

**U.S. Department of  
Transportation**

# **Transportation Demand Management Planning at Multi-Tenant Buildings**

An Example of TDM Planning  
During Project Design

September 1988

Prepared for  
Commuter Transportation Services, Inc.  
Commuter Computer

TRANSPORTATION DEMAND MANAGEMENT  
PLANNING AT MULTI-TENANTS BUILDINGS

PROTYPE III: AN EXAMPLE OF TDM  
PLANNING DURING PROJECT DESIGN

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## Preface

Traffic congestion is becoming a painful side effect of southern California's growth and prosperity, and mitigating the adverse effects of traffic congestion is becoming a primary concern for developers, employers and local governments. Specific mitigation measures have historically been negotiated between developers and cities or have been included voluntary ridesharing programs. However, traffic more and more cities and regional agencies are requiring mitigation through ridesharing programs aimed at decreasing the number of automobiles on our streets and highways. These programs are often based on Transportation Demand Management (TDM) techniques and are designed to reduce the number of solo commuters instead of adding more freeways or costly transportation services.

If you are a developer or building owner/manager faced with complying with ridesharing regulations or simply wish to learn more about managing the commute, this guide will be of interest to you. It contains the better information you will need to help you better understand **Transportation Demand Management (TDM)** planning. Implementing (TDM) energy and money - a TDM plan may even eventually save for you and your company. You will learn what Transportation Demand Management is, why it should be of interest to you and how to use it. This handbook contains a sample of a TDM plan, coupled with an explanation of each section to help guide you through the planning process.

This guide has been prepared by Commuter Transportation Services, Inc., (CTS). Private CTS (popularly known as Commuter Computer) is a nonprofit company founded in 1974. As a commute management organization, its mission is to make the commute easier, more convenient and less costly. CTS provides a wide variety of services and information aimed at providing choices to commuters through ridesharing, alternative work hour arrangements, telecommuting and other options for individuals and businesses.

This guide for developers, building owners and building managers is one in a series of samples of TDM plans that illustrate the design and proposed application of TDM strategies. This sample plan was prepared for a fictitious building manager near downtown Los Angeles. The plan is not guided by a specific regulation that encourages ridesharing. Furthermore, each of the sample TDM plans may be more extensive satisfy than the type of plan which may existing local government or special district requirements.

Beginning with the Executive Summary, pages to the LEFT titled "plan description " introduce and explain each section, and pages to the RIGHT titled " example plan " are in the form of a TDM plan.

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## INTRODUCTION

### WHAT IS ATDM PLAN?

A Transportation Demand Management (TDM) plan (sometimes called ridesharing plan) is a working document that contains specific strategies which focus on reducing travel, especially peak period travel, up to the point of the commuter's destination. In other words, it is a plan of action that attempts to use the existing transportation infrastructure more efficiently. The strategies that can be implemented at a worksite are considered TDM strategies.

The goals of a Transportation Demand Management (TDM) plan are to reduce traffic congestion, air pollution, energy consumption and the costs of commuting to work. The objectives are to increase the number of commuters arriving at work by carpool, Vanpool, bus, train, and bicycles, and to increase the number of commuters who work with a variable hour schedule or work from home. These objectives are accomplished by implementing an array of strategies to change commuting behavior.

## WHY USE TDM PLANNING?

There are several reasons why a developer or building owner would be interested in implementing a TDM plan.

### 1) Compliance with Legislated Requirements

Foremost, preparing a TDM plan may be the result of local governments passing traffic impact ordinances. Specific legislation may be in the form of a trip reduction ordinance, traffic impact fee ordinance, parking reduction ordinance, or ridesharing ordinance or regulation. To meet ordinance requirements, a developer or building owner produces a plan that encourages the tenants and/or employees at the site to use transit, ridesharing, bicycling or 'walking as their primary or alternate commute method.

Due to the fact that employers, developers and building owners can directly affect commuter habits, they have been targeted for implementing TDM plans. A developer or building owner is in a position to implement unique measures (as described in the next section) that result in tangible reductions in single-occupant automobile trips.

For example, the physical layout and land use composition of an outlying office development defines the kinds of traffic conditions that will exist, the relative ease of site access and egress, and even the modal preferences of employees commuting to and from work. In such a case, sprawling office parks have been designed with liberally-spaced, horizontally-scaled buildings surrounded by surface parking which encourages, through cost and convenience, solo driving. Through the construction of facility measures such as preferential employee carpool/vanpool parking, transit passenger shelters, showers and lockers, and bicycle paths, the commuter is encouraged to use an alternative means of commuting. These measures not only serve to meet requirements but provide additional benefits to be gained by the developer or building owners, tenants, employees, and the community.

### 2) Save on Parking

A developer may implement a TDM plan to reduce the overall number of parking spaces at a site and utilize the remaining land for

based on the initial success of the TDM program implemented. For a developer the potential cost savings can be tremendous, and there can be the opportunity of developing the site at a higher density.

### 3) **A Competitive Edge**

Through the implementation of a TDM plan, building owners and managers may create a competitive edge over other development sites. Building owners and managers have found that implementing a ridesharing program may relieve their tenants of the burden of driving alone, and also provides them with a carrot to attract and retain employees at their offices. The following is a list of the numerous reasons why tenants may be interested in a TDM program.

Benefits to the employer tenant:

- o Reduce parking demand and the need for additional parking space construction
- o Reduce monthly parking expenses
- o Offer employees an additional low-cost benefit
- o Improve employee morale
- o Reduce employee absenteeism, tardiness and stress
- o Assist in meeting Southern California Air Quality Management District requirements (SCAQMD)
- o Gain access to an expanded labor market
- o Add an extra employee recruitment tool
- o Reduce corporate relocation problems
- o Have ready a contingency plan for possible fuel shortages.

Benefits to the employees:

- o Arrive at work relaxed and less stressful
- o Increase the reliability of their commute
- o Reduce vehicle maintenance costs and responsibilities
- o Save money
- o Save time
- o Meet new friends
- o Offer "emergency" alternatives to current travel mode.

Benefits to the community:

- o Reduce peak hour traffic
- o Reduce energy usage
- o Reduce air pollution
- o Reduce need for parking spaces.

## **HOW TO USE TDM PLANNING?**

Developers, building owners and building managers can play important roles in altering the commute habits of employees. Employers also have an important, albeit different, role to play in commute management. Generally, developers and building owners can influence commuters in the following ways:

- o **Lease parking Spaces.** The price of parking is the single strongest TDM instrument. If commuters pay a significant amount for parking, they are more likely to look for alternatives. The price paid by solo parkers should be set at market rates and separated from office space leases so as to encourage employers to institute their own commute management programs. Furthermore, if an employee transportation allowance is instituted, it allows an employee to choose their preferred means of commuting without automatically establishing a preference for driving alone.
- o **Provide facilities to increase the attractiveness of certain commute modes** These measures may include: preferential employee carpool/vanpool parking, transit passenger shelters, land dedication for transit facilities, bus transit station, showers and lockers, bicycle paths and an office for a transportation coordinator.
- o **Offer building-wide commute management programs in multi-tenant sites.** This includes one or many employees to coordinate such programs as: rideshare registration, personalized rideshare matching, on-site transit pass sales and distribution of transit maps and schedules. The programs also include promotion and marketing of the commute management efforts.
- o **Join a Transportation Management Organization (TMO) to coordinate commute management efforts with other nearby worksites.** TMOs are groups of decision-makers who collectively work toward solving transportation problems in their local areas. TMOs provide a forum for building area-wide TDM programs made up of complementary strategies at individual sites.



## **WHAT IS INCLUDED IN A TDM PLAN?**

TDM plans should address the following topics and include the following information:

1. **Site Analysis** - a description of the development or building, access to the site, existing transportation services and current commuting patterns. This section includes: average commute distance and travel time, transportation mode analysis, and a comparison of the project's site and commuter characteristics to that of other sites. The Site Analysis reveals the potential of various transportation modes and programs. The analysis is often based on a commuter/employer survey.
2. **Reaching Plan Objectives** - how a plan is designed to achieve numerical or other performance objectives (often specified by an ordinance) to reduce trips or shift commuters into shared-ride modes.
3. **Role of the Commute Program Manager (CPM)** - the CPM's responsibilities for the development, promotion and implementation of a TDM plan at a site.
4. **TDM Program Strategies**- the recommended strategies for encouraging employees to commute using a variety of transportation modes designed to reach plan objectives.
5. **Other Strategies** - how various other strategies that are not mode-specific or required, such as shuttle service and on-site amenities, can integrate with the plan.
6. **Estimation of Implementation Costs** - the estimated costs of providing the specific improvements, providing financial incentives, and carrying out program activities.
7. **Monitoring** - methods for tracking the success of the program and offers suggestions for program refinement.

## PLAN DESCRIPTION

### EXECUTIVE SUMMARY

This section of the plan summarizes and highlights the important aspects of the document.

In the case of this specific document, the reader is reminded that it has been prepared as a guidebook for TDM planning. The pages to the left titled "plan description" introduce and explain each section to the reader and the pages to the right titled "example plan" are in the same form as a TDM plan. In effect, the example plan constitutes a complete model of what a well constructed plan might look like. Although the names and places used in the example plan are fictitious, the format of the plan is similar to an actual plan, including the objectives, calculations, projections and program strategies.

## EXAMPLE PLAN

### EXECUTIVE SUMMARY

This report is a prototype Transportation Demand Management (TDM) plan prepared by Commuter Transportation Services, Inc. (CTS) for the Southern California Development Company, Inc., developers of the Shamrock Hills Office Park located in a suburban area 45 miles from downtown Los Angeles. The purpose of this plan is to reduce the overall number of parking spaces at the site and utilize the remaining land for construction of an additional building. In an attempt to reach the developer's objectives, this plan creates programs designed to encourage ridesharing to the site by encouraging employees to commute by Carpool, Vanpool, bus, bicycle, motorcycle, and by also encouraging walking, telecommuting, and alternative work hours, therefore reducing the overall demand for parking at the site.

This TDM plan is unique in that it has been designed to follow the three phase construction process for the site over the next three years. During the first phase of construction, parking stalls are developed to meet a demand of four stalls per 1,000 square feet of office space. Presently, for a development site of two million square feet, the developer constructs four spaces per 1,000 square feet or 8,000 parking spaces. The objective of this plan is to construct three spaces per 1,000 square feet or 6,000 parking spaces by the completion of Phase III. After occupancy of the first building, a full-time Commute Program Manager (CPM) works at the site to coordinate transportation strategies in this plan. He/she will establish a network of Employee Transportation Coordinators from each of the site's tenants. As this plan is implemented, Phase II of the site is constructed and three and one half stalls per 1,000 square feet of total office space is developed. In the third phase, given the success of this plan, the developer constructs three parking stalls per 1,000 square feet of total office space. Overall, this scheme allows the Southern California Development Company to intensify the use of the parcel and maximize their return.

Although the overall reduction in the demand for parking at the site is achieved by encouraging a host of commute alternatives, this plan identifies the two primary means of reaching the developer's objectives at the end of Phase III: a 16 percent increase in carpooling is projected along with a five percent increase in vanpooling and a three percent increase in transit. In addition, bicycling, motorcycling, and walking is projected to increase by at least one percent.

## **EXAMPLE PLAN**

This TDM plan includes the following facility improvements and ongoing strategies:

- o A full-time, on-site Commute Program Manager
- o Rideshare registration and personalized Carpool and Vanpool matching
- o Signed preferential parking for Vanpools
- o A drop-off point for ridesharing commuters
- o Buspool information
- o On-site bus pass sales and distribution of maps and bus schedules
- o Well-located, secure bicycle parking
- o Air pumps for bicycles
- o Showers and lockers for bicyclist and walkers.

This plan will be monitored on a bi-annual basis through the use" of surveys, vehicle counting and utilizing data collected by the CPM.

This plan is designed to decrease the demand for parking at the Shamrock Hills Office Park through implementing an effective commute management program. The success of this plan rests on the level of commitment given to marketing and implementing these programs. Aside from assisting the developer in meeting his/her goals, the TDM program will benefit employees by broadening their commute alternatives. Office space in the buildings should also become more marketable.

## **PLAN DESCRIPTION**

### **I. INTRODUCTION**

The purpose of this section is to introduce the specific elements of the plan. This section states the purpose of the plan, for whom it was written, its goals and objectives and a brief outline of the plan.

## EXAMPLE PLAN

### I. INTRODUCTION

This report is a Transportation Demand Management (TDM) plan for the Shamrock Hills Office Park under the development of the Southern California Development Company, Inc. The purpose of this plan is to reduce the overall number of parking spaces at the site and utilize the remaining land for the construction of an additional building. Currently, to meet anticipated parking demand at a site, the accepted policy is to construct three and one-half to four parking stalls per 1,000 square feet of office space. With the implementation of this TDM plan, three stalls per 1,000 square feet of office space is constructed which should sufficiently meet the parking demands of the commuters. The remaining 420,000 square feet of the site is to be developed as leasable office space rather than parking in Phase III of the project. The plan is designed to accomplish this by encouraging employees to commute by carpooling, vanpooling, transit, bicycling, walking or by telecommuting and implementing changed work hour arrangements. The plan includes facilities which make commuting by these modes more convenient, with ongoing programs promoted and marketed by a Commute Program Manager (CPM).

Initially, the Southern California Development Company, Inc. (the developer) is responsible for the start up and the implementation of the TDM program. Eventually the program will be under the management of a building management firm or an agent of the developer. In addition, the planned Shamrock Hills Tenant Association assumes responsibility and funding for the CPM.

## PLAN DESCRIPTION

### II. SITE ANALYSIS

The purpose of the site analysis is to present, through graphic and written text, all existing features and attributes that affect a commuter's habits. The site analysis should identify, but be not limited to:

- o Site location
- o Site use (commercial, industrial, office etc.)
- o Site dimensions (square footage and number of stories)
- o Number of structures
- o Parking (number of spaces and type)
- o Price of parking
- o Site access (local and major streets, freeways)
- o Regional and local transit routes
- o Pedestrian walkways
- o All existing ridesharing programs.

## EXAMPLE PLAN

### II. SITE ANALYSIS

#### A. **Site Description**

##### 1. **Proposed Project**

The future Shamrock Hills Office Park is in a suburban area 45 miles west of downtown Los Angeles. The surrounding area's population has just reached 550,000 and is growing. It is ten miles north of a major freeway, two miles south of Greenville, a newly incorporated city, and seven miles east of the recently completed Green Acres Airport. Other major development sites in the area include: the Newtown Office Park, the King's Hill Office Park, Fairfax Office Park, Carpenters Station (regional shopping mall), Sparrow Hospital and the Brandywine Race Track.

Project completion is divided into three phases: Phase I - September 1988, Phase II - 1989 and Phase III - 1990 and is managed by the ACME Management Corporation. When completed, the site will consist of six, ten-story buildings spread out over a six block area. The three phases will total 2.1 million square feet of office space (300,000 square feet per building). When fully occupied the site is projected to support 8,000 employees.

Parking is currently under consideration. The focus is to make available to the employees free surface parking that is adjacent to each building. Presently, for a development site of two million square feet, the developer would construct four spaces per 1,000 square feet or 8,000 parking spaces. The objective of this plan is to construct three spaces per 1,000 square feet or 6,000 parking spaces by the completion of Phase III.

##### 2. **Regional Access to the Site**

Shamrock Hills is approximately ten miles north of Freeway 101. At the current level of traffic flow, the route from the 101 Freeway to the site necessitates a 20-25 minute commute. The site is accessed on the west by Lucky Street, a major north-south arterial that runs through the area. Traffic on this street is at a moderate level. The site is bordered to the north by Maple Street and the south by Grove Street. Traffic on these



## PLAN DESCRIPTION

- B. This section is a description of -commuter characteristics. Average commute distance and travel-time and mode split are analyzed to identify the distance an employee travels from home to work, the actual time that it takes to get to and from work, and the proportional breakdown of the means employees use to get to work. A means for collecting data is to conduct an employee/employer survey of the tenants who occupy space at the site. The survey should ask respondents: what mode they use to arrive at work (car, bus, transit; etc.), how long it takes (time), from what area they come, what affects their commute and what would motivate them to change their habits.

## EXAMPLE PLAN

streets presently operate at acceptable levels of service, since the speed limits on these streets is set at 40 m.p.h. and the average vehicle travel speed is between 30 and 40 m.p.h. Directly east of the site is an existing 250 multi- and single unit family housing development.

### 3. Transit

Shamrock Hills has infrequent transit service, with one express bus servicing the site on Lucky Street. Approximately one mile from the site are two local lines that service Greenville and the surrounding area.

### B. Shamrock Hills Commuter Characteristics

Various forms of commuter data have been utilized to best estimate the future commuter characteristics at Shamrock Hills, most importantly the availability of Commuter Transportation Services, Inc., (Commuter Computer) data on registered commuters in the metropolitan region. In addition, data collected by both public and private agencies on present and future transportation trends have proven useful. Currently, the developer is looking for major tenants to occupy the site. As of this writing, the Electronic Corporation Inc. as agreed to occupy up to 50 percent of Phase One. The developer is hoping to fill the remaining space with tenants with similar characteristics. Under normal conditions, the following commuter characteristics could be expected one year following the completion of the Shamrock Hills Office Park.

#### 1. Average Commute Distance

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FIGURE I: DISTANCE TRAVELED  
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DISTANCE TRAVELED FROM HOME TO WORK	PERCENT OF EMPLOYEES
0-2 miles	8%
2-5 miles	20%
6-15 miles	30%
16-25 miles	28%
26-35 miles	9%
36-45 miles	3%
46+ miles	2%
	100%

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**EXAMPLE PLAN**

2. Travel Time

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**FIGURE II: TRAVEL TIME**

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TRAVEL TIME FROM HOME TO WORK	PERCENT OF EMPLOYEES
0-15 minutes	28%
16-30 minutes	58%
31-45 minutes	9%
45-60 minutes	3%
60+ minutes	2%
	100%

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3. Mode Split

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**FIGURE III: MODE SPLIT**

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TYPE OF MODE	PERCENT OF EMPLOYEES
Drive alone	86.0%
Carpool	9.2%
Vanpool	0.0%
Bus	0.6%
Bicycle	1.0%
Motorcycle	0.8%
Walk	0.6%
Other	<u>1.8%</u>
	100%

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## **EXAMPLE PLAN**

### **4. Comparison of other sites**

The basic principles and objectives of the plan have been developed through the experiences at many other sites, combined with the practice and knowledge of professionals working in the field of Transportation Demand Management. It is possible to anticipate like results based on plans that have been implemented at sites that are similar in design, employee demographics, location, density and circulation patterns. Although no two sites are exactly alike, many sites do contain similar attributes. In the case of Shamrock Hills Office Park, this plan is a combination of techniques that previously have been implemented, as well as some new concepts that are unique to this site.

## PLAN DESCRIPTION

### III. REACHING PLAN OBJECTIVES

This section reports on the potential for mode shift and describes how the plan is designed to achieve numerical or other performance objectives. First, a calculation is made of the existing performance measures, then the potential for changing transportation modes split is evaluated and goals are set. It is important to keep in mind that these projections are made based on past experience and not hard data.

The conclusions from this analysis provide the information needed to guide decision makers. For example, most central business district locations may benefit from a strong transit emphasis while more suburban locations may need a strong Carpool and Vanpool program. From this analysis the number of preferential parking spaces for Carpools and Vanpools can be estimated.

**EXAMPLE PLAN**

**III. REACHING PLAN OBJECTIVES**

**A. Current Situation**

This plan is designed to reduce the overall number of vehicles arriving at the site and reduce the demand for parking. In the long run, this will reduce the total number of parking spaces and provide more land for office space. In an attempt to determine the number of vehicles that need to be eliminated, an estimate of the number of vehicles that would arrive to the site under normal circumstances is calculated. Based on the commuter characteristics discussed in Section II (Average Commute Distance, Travel Time and Mode Split) it is possible to estimate the total number of vehicles that would be arriving at the site on a given work day at the completion of Phase III. This would equal the demand for parking upon build-out.

(Objectives assume a statistical 2.5 persons per Carpool and 10.5 persons per Vanpool.)

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**FIGURE IV: NUMBER OF VEHICLES ARRIVING AT SITE**

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<u>MODE</u>	<u>CMS*</u>	<u>NOV**</u>
Drive alone	86.0%	6,880
Carpool	9.2%	294
Vanpool	0.0%	0
Bus	0.6%	0
Bicycle	1.0%	0
Motorcycle	0.8%	64
Walk, Jog	0.6%	0
Other	<u>1.8%</u>	0
SUBTOTAL	100.0%	7,238
Added parking for visitors, service vehicles, and fleet cars at 5% of total.		362
TOTAL (parking demand)		7,600

\* = Current mode split (CMS)

\*\* = Number of vehicles arriving at site (NOV)

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## EXAMPLE PLAN

### B. Potential for Change

The task of this plan is to reduce the TOTAL number of vehicles arriving at the site. Through a careful analysis of the situation, it is determined that to meet the desired performance objectives a strong emphasis should be placed on shifting the employees' mode of transportation.

#### Mode Shift

##### 1. Carpooling

- o Carpooling provides the opportunity for mode shift due to anticipated close proximity of the employees to their work places (approximately 58 percent of the employees are expected to live within 15 miles of their workplaces).
- o Carpooling is promoted through active ridesharing registration, matching and other strategies.

##### 2. Vanpooling

- o A large pool of possible Vanpool participants is available (40 percent of the employees live between 16 and 45 miles of their workplaces).

Data for this TDM plan have been based on existing employers in the region. In the event that future employees are not from the region, and choose not to relocate, longer commutes will be incurred, (at least initially). Thus, the potential for vanpooling will be even higher.

- o Past experience indicates that Vanpools are best formed through the use of an active Commute Program Manager whose role is to register, match, promote and coordinate potential vanpoolers and arrange for the provision of vans.

## **EXAMPLE PLAN**

3. Transit
  - o Employees living on or adjacent to the express bus line are targeted as potential riders.
  - o In addition, information about existing express and regional bus service helps increase ridership.
4. Bicycling
  - o Employees have the opportunity to attend bicycle safety awareness seminars. Racks, lockers and showers are installed to encourage existing recreational bicyclists, (within riding distance) to begin biking to work.
5. Walking and Jogging
  - o Eight percent of the Shamrock Hills Office Park employees are expected to live within two miles of their work place. Through the marketing of the showers, lockers, and educating employees on the availability of nearby housing, an increase in the number of walkers and joggers is expected.

### c. Reaching the desired vehicle counts

#### GOALS:

1. At the completion on Phase I a total of 2,800 parking stalls is built.
2. At the completion of Phase II a total of 4,900 parking stalls is built.
3. At the completion of Phase III a total of 6,300 parking stalls is built.

The chart on the following page illustrates how the program is designed to do this. The following projections are based on past TDM planning experience. Although these projections are estimates, past experience has shown that through the comprehensive efforts of the developer, building owner or building manager, tenants, employees and a CPM, the goals of this plan can be achieved.



**EXAMPLE PLAN**

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FIGURE v: THREE PHASE DEMAND FOR PARKING AT SHAMROCK HILLS

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MS = Mode Split one year after completion of that phase  
 Parking Demand = Employee demand for parking stalls

The chart assumes a statistical 2.5 persons per carpool and 10.5 persons per Vanpool.

	<u>PHASE I</u>	<u>PHASE II</u>	<u>PHASE III</u>
EMPLOYMENT LEVEL	2,800	5,600	8,000
TOTAL SQ.FEET BUILT	700,000	14,000	2,100,000
SQUARE FEE OF PARKING	4 stalls/ 1,000 sq.ft.	3.5 stalls/ 1,000 sq.ft.	3.0 stalls/ 1,000 sq.ft.
<b><u>MODE</u></b>	MS      Parking Demand	MS      Parking Demand	MS      Parking Demand
Drive alone	88.0%    2,464	73%    4,088	60%    4,800
Carpool	7.0%      81	15%     336	25%     800
Vanpool	1.0%      3	3%      16	5%      36
Bus	0.5%      0	2%      0	3%      0
Bicycle	1.0%      0	2%      0	2%      0
Motorcycle	1.0%      0	1%      0	1%      0
Walk/Jog	0.5%      0	2%      0	2%      0
Other	1.0%      0	2%      0	2%      0
SUBTOTAL	100.0%    2,548	100%    4,440	100%    5,638
Added parking for visitors, service vehicles, and fleet cars @ 5% of subtotal	127	222	281
TOTAL DEMAND	2,675	4,662	5,919
Total number of stalls that will be provided	<u>2,800</u>	<u>4,900</u>	<u>6,300</u>

See note on following page.

## EXAMPLE PLAN

NOTE: Anticipated parking demand may be decreased by the implementation of an alternative work hour program by tenant(s). For example, assume that after the completion of Phase II, ten percent of all employees working at the site participated in an alternative work hour program. Of this ten percent, each employee decreases his/her demand for a stall by one day per week. Thus, on any given day 160 less parking spaces would be in demand. The promotion of such programs provides a cushion for the developer to work with in the event of an unanticipated increase in demand for parking at the site. The Southern California Development Company can educate its tenants on the potential benefits of alternative work hours programs as well as telecommuting. (See Chapter VII for definition of alternative work hours programs and telecommuting.)

## PLAN DESCRIPTION

### IV. ROLE OF THE COMMUTE PROGRAM MANAGER (CPM)

The Commute Program Manager (CPM) is responsible for the development and implementation of a company's or employment center's employee transportation program. His/her duties include, but are not limited to:

- o Marketing and registration of a matching program for employees
- o Coordinating the formation of car/van/buspools
- o Promoting the use of public transit
- o Monitoring or tracking employee participation in the program
- o Interfacing with local governments, the regional ridesharing agency and other groups, public and private, which are active in transportation management.

The position can be either part- or full-time, but in all cases, the CPM should be located on the site with the full support of company or building management.

## EXAMPLE PLAN

### IV. ROLE OF THE COMMUTER PROGRAM MANAGER (CPM)

#### A. Duties and actions of the CPM

A part-time on-site Commute Program Manager coordinates transportation programs at the Shamrock Hills Office Park. The Southern California Development Company, Inc. is responsible for the CPM at the start up of the program. Eventually the planned Shamrock Hills Tenant Association assumes responsibility and funding for the CPM. In this case, participation in this TDM program is written into every lease.

This TDM program needs considerable attention in the start-up phase, especially with the formation of new Carpools and Vanpools. The CPM has a variety of duties of which the primary responsibilities are:

1. Program visibility/identity
2. Marketing
3. Management support
4. Personalized ridematching and transit assistance
5. Incentives
6. Monitoring.

The CPM's activities include:

- o Working with Commuter Computer, the regional ridesharing organization, to design and implement the program through its various promotional and marketing strategies.
- o Setting up an office in a highly visible location.
- o Developing and implementing an annual work plan which outlines the CPM's roles and objectives.
- o Developing and monitoring a program budget.
- o Providing direct assistance to employees seeking ridesharing assistance.
- o Developing and distributing promotional materials to create program identity and encourage employees to rideshare, including posters, fliers, brochures and paycheck stuffers.
- o Identifying potential ridesharing groups (car, van and public transit) through a registration drive.

## EXAMPLE PLAN

- o Organizing brown-bag "get-acquainted" meetings for potential poolers during their lunch hour.
- o Creating a ridesharing information center in the lobby and distributing promotional and information materials on a continuous basis.
- o Developing and implementing a ridesharing promotional event sponsored by Shamrock Hills (e.g. a building-wide ice cream festival).
- o Coordinating all other ridesharing activities as necessary with Commuter Computer Account Executives and staff.
- o Holding educational seminars on-site.
- o Monitoring and reporting the development of the ridesharing program to building management.

### B. CPM/Employer Coordination

It is important to form a commitment between the coordinator and the employers to ensure promotion and implementation of the plan. This will be accomplished through:

- o Sending a letter to the CEO of each company, stating the importance of registering the company's employees with Commuter Computer.
- o Meeting with the CEOs or the appropriate senior manager regarding ridesharing programs (especially alternative work hour arrangements) and explaining the importance of designating an Employee Transportation Coordinator (ETC) as a liaison.
- o Making presentations on transportation programs at departmental meetings.
- o Using company memos and news bulletins to convey transportation-related messages.
- o Developing information to be placed in new-hire packets and attending new employee-orientation meetings.
- o Maintaining an ongoing relationship with upper management on the transportation project's status to sustain support.

## PLAN DESCRIPTION

### **V. FINANCIAL INCENTIVES**

Transportation costs are one of a commuter's most important criteria in selecting a travel mode. In many cases, commuters are not sensitive to the hidden costs of automobile commuting such as purchase price and maintenance, but are sensitive to out-of-pocket costs such as gasoline and parking. Therefore, financial incentives should not only be targeted at making alternative modes more enticing to the commuter but must also, in effect, discourage driving alone.

Example Plan

V. FINANCIAL INCENTIVES

NOT APPLICABLE

## PLAN DESCRIPTION

### f. TDM PROGRAM STRATEGIES

This section is a description of the recommended strategies used for encouraging employees to commute by each of a variety of transportation modes. The purpose of this section is to match the employees' commute characteristics, survey responses and the potential for change at the site, with the ridesharing incentives agreed upon by the developer or building managers. Basically, techniques used for encouraging employees to change their commute habits include:

- 1) Assess the commuter transportation characteristics and attitudes (distance, time, cost, convenience and willingness to change their commute habits),
  - 2) Work with the developer, building owner, company management, department heads and other decision makers to decide which strategies will be available (facility improvements, financial incentives, educational and marketing measures),
  - 3) Match the above two choices to the employee characteristics to determine the TDM program strategies.
- A. Facility improvements are the structural changes that are made at the development site to encourage commute behavior change.
1. Based on a recent carpool evaluation conducted at CTS, carpoolers generally live in the range of 10 to 20 miles from their work site and vanpoolers generally live 25 miles or more from work. The purpose of providing preferential parking is to offer poolers a qualitative advantage over solo drivers.



## EXAMPLE PLAN

### VI. TDM PROGRAM STRATEGIES

Based on the site analysis and employee commute characteristics, the strategies listed below will be implemented in an attempt to meet the objectives of the developer at the Shamrock Hills Office Park.

#### A. Facility Improvements

1. Loading areas will be designated for Carpools and Vanpools. Through the use of curb painting and signage, these areas will be prominently marked.
2. Vanpool preferential parking will be designated in the parking lot. These spaces will be located adjacent to the building entrances.
3. A bus shelter will be constructed at the completion of Phase III in the center of the site.
4. Upon approval of the California Department of Transportation (CALTRANS) a Class 2 bikeway will be designated throughout the development site.
5. Bicycle parking spaces (racks and lockers) will be located at all building entrances.
6. A shower and dressing area, and several lockers will be installed in at least one building at the completion of each phase.
7. One air pump will be located at each bike rack location.

## PLAN DESCRIPTION

- B. The Commute Program Manager(CPM) is responsible for the development and implementation of an employee transportation program (coordination of ridesharing programs for one or several companies) and is usually employed by the party implementing the TDM plan. The CPM's duties include, but are not limited to: assisting CTS in registering employees for a ride-match program, coordinating the formation of car/van/buspools, promoting the use of public transit, and monitoring or tracking employee participation in the program. The position of the CPM can be either a part-time or full-time position depending on the work demand. In all cases the position requires the on-site presence of the CPM and full support of the company or building management.
- C. Financial incentives are programs that save money or contribute money to the employee, such as an employee transportation subsidy. Financial incentives may also be used as a disincentive to discourage a commute habit, such as an increase in parking fees paid by the commuter.

Changed leasing arrangements encourage tenants to reduce the number of parking spaces they rent. Tenants are encouraged to promote ridesharing to their employees in an attempt to save on overhead costs. Another option open to employers is to provide a travel allowance to their employees. For example, the employee receives a cash travel allowance roughly equal to the cost of parking at the site. The employee then has the option to purchase a monthly parking space (usually in the form of a gate key or card), a monthly bus pass, new tires for a bicycle, or other purchases depending on his or her mode of travel.

## **EXAMPLE PLAN**

### **B. Strategies Implemented by the Commute Program Manager**

1. An active CPM helps register and match perspective Carpool and Vanpool candidates, distribute park-and-ride information and provides tenant education regarding other ridesharing programs.
2. The CPM identifies, through matchlists, those employees living on or near the express bus line and encourages them to commute by bus. The CPM also educates tenants on the possibility of transit subsidies and sells bus passes and bus tickets to interested commuters. The CPM works with local and regional transit operators to assume service demands.
3. The CPM educates tenants about offering bicycle commuting subsidies, helps coordinate a Bike-to-Work Week, and works to bring films and demonstrations on safe bicycle riding.
4. The CPM promotes walking or jogging through the distribution of nearby housing information, health benefits and cost savings.
5. The CPM educates tenants on alternative work arrangements, telecommuting, and other commute options.

### **C. Financial Incentives**

Not Applicable

## PLAN DESCRIPTION

### VII. OTHER STRATEGIES

This section explains some of the other strategies that may be used to influence change. Although in many instances the implementation of these strategies is a result of the direct influence or control of the building owners, managers or developers, the strategies can still be effectively promoted by the employers. Utilizing the skills of the CPM, building owners, managers or developers, can promote these strategies to their tenants and other building managers. This can be accomplished through tenant/employer education, advertising and promotions, and seminars which explain the benefits of these strategies. The following is a list of some of the strategies that may be included, although not all may appear in a given plan:

- o Formation of a Transportation Management Organization
- o Promotion of alternative work schedules (i.e., flextime, compressed work week, staggered hours)
- o Promotion of staggered work hours
- o Promotion of telecommuting
- o Implementation of a shuttle service
- o Development of on-site amenities.

## EXAMPLE PLAN

### VII. OTHER STRATEGIES

The following TDM strategies are promoted through tenant/employer education, advertising and promotions, and seminars.

- "A. Telecommuting is working at a location other than the conventional office. This place may be the home, or an office close to home. Telecommuting is an alternative to the traditional office setting.

Telecommuting can also be defined as use of communication technology (computers and telecommunication systems) to transport information. Telecommuting also does not have to be a full-time arrangement. Most people choose to telecommute two or three times a week, and still value the professional and social benefits to working with others.

#### Variable Work Hours

1. **Flextime** gives employees the option of changing their starting and ending times each workday, while maintaining the usual number of work hours.
2. **A Compressed** Work Week schedule permits employees to finish their usual number of working hours in fewer days per week or per pay period.
3. **Staggered Working** Hours programs stagger employee starting and ending times by 15 minutes to two hours. Such a program is to shifts people out of the peak commuting period in order to relieve traffic congestion.

## PLAN DESCRIPTION

### VIII. ESTIMATION OF IMPLEMENTATION COSTS

This section outlines the estimated costs of providing the specific facility improvements and financial incentives, and carrying out program activities.

Developers/building owners have both capital and operating costs to implement their plans. Capital costs include facility improvements and office space expenses. Operating costs are ongoing and generally include costs for personnel, marketing and promotions, and office expenses. Because these costs can vary considerably, separate costs should be estimated for each case.

**EXAMPLE PLAN**

VIII. **ESTIMATION OF IMPLEMENTATION COST**

CAPITAL COSTS

<u>Costing</u>	I	<u>PHASES</u> II	III
Staging areas (signage, paint, labor for approx. 6 areas @ \$200 each)	\$400	\$400	\$400
Vanpool preferential parking (signage, paint, labor for approx. 38 spaces @ \$40 ea.)	200	400	920
Information stands (6 large stands @ 150 ea.)	300	300	300
Bus shelter (1 @ approx. \$1,700 ea.)	1,700		
Bicycle parking (6 racks @ \$90 ea. + \$40 labor)	230	230	230
Shower and locker rooms (3 @ \$20,000 ea.)	20,000	20,000	20,000
Air pumps (6 @ \$100 ea.)	200	200	200
Total facility costs/phase	<u>\$ 23,030</u>	<u>\$21,350</u>	<u>\$22,050</u>
<b>TOTAL FACILITY COSTS =</b>	<b>\$66,430</b>		

**EXAMPLE PLAN**

	<b>I</b>	<b>PHASES II</b>	<b>III</b>
<b><u>Office Expenses</u></b>		<b><u>Costs</u></b>	
Furniture	1,500	250	250
Computer	3,000		
Telephone	100		
Signage	<u>100</u>	<u>50</u>	<u>50</u>
Total Costs of Office Expenses	\$ <u>4,700</u> =====	\$300 =====	\$300 =====
<b>Total Capital Costs</b>	<b>\$ 27,730</b>	<b>\$ 21,650</b>	<b>\$ 22,350</b>

**ANNUAL OPERATING EXPENSES**

		<b><u>Costs</u></b>	
Commute Program Manager (includes part-time overhead, 40 hr/wk)	20,000	20,000	20,000
Executive overhead	5,000	5,000	5,000
Clerical support (includes overhead)	10,000	10,000	10,000
Office space	4,500	4,500	4,500
Marketing and printing	6,000	7,000	8,000
Advertisement in quarterly employer bulletin	4,000	4,000	4,000
Telephone	1,000	2,000	3,000
Office supplies	200	400	600
Mailing	1,000	2,000	<u>3,000</u>
<b>Total Annual Operating Expenses</b>	<b>\$51,700</b> -----	<b>\$54,900</b> -----	<b>\$58,100</b> -----



## PLAN DESCRIPTION

### IX. MONITORING

This section explains the various techniques that are used to monitor the progress of TDM programs. In most cases, the specific techniques chosen will be in accordance with ordinance requirements.

## EXAMPLE PLAN

### **IX. MONITORING**

Monitoring is conducted on a bi-annual basis using three techniques. While not required, techniques will be utilized to measure the demand for parking at the Shamrock Hills Office Park: surveys, vehicle counting and the use of CPM data. This assumes that the parking supply built in subsequent phases is adequate.

1. Surveys

A bi-annual employee survey will be done to collect commuting information until the site is fully occupied, at which time a yearly survey is conducted. Survey data will also be collected and provided by Commuter Computer during its yearly registrant updating process. The information collected identifies how the employees travel to work and what their transportation needs are.

2. Vehicle counting

Annual vehicle counting will be conducted at the completion of each phase and bi-annually after full buildout to record how the employees arrive at work. Counting will be difficult due to the uncontrolled access to the parking areas. Once the vehicles and the number of persons per vehicle are recorded it will be possible to determine the overall demand for parking stalls based on the total number of employees at the site.

3. CPM Data

The number of Vanpools formed, Carpools spaces in the parking garage, Carpool passes issued, and transit passes sold will be known through the data collected by the CPM. The CPM will also collect information from the employers regarding alternative work hours. This information will be compiled during the same weeks as vehicle counts.

## PLAN DESCRIPTION

### **X. CONCLUSION**

The conclusion ties the report together. This section summarizes how the plan is designed to meet the goals and objectives it sets forth. It states the requirements or purpose of the plan and how the plan is designed to meet them. Furthermore, it projects how the plan will be utilized in both the present and the future. Lastly, it pulls together the major strengths and possible weaknesses of the plan, in stating that no plan is complete until fully implemented.

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## EXAMPLE PLAN

### X. CONCLUSION

This TDM plan for the Southern California Development Company, Inc., the developer of the Shamrock Hills office park, is designed to reduce the overall demand for parking at the site. This reduction will result in less land reserved for parking, and allows for the construction of a sixth building constructed at the site. Construction on the site will be undertaken in three phases, therefore this TDM plan has been developed to compliment the three phase process.

This plan lays the groundwork for a comprehensive program, utilizing nearly all the instruments available to a developer to encourage employees to change their commute habits. It contains information on facility improvements, as well as ongoing activities for a Commute Program Manager. All commute alternatives to solo driving are encouraged in order to provide opportunities for a broad range of employees. Furthermore, alternative work hours and telecommuting appeals others.

to Monitoring is to be conducted bi-annually. Monitoring reveals the success of the various strategies employed and is also the basis for program refinement.

Since there is very little recorded evidence of the effectiveness of TDM planning at multi-tenant sites it is difficult to predict the success of this planned program. The strategies used in this TDM plan are among the best presently known. After experience with this program building owners and managers, along with transportation planners will be able to use this program as a measuring stick toward the potential success of other programs. Because this plan has been developed to be implemented throughout the three-phase development process, the overall success of the program will not be fully seen until one year after the completion of the third phase. Monitoring, after the first two phases however, assumes enough parking is provided in subsequent phases, therefore minimizing the risk to the developer.

## **GLOSSARY**

**Average Vehicle Employer Ridership (AVER), Average Vehicle Ridership (AVR)** - is the numerical value calculated by dividing a worksite's total weekly employee population that reports to work between 6:00 and 10:00 a.m. by the total weekly number of vehicles which are driven to the worksite by these employees between 7:00 and 9:00 a.m.

**Building Owners and Manager Association of Los Angeles (BOMA)** - an organization devoted to serving the needs of the office building industry and providing information, counsel and assistance to those practitioners who function in an ownership or management capacity.

**Buspool - subscription Bus - Custom Bus** - terms used interchangeably to refer to express bus service with limited pickup and destination stops, guaranteed seats and advance ticket purchase. Club buses are buspools administered by the riders themselves.

**Carpool** - shared in an employee's private vehicle to carry 1 to 5 passengers to and from work, either using one car and sharing expenses, or rotating the vehicle used so that no money changes hands.

**Commuter Computer, Commuter Transportation Services, Inc.**  
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nation, serving Los Angeles, Riverside, San Bernardino and Ventura counties, providing services and information aimed at improving the commute through ridesharing, alternative work hours programs, telecommuting and other options for individual and businesses.

**Commuter Computer Account Executive (AE)** - a Commuter Computer employee trained in transportation systems management as well as in sales, who has access to invaluable ridesharing research, planning resources, and other information.

**Commuter Lanes or High Occupancy Vehicle Lanes (HOV Lanes)** are special lanes offered only to carpool, vanpoolers and buses (two-or-more or three-or-more passengers, depending on the location).

**Commuter Program Manager (CPM)** - is a full or part time paid employee of or a contracted service for an individual development or an employer organization whose function is to promote ridesharing and TDM programs.

**Compressed Work Week Program** - consists of allocating the working hours into fewer than five days per week or fewer than 10 days per two week period.

**Core Period** - in a flexible work hour program, it is the time that all employees must be at work. In most cases, it is 9:30 to 11:30 A.M. and 1:30 to 3:30 P.M.

Counting - a method for tracking the formation of Carpools or Vanpools by actually counting and manually recording how employees arrive at the worksite.

**Employee Transportation Coordinator (ETC) or Ridesharing Coordinator or Commuter Transportation Coordinator (CTC)** - is the person selected by a company to develop, implement and administer an employee transportation program. These include duties such as: registering the employee for a ride-match program; coordinating the formation of car/van/buspools, promoting the use of public transit, and monitoring or tracking employee participation in the program.

**Employer Program Employer Ridesharing Program** - any company, public agency or institution (such as a school) that promotes ridesharing among its employees, members or students.

Enrollment a method for tracking which gets the employees to list their Carpools and Vanpools with the transportation coordinator.

**Flexible Work Hour Program** - allows employees the freedom to choose their starting and leaving times. Core periods are designated and all employees must be present during these periods (usually 9:30 - 11:30 A.M. and 1:30 to 3:30 P.M.).

**Local Agency - Local Ridesharing Agency (RSA)** - the areawide organization that markets and assists ridesharing by the general public and among employers. An RSA may be public or private.

**Park and Ride Lots** - specially designated parking areas where one may park a car or bicycle (at no charge) and join other commuters for the trip to work by Carpool, Vanpool or public transit.

**Ridesharing** - a commute alternative. The cooperative effort between two or more people who travel together - usually to or from work. Carpools, Vanpools and buspools, buses, trains, etc. are all examples of ridesharing.

**Staggered Work Hour Programs** - a fixed scheduling of work hours that spreads the employees starting and stopping times over a one to four-hour period, with individual groups of employees designated to report and leave work at set intervals (usually 15-30 minute periods).

**Survey** - an on-going process of evaluating how a transportation program is meeting its goals or of finding out the needs of potential ridesharers. They can be designed to collect either detailed or simple information.

**Telecommuting** - is working at a location other than the conventional office. This place may be the home, or an office close to home.

**Tracking** - the measuring of the formation of ridesharing modes at a worksite. It entails keeping a record of how the employees travel to work and gives an idea of how many employees drive alone, share a ride, or walk to work.

**Transportation Demand Management** - strategies that focus on reducing travel, especially peak period travel, at the point of the commuter's destination.

**Transportation Management Organizations (TMOs)** - groups of employers, real estate developers, building owners, and local government officials who work together to solve local transportation problems and to establish policies.

**Transportation System Management (TSM)** - a federal policy promoting low-cost, non-capital-intensive, and quickly-implementable means of improving highway traffic flow. Ridesharing is an important element of TSM.

VanDool- a group of 10 to 15 passengers who are picked up at specific points (possibly their homes) to be taken to and from common or nearby employment sites. The three basic types of Vanpools are: **Owner-operated, employer-sponsored and third-party.**

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