CHAPTER 1. INTRODUCTION

The Southside/Downtown Transportation Demand Management (TDM) Study intends to develop transportation management strategies that further the Berkeley community's vision as revealed through the study process. These strategies will inform other plans, including the City's General Plan and the University's Long Range Development Plan, but they are not intended to be adopted as a 'plan' in and of themselves.

This introduction includes five sections. The first section explains the process used to develop the Southside/Downtown Berkeley TDM Study, and describes the study's goals, objectives, and community involvement strategy. The second section describes the Transportation Demand Management Planning Principles that have guided the development of the study's recommendations. The next section examines how Study Area growth and regional lessons learned influence the study's outcomes. The fourth section profiles the different types of people traveling within the Study Area and how each group generates trips. The introduction concludes with an explanation of the document structure.

STUDY PROCESS , GOALS AND COMMUNITY INVOLVEMENT

The Southside/Downtown Transportation Demand Management Study was sponsored jointly by the City of Berkeley and the University of California. The Study Area is bounded roughly by Hearst Avenue, Martin Luther King Jr. Way, Dwight Way and Prospect Avenue. A map of the area is provided in Figure 2-1. Since transportation projects are inherently about connections, neighborhoods outside this Study Area have also been considered throughout the process.

The project was guided by a Working Group with an informal membership that included regular participation from local residents, business owners, students, employees, university faculty and staff, and staff from several agencies that serve or are housed in the Study Area. In addition, the study team conducted over 30 stakeholder interviews to gather input from key community interests. The interviewees are listed in Appendix A of this document. An Existing Conditions report was developed that analyzed trip patterns, development issues and other factors that would provide a factual foundation for this report. The entire document is available online at the City's Planning Department website at:

http://www.ci.berkeley.ca.us/planning/

Following the development of the Existing Conditions report, the study team met with the Working Group and held a public workshop to identify community values and confirm the goals and objectives for the project. These are summarized in Figure 1-1.

Once the goals were set, the study team developed a matrix of alternative Transportation Demand Management Strategies to meet the community's vision. This matrix was presented to the project working group and at a public forum, where it was refined. This report builds on the refined program matrix and develops a formal set of recommendations.

Study Area Transportation Goals and Objectives

By distilling the comments the TDM study team heard from over 30 stakeholder interviews, five Working Group meetings and a public workshop, two simple goals were crafted. Local residents, business leaders, policymakers and officials from both the City and University are most concerned about making Berkeley a great place to live, conduct business and pursue academic achievements. They want a place that is fundamentally *livable* – with clean, walkable streets, fresh air and a sense of "neighborhood" – and at the same time full of economic, cultural and social *vitality*. Specifically, the two goals are:

- Improve the *livability* of Berkeley's core, including the University, Downtown, Southside and surrounding neighborhoods.

- Improve the *vitality* of Berkeley's core, including its role as a place for living, business, research, teaching, study, worship, shopping, recreation and entertainment.

These desires for livability and vitality are often in tension with one another, but they do not need to cancel each other out. Figure 1-1 displays the goal statements and the objectives which support them. The level of community consensus surrounding each goal and objective is also noted.

FIGURE 1-1
COMMUNITY VISION: GOALS AND OBJECTIVES FOR TDM STUDY

Goal 1: Improve the *livability* of Berkeley's core, including the University, Downtown, Southside and surrounding neighborhoods.

	Objective	Consensus?	Alternative Points
1.1	Reduce the negative impacts of the automobile on livability along all streets in the community, including noise, congestion, air and water pollution and the disruptive effect automobiles may have on the comfortable scale of neighborhoods and the interaction among neighbors.	High	Some people felt simply the numbers of cars should be reduced, while others focused on the impacts of cars. Many residents wanted to ensure that livability would be improved along arterials and collectors as well as local residential streets.
1.2	Improve safety for all road and sidewalk users -- especially bicyclists and pedestrians.	High	
1.3	Improve the effectiveness of residential parking programs, including motorists' understanding of and compliance with the laws.	High	
1.4	Reduce the negative visual and environmental impacts of parking lots and structures.	High	
1.5	Improve the experience for pedestrians, bicyclists, disabled people and transit users throughout the Study Area, with a focus on pedestrians and the disabled.	High	
1.6	Reduce the need for automobile trips by providing the right balance of jobs, neighborhood-oriented services and a diversity of housing types all within easy walking distance of one another.	High	Strong support for increasing housing to better match the number of jobs, but concern that appropriate scale, building height and open space is maintained.

	Objective	Consensus?	Alternative Points
1.7	Acknowledge the established street hierarchy and continue to focus more trips on major streets and fewer trips on local residential streets.	Moderate	Moderate disagreement on this issue. Some people support removing traffic barriers from neighborhood streets to spread traffic impacts throughout the Study Area.
1.8	Accommodate motorcycles and scooters in Study Area planning.	Moderate	Some people were concerned about the risks inherent in motorcycle riding and questioned whether these uses should be promoted.

Goal 2: Improve the *vitality* of Berkeley's core, including its role as a place for living, business, research, teaching, study, worship, shopping, recreation and entertainment.

Objective		Consensus?	Alternative Points
Access			
2.1	Maintain and improve access to the Study Area by all modes, recognizing that the ability to widen Berkeley's streets is very limited, and those modes that can move the most people and are the most environmentally sound will need to be emphasized.	High	
2.2	Recommend the appropriate amount of parking supply in the Study Area to support the study goals.	Moderate	There are widely divergent views on this point, with some people saying there should be 10,000 spaces built and others saying the existing parking should be eliminated. Most people, however, think the existing number is "about right" with significant numbers supporting a slight increase or decrease. Most recognize that there is an ultimate reasonable limit to the number of spaces which can be provided.

Objective		Consensus?	Alternative Points
2.3	Maintain and improve marketing and information programs to increase awareness of the mode choices available to the community.	High	
2.4	Increase the reliability on all modes – with an emphasis on transit.	High	
2.5	Coordinate transportation programs and parking management among the University, the City, local businesses, entertainment venues, transportation providers and other institutions.	High	
2.6	Address societal issues that affect mode choice, including dependent care, the aging population, welfare reform and personal safety concerns.	High	
2.7	Decrease transit travel time on primary transit streets by reducing congestion and/or implementing transit preferential measures.	High	
2.8	Coordinate transit services among all existing providers.	High	
2.9	Develop transportation systems that are cost effective and have identifiable long term funding sources.	High	
2.10	Provide access to people within the full spectrum of personal ability and disability.	High	

Objective	Consensus?	Alternative Points
Employers		
2.11 Recommend the right balance between long-term commuter parking supply and increased transportation demand management programs.	Moderate	Moderate support of existing plans for new local and satellite parking, but serious concerns about significantly more. Specific concern among some residents about the restoration of the Underhill parking structure. People more supportive of short-term parking than long-term.
2.12 Develop a mechanism for allocating use of commuter parking facilities serving the Study Area.	High	
2.13 Increase the supply of affordable housing within walking distance of Berkeley's core to better match the needs of employees and students in the area.	High	Strong support for increasing housing to better match the number of jobs and students, but concern that appropriate scale, building height and open space is maintained, and that the existing community is not displaced. Small minority opinion that downtown housing is undesirable, because it will place additional demand on transportation system.
Retail, entertainment and culture		
2.14 Maintain an adequate supply of short term parking aimed at shoppers, city/campus visitors and entertainment/culture trips.	High	
2.15 Coordinate special events so as to minimize transportation disruption.	High	
2.16 Recommend the right balance between parking supply, transportation demand management and new transit services to flexibly meet the needs of special events and entertainment venues.	High	

Areas of agreement and disagreement

There is a high level of agreement over these goals and objectives, with many friendly amendments to increase the inclusiveness and improve the clarity of the wording. The two areas that produced the most disagreement were on the subjects of traffic barriers (formally known as diverters) in residential neighborhoods and parking – especially for commuters.

For the purposes of this study, the consultant team has assumed that the City's well developed, existing policies on street barriers in residential neighborhoods will remain. By replacing the existing barriers with more sophisticated traffic calming devices, it may be possible to increase mobility in Berkeley without decreasing neighborhood quality of life. Nevertheless, such a proposal is well outside the scope of this TDM Study.

A controversial topic that falls within the scope of this study, however, is parking supply. Among the participants in the public input process, who were self-selected, the *slight* majority opinion is that the parking supply that exists now is the right supply -- while more should not be built, none should be eliminated. In addition to the fact that this view is held by just a slight majority, there are very strong advocates for the positions on either side of this majority viewpoint. This issue is addressed in further detail in later chapters.

TDM PLANNING PRINCIPLES

This study's recommendations begin with a variety of important principles and assumptions that are spelled out below.

It is Often More Cost-Effective to Better Manage Existing Resources than to Add More Capacity

The Study Area has extensive existing resources to manage transportation demand. All residents and employees in the Study Area are located within ¼ mile of transit, a large percentage are within a ½ mile of the Downtown Berkeley BART station, there are several private shuttle programs, and the City and University have worked together to fund a TDM agency. The University already boasts 85 and 50 percent alternative mode use rates among students and staff/faculty respectively, and Study Area employees, overall, are much less likely to drive alone than non-Berkeley commuters (46% versus 71%). The Study Area also features land use patterns and mixed-use development that are conducive to riding transit, walking and bicycling. Traditional transit corridors lead into the Study Area from several directions.

Despite all these resources, automobile traffic congestion in Berkeley threatens the quality of life, economic vitality, future growth, the town-gown relationship, and access within the Study Area. Because Berkeley is doing so much already to promote alternatives to driving alone, it is clear that managing existing resources is a top priority.

Managing Demand is as Important as Managing Supply

Transportation engineering over the last 50 years has tended to focus on the "supply side" of transportation questions. That is, "how many more roadway lanes should we add to accommodate 20,000 more residents?" Or, "where should the train run in order to serve the most riders?" Transportation Demand Management, on the other hand, considers the "demand side," posing a very different set of questions, such as: "What effect would a parking price increase have on transit ridership?" or "Should we build a parking structure or expand hours to accommodate visitors over a longer period?" Managing demand makes the best use of supply by maximizing unused capacity through pricing and incentive strategies.

Traffic Congestion and Travel Conflicts Negatively Impact Community Quality

Vehicular traffic congestion -- whether caused by limited street capacity, travel time-peaks, or parking availability -- has a negative impact on community livability. The negative aspects of vehicles include noise, congestion, air and water pollution, residential stress, and reduced mobility. Travel conflicts include competition for roadway space among different modes, such as buses and cars, cars and bikes, or bikes and pedestrians. Travel conflicts also include competition for roadway use, such as residential on-street parking versus retail parking.

Personal Access is Prioritized Over Vehicular Access

TDM emphasizes personal access rather than vehicular mobility -- that is, how can people access the goods, services and employment they need, rather than how do we make sure they can drive to these things? Would a delivery service be just as good as another freeway lane? Transportation, after all, is not usually an end in itself but a means to an end. Vehicular mobility is only one of many ways to achieve personal mobility and access.

There is Limited Travelway Capacity

TDM strives to treat roadway, bus and sidewalk capacity as valuable, limited assets to be carefully managed. Just as businesses try to maximize their capital return through adding second employee shifts, TDM may maximize the use of the highway by spreading the peak hours of road use. Businesses may use "just-in-time" inventory while TDM uses traffic signal timing and timed transfers. Businesses use express check-out stands and frequent flyer benefits while TDM offers HOV bypasses and discounted transit passes. Businesses develop new products, while TDM develops new services like vanpooling or improved transit routing.

Limited travelway capacity is especially apparent in central Berkeley, where historical buildings front narrow streets, and sidewalk space is limited. The voters of Berkeley have reinforced this physical constraint by approving Measure S, which calls on the City to avoid roadway widening.

The Berkeley Study Area already boasts an impressive percentage of people using alternatives to driving alone. Whether driving, walking, biking or riding the bus through the Study Area, however, traffic congestion is immediately apparent and diminishes the enjoyment of the urban experience.

TDM is More than Carpooling

Transportation Demand Management generally focuses on commute trips, because these trips are often more regular, predictable and occurring at times of peak congestion. Because this is an area-wide study, it addresses more than just the commuter market. The study takes a comprehensive approach to TDM by determining the best mix of transportation capital projects, programs and incentives in order to achieve the City's and University's development and quality of life goals. This study considers not only marketing and economic incentives for alternatives, but also the City's housing policies, maintenance of the Study Area's pedestrian infrastructure and the economics of parking garage construction. These types of strategies impact both commute and non-commute travel.

No Single Solution Works for Everyone

One of the clearest lessons of modern urban transportation systems planning is that no single solution works for everyone. Indeed, different solutions may work better for the same individual on different days. TDM is about providing people with more transportation options to choose from and leveling the economic playing field between those choices. It is not about "forcing" people to do one thing or another. The modern American transportation system, however, often provides travelers with only one viable "choice": driving alone. TDM approaches seek to broaden the choices.

Information is Critical to Change

People must be informed about their transportation choices in order to make them. Many people are not aware of existing bus lines which could serve their needs. People may also have heard negative comments about bus service, carpooling, bicycling, etc. While there are negative aspects of all travel modes, hearing negative comments about a mode that a person has not used, discourages that person from trying the alternative. Inertia plays a large role in people's travel patterns. People become used to, and comfortable with, the mode they use most often. They become comfortable with the advantages and disadvantages of that mode, whether it is traffic congestion or the occasional late bus. Since the most common mode for the majority of travelers is the Single Occupant Vehicle, accurate, easy-to-obtain, and easy-to-understand information about alternatives is vital to overcoming this inertia.

Travelers are Rational Decision-Makers

Travelers are transportation consumers, and they are looking at what is the best value for their needs. A traveler will not select a transportation mode if it is more time consuming, less convenient, less reliable and equally costly. The factors that influence mode choice are:

Time -- The time is takes for a person to use a particular mode is the most important factor a traveler considers. Travel time depends upon the distance between destinations, traffic conditions, and the available transportation infrastructure.

Convenience – Convenience entails access at the starting and ending points, the ease of using the mode, and related benefits to using the mode. These related benefits might include the ability to carry packages or transport children (as in the case of driving) or the ability to read while traveling (as in the case of riding transit).

Information – Customers cannot select a mode without being properly informed of their choices.

Reliability -- Knowing that the bus or a carpool partner will be on time and consistent is critical.

Customer Service – Does using the mode make a person feel more or less frustrated, stressed, or valuable? Customer service also means that travelers feel that the mode is designed *for them* and their needs.

Cost -- Cost is a factor although most commuters do not consider the fixed-cost of owning an automobile. The influence of cost also depends on a person's income level.

Flexibility -- Knowing that a person can leave at "any" time and be able to access their mode is critical. Bicycles, walking and the personal automobile have the most flexibility. The more frequent transit, the more flexible it is.

Mode Choice Is Influenced by Parking Availability and the Availability of Travel Choices

Parking supply and effective alternative mode choices, together, equal access. The tighter the parking supply, the more attractive using transportation alternatives becomes. The more transportation alternatives provided, and the more those alternatives meet people's needs, the easier it is for parking demand to decline.

Shifting Each Additional Trip to Alternative Modes Becomes Increasingly Challenging

Even when a community spends very little money to provide transportation alternatives, there are people who will use alternatives because no one solution, including driving, works for everyone. As programs are implemented to offer more transportation choices and level the economic playing field between alternatives, the people who can most easily switch modes will do so. To continue to shift travelers, TDM programs must become more robust, and often more costly. In the case of economic incentives, such as subsidies, not only is each new trip more costly to shift from driving, but the additional cost of the benefit has to be added to all those trips that were already shifted.

TDM PLANNING LESSONS

Examining transportation planning history in the Bay Area can help Berkeley deal with today's opportunities and constraints. Realizing the community vision in the Study Area requires a fundamental shift in how transportation is viewed. Many people in Berkeley contend that "*people* won't get out of their cars." As these lessons show, this is simply not true. Change is possible.

San Francisco

Located two miles from any freeway and surrounded by residential neighborhoods, access by vehicle to the Berkeley Study Area is constrained by roadway capacity and neighborhood quality of life concerns. The planning history of the City of San Francisco offers lessons on how it addressed a similar challenge.

According to the San Francisco Planning Department, employment in downtown San Francisco doubled between 1968 and 1984, while the number of cars traveling into the downtown stayed the same. City planners recognized that constrained capacity in the regional highway system – and particularly the Bay Bridge – made it impossible to develop a downtown that promoted access by car. Completion of BART and Muni Metro subways and a Downtown Plan that encouraged a compact, walkable, highly dense pattern influence downtown's 500,000 employees to use alternatives to driving.

Parking was also controlled. New buildings were built atop existing surface parking lots and most were allowed to build little or no parking. Instead, the City developed ten public garages arranged in a ring around the far edges of the Financial District and Union Square area, totaling over 11,000 spaces. Parking prices at each of the garages are set to discourage long term commuter parking and to support shorter-term shopping, business and errand trips.

In recent years, San Francisco's parking restrictions have been challenged, largely because the City has failed to maintain and expand its investments in Muni. Nevertheless, recent major

projects have been designed with little or no parking. The Sony Metreon, a four story, 350,000 square-foot entertainment center, opened in June 1999 amid predictions that it would create a parking crisis and gridlock. The project was built with no parking. The majority of users arrive by foot and transit, and the remainder can park in the existing, 2,600-space 5th & Mission Garage across the street. As of March 2000, peak utilization of the garage has averaged 78%, with not a single parking shortage period in the evening when visitation to Metreon peaks.[1]

Pacific Bell Park faced dire predictions that it would create gridlock and parking shortages because everyone would drive there. Instead, the park's 5,000 space lots do not regularly fill. According to the Department of Parking and Traffic's Bond Yee, "60% of ballpark fans are taking transit," even to the relatively remote Ballpark location, exceeding planners' initial goals.

The lesson here is that cities can change from car-dominated to transit-dominated as they urbanize. The shift can be accomplished by investing in alternative transportation strategies that support a long-term vision.

Berkeley

Berkeley can also look to its own history to find an example of a vibrant economy intimately linked with public transportation. Berkeley was built upon the backbone of transit. The transit corridors leading into central Berkeley from the West, North and South were major contributors to the sense of community and economic prosperity in Berkeley. These corridors were lined with major shopping destinations and mixed-development that fostered walking and transit ridership. Many of these development patterns are still evident in Berkeley today.
Many Berkeley residents are nostalgic about the loss of the East Bay's transit infrastructure and the "Key System" streetcars that used to run on Berkeley's streets. But just as planners and economic trends shifted the infrastructure's balance from transit to automobile dominance in the 1950s and 1960s, we now have the opportunity to shift this balance again. The lesson to be learned from Berkeley is that the infrastructure and mode dominance in the Study Area can change with careful planning and community support.

The University of Washington

In 1983, the University of Washington and the City of Seattle entered into an agreement stating that the university would maintain traffic volumes at 1983 levels, not increase the number of vehicles parking in surrounding neighborhoods, and limit the university parking supply to 12,300 spaces. UW currently has 12,000 parking spaces. With 35,000 students and 20,000 faculty and staff members, this represents a ratio of .22 parking spaces to population and .34 total spaces per student.

[1] San Francisco Planning and Urban Research, "The SOMA Transportation and Land Use Connection," July, 2000.

As a state institution, it was not clear to the University what jurisdiction Seattle has over UW. At the time of the 1983 agreement, the University concluded that it was not worth taking the jurisdictional issue to court, and instead decided it was better for the University and the community to sign the agreement. They also concluded that it would be less costly to fund transit rather than build more parking structures.

In response to the 1983 goals, the university developed a Transportation Management Plan. In 1991, the University enhanced this plan to develop the U-PASS Program. The U-PASS program was developed in response to the 1989 General Physical Development Plan, which called for the addition of 2.2 million gross square feet of new development by 2001, and predicted an increase of 1,000 peak-hour and 10,000 daily vehicle trips and the loss of 1,700 surface parking spaces. As a result of the U-PASS, the University states that it has avoided any major parking construction in the last decade, despite the growth of 5,000 faculty and staff since 1990.

To develop the U-PASS program, the university formed a task force of Metro Transit planners and university faculty, students, and staff and received approval for the program from the University Regents and the Seattle Metropolitan Transportation District board.

Those who purchase UPASS have:

- Unlimited access to Metro, Community Transit and Sound Transit buses
- Free carpool parking on campus
- Subsidized vanpool fares ($40)
- Free rides on the Night Ride shuttle
- Ridematch services
- Bicycle programs
- Discounts at stores and restaurants

Additional benefits for faculty and staff:

- Reimbursed Ride Home for emergencies
- Discounted daily parking passes.

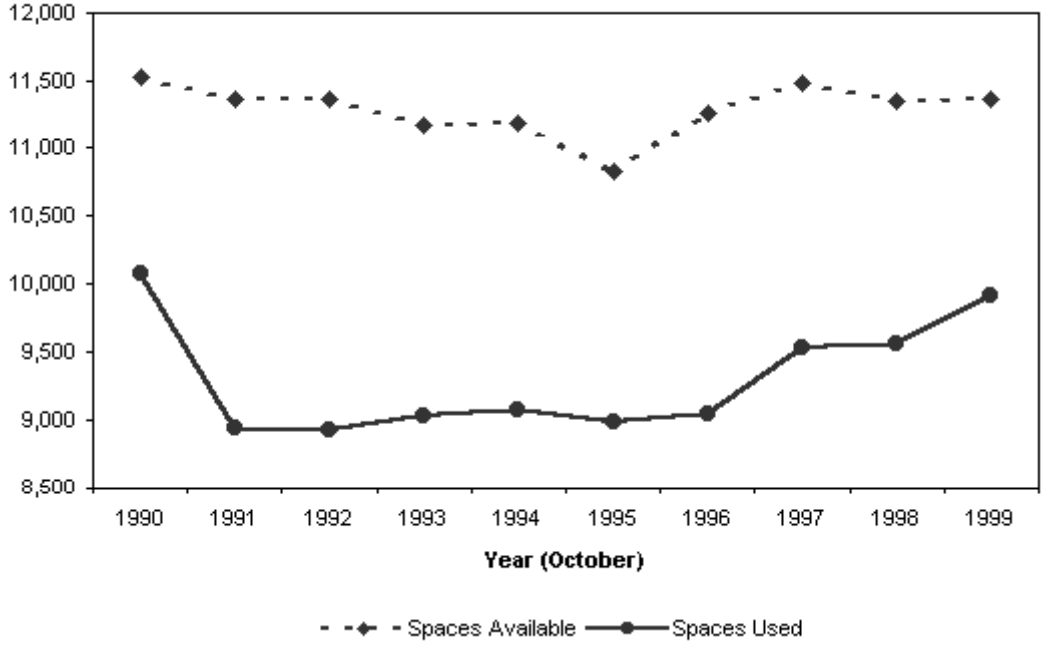
Three students in a carpool may park on main campus on a first-come, first-served basis in one of three reserved carpool areas. Vanpool vans are owned, maintained and insured by Metro or Community Transit. All faculty and staff receive a quarterly TDM newsletter.

The 1998-99 U-PASS Program operating budget was $9,049,000, of which $7,891,000 was paid to transit service providers for support the level of transit service. 48% of program revenues come from U-PASS sales, 38% from parking permit fees, 5% from parking fines, and 9% from other UW sources.

Within one year of implementation of U-PASS, vehicle trips to campus were down 16%, parking lot use had decreased from 91% to 78%, and transit ridership had increased 35%. In 1998, the most recent year for which data is available, the weighted-average drive alone rate among

students, staff and faculty had fallen from a pre-U-PASS rate of 33% to 25%. Transit mode share increased from 21% and 29% between 1989 and 1998, while car and vanpooling increased from 10% to 12% and walking increased from 23% to 27% over those years. Bicycling fell from 9% to 6% and "other" fell from 4% to 1%.

FIGURE 1-2
COMMUTER PARKING UTILIZATION AT UW



The University agreed to maintain the trip generation cap regardless of university growth. The University does not want to limit its population, however, and believes that campus growth is a good thing. Managers of the U-PASS program are concerned that they have maximized the benefits they can achieve from the U-PASS program and are now facing a big challenge to make additional shifts in mode share.

STUDY AREA GROWTH AND CHARACTER

Because the intent of this study is to inform other plans, such as the City's General Plan, the Southside Plan and the University's Long Range Development Plan, the study does not analyze or make recommendations about the level of Study Area development and growth. Study Area growth and development, however, are extremely important to transportation management. The Study does propose some housing policies which support the use of transit, walking and bicycling.

Based on the progress of the General Plan and UC's Long Range Development Plan to date, the study team has assumed that there will be an increase in the intensity of development in the Study Area and that it will continue to become more urban than suburban in character. These two assumptions are pervasive throughout this document, and many of the recommended programs strive to support this strategic direction and mitigate some of its negative impacts.

Study Area stakeholders do not agree on the character of the area. Some state that the Downtown and Southside are urban, with others fiercely maintain that the area is a "village" and should not become more urbanized. Regardless of perceptions, both groups share common ideas about what a livable, vibrant community looks like, and no great urban city or quaint university town is known for its abundant, free parking. Instead, great places tend to rely on a rich variety of factors, including:

- Lots of people on the street, 24 hours a day
- High concentrations of housing nearby
- Transportation options that are appealing to people who have access to a car
- Unexpected surprises
- A diverse economy
- Coordination and communication

Similarly, great universities and cities promote the free exchange of ideas, something that happens when people are encouraged to linger and interact in pleasant places. Because people cannot have meaningful interactions from their cars, great universities typically relegate automobiles to the periphery and do not subsidize or promote cars in the form of free parking.

To meet the community vision, an excellent pedestrian environment must be provided with broad, clean sidewalks edged by interesting storefronts or academic buildings, and transit services that are frequent and reliable and offer competitive travel time and high levels of customer service. For downtowns in most college towns, it also means bicycle access that is safe and comfortable.

Successful downtowns and universities are both social and economic units. They rely on a critical mass of people on sidewalks and plazas, and the opportunity this creates for random human interaction. They also rely on people discovering shopping and knowledge

opportunities they did not know existed. Great downtowns, universities and retail destinations have a lot in common: they are well managed, attractive places with a variety of shopping, information-discovery and entertainment venues. Finally, a great downtown is a 24-hour place. In order to achieve all-day liveliness, great downtowns must be surrounded by high concentrations of housing, and retail businesses in the downtown must cater to local residents in addition to commuters and visitors.

THE TDM MARKET IN THE STUDY AREA

The transportation programs recommended in this report are designed to serve a diverse market of travelers. The problems caused by the automobile in the Study Area are not caused by any one particular group. Residents, students, and employees of companies and institutions both large and small add traffic and trips in the Study Area. Many TDM programs, however, focus on commute trips, because these trips generally create the greatest demand on the transportation system at any one time.

A review of existing conditions revealed the commuter markets shown in Figure 1-3. It is recognized that the data sources used to identify these markets are from different years and that some sources are ten years old. For purposes of this study, however, this information provides an understanding of who is making trips within the Berkeley Study Area. In addition, Berkeley's population has not dramatically increased or decreased and development patterns have not significantly altered in the last decade. Thus, these figures show the relative size of the different groups to each other. Numbers have been rounded to prevent a false sense of accuracy.

FIGURE 1-3
DAILY COMMUTER TRAVEL MARKETS IN STUDY AREA

	Daily Population	Drive Alone Rate	Drive Alone Trips	% Drive Alone Commute Trips	Vehicle Trips	% Vehicle Commute Trips
UCB Students	27,600 (1)	15% (2)	4,140	28%	4,250 (3)	27%
UCB Faculty/Staff	10,165 (4)	50% (5)	5,080	34%	5,500 (6)	34%
Off Campus Study Area Employees	12,300 (7)	46% (8)	5,660	38%	6,200 (9)	39%
Total	**50,065**		**14,880**	**100%**	**15,950**	**100%**

(1) 1998-99 Student Headcount was 30,680, Source: UC Berkeley; Assume 90% of students come to campus on any given day due to part-time or staggered class schedules.
(2) Source: 1997 Student Transportation & Housing Survey.
(3) Source: 1997 Student Transportation & Housing Survey; 15% Drive Alone Rate, 1% HOV rate, assume 2.5 passengers per HOV = 15.4% vehicle trip generation rate.
(4) 1998-99 Faculty/Staff Headcount was 11,295, Source: UC Berkeley; Assume 90% of faculty and staff come to campus on any given day due to part-time schedules and time off.
(5) Source: 1996 Faculty and Staff Hosing and Transportation Survey
(6) Source: 1996 Faculty and Staff Hosing and Transportation Survey; 50% Drive Alone Rate, 10% HOV rate, assume 2.5 passengers per HOV = 54% vehicle trip generation rate.
(7) Alameda County Congestion Management Agency projections for study area employed population in 2000 (See Figure 9-5 for more detail); Assume 90% of employees come to the Study Area on any given day due to part-time schedules and time off.
(8) Source: City of Berkeley, from 1990 Census.
(9) Source: City of Berkeley, from 1990 Census; 46% Drive Alone Rate, 11% HOV rate, assume 2.5 passengers per HOV = 50.4% vehicle trip generation rate.

About half of the commuter drive alone trips are generated by UC Berkeley and the other half are generated by the sum total of the all the other employers in the Study Area as well as non-student residents traveling to their jobs.

In addition to the commuter market, there is also a TDM market for non-commute trips. Unfortunately, there is little data available on non-work trips. According to the Metropolitan Transportation Commission, non-work trips make up 75% of daily trips in the Bay Area, and the regional average of non-work related trips as a percentage of peak morning trips is 47%. The average number of trips per day per household is 8.44; 6.44 (75%) of which are non-work trips.

There are no data sources that identify the number of non-work trips traveling through the Study Area on a daily basis. The populations making these non-work trips, however, include residents of the Study Area, residents from throughout Berkeley, employees who have commuted into the Study Area, students, and visitors from throughout the Bay Area and beyond. These trips contribute to traffic congestion, and strategies that shift these trips from the

Single Occupant Vehicle to other transportation alternatives are critical to meeting the community's vision. The impact of these trips on traffic congestion, should not be underestimated, and the programs presented in this report aim to impact all travel purposes. Some activities specifically address the University, but equal attention is placed on actions that the City can take to influence the broader traveling market. Many TDM programs, however, focus on commute trips, because these trips occur in the peak travel hours and create the greatest demand on the transportation infrastructure at any one time.

DOCUMENT STRUCTURE

The Southside/Downtown TDM Study Final Report starts with an overview of the existing conditions in the Study Area. Chapter Three provides an overview of all the TDM activities that are presented in the Study and explains how the activities are organized. The next four chapters describe each TDM programming activity in detail and lay out a framework for how the activity could be implemented in the Study Area.

Following the descriptions of the TDM activities, Chapter 8 presents a summary of the activities' estimated costs (order of magnitude) and impacts on trip making behavior in Berkeley. Chapter 9 analyzes the parking supply in the Study Area. Recommended approaches to implementing the TDM Study's activities based on different policy objectives are outlined in Chapter 10. The document concludes with a discussion of potential funding sources.

TABLE OF CONTENTS

TABLE OF FIGURES