and a health and fitness center in the works. There is some residential use. There is limited parking, especially during Friday night, when many people come to the restaurant and bars. Even though there is space for more parking, the construction can be too costly.

### III. Cost of Transportation Construction Projects

In order to relieve the congestion along Route 13 and to redistribute the traffic in a more optimal way, the City adopted several capital transportation projects of widening roads and (re)constructing bridges, known together as the Six Point Traffic Plan. The total budget for various projects are listed below:
- West Spencer Street reconstruction: $3,368,000
- Meadow Street widening: $3,400,000
- Meadow Street bridge over Six Mile Creek widening: $1,525,000
- Utility bridge over Six Mile Creek relocation: $260,000
- South Plain St. bridge over Six Mile Creek construction: $1,200,000
- Taughannock Boulevard Extension: estimate $15,000,000

These capital projects are generally quite expensive. Although they do relieve congestion temporarily, the benefits may not last long. The additional capacity of the roadways does reduce congestion, but studies have shown that it also attracts more automobile travel and soon the capacity may be exceeded again. In order to avoid the high cost and the short-term benefits, more long-term strategies and visions are needed.

Objectives for an Ithaca TDM Program

1. Reduce Congestion
   The first objective is to reduce congestion in the City of Ithaca, specifically in the downtown and Route 13 corridor areas, and to ease the stress on commuters and on nearby neighborhoods.

2. Efficient Parking Management
   In order to relieve the parking problems around the City, parking management is needed to provide more efficient use of parking. TDM strategies may be able to reduce future parking demand, and therefore, the cost of new construction. Future developments can provide shared parking among buildings, so people can use the same spaces at different times. This can help reduce the number of unnecessary or vacant parking spaces.

3. Implement Cost-Effective Transportation Projects
   Since the various transportation construction projects have cost the City a large amount of money, and because the long-term benefits are open to discussion, the City hopes to solve transportation problems in a more cost-effective way. The total cost of traffic and parking projects listed above, not including the proposed Taughannock Boulevard Extension, is $41,153,000. In contrast, from 1991 to 1998, Cornell University saved $17 million by creating a TDM program and reducing the number of parking spaces they had to build on campus.

4. Improve and Encourage Alternative Modes of Transportation
   One of the ways to reduce the problems that are caused by congestion, lack of parking, and expensive capital projects is to lessen people’s dependence on automobiles. The private car, however, is one of the most convenient ways for people to get around, especially because American society is structured around motorized transportation. In order to provide more options for travel and more access for those who do not own or drive a car, attention should be focused on alternative modes of transportation. Public transit, walking, and biking, are healthier, less expensive, and more environmentally friendly.

Around the country, many public transit systems do not have adequate funding, have low ridership, or are stigmatized as “for poor people.” The needs of pedestrians and bicyclists are
often ignored; sidewalks and bike lanes are either in poor condition or do not exist at all. In order to encourage more people to use alternative modes, it is necessary to improve public transportation and to address facilities for pedestrians and cyclists. Different modes should also be linked to each other, so people can get around in a multi-modal system. Education and marketing are also important for people to understand the benefits of other travel modes and to erase their fear of transit.

On the other hand, it is important to acknowledge that cars are still needed in many places and that they are sometimes the most sensible mode of transportation. A TDM education campaign should focus on reducing not only the total number of automobile trips, but also unnecessary single occupant vehicle trips. If the public understands the full cost of driving and the benefits of fewer cars on the road, if policies or financial incentives/disincentives balance externalized costs, and if there are good alternative choices, reliance on single person car trips will decrease. People will think before they go on a trip; they will think about how they can travel with more people and about what automobile trips they can combine together instead of going to only one place at one time. Financial incentives and environmental consciousness motivate people to travel in other ways instead of single occupancy vehicles. The goal of improving and encouraging alternative modes is for people to move around easily and comfortably.

5. Sustainable Transportation
A sustainability principle focuses on the economic, social, and environmental impacts of planning. It aims to increase the efficiency of resource allocation and reduce consumption. Sustainable planning and analysis looks to provide equity and to highly value long-term benefits and effects on future generations. It is a framework to understand every aspect of the problem, to have a broader view, and to emphasize the integration of human activities.

Sustainable transportation planning focuses on economic factors like traffic congestion and consumer transportation costs, social factors like equity and community livability, and environmental factors like energy use and air pollution. It requires prioritizing the development of a more balanced transportation system that provides equity, mobility, and accessibility for every person and generation. Sustainable analyses not only account for congestion costs for drivers, but also the economic, environmental, and social costs of the private automobile, which are often subsidized, externalized or hidden from individual users.

6. Efficient Land Use
Land use and transportation are interlocked together. Many places around the country are growing in patterns of low-density sprawl that essentially make automobiles the only convenient mode of travel. Land use planning should create higher density areas and cluster places closer together in order for people to bike and walk around to different destinations easily, and to allow public transit to capture more riders and provide better services. Mixed land use development puts commercial and residential areas together, so people do not have to commute, shop or go to a theatre by car. With aesthetically pleasing environments and short distances, it is more
appealing for people to walk; more people on the streets also make pedestrians feel safer. When different kinds of stores, employment centers, and apartments are close to each other, the number of automobile trips will diminish since people will not have to drive to different places for errands anymore.

In the next section, this report recommends individual TDM strategies and projects that the City can initiate to accomplish sustainable transportation planning goals. Land use planning that supports transit, mixes uses, and densifies development is more a broad vision, connected with or an underlying framework for other TDM strategies. TDM-oriented land use planning is not listed in this report as one of the recommended strategies because most of the land in the City of Ithaca is already developed and large scale opportunities for redevelopment are few and far between. However, it is essential to remember how land use patterns affect the transportation system. Some major development projects do have the potential to change transportation patterns, such as the downtown Ciminelli/Cornell office and hotel project or the mixed-use Cayuga Green project. Location decisions such as Cornell’s are incredibly important, as it will bring hundreds of employees downtown, will influence individual home buying decisions and will support TDM strategies like transit incentives or ridesharing. That said, much of the development in Tompkins County is happening outside of the City of Ithaca. Thus it is incumbent on other municipalities in the area to consider the land use-transportation connection. When creating comprehensive plans or reviewing individual development projects and site plans, towns should find ways to support transit, bicycling, walking and other TDM strategies. The draft Tompkins County Comprehensive Plan currently “promotes a transportation system that supports nodal, compact development patterns and reduces negative environmental impacts.”
Recommendations

Many TDM strategies have potential in Ithaca, but an effective program cannot implement every possible strategy at the same time and some strategies are just not appropriate for the Ithaca context. This section is separated into four parts. The first part describes the strategies and steps that are recommended for a first phase of a TDM program. The second part identifies existing projects that already fit in a TDM framework. The third part lists strategies that are too immature for the City to implement in the present time, but are worth looking at in the future. The last part gives a very brief description of why some other TDM strategies are seen as unsuitable for a city like Ithaca.

Recommended Strategies for the Present
These strategies are recommended steps toward setting up a City-wide TDM program. Because some people have never heard of TDM or are skeptical towards alternative modes, the initial stage needs to include feasible and attractive options so people will decide to act differently from their normal habits. There is potential organizational capacity for all these strategies and some already receive considerable attention from government agencies, TCAT, and related organizations.

1. Commuter Incentives
Commuters are chosen as the first target group because they contribute significant congestion on Route 13, the number of commuters is easier to quantify, and their travel patterns are more predictable and homogenous as a group. Though people work all over the city, the employment centers of Cornell University, downtown, Collegetown, and the Southwest area are significant commuter destinations. Many of these commuters travel on Route 13 for some part of their journey to work, as do many of those who have to travel through the City to get to work. 
According to the 2000 census, 13,725 people work in Tompkins County but live elsewhere, and 4,075 live in Tompkins County and work elsewhere. The percentage of in-commuters less the percentage of out-commuters is 15% for Tompkins County; compared to counties nearby (see Map #1 and #2 for commuting statistics), this percentage is very high – one of the highest in upstate New York. Many of the commuters who drive into the County work in the Ithaca urbanized area. According to the Ithaca-Tompkins County Transportation Council’s NESTS report, since the commuters’ “parking costs are higher, daily or multi-hour commuters represent the best opportunity to shift trips from automobiles to transit, to increase TCAT’s ridership, and to reduce traffic congestion”.

As far as a TDM program is concerned, the City of Ithaca has the greatest opportunity to influence employers and employees in the downtown. Cornell University already has an award winning TDM program. Collegetown has fewer businesses than downtown, does not have major employers, and is not held together by any umbrella organization. Route 13 businesses employ many people, but they also tend to provide free parking in large, open lots – a strong incentive to drive. Downtown employers are connected through the Ithaca Downtown Partnership, which is also interested in potential TDM programs. There are about 3,000 employees working in the downtown. Downtown is the hub of the TCAT system and parking has a cost associated with it. It is pedestrian friendly and there are a variety of stores and services available. For these reasons, it makes the most sense to focus TDM efforts on the downtown.
The easiest way to gain access to commuters is through their employers. The City can play a role in catalyzing employer-based transportation incentives by introducing employers to TDM ideas and helping them custom craft suitable strategies for each workplace. This approach would likely be more successful than creating a TDM program in the first instance and then trying to sign people up for the services. In order to gain a perspective on what options will appeal to downtown commuters, it is important to include the employers in the process. The City can approach employers with the intention of improving the commutes of their employees, especially those who live farther away, so that the employers can become more attractive; commuting benefits can be part of the package of benefits offered to employees. With employers’ assistance, the City can survey employees, asking where they come from (zip codes or place of residence), what transportation needs they have, what modes they use for commuting, their interest in other modes, and if they drive, what routes they usually take. It is important to understand the commute patterns in order to understand the needs of the commuters. Once the demographics and needs of the commuters are determined, the City can work with individual employers to custom craft transportation options and incentives for their employees.

Most employers are not aware of the assortment of TDM strategies or their benefits. Therefore, it is important for the City to show employers the benefits they can gain. For example, by providing more workday flexibility, companies can become more attractive to current and potential employees, especially for those who have children or those who have long commute distances. If an employer is subsidizing parking for their employees, they may be able to reduce parking costs. Or, they may be able to free up parking for visitors instead of employees. Employers can also obtain federal tax savings from subsidizing employees. For example, if employers give their employees up to $100/month to commute by transit, they can get a tax reduction; or if the employers allow their employees to use pre-tax income for transit, then they can save on payroll taxes. More information on this program is available from www.commuterchoice.com. Another way the City can assist employers in this context would be to help provide the initial startup costs for the company.

There are different types of incentives for commuters. Employers can offer alternative work schedules for their employees. “Flextime” allows people to shift their working time; for example, they can work earlier or later in the day, at night, or on the weekend, instead of having to work 9-5 from Monday to Friday. People can also work a compressed workweek, where employees fit their 40 hours per week into less than five days. The staggered shifts of employees leads to people commuting at different times of the day and week, reducing congestion at typical peak travel times. Employers can also provide financial incentives to their employees. By giving generalized travel allowances instead of parking subsidies, employers let their employees choose how to use the money, whether for transit, parking, or some other mode. Discounted or free transit passes can be given to employees who use transit, Park & Ride, or rideshare programs. Employers can also reimburse money that is spent on using transit or bicycling for business trips, instead of only reimbursing automobile mileage. Some employers even give out extra vacation days for regular transit riders. There may be more strategies that can be included in a commuter-based TDM program.
Cornell University has a successful TDM program, which provides free TCAT bus passes to all employees (faculty and staff) who take the bus for commuting. Cornell has about 1/3 of its 9,300 employees in its TDM program, so there are already 3,100 people who take the bus or do not drive alone. For employees who live outside of Tompkins County, the University subsidizes the cost of a multi-county transit pass. It also reduces the parking price for groups who carpool. Cornell University has found a number of TDM strategies that work for their employees.

Besides providing flexible work schedules and financial incentives, employers and the City also need to make alternative modes of transportation more appealing and comfortable options. For example, in order to encourage bicycling to work, the City (or employers) may need to provide bike storage facilities, such as lockers, or make arrangements with a local fitness club to provide showers for cyclists. Bicycle lockers could be incorporated into the Cayuga Green project. Progress on the City’s Bicycle Plan would also provide facilities to encourage bicycle commuting. For those who would ride down a hill, but find the climb daunting, perhaps a discounted “one-way transit pass” program could be created.

Despite wonderful TDM incentives or programs, many people might still decide to drive because they fear some emergency might come up and they would be stranded without a car. For these folks, a Guaranteed Ride Home (GRH) program may provide the comfort to keep them in the TDM program. GRH guarantees employees a ride anywhere (within reason) for an unanticipated situation, with only a few questions asked. In Cornell’s GRH program, if any employees who take transit or rideshare have to go somewhere unexpectedly, they can call for an emergency ride. Cornell will screen the call to make sure the request is appropriate and then will dispatch a remote field person (usually a parking enforcement officer) to pick up the person within five minutes. There are over 3,000 people who are eligible for the service, but Cornell only receives about five calls per month. According to an EPA study on Guaranteed Ride Home, many organizations stated that the program is the number one reason the commuters chose to rideshare. The Artery Business Committee Transportation Management Association in Boston stated that seven percent of its commuters switched to transit once they knew a guaranteed ride home was available. The average administrative time for such a program in a suburban/rural area is only 15 minutes per week per 100 commuters. The usage rate is 6 rides/year per 100 commuters, and it only cost $5 for each commuter per year. It is essential to have a GRH program as a TDM incentive, but also as a safety blanket for Park & Ride and rideshare programs. To create such a program, the City would need to determine who could be the drivers, what cars could be used, and who could dedicate some work time for administration.

Employers and employees have their different needs; therefore, it is important for the City to design different incentives to fit their wishes. Good communication between the City, the Downtown Partnership, and employers and employees are essential in the planning process. One way the City could take on this project would be to hire a series of student interns to work with the Downtown Partnership and area employers/employees to design solutions on a case by case basis. The interns’ main responsibilities would be to communicate with individual employers in downtown and help them design and run an effective TDM program.
In order to provide a good example for other employers and to take the lead in creating a TDM program, the City should conduct its own internal audit of commuting needs, patterns and incentives/disincentives. Currently, the City provides both free bus passes and free parking to its employees, thus negating a possible incentive to take transit. If the City has its own effective TDM program, it will serve as a role model to others and attract other employers to participate.

2. Rideshare

The main goal of ridesharing, or carpooling/vanpooling, is to reduce the number of automobile trips and single occupancy vehicles. Usually, employers encourage ridesharing among their employees as part of a Commuter Trip Reduction program and provide incentives like free parking for those who rideshare. Some local municipalities like Madison, WI and Boulder, CO establish rideshare programs that provide vanpool and carpool services and match people into groups throughout the city. Across the nation, there are also many for-profit and non-profit organizations and online agencies that offer ride matching for potential carpools and vanpoolers.

Ridesharing can be an effective strategy to familiarize people with a TDM program, especially when there is already a receptive market. According to the 2000 Census, 12% of the people in the County carpool, and 8% in the City of Ithaca carpool (see Table 2 in Appendix B). Some surrounding towns and villages have even a higher rate, given that many of the commuters enter into Ithaca. Making rideshare more of a program, instead of just personal organization among coworkers and neighbors, can increase the number of carpools. Many people might be aware of carpooling and are willing to participate but cannot find any partner. If there is a rideshare matching system out there, it gives them an opportunity to carpool. Also with incentives and an organizational process, a rideshare program can draw more people to try carpooling.

Much discussion is needed to determine how a rideshare program can be established. One question is whether it should be a City program or part of the employers program. The City can match commuters across the downtown. Employers can provide ride matching services within their office. The advantage of an employer program is that it is easier to link employees within a company, who have the same destinations and similar schedules. However, few downtown employers have a large enough number of employees. A citywide program allows employees from different businesses to find each other and increases the chance of making matches. Also, if the City launches the program, it might attract other people who work along Route 13 or in the West End, but could carpool with a downtown employee. Such a program would require staff time and funding to establish and market it.

Another issue is to understand what kind of incentives can be provided to make ridesharing more appealing. Cornell University provides parking incentives to its employees for carpooling. The University has high parking permit rates and a limited number of parking spaces near central campus. As part of the RideShare program, group parking rates vary based on the proximity to central campus and the number of people in the group. The people who rideshare have their own transit pass and there is frequent bus service between the remote lots and campus. People who rideshare also have 30 day parking permits per year, in case they need to drive their own car on
some days. In some situations Cornell even pays a rebate to a rideshare group, for example, when three carpoolers park in the most remote lot. Now that’s an incentive!

The parking garages in the downtown, however, are all within a short walk of workplaces. There are remote public parking lots, like the one at Cass Park, but there is infrequent bus service between the lots and downtown. It is therefore difficult to make parking pricing one of the incentives for ridesharing. Reserving some good parking space in the garages for carpoolers is possible. Drivers then do not have to hunt for a space and there are advantages for the car to be in a covered lot. Another incentive is to provide cheaper parking rates for groups that rideshare. The City could also provide a certain number of daily parking passes for times when the carpoolers need to bring their own cars. Certainly, guaranteed ride home is a must as a safety blanket.

There is definitely a potential for ridesharing to be successful in Ithaca. Many people who live out of the county might prefer driving less to avoid the long commute. First, it is important to identify which agency or organization has the most efficient organizational capacity to administer a ridesharing program. Then, the features and incentives of the program need to be determined in order to maximize the effectiveness and potential of ridesharing. Lastly, marketing is essential; the City might cooperate with other municipalities or Cornell and the County to promote such a program.

3. Park & Ride
This strategy is to encourage drivers to park their cars in remote parking lots and ride the bus or a shuttle to their workplaces. There is currently some exploratory work being done towards establishing an urbanized area Park & Ride program through the ITCTC. A Park & Ride subcommittee is organized with members from the City, Town of Ithaca, County, Cornell, and TCAT. In the ITCTC 2003 NESTS Transit Planning Project, the market research study stated that “ten percent of non-[transit]-users said that if they could park for free at a remote lot and have an express shuttle to their destination they would be willing to become a regular transit user, even if the daily charge for parking at their destination did not increase”.

In looking at location of Park & Ride services, the geographical areas and targeted commuters should be separated into three categories: rural areas and other counties, the Ithaca urbanized area, and within the City of Ithaca limits. Tompkins County has a net-in-commute of 15%; many commuters come from outside the County. Also, there are a number of people who live in rural areas within the County who are commuting into the city everyday. Many of these drivers could be shifted to transit use through a park & ride system. A second tier of park & ride lots could be set up around the fringe of the Ithaca urbanized area. These lots could capture many of the drivers within the County who do not find the rural park & ride lots convenient. The ITCTC subcommittee is looking into the feasibility of these types of parking lots. Third, a park & ride system could be set up with the City limits using large parking lots associated with large retail businesses or city parks. On two occasions the City has attempted this type of program, both times with little success.
In order for Park & Ride to be efficient and effective, it is best to use existing parking lots that already have TCAT services, thus saving costs of construction or new service delivery. TCAT already has its own Park & Ride services with remote lots at the following locations:

- Brooktondale: next to the community center, Brooktondale Road
- Danby: intersection of Gundamen Road and NYS Route 96B
- Dryden: village Hall, South Street
- Enfield: intersection of NYS Route 79 and Enfield Main Road / Route 327
- Freeville: opposite the Methodist Church, Main Street
- Groton: across from the town barn, Conger Boulevard
- Lansing: fire Company #3, 1235 Lake Ridge Road; fire Company #4, 1189 Auburn Road; Town Hall, NYS Route 34B
- Newfield: behind Town Hall, Main Street
- PyraMid Mall: at the rear of the mall, near Sears
- Slaterville Springs: next to Caroline Town Hall, NYS Route 79
- Tompkins-Cortland Community College: near the bus stop at building entrance
- Trumansburg: Salo Drive, adjacent to NYS Route 227

The TCAT Park & Ride system has its limits, however. The bus service between the lots and downtown Ithaca is infrequent. For example, there are just 6 buses from Groton (2 in the morning, 2 in the evening, and 2 mid-day) to Ithaca during weekday and only 6 buses from Newfield (3 in the morning and 3 in the evening). It is important to increase the frequency of bus services between the parking lots and downtown in order to make Park & Ride effective and appealing. Also, the time of travel needs to be similar to the travel time for driving. If there is a significant difference in favor of the private automobile, people will drive.

For a park & ride system at the urbanized fringe, the location of the lots is essential. The lots should be positioned at the critical point of congestion, before the traffic becomes heavy. If the parking lot is located after the most congested area, there is no incentive for drivers to park and take transit. This situation also makes Park & Ride services within the city a difficult prospect. Residents who live and work inside Ithaca have a relatively short commute and won’t park & ride. They should be encouraged to use transit, bike or walk to work. Park & Ride lots in the City of Ithaca are not effective in capturing commuters outside of the city either. If commuters have already passed through congestion and entered the city, they will simply endure 10 more minutes of traffic instead of getting out of their cars and waiting for a bus, which will definitely take them more than 10 minutes. The City has already twice attempted to attract commuters to park along or near Route 13 and ride a free shuttle into downtown. Both times resulted in very low ridership.

Another important point about locating Park & Ride lots is that they should be located at development nodes. Drivers then do not need to make extra automobile trips to other places, such as the grocery store or a day care center, because services are clustered around a trip end point. Municipal site plan review can support the integration of new development and Park & Ride lots, especially in projects with large numbers of parking spaces that are mostly vacant during weekdays. If those spaces can serve as Park & Ride lots (through some agreement with
the owner), it will save on the cost of construction. It is important to conduct some market research to determine the potential utilization for park & ride lots; the ITCTC can help with this kind of study.

4. Parking Management and Evaluation
Inadequate parking supply leads to driver frustration, expensive parking fees, competitive disadvantages for downtown, and spillover problems in surrounding neighborhoods. Excessive parking supply, on the other hand, allows drivers to find parking easily, but carries high costs for developers or government agencies to construct, operate, and maintain the spaces. Free parking requires heavy subsidies, while many of the spaces can be vacant for much of a 24-hour day. Giant parking lots also induce sprawl, encourage automobile usage, and make communities less walkable.

In Ithaca, parking management (or the lack thereof) has direct consequences on the surrounding areas. Inadequate parking supply in Collegetown leads to illegal parking on lawns, in alleys and on sidewalks. For the West End and Inlet Island, the high cost of providing parking inhibits development. Downtown, parking affects business success, tourism, development projects, and nearby neighborhoods. In order to relieve these problems, it is important to have organized and enforced parking management.

One efficient management strategy is shared parking. If there is efficient management of parking in West End and Inlet Island, for example, the number of additional parking spaces needed for development can be reduced. An office building on Inlet Island could share parking spaces with a restaurant or bar because their peak hour of demand is different. Offices mainly occupy spaces during weekdays, while restaurants and bars have the most customers on nights and weekends. Shared parking among different uses of adjacent buildings shortens the period of time that parking spaces are left vacant and also reduces the number of necessary parking spaces. City Code §325-20C(5)(d) covers existing shared parking procedures.

Another strategy is parking pricing. The NESTS transit report states “the market research in this study confirmed that the lack of inexpensive parking was a major reason that current riders use the bus system, and that increases in parking prices were a strong incentive to switch from driving to transit”. There are various ways pricing can work. From a TDM perspective, parking should be priced so that the monthly cost of parking is more than the monthly cost of a transit pass. One of the objectives is to make parking spaces expensive enough to discourage a certain number of automobiles. For commuters, if the parking price is too high to park for the whole day, five days a week, then they might start to think about using alternative modes. Many people are so used to the convenience of driving that they do not plan before driving. Parking prices can make them think about the cost of driving, and they will try to reduce multiple trips into one trip. In order to have an effective plan in place, it is important first to evaluate the supply and demand of parking in different area. For example, the Collegetown Parking Study in 2000 gives significant insight of the concerns in the neighborhood.

In the downtown, setting parking prices is a tricky thing. First of all, there are a number of interests to try to balance. Downtown merchants want parking to be plentiful and inexpensive – they know that they are competing with stores that often have free parking (at the mall or along
Route 13). Residents want proximate parking and tend to need parking more in the evenings and overnight. Commuters also want proximate parking, but need it during the day and sometimes need to get in and out of the garages for work. The City wants to provide a safe and clean public facility, but also needs to balance costs and revenues.

Currently the first two hours of parking is free, with rates stepping up after that (see Table 1 for City parking rates). This serves the merchants well, but ends up as a major revenue loss to the City. It was estimated that the two-hour free policy costs the city over $300,000/year; that’s a direct subsidy to drivers. For downtown employees, the daily parking rate in the garages is steep and this is an incentive to buy a monthly parking pass, which, at $40 or $50/month, is not cheap. However, compared to the monthly price of a TCAT pass ($45/month), downtown parking is priced to favor the automobile. Also, compared to the cost of building, operating, and maintaining a parking space in a garage (which can run around $125/month/space), there is a considerable subsidy to the driver. The only incentive to take transit (as far as parking management goes) is that parking can sometimes be tight in the garages and commuters can have trouble finding available spaces.

Table 1. Parking Pricing in Ithaca

<table>
<thead>
<tr>
<th>Parking Facilities</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Street garage and Seneca Street garage</td>
<td>First 2 hours: free</td>
</tr>
<tr>
<td></td>
<td>2-3 hour: $.50</td>
</tr>
<tr>
<td></td>
<td>3-4 hour: $1.00</td>
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<tr>
<td></td>
<td>Over 4 hours: $2.00/hr</td>
</tr>
<tr>
<td></td>
<td>Daily fee: $15.00</td>
</tr>
<tr>
<td></td>
<td>Evening (6pm–2 am): free</td>
</tr>
<tr>
<td></td>
<td>All Weekend: free</td>
</tr>
<tr>
<td></td>
<td>Monthly Permit: $40 for Green St. and top floor of Seneca</td>
</tr>
<tr>
<td></td>
<td>$50 for ground floor of Seneca</td>
</tr>
<tr>
<td>College Town garage</td>
<td>$.075 / hour</td>
</tr>
<tr>
<td></td>
<td>Monthly Permit: $85 for day (6 am – 9:30 pm)</td>
</tr>
<tr>
<td></td>
<td>$85 for night (9:30 pm – 6 am)</td>
</tr>
<tr>
<td></td>
<td>*Vehicle must be moved daily</td>
</tr>
<tr>
<td></td>
<td>Half month permit $42.5</td>
</tr>
<tr>
<td></td>
<td>*Available only after the 15th of each month</td>
</tr>
<tr>
<td>Meters</td>
<td>Nickel = 6 minutes</td>
</tr>
<tr>
<td></td>
<td>Dime = 12 minutes</td>
</tr>
<tr>
<td></td>
<td>Quarter = 30 min</td>
</tr>
<tr>
<td></td>
<td>6:00 pm – 9:00 am: free</td>
</tr>
<tr>
<td></td>
<td>All weekend: free</td>
</tr>
<tr>
<td>Fine</td>
<td>Meter overtime: $10</td>
</tr>
<tr>
<td></td>
<td>Prohibited Zone: $15-20</td>
</tr>
<tr>
<td></td>
<td>If not paid after 20 days: $15 more</td>
</tr>
</tbody>
</table>

One of the greatest difficulties in managing parking downtown is that there is usually free parking available in nearby neighborhoods. Streets such as Geneva, Albany, Farm, and Titus, often feel the burden of overflow or displaced downtown parking. A number of downtown
employees choose to walk the 4 or 5 blocks in order to park for free. In and of itself, this neighborhood parking does not create enormous problems (it does make it difficult for residents of those streets who do not have off-street parking), but it does make it very difficult to manage downtown parking well. If prices are set too steep, instead of being an incentive to take the bus, it might just be an incentive to park in the neighborhoods. One solution to this problem would be to create a residential parking permit system for certain streets in proximity to downtown. Such a permit system was created on East Hill to deal with overflow parking from Cornell’s campus, but it required state legislative approval.

A second complication of setting parking rates is that parking revenues from the downtown parking garages are tied into the financing scheme for the Cayuga Green project. Therefore, the City has an interest in maintaining a strong demand (and therefore high revenues) for parking, especially considering the fact that construction of a parking garage is underway. Attempts to shift people out of the garages and onto the bus may be seen as taking away from the financial security of the development project. A related detail is that any increases in parking garage revenues are tied to the Cayuga Green project, too. This may eliminate what would otherwise be an excellent funding strategy for TDM programs.

Ultimately, the City needs to consider how parking pricing affects the behaviors of downtown commuters. It certainly acts as either an incentive or a disincentive to driving. And there is already a huge subsidy to the individual user. Pricing also has the ability to hide or to reflect the hidden costs (to the parkers) to build, operate, and maintain the parking spaces. As the NESTS transit study points out, by shifting commuters to other modes of travel, “more parking would be available for shoppers, helping to keep downtown competitive with suburban shopping areas”.

5. Transit Improvement
Transit is an integral part of any TDM program. It needs to be convenient, comfortable, and appealing to maximize its potential. This report does not analyze the TCAT system and make specific TDM-related transit recommendations; rather, it stresses the role of transit in any TDM program and comments on the improvements suggested in the NESTS transit study. TDM inspired transit improvements should be recommended as part of specific TDM programs, a level beyond the scope of this report. However, it should be emphasized that transit is the crux of many TDM programs, such as commuter incentives and park & rides, and close coordination with TCAT is essential.

The NESTS transit study proposed adding three new routes, which would be circulators and express routes; modifying four routes significantly and six routes slightly; and eliminating TCAT Route 13. Based on the market research from the NESTS report, 79% of non-transit users were willing to take the bus if the service was more frequent and 64% stated that they would take transit if buses ran later in the evening. The study made a series of recommendations for system improvements in the study area and attempted to explain what it would take to shift 3%, 5%, and 10% of travelers from automobiles to transit. The study concluded that even a 3% mode shift would require unacceptable funding levels and policy changes. However, in follow up interviews with TCAT and ITCTC staff, it was agreed that there were a number of lessons learned at the completion of the study, namely that there is no problem-free or error-free methodology to
estimate transportation mode shifts and that some high demand transit routes can actually produce surplus revenue if additional service is added. This last point is discussed in more detail below.

It is very difficult to estimate transportation mode shifts because there is not a reliable method for determining which automobile trips are converted into transit, bicycle or pedestrian trips. One can analyze transit ridership statistics, but there is no guarantee that increases in transit use correspond to decreases in automobile use; other factors exist: general population growth, increased number of trips per household; and new trips generated by increased transit service. Nonetheless, increased transit ridership does mean greater choice for the traveling public. With greater choice comes less reliance on the single occupant motor vehicle and an accompanying shift in modes of transportation. Since 2000, according to TCAT, TCAT bus ridership has increased at an average rate of 2.6% per year.

The study also undervalued revenue generation from high demand routes. It recommended increasing service on TCAT Route 30 (connecting downtown, Cornell, and the mall), but it projected increased net costs as well, a burden on the overall TCAT system. Since the conclusion of the study, however, TCAT has doubled service during peak times on Route 30 and has found instead that it produces a net revenue surplus. This surplus can be used to subsidize less productive routes. If TDM can strategically target transit routes with high demand, it may be that the additional costs of enhanced service can be covered by increased revenues.

Also recommended in the transit study was a detailed proposal of a suburban transfer facility at Pyramid mall and a park & ride lot in Bethel Grove. At the mall, free parking spaces that are vacant from absent shoppers on weekdays are already serving as an informal TCAT park & ride lot. The mall is a common destination for various bus routes, and the sheltered waiting area allows people to wait comfortably. In addition, potential facility improvements like a traffic signal priority system, queue jumpers, or designated bus lanes are also suggested to enhance the service of the hub. The report also states that there is “favorable reception in surveys and public meetings to proposals for a new transit hub at Pyramid Mall”. The transit hub can serve people from outer areas with better connections and attract people to park and ride before congestion becomes heavy.

Beside the recommendations from the NESTS study, other TCAT improvements were discussed in several interviews. One idea was to improve service on TCAT Route 15, the main route that serves the Southside neighborhoods and the Southwest area. This route is circuitous, infrequent and time consuming. TCAT hopes to better serve the neighborhood and area shoppers. A second idea was to provide a shuttle service around the Southwest area, connecting with nearby neighborhoods. A variation would make a direct connection between Cornell campus (or Collegetown), the Commons and the Southwest area. A related idea would be to create a new route that would primarily serve the NYS Route 13 corridor, connecting the Southwest area, the West End, the Northside neighborhood, and the Ithaca High School. TCAT also mentioned the idea of a transit hub in the Southwest area, perhaps developed as part of a project on the City-owned land, west of the current development. The hub could connect a number of routes or could be the base for an on-demand shuttle circulating within the Southwest area. Further development and implementation of some of these ideas could reduce congestion in the Southwest area.
Extending service to rural areas is a difficult task. Low density areas cannot support public transit without running high costs and inefficient routes. For these reasons, it is better to build park & rides and transit hubs to serve people in rural areas. This allows people to drive short distances or walk to transit stops, take the bus to a hub and make connections to their ultimate destination. These facilities need to integrate with other modes of travel, pedestrian accessibility, comfortable waiting areas, and bicycle facilities (especially safe, sheltered parking) would significantly increase the appeal of transit hubs and park & rides. TCAT’s Bicycles on Buses program (bike racks on the front of buses) provides more options and comfort for cyclists. According to the TCAT, in 2003 their buses carried 17,679 bicycles.

Certainly, TDM-related transit improvements carry a cost. It is important to include reasonable revenue and cost projections for transit in any TDM program. If there is strong demand for the service, it may pay for itself or even generate a revenue surplus. If there is weak demand, it will necessitate some sort of subsidy. As a point of reference, TCAT’s least traveled urban route costs about $75,000 per year in net operating costs. Besides fares, other potential revenue sources include participating employers and the federal Job Access and Reverse Commute program. The NESTS transit study suggested two others: villages and towns that receiving additional service, and the County mortgage recording tax. Unfortunately for transit, the County recently voted against raising the latter. Nonetheless, the City of Ithaca should be alert to new or creative funding sources, such as healthy communities grants or air quality funding through the Environmental Protection Agency.

6. Education and Marketing
TDM will not reach its full potential if the public is not aware of the programs; there needs to be educational and marketing campaign. Automobiles are rooted in American culture as a symbol of social status. Buses in some areas (including some of the hometowns of incoming college students) are stigmatized as “for the poor” or give people a negative impression. Public education is needed to present the positive image of transit, whether it’s on the radio or in a university catalog. Students from elementary school to the university should be encouraged to ride the bus. Also, different trails and bikeways in and around the City of Ithaca should be promoted vigorously to encourage recreational walking and biking and to educate people about the health benefits from excising outdoors. A multi-modal access guide (filled with photos) could explain, for example, how to walk to a bus stop, ride a bus to Cass Park, stroll along the Cayuga Waterfront Trail, and then take the bus back. In Ithaca, one can have a simple walk in nature without driving a car at all.

Depending on the TDM strategy, there needs to be targeted marketing to reach the critical people. One way is to have employers announce the program in an office newsletter or a pamphlet. Some cities send out postcards to employers and residents directly. The South Florida Commuter Services sent out postcards with a photo of a huge parking lot filled with cars and a headline that said, “There are lots of good reasons to Park & Ride!” Attractive posters can inform about Park & Ride locations or a ridesharing board website/phone number, contrast the real cost of driving compared to alternative modes of commuting, or show the benefits of one simple individual change in behavior. These posters can be put in the mall,
big box stores, and grocery stores. There can be advertisements on television, in the newspaper, or on the radio. In addition, a major event, like Walk/Bike to Work Week and Curb Your Car Days (see http://owasco.co.tompkins.ny.us/itctc/cyc, for local program), can promote alternative transportation and increase awareness.

It is essential to have strong organizational commitment to a TDM program, including the educational campaign. Marketing and communicating with employers, residents, and transit providers takes staff time and a good deal of effort. The City may not have the capacity or staff time to take on such activities, except, perhaps, through a series of interns. The Ithaca Downtown Partnership can be a good organization for promoting employer-based incentives. The Curb Your Car Coalition can (and has already begun to) raise public awareness on the issues. Mayor Carolyn Peterson will be kicking off a Healthy City Initiative in the near future, a major part of which is to encourage alternative transportation; the initiative may able to take on some of the education responsibility. It is important to have one central person or small group to organize and administer the programs and campaigns.

**Existing/Ongoing Strategies**
The City already has several existing strategies and ongoing programs that fulfill some TDM objectives. The Common Council has adopted a Bicycle Plan and work, though slow, continues on a first phase of implementation. The City aims to create a direct and an indirect route between Cass Park and the Commons. The routes are currently under review by the New York State Department of Transportation.

The Town and the City are also working on constructing more trails in the surrounding natural area in order to encourage more recreational walking. These trails also have the potential to serve as transportation corridors. The City has a sidewalk program that, though troubled in past years, has the opportunity to pay for construction of public sidewalks or the initial costs of repair for privately owned sidewalks. The City’s Bicycle/Pedestrian Advisory Council has created a priority list of crosswalks that need improvements or enhancements. In the past few years, there have also been improvements to the Commons to make it a livelier and more appealing walking area. Sidewalks have been added to a number of properties in the Southwest area as part of site plan review. However, the City does not have a staff person dedicated to needs of transit, cyclists and pedestrians.

**Appropriate Strategies for the Future**
There are other TDM strategies that have potential in Ithaca; however, they are more appropriate for the second phase when the City will have more experience in TDM and the public is more receptive and aware of the program. In addition, once an employer-based incentives program is successful, the City can shift its attention from commuters to other drivers like shoppers and students. The strategies are briefly described in this report and more detailed descriptions on each strategy can be found in the Victoria Transport Policy Institute online TDM encyclopedia (www.vtpi.org/tdm)

- **Carsharing** — Carsharing is like a rental car service for subscribers. Its goal is to replace the individual ownership of private vehicles with shared “ownership” or rights of use. Carsharing is intended for short trips in town and can be organized by a non-profit, for-
profit, or cooperative business. There are several successful non-profit and for-profit carsharing organizations, such as City CarShare and Zipcar, throughout America. ITCTC has a particular interest in conducting a feasibility or market study for a carsharing program. The NESTS report also points out that “Cornell may a ripe market for a car-sharing program”. The City can help start up or promote a carsharing program or may be able to provide incentives like free parking.

- **Evaluation and Survey** – evaluation of different transportation issues before and after implementation of TDM strategies can help the City understand the effectiveness of the programs. Studies should be conducted at least annually to better understand the market, demographics, and travel patterns. The City can collect data from or through employers, and send out survey to residents and students yearly.

- **Financial Analysis** – every project requires economic justification to continue. Around early 1990s, Cornell University did a financial analysis to compare the cost of building and maintaining additional parking spaces with the cost of implementing a TDM program. Using projections, it predicted savings of $56,881 per year. In 1998, it analyzed the actual numbers and found that the university had actually saved over $17 million. It is beneficial for the city to have a financial analysis for different transportation programs to support TDM. Though financial analysis can certainly come earlier in a TDM program, the City has already made a decision to build a 700 car parking garage. Any future decision making in regard to parking should include a TDM component.

- **Campus Transport Management** – As previously noted, Cornell University already has an award winning and effective TDM program. Ithaca College is starting to look more in depth at transportation issues through its Sustainable Tompkins initiative. In the future, there may be opportunities to join the two campus programs with City-based TDM strategies, perhaps uniting them into an even more effective regional program. There is also a chance to work with Cornell when it extends its TDM program to its downtown office.

- **School Transport Management** – the majority of K-12 students cannot drive and many parents drop them off and pick them up by car. The City, PTA groups, or other community groups could organize walking groups or carpools among students and/or parents. In order to lessen the fear of riding transit, some communities gather elementary school students to name and paint the outside of the buses that serve their school, so they are familiar with their bus and will not take the wrong one. Faculty and staff can rideshare or take transit for their commute. Some junior high and high schools help organize carpools and encourage alternative modes of transportation as class projects; students gain a sense of community and learn about the impacts of driving in the process.

- **Special Event Management** – during special events like Ithaca Festival and graduation weekends, there are more people than usual moving around downtown and the campuses. The increase of public transportation services, vehicle and parking restrictions can encourage people to use transit and prevent heavy and chaotic traffic during these events. The City can coordinate with events organizers to manage a transportation plan.

- **Tourist Transport Management** – the natural areas and campuses in Ithaca attract many visitors throughout the year. The City can work with the Chamber of Commerce and the Ithaca Convention and Visitors’ Bureau to integrate transit into different tourists activities, to provide incentives to drive less, and to encourage visitors to take advantage
of the trails and bikeways. Directory of maps and signs around town can guide people in walking and taking the buses to different landmarks.

- **Telework** – this is mainly an employer-based strategy that allows commuters to telecommute, to work at home, or to work at various places with flexible schedules. Since information technology is advancing every day, employers can provide different working environment for their employees while reducing the number of unnecessary trips.

- **Car-free Planning** – land use planning and special events can be developed toward establishing an almost car-free community. Though expanding the Commons zone or issuing an automobile ban are not likely, the City can consider vehicle exclusion zones when appropriate. Alternatively, the City can create (or modify) streets that devalue the car from its usually supremacy and make it behave like other users – for examples, see the City Repair Project of Portland, Oregon (www.cityrepair.org). Lastly, the City could sponsor a car-free day once a year for the downtown (Bogotá, Columbia is well known for doing this) or rotate daylong car-free zones from neighborhood to neighborhood during the year.

### Inappropriate Strategies for Ithaca

There are other TDM strategies that work very well for other cities but would not be appropriate or feasible for Ithaca. The main reason for this is that Ithaca has a small area and population compared to other metropolitan areas. Many regions establish road, distance-base, and congestion pricing by setting tollbooths on their highway and bridges. There are designated High Occupancy Vehicle lanes during commuting hours as incentives for ridesharing. Other cities also manage freight and air traffic as part of their TDM program. Since the report only focuses on the City of Ithaca, these strategies for much larger regional areas are unsuitable for the City.
Concerns and Feedback from Interviews

In talking with various people, a number of practical concerns were raised about the strategies and feasibility of a TDM program. This section summarizes the different comments into related categories. Notes from each interview are not attached with the report but are available from the City.

Commuter Incentives

One of the largest barriers in implementing a TDM program is the lack of enthusiasm from stakeholders. The NESTS transit study asked over 20 of the largest employers in the area about their interest in annual transit passes and related programs and only Wegman’s and the Ithaca Journal expressed some interest. Many employers stated that their employees use little or no transit because their shifts do not match the bus schedule, that some need to travel to different locations throughout the day, that many have remote home or work locations, and that there are plenty of available parking spaces. Many employers just might not see the benefits of a TDM program. Therefore, it is important to approach each employer individually and show them the advantages of providing commuting incentives.

Once the employers agree to cooperate, it is easier to get in touch with the employees who would be interested in incentives or transit options. Some employers may be reluctant to give out information about employees because of privacy issues and some commuters may not be willing to participate in data collection. Privacy is a delicate issue and the City may need to reach agreements with employers and employees to instill confidence that the information will remain confidential.

Some employers struggle to extend commuter benefits, even though they are interested. Over the past few years, Ithaca College has tried to persuade their faculty, staff, and students to not drive their cars. The effort has not been always successful because faculty and staff are provided both free parking and a free bus pass. The college also sees transit service as being inadequate for commuting or student shopping trips and is working with TCAT to find ways to improve service. Another reason for lackluster results is that the parking fees for students are significantly lower than the price of a bus pass for students. The lack of incentives and inadequate transit service can harm a TDM program even though there is interest.

TDM Impacts

Concerns were raised about the effectiveness or impacts of a TDM program in a small city like Ithaca. Could the benefits justify the costs? Also, some of the initial interest in TDM came about from discussions about the Taughannock Boulevard Extension and congestion in the Southwest area. Concerns were raised that if the program targeted downtown employees, there might not be any effect on the congestion along Route 13. However, downtown have around 3,500 employees. A good number of them commute in and out of the downtown using Route 13 for some portion of their journey. If a TDM program was able to shift 10% of employees to an alternate mode, or about 350 people, and if half of them use Route 13 for some part of their journey, about 175 vehicles could be removed from the Route 13 corridor during peak traffic events. This is not an overwhelming number, but it would account for about 8 or 9% of the peak hour traffic, a not
insignificant increase in capacity. On the other hand, Saturday shopping trips are unaddressed in the first phase of the program, and they contribute significant congestion along Route 13.

It is difficult to lure people out of their cars; especially those who have a relative short commute distance and are quite comfortable driving to downtown. It is important to gather demographic information in order to understand the different markets (both geographic and functional) and market-users of transportation services. Another concern is that Ithaca maybe too small to implement a TDM program, but there are other small cities that have TDM program in place. One example is Glenwood Springs, Colorado. It is a town of 4.8mi², with a population of 7,736, and is at least 150 mi away from the nearest urban area, Denver and Boulder. It has a successful TDM program, and further information about it can be found in Appendix A.

**Downtown**
The Ithaca Downtown Partnership was concerned about the possibility that TDM strategies could discourage people from coming downtown. For example, strategies like parking pricing may make drivers feel inconvenience and choose not to shop at downtown. A transit hub at Pyramid Mall might attract downtown employees to shop at the mall instead of downtown. Also, telework for employees might also reduce the number of people who would come downtown. Even though TDM aims to reduce the number of automobile trips to downtown, it does not want to inhibit people from traveling downtown. Nonetheless, the impact on downtown should be considered when evaluating TDM strategies.

**Parking**
Drivers might avoid parking pricing by parking on nearby streets, spilling over into the neighborhood areas. Since the City does not have a system of parking like Cornell and cannot issue residential permits without state approval, it is difficult to efficiently manage or price parking arrangements. In addition, when the Seneca and Cayuga Street garages are completed, downtown will have parking spaces that exceed the demand (at least until the Green Street garage is demolished or repaired or until the rest of Cayuga Green is constructed). If parking pricing was wildly effective in reducing the number of cars downtown, the excessive parking spaces left vacant would be a waste of construction costs. On the other hand, if the pricing is low, people will be encouraged to park in the garages, but TDM objectives will not be accomplished.

**Funding/Organizational Capacity**
It is difficult to identify new or unaccounted for revenues sources for a TDM program. The majority of TDM costs are operating or programmatic costs, so capital budgets are not particularly appropriate (though some TDM costs may be capital components). Assuming the City’s General Fund could not accommodate a TDM program (because this would in all likelihood mean raising taxes), the City could look to the margin of recently increased parking fine revenues. Much of other parking revenues are either dedicated to the Cayuga Green project or are already accounted for in the General Fund. It is possible that funding would be available through the ITCTC, but much depends on how the current federal transportation bill is reauthorized. Student interns can be hired through university or college at little to no cost. No realistic grant opportunities have been found during this project.
It is also important to determine an organization or agency that can be the central management of a TDM program. Currently, there is no organization that has the staff capacity to take on a significant program like TDM. The City seems interested, as does ITCTC and the Ithaca Downtown Partnership. If no overarching administration can be created in the short term, perhaps specific programs can be partnerships of existing organizations. Certainly, ITCTC, TCAT, Cornell, surrounding municipalities, and the County have direct interests in Park & Ride and land use development around the area. For commuter incentives, the City and Ithaca Downtown Partnership can work together to approach downtown employers. As Cornell extends their workforce into the downtown, it may be possible to expand their program with City contributions.

**Conclusion**

The recommended strategies are divided into two phases, initial and long-term. In the beginning, the target group should be the commuters. City should approach the employers in downtown individually to custom craft incentives for each work place. Rideshare and guaranteed ride home can be implemented by the employers or the City. Park & Ride can indeed capture many commuters from rural or out of county areas. In order for TDM to be effective, transit improvement and marketing/educational campaign are essential. Once the initial phase has matured, then other long-term strategies like carsharing and data collection can be put into place. TDM is definitely worth pursuing and it will benefit Ithaca by reducing congestion, managing parking problems, and helping the City to become more sustainable.
Appendix A.

Other Cities’ Transportation Programs
The City of Ithaca’s density is 5,362 people/square mile (29,287 people in 5.5 mi²).

City, State: Arcata, California
Density: 1,812 people/square mile (16,651 people in 9.2 mi²)
TDM Program: ✓ 2003 Pedestrian and Bicycle Master Plan for improving safety and attractiveness
✓ Bike week
✓ Loan bikes that are stationed at libraries
✓ Suggestion of flexible work hour, on site lockers and showers, and guaranteed ride home program in regional transportation plan
✓ City provides subsidies for free transit travel to University students and employees
Website: ✓ Alternative Modes information and facilities for university students
www.arcatacityhall.org

City, State: Asheville, North Carolina
Density: 1,668 people/square mile (68,889 people in 41.3 mi²)
TDM Program: ✓ In the City Development Plan, one of its goals is to have development nodes as pedestrian and transit friendly development; other goals are:
✓ Develop street design templates
✓ Provide more pedestrian and bicycle facilities
✓ Create network of greenways for recreation and transportation
✓ Identify different sources of funding for TDM
✓ Bring AMTRAK to the city in 2005
✓ Encourage transit supporting density (minimum 8-16 units per acre)
✓ Develop a transit system that is capable of meeting the needs of all residents of and visitors to the region
Website: ✓ Develop comprehensive strategies to reduce local vehicle miles travel
www.ci.asheville.nc.us/planning/plan2025/plan2025.htm

City, State: Aspen, Colorado
Density: 1,675 people/square mile (5,914 people in 3.5 mi²)
TDM Program: ✓ Free in-town shuttle to shopping, dining, and recreational areas; also airport and ski resorts
✓ Carpool: HOV lanes and free parking benefits
✓ Carsharing
✓ Transportation Options Program that works with employees
✓ Park & Ride
✓ Guaranteed ride home
✓ Incentives and Marketing
✓ Tourist Transport Management
✓ Zone Pass: transit pass
Website: www.aspenpitkin.com/depts/57
City, State: **Bend, Oregon**
Density: 1,624 people/square mile (52,029 people in 32 mi²)
TDM Program:
- Improve and encourage transit alternatives
- Demand response transit
- Park & Ride
- Rideshare
- Reduce the number of free parking that is provided by employers
- Improve bicycle and pedestrian facilities
- Trails system
Website: www.ci.bend.or.us/planning/transportissues/Transport_issues.htm

City, State: **Boulder, Colorado**
Density: 3,844 people/square mile (118,652 people in 24.4 mi²)
TDM Program:
- Part of the Boulder Transportation Master Plan, which focuses on multimodal corridors, regional travel, TDM, and funding
- Encourage employers to buy Eco Pass (an annual unlimited bus pass) for the employees
- Guaranteed Ride Home
- Alternative mode research and outreach
- Employee Transportation Coordinator network
- Vanpool subsidies and startup assistance
- Real-time ridesharing
- Intelligent transportation system
- Implement the Transportation Option Toolkit for employers and developers
Website: www.ci.boulder.co.us/publicworks/depts/transportation/masterplan

City, State: **Burlington, Vermont**
Density: 3,682 people/square mile (38,889 people in 15.5 mi²)
TDM Program:
- 2001 Municipal Development Plan - Parking Management
- Parking Management
- Park & Ride
- Encourage and improve alternative modes
- Increase pedestrian access
- Transit-Oriented Development
- Campus Area Transportation Management Association (CATMA)
  - Carpool/vanpool incentives
  - Staggered work and class scheduling
  - Joint ridesharing program
  - Pedestrian walkways and a bikeway system
  - Guaranteed ride program
  - Bike/walk incentives program
  - Telecommuting
Website: www.ci.burlington.vt.us/planning/mdp/toc.html
/www.uvm.edu/~catma
City, State: **Fort Collins, Colorado**
Density: 2,549 people/square mile (118,652 people in 47.1 mi²)
TDM Program:
✓ Transportation Master Plan, adopted in 1997 and updated in 2004
✓ Provide multi-modal corridors for two or more major activity centers
✓ Improve bicycle programs, facilities, and policies
✓ Achieve the “walkable city” vision
✓ Outreach business, community, youth, pedestrians, and cyclists
✓ Encourage increased ridership
✓ Visitors will park once and complete their downtown activities using pedestrian, transit, and bicycle facilities
✓ New parking additions along the periphery of the downtown core
✓ On-street parking management strategies

Website: http://fcgov.com/transportation

City, State: **Glenwood Springs, Colorado**
Density: 1,612 people/square mile (7,736 people in 4.8 mi²)
TDM Program:
✓ City of Glenwood Springs TDM stakeholders (with 12 members now):
  provides employers with services and customized assistance, carpool matching, guaranteed ride home, and networking
✓ Guaranteed ride home for alternative transportation users with reimbursement from taxi and enterprise
✓ Park & Ride
✓ Carpool
✓ Parking management with different zones
✓ Encourage Transit
✓ Marketing and improve community awareness of transportation alternatives

Website: www.ci.glenwood-springs.co.us

City, State: **Madison, Wisconsin**
Density: 3,030 people/square mile (208,054 people in 84.7 mi²)
TDM Program:
✓ Parking Regulations: meters, residential parking permit, spaces for carpoolers
✓ Park & Ride
✓ Rideshare
✓ 2000 Bicycle Transportation Plan, bicycle registration, bicycle improvement program, route map, and bikes at work
✓ Street location query

Website: www.ci.madison.wi.us/transp.html
City, State:  Missoula, Montana
Density:  1,060 people/square mile (57,053 people in 23.9 mi²)
TDM Program:  ✓ Drafting an Urban Transportation Plan
✓ Transit and multi-modal improvement
✓ Land use plan modification
✓ Missoula in Motion: work with employers and commuters
✓ Carpool/Vanpool
✓ Flexible Work Hours
✓ Telecommuting
Website:  www.co.missoula.mt.us/opg/opgweb/Transportation/transportation_planning.htm

City, State:  San Ramon, California
Density:  3,863 people/square mile (44,722 people in 11.6 mi²)
TDM Program:  ✓ Commuters Alternative Solutions: transit and carpool/vanpool incentives program, guaranteed ride home program, Park & Ride, carpool to school ridematching, and carpool to BART
✓ Transportation Options presentations to employers and employees that relocate to San Ramon
✓ Coordinate, distribute, and evaluate employee transportation surveys
✓ Develop, promote, and increase transit services with local transit agencies
✓ Assist and support property managers to promote commuter rideshare programs with their tenants
✓ Provide rideshare information to the Chambers of Commerce, developers, and homeowner associations
✓ Support and provide information on national and regional campaigns like Bike to Work Week, and California Rideshare Week
Website:  www.ci.san-ramon.ca.us/transp/tdm.htm
### Table 2. 1990 & 2000 Census Data: Modes of Commute

<table>
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<tbody>
<tr>
<td>Total Commuters</td>
<td>12,708</td>
<td>13,335</td>
<td>22,235</td>
<td>24,938</td>
<td>45,175</td>
<td>47,394</td>
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<td>Car/truck/van (drive alone)</td>
<td>4,426</td>
<td>4,767</td>
<td>10,038</td>
<td>11,546</td>
<td>27,067</td>
<td>28,339</td>
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<td>% of total commuters</td>
<td>35%</td>
<td>36%</td>
<td>45%</td>
<td>46%</td>
<td>60%</td>
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<tr>
<td>Car/truck/van (carpool)</td>
<td>1,023</td>
<td>1,074</td>
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<td>% of total commuters</td>
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<td>8%</td>
<td>10%</td>
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<td>Public Transportation</td>
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<td>8%</td>
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<td>7.3%</td>
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<td>Bus</td>
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<td>1,043</td>
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<td>1,782</td>
<td>1,311</td>
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<td>% of total commuters</td>
<td>5.6%</td>
<td>7.8%</td>
<td>4.8%</td>
<td>7%</td>
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<td>Walked</td>
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<td>5,493</td>
<td>7,517</td>
<td>7,371</td>
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<td>Bicycle</td>
<td>209</td>
<td>236</td>
<td>305</td>
<td>345</td>
<td>335</td>
<td>407</td>
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<td>% of total commuters</td>
<td>2%</td>
<td>1.7%</td>
<td>1%</td>
<td>1.4%</td>
<td>0.7%</td>
<td>1%</td>
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<td>Other means</td>
<td>240</td>
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<td>93</td>
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<td>3%</td>
<td>2%</td>
<td>0.7%</td>
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<tr>
<td>Worked at home</td>
<td>506</td>
<td>658</td>
<td>867</td>
<td>1,168</td>
<td>2,425</td>
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<td>4%</td>
<td>5%</td>
<td>4%</td>
<td>4.7%</td>
<td>5%</td>
<td>4%</td>
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Annotated Bibliography


*TDM Review* is a quarterly periodical from the Association for Commuter Transportation that contains articles on TDM companies and services. More information about this organization and its publications can be found on its website at www.actweb.org


The Cornell Office of Transportation and Mail Services used projected figures to state that TDM program would save the University $56,881/year and to justify the proposal of a TDM program. After TDM is implemented, the Office looked at actual savings in 1998, and found that the program had saved the University nearly $17 million in total. This financial analysis serves as a powerful evidence to support a TDM program.


The study gives insight on the situation of Collegetown parking. It provides information on the parking problems and serves as an example on studying parking in other areas within the City.


The goal of this study is to identify the feasibility of encouraging people who currently drive in the northeast subarea of Tompkins Count to use transit. The report has a detailed proposal on how to improve the service of TCAT and design a Pyramid Mall Transit Hub. There is also market research on the public perception of transit, and an analysis of downtown, Cornell, and IC parking and transit policy. The report provides many insights on technical changes and the transit in the Ithaca urbanized area.


It provides comprehensive resources of the planning, implementation, and evaluation of TDM. There is very detailed description of specific TDM strategies and general information on techniques of planning and evaluation. It also has many case studies and related links.