# TRANSPORTATION DEMAND MANAGEMENT ORDINANCE GUIDE



December 2009

CONTRA COSTA COUNTY
DEPARTMENT OF CONSERVATION & DEVELOPMENT

# **TABLE OF CONTENTS**

1.0	Intent and Purpose	Page 4
2.0	Definitions	Page 5
3.0	Applications for Off-Street Parking Reductions	Page 5
	3.1 Conceptual TDM Program	Page 6
	3.2 Proposed Improvements	Page 8
	3.3 Final TDM Program	Page 9
4.0	TDM Requirement for Residential Projects	Page 10
	4.1 TDM Program Content	Page 10
	4.2 Proposed Improvements	Page 11
5.0	TDM Requirement for Non-Residential Projects	Page 11
	<u>APPENDICES</u>	
App	pendix A: Potential TDM Measures for Residential Projects	Page 12
App	pendix B: Potential TDM Measures for Non-Residential or Mixed-Use Projects	Page 17
App	pendix C: Implementation Mechanisms	Page 27
App	pendix D: Costs, Degree of Difficulty and Implementing Entity	Page 31

#### Introduction

The Transportation Demand Management (TDM) Ordinance Guide is provided to developers to encourage the use of creative and effective ways to reduce motor vehicle trips and their associated impacts created by new development projects, pursuant to the County's TDM Ordinance.

County staff will review development projects with the applicant based on this guide and determine if a combination of acceptable options/measures will reduce the net number of trips that the project is anticipated to generate. This document contains recommended TDM measures and guidance based on the County's TDM Ordinance.

The County faces the inevitability of a growing population, in conjunction with an expanding job market. The County's TDM Ordinance Guide will help property owners and developers reduce traffic congestion through measures designed to encourage the use of alternatives to the driving alone by car.

## 1.0 Intent and Purpose

This is a guide to help property owners and developers comply with the requirements of the County's Transportation Demand Management (TDM) Ordinance. Text in *italic* font is taken directly from the ordinance.

- (a) The intent of this chapter is to further the transportation goals of the County General Plan, the Measure C Growth Management Program, Contra Costa County's Congestion Management Program, and the Bay Area Clean Air Plan.
- (b) The purpose of this chapter is to implement the provisions of the general plan to promote a more balanced transportation system that takes advantage of all modes of transportation by:
- (1) Incorporating pedestrian, bicycle, and transit access into improvements proposed in development applications;
- (2) Incorporating the overall intent and purpose of this chapter into the land use review and planning process;
- (3) Allowing requests for reductions in the off-street parking requirements for residential or nonresidential projects that have a conceptual TDM Program;
- (4) Providing information to residents on opportunities for walking, bicycling, ridesharing and transit. <sup>1</sup>.

Pursuant to the County's zoning ordinance or possibly under a project's conditions of approval, County staff has the authority to require the submittal and approval of a TDM program prior to the issuance of a building permit for a project. TDM programs associated with development projects typically aim at achieving the following general outcomes:

- Reduce the frequency and distance of auto trip making;
- Spread peak-hour trip making to off-peak time periods;
- Shift trips towards the use of environmentally friendly and non-motorized modes of transportation; and
- Provide technological solutions to reduce the environmental impacts of vehicular traffic, such as provision of charging stations to encourage the use of electric/hybrid vehicles, and provision of real-time or interactive information on bus services.

There is no single TDM measure that can effectively reduce a project's traffic impacts. Relative effectiveness of each TDM measure within a program; and the effectiveness of the overall program can be evaluated by how well the aforementioned outcomes are achieved. The following sections of this guide provide information on the different TDM measures that can be deployed by different types of developments, as well as means for their implementation and, if applicable, monitoring their effectiveness.

There should also be a reference to a significant community resource, namely 511 Contra Costa, which can be of great use for employers and developers pursuing the deployment of TDM

\_\_\_

<sup>&</sup>lt;sup>1</sup> Ch. 82-32.004

strategies. The <a href="www.511contracosta.org">www.511contracosta.org</a> web site has information on the different transit services and regional connections (e.g. ACE commuter rail, AC Transit, BART, County Connection, and others). The web site also has information on park & ride lots, taxicab services, clean fuel vehicles and infrastructure, bicycle programs, racks and lockers as well as different commuter and employer services. Subject to current programs and availability of resources, 511 Contra Costa could supply free transit and bicycle maps, transit and vanpool vouchers with tax benefits for employers and employees, free taxi rides as part of the Guaranteed Ride Home Program, and free gas cards and transit passes to encourage employees to try a commute alternative. The 511 Contra Costa staff could also assist by providing presentations on the transportation options, alternative work schedules, telework, as well as assist in conducting and analyzing employee transportation surveys, developing parking management programs, providing a specialized rideshare or parking management program at the worksite, and other TDM initiatives.

It should be noted that development projects are also subject to the potential requirement of Traffic Impact Analysis (TIA), which may include mitigations to individual and cumulative project impacts at study intersections, roadway segments, and/or freeways as well as on-site and site access improvements. Such analysis and mitigation requirements are not addressed in this guide.

#### 2.0 Definitions

The TDM Ordinance defines important terms to clarify the type of projects subject to its requirements.

- (a) "Residential Project" means any residential development application containing thirteen or more dwelling units that must be approved through a public hearing process and has not received final approval.
- (b) "Non-Residential Project" means any non-residential or, mixed-use development application that must be approved through a public hearing process and has not received final approval. Non-residential project also includes an application to expand an existing office or industrial structure that has at least five thousand square feet of gross floor area, by twenty-five percent or more of the structure's gross floor area.<sup>2</sup>

## 3.0 Application for Off-Street Parking Reductions

The requirements of this chapter shall apply to all development projects, residential or nonresidential.<sup>3</sup>

(a) A project may qualify for reductions in off-street parking requirements pursuant to this section. A sponsor requesting parking reductions shall submit a conceptual TDM program to the community development department concurrently with the application for the project. If the tenant is known, the project sponsor and tenant shall jointly submit the conceptual TDM program.<sup>4</sup>

<sup>&</sup>lt;sup>2</sup> Ch. 82-32.002

<sup>&</sup>lt;sup>3</sup> Ch. 82-32.006

<sup>&</sup>lt;sup>4</sup> Ch. 82-32.006

The two main benefits to project sponsors associated with a reduced off-street parking requirement are: (1) Significant savings in construction and maintenance costs for off-street parking; and, (2) The availability of space/land that otherwise would be used for parking. Such space could be utilized to provide on-site amenities, landscaping, or increased project density subject to County approval.

A mixed-use development application can have characteristics that could qualify for a reduction in off-street parking required by the zoning code. Different uses can vary in their peak parking demands in a day, week and/or season which could support the concept of shared parking. For example, parking associated with a general office use on a weekday takes place at 10:00 a.m., while parking of a movie theatre peaks at 8:00 p.m. and 10:00 p.m. The Institute of Transportation Engineers (ITE) *Parking Generation Manual* is a professional source for obtaining information on the variations in parking demands during a weekday and weekend day, as well as variations in the different months and seasons during a year. Currently, the 3<sup>rd</sup> Edition of the ITE *Parking Generation Manual* is in use with expected future updates. Also currently in use is the 2<sup>nd</sup> Edition of the "Shared Parking" report produced by the Urban Land Institute, which can be utilized to obtain parking rates for mixed-use developments. Different combinations of uses would result in different overall peak parking demands. Such analysis also typically relies on surveys of similar projects established in similar communities.

## 3.1 Required Information for Development Permit Application

## **3.1.1 Conceptual TDM Program**

The conceptual TDM program shall identify TDM measures that can be demonstrated to attain the trip reduction necessary to qualify for the requested parking reductions. The department shall review the project's conceptual TDM program and make a recommendation to the division of the planning agency hearing the project application $^5$ .

TDM measures potentially suitable for consideration in a residential project's Conceptual TDM Program can be found in Appendix A, with cost and implementation comparisons in Appendix D of this guide.

TDM measures potentially suitable for consideration in a non-residential or mixed-use project's Conceptual TDM Program can be found in Appendix B of this guide, with cost and implementation comparisons in Appendix D of this guide.

All Conceptual TDM Programs shall contain a monitoring, evaluation and enforcement component.

Monitoring: Monitoring a TDM program can be accomplished by periodically surveying occupants or residents to determine the success or failure of the TDM measures individually or in combination. A commute survey typically gathers quantitative data (e.g., % use of the various modes of transportation) and qualitative data (e.g., respondents' perception of the alternative transportation programs). The survey data can then be used to decide on any needed adjustments to the TDM measures. They can also be used to focus future marketing initiatives. 511 Contra Costa

<sup>&</sup>lt;sup>5</sup> Ch. 32-32.008(a).

staff can assist with the preparation of the survey questionnaire, collection of the data and analysis in the form of survey reports. Some survey tips are provided at the end of this section of the TDM Ordinance Guide.

Allowing completion of the survey on-line can help reduce the time and effort spent on circulating and administering the survey. When possible, conducting a baseline survey before starting the TDM program can later assist in evaluating the program's effectiveness (Before and after comparative analysis). In addition, comparing results of the survey to previous surveys can assist in evaluating the program's progress and potential modifications. It is possible to add survey questions to assess such new improvements.

Evaluation: TDM programs are not static, but must change as the needs of commuters change or as transportation services available to a project change. The effectiveness of TDM measures should be monitored and evaluated to determine if changes are needed. Effectiveness is typically based on a cost/benefit analysis of the individual TDM measure. For example, is the cost of providing a shuttle service to a BART station justified by the number of shuttle users? Such cost/benefit analysis can assist in identifying measures that the participants' needs at the least cost. TDM Program costs typically include the capital and operating costs, such as the cost of bike lockers, shuttle fleet, cost of training and educational materials, TDM staff hours and rates, cost of office equipments provided to telecommuters, etc.

<u>Enforcement:</u> To ensure the success of the TDM program, it is important that the project sponsor establish mechanisms that guarantee the perpetuity of the program. Examples of such mechanisms are described below:

- Incorporate the TDM program requirements into the Covenants, Conditions & Restrictions (CC&Rs) of the property to ensure that the TDM program runs with the land. Wording of the CC&Rs has to ensure that the property, as well as every owner and occupant shall be subject to, abide with, and satisfy each and all of the provisions and obligations contained in the TDM program. This includes any obligation to provide funding and resources to implement the TDM program and comply with all requirements of associated conditions of approval imposed by the County. It is important to clarify that the TDM program requirements apply equitably to all portions of the property. They also apply to all owners and tenants, as well as their successors in case the property is transferred, sold or leased. Should the County apply a penalty fee system for lack of compliance with the set percentages of trip reduction, this also must be stated in the CC&Rs to avoid any surprises.
- Incorporate the TDM program requirements into the tenant lease agreement to ensure that occupants of the project site cooperate with the property owner/sponsor, property manager and/or the County in meeting all requirements. The wording of the lease agreement may also specify that a person shall be designated to act as a liaison with the landlord, the County, etc.

## 3.1.2 Proposed Improvements

The sponsor shall include in the tentative map, land use permit, or development plan application, any improvements that will provide access to public transit, ridesharing opportunities and nonmotorized forms of travel.<sup>6</sup>

Typical on-site improvements include internal paths, bicycle parking, pedestrian/cyclist connections to off-site facilities, pedestrian signage and lighting, etc. The site plan should also acknowledge access to bicycle lanes/routes, sidewalks/paths or transit stops adjacent to the project site.

A more detailed description of proposed improvements potentially suitable for reducing a residential project's off-street parking needs can be found in Section IV of this guide.

Proposed improvements potentially suitable for reducing the off-street parking needs of a non-residential or mixed-use project can be found in Section V of this guide.

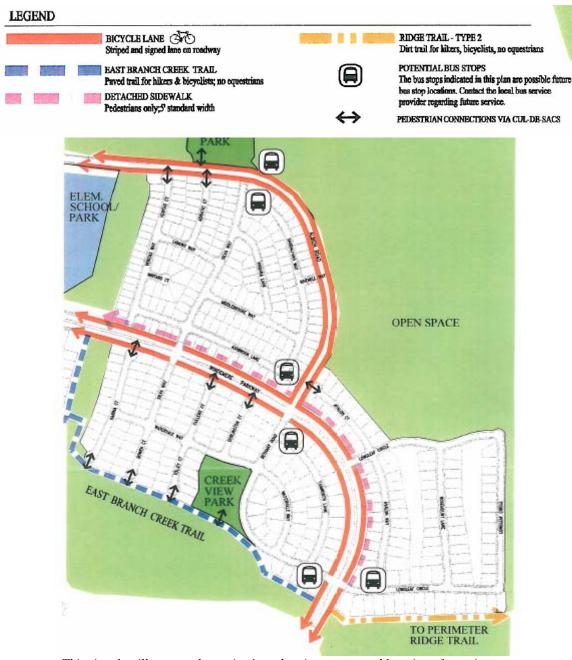
If the project lies within a transit service area identified in the circulation element of the General Plan, the sponsor shall consult with the transit service provider on the need to provide infrastructure to connect the project with the transit services. Evidence of compliance with this requirement may include correspondence from the local transit provider(s) regarding the potential need for installing bus turnouts, shelters or bus stops at the site.<sup>7</sup>

Transit facilities may be needed for existing transit service or to allow the project to be served by new transit routes in the future. The transit service areas are shown in Figure 5-3 of the General Plan. The 511contracosta.org website has the contact information and route schedules and maps for all San Francisco Bay Area transit providers, including those that serve Contra Costa. A listing of the transit service providers for these areas follows:

- AC Transit serves El Cerrito, Richmond, San Pablo and neighboring unincorporated areas.
- West CAT serves Pinole, Hercules, Rodeo and Crockett.
- County Connection serves Lamorinda, Martinez, Concord, Clayton, Walnut Creek, Pleasant Hill, Danville, San Ramon, and neighboring unincorporated areas.
- Tri Delta serves Antioch, Brentwood, Pittsburg, Oakley, and unincorporated communities in eastern Contra Costa.

<sup>&</sup>lt;sup>6</sup> Ch. 82-32.008.(c)

<sup>&</sup>lt;sup>7</sup> Ch. 84-32.008(d)



This site plan illustrates the project's pedestrian access and location of transit stops.

## 3.1.3 Final TDM Program

Final TDM Program. The design and implementation of the final TDM program shall be a condition of a project's approval. The sponsor and all subsequent owners of the project shall provide deed notification of mandatory participation in the final TDM program to all subsequent purchasers and owners of the project.<sup>8</sup>

<sup>&</sup>lt;sup>8</sup> Ch. 84-32.008(e)

The County's approval of a TDM program for a reduction in off-street parking is discretionary. County staff will review the Conceptual TDM Program, in consultation with the applicant, and determine its potential to achieve the off-street parking reduction requested in the development application. A recommendation for a Final TDM Program will be made to the approving body. Approval may be conditional and include performance standards which, if not met, would require reconsideration of the Final TDM Program. If the TDM Program is not approved, there will be no reduction in off-street parking requirements.

Following the County's review and approval process, the Final TDM program will be set as a condition of approval on the project. The project sponsor and all subsequent owners of the project shall provide deed notification of mandatory participation in the Final TDM program to all subsequent purchasers, owners and tenants of the project.

## 4.0 TDM Requirement for Residential Projects

## **4.1 TDM Program Content**

A sponsor of a residential project containing thirteen or more dwelling units shall prepare and implement a TDM program that includes at least the following:

- (1) Owner-Occupied Units. Upon a residential dwelling being sold or offered for sale, the sponsor shall notify and offer to the buyer or prospective buyer, as soon as it may be done, materials describing public transit, ridesharing, and nonmotorized commuting opportunities available in the vicinity of the project. Such information shall be transmitted no later than the close of escrow;
- (2) Rental Units. Upon a residential dwelling being rented or offered for rent, the sponsor shall notify and offer to the tenant or prospective tenant, materials describing public transit, ridesharing, and nonmotorized commuting opportunities in the vicinity of the development. The materials shall be approved by the Department of Conservation and Development. The materials shall be provided no later than the time the rental agreement is executed.

The sponsor and all subsequent owners of the project shall provide deed notification of mandatory participation in the TDM program to all subsequent purchasers and owners of the project. <sup>9</sup>

The TDM Program for a residential project should be understood as a disclosure document to the occupants of the residential project. It discloses the transportation facilities and services located onsite and off-site that are available to the occupants. It should be of a format and size that can be easily incorporated into other disclosure documents prepared for the project. A format adaptable to a letter-size 3-ring binder is typically used.

The TDM Program must be approved prior to issuance of the first building permit for the project, unless the conditions of approval indicate otherwise. The applicant must submit an initial submittal to County staff for review. County staff will review this submittal and identify any revisions needed, in consultation with the application, to receive approval. County staff's primary concern is

<sup>&</sup>lt;sup>9</sup> Ch. 82-32.010

that the TDM program be accurate regarding the on-site and off-site transportation services available for project residents and that it be easily understood by residents.

## **4.2 Proposed Improvements**

- (b) A sponsor shall include in the tentative map or development plan application, all improvements that will provide access to public transit, ridesharing opportunities and nonmotorized forms of travel.
- (c) A sponsor whose project lies within a local transit service area identified in the circulation element of the general plan shall consult with the local transit service provider on the need to provide infrastructure to connect the project with transit services. Evidence of compliance with this requirement may include correspondence from the local transit provider(s) regarding the potential need for installing bus turnouts, shelters or bus stops at the site. <sup>10</sup>

Proposed improvements are a primary feature of a TDM Program for residential projects. The Program will incorporate a copy of the project's site plan showing the internal paths, bicycle parking, pedestrian/cyclist connections to off-site facilities pedestrian signage and lighting, etc. It will also require including a plan/map showing bicycle lanes/routes, sidewalks/paths in the area around the project site. If the project lies within a transit service area identified in the Circulation Element of the General Plan, a map showing the transit services and the stops closest to the project site is also required. The aforementioned information and supportive maps and graphs should be submitted in a three-ring binder. For further guidance on complying with the above requirements, see Section 3.1.2.

#### **5.0 TDM Requirement for Non-Residential Projects**

- (a) A sponsor shall include in the tentative map or development plan application, all improvements that will provide access to public transit, ridesharing opportunities and nonmotorized forms of travel.
- (b) A sponsor whose project lies within a local transit service area identified in the circulation element of the general plan shall consult with the local transit service provider on the need to provide infrastructure to connect the project with transit services. Evidence of compliance with this requirement may include correspondence from the local transit provider(s) regarding the potential need for installing bus turnouts, shelters or bus stops at the site. <sup>11</sup>

The guidance previously provided for the TDM requirement for residential projects in section 4.2 also applies to non-residential projects.

December 2009 Page 11

\_\_\_

<sup>&</sup>lt;sup>10</sup> Ch. 82-32.010

<sup>&</sup>lt;sup>11</sup> Ch. 82-32.012

#### APPENDIX A

## POTENTIAL TDM MEASURES FOR RESIDENTIAL PROJECTS

TDM measures that can be deployed by project sponsors of residential projects are described in this section. These measures can be physical improvements incorporated into the project's design, or operational programs implemented once the project is occupied.

## **Project Design**

#### **On-Site Amenities**

There are on-site amenities that can be provided within residential developments to help reduce the need for vehicular trip making to external facilities. Example on-site amenities are listed below. The on-site amenities will need to be customized depending on the size and density of the residential development.

- fitness center;
- Tennis court, basketball court, and/or game court area;
- swimming pool with adjacent deck and lawn area;
- children's play apparatus area;
- Family picnic area;
- Turf playfield;
- childcare room;
- Information kiosks including cycling maps, transit routes and schedules, shuttle services, etc.
- Bicycle racks, secure bicycle lockers, bicycle cages
- On-site transit pass sales; and,
- Mail drop and supplies.

#### On-Site Vehicular Parking

There are several parking design techniques that can potentially manage and/or reduce vehicular traffic demands. Example of these design techniques are listed below.

- 1. Locate a park and ride lot within or adjacent to your project. A park and ride lot provides a safe and convenient location for long-distance commuters on their way to work to leave their personal cars and transfer to a carpool, vanpool, or express bus route to complete their journey. Preferred locations for these lots include parcels that have convenient access to major thoroughfares or freeways, or at a bus stop serving one or more express bus routes.
- 2. On-site parking location and design should not interfere with pedestrian and bicycle circulation (e.g. paths, bike routes, etc.). Parking location and design should not obstruct or make less convenient pedestrian access from sidewalks and transit stops to building entrances. Parking should generally be located on the side and/or back of buildings; not in front of the buildings to avoid increasing the distance between sidewalks and building entrances.

#### **Cycling Facilities**

A TDM strategy is shifting short distance trips made by automobiles to the use of bicycles, and thereby reduce congestion, air pollution and parking demand. Effective cycling initiatives take advantage of the positive aspects of cycling, and offer solutions to the negative aspects when possible. Example advantages associated with bicycle use include a low cost and environmentally friendly means of travel, and a convenient way to incorporate exercising into one's commute. On the other hand cyclists are more susceptible to serious injuries in collisions, exposure to adverse weather, poor pavement conditions and are restricted by age and health conditions. Design solutions to some of the negative aspects of bicycling include the following:

- 1. Provide adequate bicycle parking both for residents and guests. Residents parking needs to be long-term such as bicycle lockers, or secured bicycle racks within a garage. Bicycle parking for guests would typically be in the form of racks placed at convenient locations throughout the project site. Special attention needs to be given when placing bicycle parking. For example, near building entrances, in well lit areas, sheltered when possible, secured (some bicycle types are expensive and may be equipped with electric motors), and on the ground level unless elevators are provided in the buildings.
- 2. Ensure safe and convenient access and movements of cyclists within residential projects. Design elements to be considered include the provision of an interconnected web of shaded paths and crosswalks, traffic calming for auto traffic, adequate lighting, signage, and easily accessible bicycle parking.

#### Pedestrian Facilities

Walking is an effective mode of transportation for short distance trips, and can be undertaken by a wider range of population relative to cycling. There are different design elements that can be considered when developing project sites. Example design elements are described below.

- 1. Minimize walking distances within project sites, and provide direct connections to the public streets including transit stops. Provide pedestrian pass-throughs in soundwalls bordering arterials.
- 2. Give a priority to establishing and maintaining pedestrian facilities such as sidewalks, marked crosswalks and stop bars, in-pavement lighted crossing, bulbouts and other traffic calming devices, pedestrian-scale lighting, signage, sheltered seating areas, and landscaping.
- 3. Other design considerations that are safety related include the provision of adequate sight triangles at project driveways and internal intersections, as well as preventing parking encroachment within pedestrian sidewalks and walkways.

#### Transit Facilities

Project site design can play a key role in supporting the use of public transit. A few examples of such design elements are listed below.

1. Provide pedestrians and cyclists with safe and direct paths to public roads where transit services can be provided.

- 2. Provide an on-site information kiosk where current transit information is offered along with transit maps, schedules, etc.
- 3. Provide necessary transit facility in the vicinity of the project site based on consultation with the transit agencies and the County. Possible improvements can be a bus shelter, bus turnout, concrete pad/road surface, seating at transit stop, and lighting.

## **Project Occupancy/Operation**

#### **On-Site Parking Operation**

Limit the time periods at designated visitor parking to discourage residents from using such spaces for long-term parking of their second and third vehicles.

#### Cycling Initiatives

Provide educational information that encourage cycling as a healthy living lifestyle and environment friendly mode of transportation in homeowners association or tenant newsletters/bulletins. Include information on bicycle commuting events and services offered by 511 Contra Costa (e.g. Bike to Work Day).

#### Walking Initiatives

There are operational means that can be practiced by homeowner associations and building managers to encourage walking to/from neighborhoods.

- 1. Provide annual and seasonal events that promote walking as a healthy way of living and as an environment friendly mode of transportation. Prizes and other incentives can be offered to encourage participation at the events.
- 2. As will later be explained under the Monitoring and Evaluation section of this guide, the survey data can be used to identify residents who are interested in walking and the approximate locations of their frequent destinations. Such information can help the formation of a walking buddy system to encourage participants to walk to/from work, shopping facilities, school, etc.

## **Public Transit Initiatives**

Transit plays a particularly important role in serving peak period travel demands associated with commute trips to work and school. Transit also provides basic mobility for people who do not have an alternative. For many commuters, transit is the preferred choice of travel during the peak periods since it can be faster in HOV lanes or a dedicated rail line. Commuters can utilize the trip time for reading, or another activity that benefits them.

- 1. Depending on the project size, consult with relevant transit agency to seek changes to bus routes and/or routes capacity to better support transit ridership projected for the project.
- 2. Encourage the use of public transit through promotional and educational materials. Also, if possible, allow for the purchase of transit passes on site to facilitate transit use. Supporting

the use of public transit can benefit the environment, transportation system, and social equity.

## **Rideshare Initiatives**

- 1. Encourage and facilitate a car cooperative program using a car sharing service. (e.g. City Carshare or Zipcar Carshare). Deploying such a cooperative program could potentially minimize the need for owning a car.
- 2. Carpooling to schools, daycares, work and other destinations. Carpooling can be deployed in a formal fashion through services provided by 511 Contra Costa, or through informal communications among the residents.

#### **TDM Coordinator**

A TDM Coordinator is typically responsible for developing, marketing, implementing and evaluating the TDM programs. The TDM Coordinator can be a designated on-site resident, a community association representative, or a property management representative. The Coordinator's responsibilities can also be contracted out with a commute company. It should be noted that one of the most effective TDM measures is by having an on-site transportation coordinator. Example functions of a TDM Coordinator are listed below:

- 1. Distribute pertinent information to all residents regarding the facilities, programs and services available at the project site. Also regularly update any information kiosks and information boards at the project site for displaying TDM information. The regular information update makes it useful and interesting for users.
- 2. Obtain and circulate educational and promotional information from BART, bus operators, 511 Contra Costa and other transportation service providers.
- 3. Act as a liaison to all appropriate transit agencies. This includes distribution of appropriate transit information and maps, transit passes, and any other responsibilities related to the utilization of transit services or car sharing.
- 4. Distribute carpool/vanpool, school pool matching applications to all new residents upon occupancy, as well as on an annual basis.
- 5. Develop and implement promotional programs such as on-site transportation fairs and promotional events. Also coordinate with regional promotional programs such as Bike to Work Day and Spare the Air Days.
- 6. Conduct the annual commute survey, evaluate survey results and potential need for improvements, and update the program elements accordingly. Develop the annual status report and submit it to the County for projects conditioned to achieve a certain trip reduction rate.

#### Home-Based Work

Supporting home-based businesses is an effective TDM strategy and has co-benefits for economic development. Properly developed and advertised information on small business support groups, by-laws and guidelines, key information on home-based businesses and possible means for starting a business type, tax information, land use permits, etc. can assist in increasing home-based businesses. Such information can be obtained from a number of governmental and reliable private agencies. Also having common access to key office equipment, such as photocopy machines, can also support the formation and ongoing operation of home-based businesses.

#### APPENDIX B

#### POTENTIAL TDM MEASURES FOR NON-RESIDENTIAL OR MIXED-USE PROJECTS

TDM measures that can be deployed by project sponsors of non-residential or mixed use projects are describe in this section. These measures can be physical improvements incorporated into the project's design, or operational programs implemented once the project is occupied.

## **Project Design**

## **On-Site Amenities**

On-site amenities provide services at the development site to minimize vehicular traffic, especially mid-day trips. Such on-site amenities can include the following:

- Clothes lockers and showers;
- fitness center:
- On-site cafeteria preferably with hot food service;
- Lunchroom with microwave and refrigerator;
- Vending machines;
- Automatic teller machine;
- dry cleaner;
- childcare service;
- Mail, copying and shipping services;
- On-site transit pass sales;
- Car rental or car share service:
- Convenient and/or gift stores;
- Dental services; and,
- Shoe repair.

The on-site amenities would be customized depending on the size and type of proposed development. It would also depend on the types of services already available in the area surrounding a project site. The example on-site amenities listed above can be of use at employment centers, hotels, mixed-use developments, and others.

## **On-Site Vehicular Parking:**

- 1. Establishing user fees for on-site parking; combined with a strong TDM program can help shift drivers behavior to the use of alternative modes of transportation and higher occupancy vehicles.
- 2. Designate premium parking spaces for carpools and vanpools. Such parking stalls have to be clearly marked with signing and pavement marking. Number of the designated stalls depends on the desired strength of deployed TDM program. In general, the designated carpool/vanpool spaces should not be less than 5% of the total number of parking spaces for large projects and 10% for smaller scale projects. This parking design technique is especially effective at project sites with limited on- and off-site parking supply.

3. Place the on-site parking on the side and/or back of buildings to avoid creating a physical separation between the buildings and abutting public streets, which could discourage pedestrians and cyclists access. Limit the on-site conflict locations between vehicular parking and pedestrian/cyclists movements, and clearly identify walking paths and crossing locations with appropriate pavement markings and signing according to the 2006 California Manual on Uniform Traffic Control Devices (MUTCD), or future document updates.

## **Cycling Facilities:**

The design measures listed below need to be established by the project sponsor and approved as part of the development application review process.

- 1. Provide secure short- and long-term bicycle parking (i.e. bicycle racks and lockers, respectively) at prime locations of the development sites. Such prime locations need to be visible, accessible, on a flat area, and in close proximity to building entrances. It is also advisable to provide the bicycle parking at sheltered locations free of mud, dust and debris. When placing bicycle parking on upper building floors, elevator access needs to be provided. Wherever bicycle parking is located, sufficient clearances for accessing and maneuvering the bicycles need to be provided. Adequate protection needs to be ensured when placing bicycle parking near car parking or traffic lanes. In general, some of the bicycle racks need to be made available for short-term parking by guests, couriers, shoppers, etc. The individual bike lockers or locked bike room are typically reserved for longer-term parking by tenant employees and residents. Bicycle parking needs to be distributed to serve main entrances of all buildings on a project site. Preferably within view of security personnel or a security camera.
- 2. Provide showers, change facilities, and clothes lockers at convenient locations within business buildings in order to encourage cycling for longer distances. Such facilities need to be available free of charge to increase its potential use, and need to be placed in close proximity to the on-site bicycle parking.
- 3. Ensure safe and convenient access and movements of cyclists within development sites. Design elements to be considered include the provision of an interconnected web of paths, signage and crosswalks (preferably protected with traffic control devices) on the internal street system. Also the provision of adequate lighting, sheltered bicycle parking, and shaded paths.



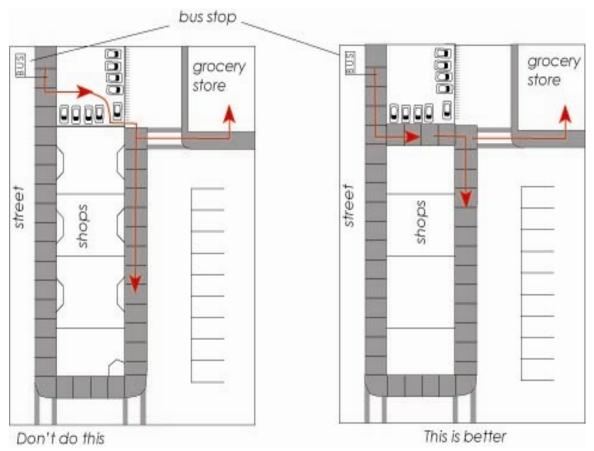
Bicycle facilities need to be visible, accessible and in close proximity to building entrances.

## **Pedestrian Facilities:**

Walking can be regularly practiced by a wide range of the population. To encourage walking, safe and convenient pedestrian access and movement need to ensure as part of the project site design. Example design elements are described below.

- 1. Minimize walking distances along the internal street/path network to provide convenient connections between the different buildings, services, etc. Also provide direct and convenient connections to the public streets including transit stops.
- 2. Design gathering areas where enhanced landscaping, adequate lighting, signage, and street furniture are provided. Undertaking such an action can help in providing good quality of life by facilitating enjoyment of the outdoors, as well as encouraging community interactions along with associated development of sense of security. Walking can be naturally encouraged with the provision of such design elements.
- 3. Establish traffic calming devices where feasible on the internal street system. Example of traffic calming designs can be through the provision of traffic circles, speed tables at pedestrian crossing locations, textured and/or colored street surface, staggered parking arrangements, and corner bulbouts. These design elements can assist in reducing vehicular traffic speeds, enhance good safety conditions, increase visibility of pedestrians, reduce pedestrians crossing distances and exposure to vehicular traffic, and improve overall street aesthetics,

- 4. Other design considerations that are safety related include the provision of adequate sight triangles at project driveways and internal intersections, as well as preventing parking encroachment within pedestrian sidewalks and walkways.
- 5. Give a priority to establishing and maintaining pedestrian facilities such as sidewalks, marked crosswalks and stop bars, in-pavement lighted crossing, bulbouts and other traffic calming devices, street and pedestrian lighting, sheltered seating areas, and landscaping.



Pedestrian improvements need to be designed so that they maximize safety and convenience.

#### **Transit Facilities:**

- 1. Provide safe and direct site access to the public streets where transit services are provided.
- 2. Provide necessary transit facilities in the vicinity of project site (such as bus shelter, bus turnout, concrete pad, seating, lighting, etc.), in order to support transit use. Private land dedication may be needed to provide for future transit facilities such as a bus turnout.
- 3. Establish an on-site information kiosk where information on transit routes, schedules, and fares can be provided.
- 4. Intersection geometry and road structure should be capable of supporting the length and weight of buses, including internal project circulation roads if bus or shuttle service is anticipated to enter the project site.

#### **Rideshare Facilities:**

1. Designate a number of on-site parking spaces at prime locations (i.e., close to buildings access, well lit, etc.) for carpools and vanpools privately operated by tenants. Also designate

- prime parking stalls for company operated high occupancy/shuttle vehicles. Short-term parking spaces or passenger loading areas are also needed for taxi and outside shuttle services. Establishing carpool/vanpool initiatives can reduce the overall demand for on-site parking.
- 2. Provide on-site internet connections to facilitate access to agencies that provide ridematching services such as 511 Contra Costa, Enterprise Rideshare and others.
- 3. Establish on-site car rental or carshare services so that tenants do not need to rely on personal cars for work-related purposes.

# Project Occupancy/Operations:

## **On-Site Parking Operation:**

- 1. Charge for on-site parking. The provision of free on-site parking encourages the use of private automobiles. Drivers tend to be more aware and sensitive to direct out-of-pocket charges. For example, drivers tend to be more aware of their regular expenses on gas, parking, and bridge tolls rather than the costs associated with the depreciation of their vehicles. Charging for on-site parking needs to be coordinated with adjacent properties to discourage spillover of parking demand to other properties.
- 2. In the event that a site has paid parking, provide free or reduced fee parking for carpools and vanpools.
- 3. In the event that a site has paid parking, the Federal Commuter Choice Benefits Package (Transportation Efficiency Act-21) allows employers to establish a parking cash-out program. Such program provides the employees with the opportunity to forego parking and receive instead a taxable cash value of the parking, or receive a tax-free transit or eligible vanpool benefit for up-to \$230 per month (the value of this benefit is typically increased every year). This compensation also allows employees to finance other commuting means not currently qualified as fringe benefits, such as walking, bicycling and carpooling.
- 4. Limit the time periods at designated visitor parking to discourage employees from using such spaces for their long-term parking. When feasible, consider establishing shared parking between the different uses at mixed-use development sites.
- 5. When designating preferential parking spaces for carpools or vanpools it is important to register participants. Registration information needs to at least include the name and telephone number of participants, as well as the make, model and license plate number of their vehicles. The registration information needs to be updated on a regular basis to ensure that participants are still active and vehicles data is current. In addition, participants need to be provided with placards to be displayed inside their vehicles at a visible location (such as placed on the dashboard, hung on the front mirror, etc.). Taking these actions facilitates monitoring and enforcement of the preferential parking by on-site security, TDM coordinator, or other authorized person. It should also be noted that there should be a project-wide parking policy outlining rules dictating on-site parking including preferential parking, and procedures for handling parking misuse and violations.

## **Cycling Initiatives:**

1. Employers can provide travel allowance per round-trip to employees using their bicycles for commute and/or work related trips. To avoid considerable increase in travel times and delays, the use of bicycles for work related trips can be restricted to short distances or a

- series of stop-and-start visits. Employers can also provide insurance that covers bicycle usage except for losses or damages caused by negligent or deliberate actions.
- 2. Employers, especially of large businesses, can purchase and maintain a fleet of bicycles and safety devices (i.e., lights, helmets, etc.) for the use of employees traveling on work related trips. To facilitate use, bicycles can possibly be accessed by an identification card from a storage room or other form of secured parking.
- 3. Offering free or reasonably priced cycling seminars and training courses in order to promote cycling, available cycling facilities, and transit access. Training information can cover cycling skills, appropriate clothing and bicycle maintenance.
- 4. Organize cycling tours to recreational and shopping facilities where cyclists can benefit from each others' experience. Food and drinks, for example, can be offered to encourage participation.
- 5. Provide other TDM initiatives that complement the use of bicycles, such as establishing a Guaranteed Ride Home program in case of emergencies (511 Contra Costa provides a free GRH program for all employees who take a commute alternative in Contra Costa).

## **Walking Initiatives:**

Walking is practiced by the vast majority of people, yet a relatively small percentage walk to their destinations such as work and shopping. For example, establishing mixed-use developments where services are provided within walking distances can help build the habit of walking at least within the neighborhood. Adequate selection of the types of supportive services (such as a local convenient store, a dry cleaner, a restaurant, a coffee shop, etc.) can further support walking and assist in eliminating vehicular trips. There are also operational means that can be practiced by developers, property management, or tenants in order to encourage employees and residents within a project to walk to/from their destinations as follows.

- 1. Provide annual and seasonal events that promote walking for health and environmental reasons. Offer food, drinks, prizes and other incentives to encourage participation at the events.
- 2. TDM Coordinator or other community organizer can also identify residents and employees who are interested in walking and the approximate locations of their frequent destinations. Such information can help the formation of a walking buddy system to encourage participants to walk to/from work, shopping facilities, schools and daycares, etc.

## **Public Transit Initiatives:**

An increase in transit use is fundamental to the overall reduction of automobile use. In general, people associate utilities with each mode of transportation (such as safety, reliability, comfort, accessibility, speed, cost, travel time, etc.), and their mode choice is based on the relative costs associated with one versus another mode. The two characteristics of travel modes most likely to influence mode choice are monetary cost and travel time. Some of the measures that can potentially increase public transit rideshare are:

1. Establish an employer based subsidized transit pass program. This can be achieved by providing commuter checks/vouchers to subsidize transit passes/fares. It can also be accomplished if the employer purchase the passes and offer them to the employees at

- reduced prices. It should be noted that employers are allowed to provide monthly tax-free transit subsidy.
- 2. Employee programs can allow employees to use pre-tax income to pay for commute expenses, which can reduce the cost of transit and vanpooling and thereby encourage their use. Employers can establish eligible pre-tax spending account for employees pursuant to Section 125 of the Internal Revenue code. The money an employee allocates to a spending account for commute expenses is not subject to federal, state, Social Security or Medicare taxes. Employees can allocate up to \$1,380 annually to such spending accounts. Employers can establish this account in-house or through a vendor (e.g. Commuter Choice Program).
- 3. Allow the purchase of transit passes on site to facilitate transit use. This can be achieved, for example, by contacting the local transit agency to set-up an on-site transit pass outlet.
- 4. Participate in the Regional Transit Connection (RTC). The RTC is the transit ticket clearinghouse serving Bay Area employers. By delivering transit tickets to the work site, RTC enables employers to provide employees with tickets from eight Bay Area transit systems (AC Transit, Alameda-Oakland Ferry, BART, Caltrain, County Connection, Golden gate Transit, MUNI, and SamTrans). Employers decide the type and quantity of tickets to purchase based on a monthly order. Employers then can choose to either sell them to their employees or offer them as part of a transit subsidy benefit. Each month, employers pay RTC only for the tickets that get sold or distributed to employees.
- 5. Through direct communication with relevant transit agency, seek changes to bus routes and/or routes capacity to better support transit ridership projected for the project.
- 6. Provide shuttle service(s) to main transit stations during the morning and afternoon commute periods. In addition, shuttle programs that run during the mid-day can reduce the need for automobile driving for work related travel and lunchtime trips.
- 7. Promote the use of public transit as part of the solution to environmental and transportation issues, such as global warming, air pollution and traffic congestion. Beside the promotional materials, educational information can be provided in company's newsletter, monthly TDM e-mail messages, etc.

#### **Rideshare Initiatives:**

- 1. The developer, tenant, or TDM Coordinator can facilitate the formation of carpooling. A carpool is four to six people sharing a ride in an automobile. Carpool can be as simple as a husband and wife, neighbors, or co-workers carpooling together. The two most common approaches for carpooling are for participants to rotate automobile use with no exchange of money, or to use one car and share the commute expenses. Carpooling reduces the cost of commuting and provides a stress-free ride for non-drivers. It can also save travel time and expense by using the HOV lanes and exempted from freeway/bridge tolls during commute periods. Carpools can provide door-to-door directness and a convenience level of flexibility that is almost like a single occupant vehicle. The biggest challenges to carpooling is committing to a common work schedule due to interruptions to work schedules, family needs, etc. Often such problems can be addressed through schedule planning, part-time carpooling, and the provision of a back-up service such as a Guaranteed Ride Home (currently available through 511 Contra Costa).
- 2. A project sponsor can implement a vanpool program by subsidizing the cost of vanpooling through a third party lease arrangement; an owner operated vanpool, or by providing facility/company sponsored vanpools. A third-party lease can be carried out with an auto

dealership, van leasing company, transit agency, or a non-profit organization. Vans are generally leased on a 30-day basis and their lease rates are based on cost of the vehicle, as well as insurance, maintenance, mileage, and fuel costs. Owner-operated vanpool puts more responsibility on the owner to organize all financial, maintenance and insurance requirements. Depending on the size of the company, expected level of employee participation and areas of employees' residences, companies can invest in purchasing, maintaining and insuring the vans which can be used for commute and other work related trips. Vanpools are comprised of 7 to 15 riders, and operate like a mini-transit service with an organized route, schedule and passenger fare charges. Fares depend on the commute distance, the total number of participants, the type of van, and company provided equipment and/or subsidies. Vanpooling can simply save time, money, energy consumption, and noise and air pollution.

- 3. 511 Contra Costa has a Guaranteed Ride Home Program that enables rideshare participants to get home in case of an emergency, and current provisions allows for up-to 16 free taxi rides per year. Employers, for example, can also establish their own Guaranteed Ride Home Program using company vehicles or a taxi service.
- 4. 511 Contra Costa provides rideshare rewards program. Current rewards include gift and gas cards to eligible carpoolers of up-to \$100 over a three-month period with a yearend drawing for \$600 in gift cards.
- 5. With regard to vanpooling, 511 Contra Costa currently offers vanpool reward \$300 to \$900 in gas cards to new vans that meet all eligibility requirements and successfully complete three to nine consecutive months of operation. The gas cards are offered on a first-come, first-served basis until the funds are exhausted. The 511 Contra Costa Program also offers a vanpool seat subsidy in the form of gas cards. The seat subsidy provides \$100 per month for up-to three months per program year to help cover the fare of a lost vanpool participant. Again the gas cards are offered on a first-come, first-served basis until the funds are exhausted.
- 6. Commuters can travel toll free by carpooling, vanpooling or taking transit over one of the Bay Area's eight bridges during peak commute hours. Specific Bay Area bridge toll information can be found at 511ContraCosta.org.
- 7. Promote ridesharing initiatives through communication mediums (newsletters, employee memos, e-mails, meetings, etc.), specialized events and marketing pieces. 511 Contra Costa can help with free services to help companies promote commute alternatives including a regional carpool/vanpool matching database.
- 8. Periodic contacts with employees interested in carpooling/vanpooling to ensure that they indeed achieve long-term switch in their modes of transportation. In addition, one of the measures suggested for monitoring TDM programs is by conducting an annual commute survey. Such survey results can be utilized in customizing new carpools and/or vanpools. The survey results can also be used for identifying design and operational measures that can support and increase participation in carpooling/vanpooling.

## Flexible Work Schedules:

1. These TDM initiatives are appropriate for business type developments, such as office and research and development land uses. Flexible Work Schedule programs established by employers govern the time period in which employees travel to and from work. Such programs influence employees' propensity to consider using transit, carpooling, and other

alternatives to driving alone to work. Employees tend to view these programs as a highly desirable benefit. Employers can use such programs as an attractive employee recruitment tool that enables employees to work around childcare, school schedules and other family responsibilities. A typical FWH system uses two types of time: (a) Core period of time when all employees are required to be on the job; and, (b) Flex-time which contains preestablished limits (e.g., 7:00 to 9:30 a.m. and 3:00 to 5:30 p.m.) from which employees can select their arrival and departure times. Similarly this strategy can encourage participants to avoid most congested times, and coordinate arrivals and departures to rideshare with other employees.

It should be noted that management still retains a significant degree of control over the allowable work schedule arrangements. Consequently, some work units within an organization may offer flexible work schedules and others may not.

## **Telecommuting:**

Telecommuting exists in several forms, such as working at home, working at a satellite center with shorter commuting distance, and working at neighboring work centers that can be leased to several employees and where office equipment are provided. Telecommuting is a better fit for jobs that are computer oriented, do not require frequent on-site support, and do not require frequent face-to-face interactions with customers or other workers.

Allowing employees to telecommute can eliminate some commuting trips. This in turn helps in relieving congestion, reducing energy consumption and improving air quality. Experience has also shown that telecommuting assists in increasing productivity, decreasing absenteeism, improving employee morale, and eliminating the need for constant oversight. In addition, employees tend to consider telecommuting as a job benefit which could increase the employers' competitiveness when recruiting for new employees, as well as reduce turnover of current employees along with associated recruitment and training expenses. It should also be noted that telecommuting from home or less costly office space can help decrease the employers' overhead expenses associated office space and on-site parking.

The key to the success of telecommuting is "voluntary" as it requires both management approval and employees willingness. It also involves regulatory and legal parameters, which in some agencies could include unions' regulations. Some of the administrative arrangements that need to be considered include establishing a telecommuting schedule, determining equipment needs and who will pay for the initial costs and monthly expenses, establishing realistic expectations of work that can be completed in 8-hour work days, and identifying work monitoring procedures.

## **TDM Coordinator:**

A TDM Coordinator is typically responsible for developing, marketing, implementing and evaluating the TDM programs. The TDM Coordinator can be a designated on-site staff person (half- to full-time) with specific TDM responsibilities and authority. The Coordinator's responsibilities can also be contracted out with a commute company. It should be noted that one of the most effective TDM measures is by having an on-site transportation coordinator. Example functions of a TDM Coordinator are listed below:

- 1. Distribute pertinent information to all tenants/employees regarding the facilities, programs and services available at the project site. Also regularly update any information kiosks and information boards at the project site for displaying TDM information. The regular information update makes it useful and interesting for users.
- 2. Contract with and/or act as a liaison with 511 Contra Costa and other transportation service providers. It should be noted that the 511 system offers one-stop shopping for traffic, transit, rideshare and bicycle information in the region.
- 3. Contract with and/or act as a liaison to all appropriate transit agencies. This includes distribution of appropriate transit information and maps, transit passes, commuter checks, administering contract for carsharing or car rental services, and any other responsibilities related to the utilization of transit services.
- 4. Distribute carpool/vanpool matching applications to all new tenants upon occupancy and/or new employees upon hire, as well as on an annual basis at Transportation Fair, Wellness or Benefits events, etc. The transportation coordinator can also research ZIP code data or work and residence locations and offer to match ridesharing. When using carpool/vanpool ridematching software, it typically provides individuals with a computerized list of other commuters near their employment or residential ZIP code along with the closest cross street, phone number, and hours they area available to commute to and from work.
- 5. Develop and implement promotional programs such as on-site transportation fairs and promotional events. Also coordinate with regional promotional programs relating to TDM. Example regional programs include the Bike to Work Day and Spare the Air Days and possibly free transit. 511 Contra Costa sponsors events and activities for these campaigns.
- 6. Conduct the annual commute survey, evaluate survey results and potential need for improvements, and update the program elements accordingly. 511 Contra Costa can assist with the survey development and analysis. Develop the annual status report and submit it to the County for projects conditioned to achieve a certain trip reduction rate.
- 7. Provide TDM training especially at the start-up of the program, and possibly on a regular basis. Inviting other agencies, for example 511 Contra Costa, can enhance such training.

## APPENDIX C

#### IMPLEMENTATION MECHANISMS

A project condition of approval may require the project sponsor to implement a Transportation Demand Management (TDM) program.

#### **Educational and Outreach Activities**

There are educational and promotional means that can assist in launching, and achieving a long-term success of the TDM program. Examples of these educational and promotional means are listed below.

- 1. Promotional activities are usually needed to launch a TDM program. Upon 50% to 75% occupancy (depending on the type of development) of the new development, the project sponsor (through the help of a TDM coordinator if assigned) should coordinate and host a commute alternative kick-off event. Transportation service providers such as 511 Contra Costa, Enterprise Rideshare, ACE, BART, etc. can be invited to set-up information booths/tables. To encourage participation in the event, the project sponsor can provide givea-ways, refreshments, etc. Such event needs to be advertised at least two weeks in advance via e-mail, flyers, on-site posters and/or other means.
- 2. Regular, possibly annual, commute event or fair is also advisable to encourage continued participation and to approach new tenants/owners. Similarly, proper event notification is needed. It is also advisable to invite participation of transportation service providers and to provide some give-a-ways.
- 3. Promote and encourage participation in events sponsored by other agencies such as Bike to Work Day (in May of each year), potential free transit on Spare the Air days, etc.
- 4. It is advisable that the project sponsor register with the Bay Area Air Quality Management District (BAAQMD) for the Spare the Air program so as to receive regional air quality forecast bulletins about poor and unhealthy air quality days. These e-mail updates can then be forwarded to all tenants. The 511contracosta.org website also has up to the minute Spare the Air alerts and air quality status.

## **Monitoring and Evaluation**

Monitoring a TDM program can be accomplished by periodically conducting a commute survey to determine the success or failure of the TDM measures individually or as a combination. A commute survey typically gathers quantitative data (e.g., % use of the various modes of transportation) and qualitative data (e.g., respondents' perception of the alternative transportation programs). The survey data can then be used to decide on any needed adjustments to the TDM initiatives. They can also be used to focus the marketing initiatives and efforts of the TDM Coordinator. It should be noted that 511 Contra Costa can typically assist with the preparation of the survey questionnaire. Some survey tips are provided at the end of this section of the TDM Guidelines.

Allowing completion of the survey on-line can help reduce the time and effort spent on circulating and administering the survey. When possible, conducting a baseline survey before starting the TDM program can later assist in evaluating the program's effectiveness (Before and after comparative analysis). In addition, comparing results of the annual survey to previous years can assist in evaluating the program's progress and potential modifications. It is possible to add survey questions to assess such new improvements.

Cost effectiveness of TDM measures should be monitored and evaluated. The cost effectiveness is typically based on a cost/benefit analysis of the individual TDM measures (for example, the cost of providing a shuttle service to the main transit stations relative to the number of shuttle users along with peak occupancy periods). Such cost/benefit analysis can assist in identifying the measures to better fit the participants' needs at the least cost. TDM Program costs typically include the capital and operating costs, such as the cost of bike lockers and/or fleet, cost of training and educational materials, cost of awards and commute events, cost of shuttle vehicles, TDM staff hours and rates, cost of office equipments provided to telecommuters, etc. In larger developments, both residential and office/commercial, the developer should consider establishing a Transportation Management Association (TMA) to provide the mechanism for ongoing financial support of TDM elements, including monitoring and evaluation over a period of years. An example of a TMA is the Contra Costa Centre Association. (www.contracostacentre.com)

Typically within six months following the granting of a certificate of occupancy of the new development site, the project will submit to the Director of the Department of Conservation and Development a TDM notice that confirms the installation of facilities and site amenities, as well as implementation of commute program features and events (if required).

A development project that receives a reduction in off-site parking requirement in return for implementing an approved TDM Program will be subject to penalties if the TDM Program is not implemented. Project sponsors must seek renewal of TDM Program for time periods specified by the County. Renewal of TDM Programs may require additional TDM measures if agreed-upon trip reduction targets are not achieved. If project sponsors fail to seek renewal of TDM Programs, the penalty typically involves reducing permitted occupancy to a level that matches the on-site parking supply (to be specified in the Development Permit).

## **Commute Survey Tips**

The statistical reliability of a survey depends in part upon the response rate, which is the number of correctly completed surveys compared to the total number of distributed surveys. Thus, it is important to maximize the survey response rate. Some of the means that can be used to maximize the response rate are listed below:

- Attach a cover memorandum to the questionnaire, describing the purpose of the survey and requesting cooperation.
- Inform recipients of the duration it takes to respond to the questionnaire, and note that their responses are strictly confidential.
- Offer prizes to respondents preferably based on a drawing to ensure un-biases. Offer rewards to tenants, departments, etc. with the highest response rate.

- Offer a contact person and phone number to respond to any questions that survey recipients may have.
- Offer an hour of administrative leave, or other incentives, to recipients who complete the survey.
- Facilitate access to the survey questionnaire by posting it on a web-page. As an alternative, deliver the questionnaire and pick-up responses of the different tenants.
- Send one or more reminders (e-mail, flyer, etc.) requesting to complete the survey by the due date.

Survey questions at a minimum need to cover the type and frequency of modes of transportation used in a typical week (e.g., walk, cycle, drive alone, carpool, vanpool, use public transit, etc.), reasons behind driving alone (e.g., availability of free parking, needing privacy, flexibility to assist family members, etc.), means that would encourage drive alone respondents to use alternative modes of transportation (e.g., a guaranteed ride home program, subsidized transit passes, reliable rideshare matching services, etc.), whether or not they participate in telecommuting and/or flex work hour arrangements. It is also important to collect information regarding work addresses or residence ZIP codes.

#### APPENDIX D

## COSTS, DEGREE OF DIFFICULTY AND IMPLEMENTING ENTITY

#### TRANSPORTATION STRATEGIES

There are five categories of strategies listed below which are described in more detail within this document. Three descriptive are listed in the columns to the right. They include:

**Effectiveness** – is a measurement tool to determine the value of the effort in reducing single occupant vehicle trips at the site. Effectiveness is on a scale of 1-10, with 10 being the most effective and 1 being the least effective. Effectiveness for certain projects may vary.

**Cost** – indicates the cost relative to the other options listed.

X = no cost

\$ = low cost (less than \$10/year per employee, or offered by 511 Contra Costa)

\$ = medium cost (\$10-\$30/year per employee)

\$\$\$ = high cost (more than \$30/year per employee, or higher infrastructure cost)

**Who** – identifies who will likely implement this strategy. This may be the developer (D), (property owner) or employer (E), however in some cases, the regional rideshare agency 511 Contra Costa (511 CC) provides these services for free, or for a nominal charge. Your must register your worksite/property at <a href="www.511contracosta.org">www.511contracosta.org</a> or call (925) 969-0841.

	Facilities and Design	Effectiveness	Cost	Who		
1.	Bicycle Racks/Lockers	3	\$	D/E/511 CC		
For r	For residents or employees to secure their bicycles at the employment/residential site.					
2.	Bicycle Station	6	\$\$	D		
A de	dicated location that provides secure	and covered parking	for bikes.			
3.	Showers and Clothes Lockers	3	<b>\$\$\$</b>	D/E		
Allov	Allows for those who walk or bike to work to freshen up upon arrival.					
4.	Walk/Bicycle Corridors	4	<b>\$\$</b>	D		
Walking/bicycle access which is separate from vehicle parking through separated paths and landscaping.						
5.	Onsite Amenities	5	<b>\$\$</b>	D/E		
Provide retail services to employees onsite (lunch facilities, dry cleaners, mail, copy store, etc.).						

6.	Site Design	5	<b>\$\$</b>	D
υ.	Ditt Design	3	ΨΨ	D

A comprehensive design that features bicycle and pedestrian amenities, covered bus stops and adequate accessibility, benches, passenger loading zones, etc.

	Alternative Work Schedules	Effectiveness	Cost	Who	
1.	Compressed Work Week	4	X	${f E}$	
Allows employees to receive a day off each week in exchange for working longer hours on other days each week.					
2.	Flexible Work Hours	3	X	E	
Allows employees to alter arrival and departure times slightly to accommodate commute schedules.					
3.	Telework Policies	5	<b>X</b> /\$	E	
Deve	elops specific personnel policies that twice per month.	<u> </u>	· .		

	Incentive Strategies	Effectiveness	Cost	Who		
1.	Carpool Incentives	5	<b>\$\$</b>	D/E/511 CC		
	Provide incentives to employees who form carpools (incentives can be gift cards, gas cards, money, time off, etc.).					
2.	Vanpool Incentives	5	\$\$	D/E/511 CC		
Prov	vide financial support to vanpool ride	rs who form or join a	vanpool.			
3.	Vanpool Empty Seat Subsidy	3	\$\$	E		
	Ensures that as vanpools lose riders over time, the other riders maintain a consistent users fee until the seat can be filled.					
4.	Transit Incentives	4	\$\$	D/E/511 CC		
Prov	Provide incentives for new transit riders to take transit to commute to work.					
5.	Guranteed Ride Home	3	\$	D/E/511 CC		
Free taxi voucher or rental car for employees who take a commute alternative and are ill, have an emergency or unscheduled overtime.						

## 6. Commute Alternative Program 4 \$\$ D/E/511 CC

Program similar to airline miles by providing prizes or incentives to commuters who take transport alternatives to driving to work alone.

## 7. Tax Benefit Programs 5 X E/511 CC

Federal and/or state pre-tax benefits for vanpoolers and transit riders which offer savings for both employers and employees.

## 8. Car/Bike Sharing 2 \$\$ D/E

Cars/bikes that are available for limited short trips to employees or residents as members of the car/bike sharing program, or for a per-use fee.

## 9. Bicycle Loan Program 1 \$ D/E

Bicycles (to be tracked and maintained by the employer/property manager) for general employee/resident use.

## 10. Free Bicycle Accessories 1 \$ D/E

Headlamps, helmets and bells can improve the safety of bicyclists and encourage bike commuting. Bike safety classes can also be offered.

	Maybatina Ctuatacias	Effectives and	Cost	Who			
	Marketing Strategies	Effectiveness	Cost	Who			
1.	<b>Employee Transportation Coordinators</b>	5	<b>\$\$</b>	D/E			
	Someone onsite assigned the responsibility of helping employees with their commute options to and from work (must register with 511 Contra Costa).						
2.	<b>Employee Orientation</b>	2	\$	D/E			
Orientation meeting provide new employees or residents with a way to learn more about travel to the site.							
3.	Transportation/Health Fairs	3	\$	D/E/511 CC			

Oniste special promotions sponsored by the employer or property manager to encourage the use of transportation options at the site.

# 4. Commute Options Brochures 1 X D/E/511 CC

Provide brochures, maps and other information either individually or at an information rack/display onsite.

5.	Bike to Work Day	1	X	D/E/511 CC
Participate in the regional promotion each May to encourage commuting to work by bicycle. There is also a residential component on Contra Costa for residents to be involved.				
6.	Bicycle Riders Guide	1	\$	D/E/511 CC
A guide for your worksite that include bike routes and other information.				
7.	Spare the Air	1	X	D/E/511 CC
Register to get alerts about poor air quality and inform employees upon notification of a Spare the Air Day from the Bay Area Air Quality Management District (BAAQMD).				

_ P	arking Management Strategies	Effectiveness	Cost	Who		
1.	Preferential Parking	4	\$	D/E		
_	Designated parking spaced for carpools and vanpools in close proximity to the employee entrance of the building.					
2.	Parking Management Program	8	\$\$\$	D/E		
servio	Balances the number of parking spaces relative to the availability of transit and other services. Can include a reduction in parking requirements if resources and subsidies are offered to subsidize transit ridership, carpooling and other modes.					
3.	Parking Cash Out	10	\$\$\$	D/E		
Provides employees with a choice: receive a parking space or receive the cash equivalent of the space and take another commute mode to get to work.						
4.	Unbundled Parking Leases	8	X	D		
Spaces are not part of the office lease, with flexibility for the tenant to vary the number of parking spaces rented.						
5.	Parking Charges	10	\$\$	D/E		
Can be set for cost recovery to the employer or developer or be variable based upon the time of day and length of parking.						

 $g: \label{lem:condition} g: \label{lem:condition} g: \label{lem:condition} g: \label{lem:condition} define the condition of the condition of$