

# Routine Accommodation of Bicyclists and Pedestrians in the Bay Area

## *Results from Interviews with Transportation Professionals and Recommendations to Encourage Routine Accommodation*

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## *I. Executive Summary*

One of the Calls to Action included in the Metropolitan Transportation Commission's (MTC) Transportation 2030 Plan calls for full consideration of the needs of non-motorized travelers during project development, design, construction, and rehabilitation. In part, the Call to Action says that:

*...bicycle facilities and walkways must be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities.*

This report evaluates how often these facilities are included in the design and construction of various transportation projects throughout the region based on interviews with project managers. It does not attempt to differentiate between different non-motorized improvements, such as bike lanes versus the shared-lane making (sharrow), or ladder crosswalks versus pedestrian refuge islands.

Based on the evaluation, this report makes nine recommendations for increasing the routine consideration of such facilities in the future. Recommendations include improving review and design strategies to ensure that transportation projects routinely accommodate bicycles and pedestrians.

The evaluation in this report is the result of a review of existing non-motorized policies, 35 interviews with transportation project managers and over 30 interviews with other bicycle and pedestrian public agency employees and non-motorized transportation advocates in the Bay Area. Of the 35 project managers interviewed, 21 of them referenced a bicycle and/or pedestrian planning document for the projects' planning. The report also includes three case studies.

The report's recommendations for MTC, Caltrans District 4, and cooperating agencies are listed below and sorted by category.

### *PROJECT PLANNING and DESIGN*

1. *Recommendation:* Caltrans and MTC will make available routine accommodations reports, publications available on their respective websites.
2. *Recommendation:* Caltrans District 4 will maintain a database and share a list of ongoing Caltrans and local agency PIDs and PSRs either quarterly or semi-annually at the District 4 Bicycle Advisory Committee to promote local non-motorized involvement.

## *FUNDING and REVIEW*

3. *Recommendation:* MTC will continue to support the use of TDA funds for bicycle and pedestrian planning, with special focus on the development of new plans.
4. *Recommendation:* MTC's regional discretionary fund programming policies shall ensure project sponsors consider the accommodation of non-motorized travelers consistent with Caltrans' Deputy Directive 64. Projects funded all or in part with regionally discretionary-funds must include bicycle and pedestrian facilities at those locations called for in applicable plans and standards unless those facilities exceed 15% of the total project cost.
5. *Recommendation:* TDA Article 3, Regional Bike/Ped, and TLC funds shall be reserved for improvements to existing sub-standard facilities that are not part of a roadway rehabilitation project, or in cases where the non-motorized costs exceed 15% in #4 above. Further, TDA Article 3, Regional Bike/Ped, and TLC funds shall not be used to fund new non-motorized facilities that need to be built to mitigate roadway construction activities.
6. *Recommendation:* MTC will monitor how the needs of non-motorized users of the transportation system are being considered and accommodated in the design and construction of transportation projects by auditing candidate TIP projects.
7. *Recommendation:* Caltrans shall develop an online form to serve as a checklist review for state highway and interchange projects at their earliest conception or design phase. Consider requiring this form as part of the PSR and PID stage. Caltrans shall monitor select projects based on their online forms and the proposed checklist.
8. *Recommendation:* Caltrans, CMAs and local agencies shall have BPACs review projects during the design stage to ensure that appropriate bicycle and/or pedestrian facilities are included in projects. BPACs shall include members that understand the range of transportation needs of bicyclists, pedestrians and the disabled.

## *TRAINING*

9. *Recommendation:* Caltrans and MTC will continue to host project manager and designer training sessions to staff and local agencies to promote routine accommodation Deputy Directive 64.

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## II. Introduction

There are a growing number of transportation policies that encourage the routine accommodation of bicyclists, pedestrians and persons with disabilities in all transportation projects. Federal, State, and Regional agencies adopted guidelines to promote the regular inclusion of non-motorized transportation improvements in both new and rehabilitation project planning, design and construction. Many policies also exist in the region's municipalities and more are currently in development.

The study reviewed various types of projects including local road rehabilitation, transit, interchanges, and highway improvements, which were sampled from MTC's TIP database. In summary, a majority of projects (57%) included non-motorized facilities consistent with adopted policies, while 43% did not. Projects. Retrofitting our existing transportation infrastructure to include facilities for bicyclists, pedestrians and the disabled is often more expensive than incorporating them as part of a larger project due to economies of scale.

This report reviews federal, state, regional, and local Bay Area funding policies related to routine accommodations of non-motorized transportation users. It then reports on the results of interviews with 35 transportation project managers and more than 25 bicycle and pedestrian public agency employees and non-motorized transportation advocates in the region. The report includes three case studies, which examine how non-motorized accommodations were addressed in those projects. Finally, the report recommends procedures for increasing the number of successful routine accommodations for bicyclists, pedestrians, and persons with disabilities in all transportation projects.

## III. Policies

### Federal Policies

Policies supporting the routine accommodation of non-motorized transportation users are found at all levels of government. At the federal level, the Americans with Disabilities Act (ADA), enacted in 1990, provides rights and protections to people with disabilities. It states that:

*No qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity.*

As a result, new construction projects are obligated to design and construct facilities so persons with disabilities can successfully use them without restrictions. These facilities are required for all new projects including roads

and sidewalks. The success of ADA compliance in transportation projects is due to several legal victories for people with disabilities in suits against public agencies when these facilities were not developed. However, concern about the maintenance costs of these improvements (e.g. new sidewalks) may actually limit their development.

The 1998 Transportation Equity Act of the 21st Century (TEA-21) emphasized the accommodations of non-motorized transportation users. TEA-21 stated that:

*Bicycle transportation facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use are not permitted. (Section 1202)*

TEA-21 was the first mention in a U.S. federal government policy that explicitly stated the importance of providing for non-motorized transportation facilities in transportation projects. This federal legislative reference pressed other public agencies to follow suit, especially after the U.S. Department of Transportation's Federal Highway Administration (FHWA) issued and recommended states follow design guidance based on the language presented in TEA-21. The 2000 U.S. Department of Transportation Policy Statement, *Accommodating Bicycle and Pedestrian Travel: A Recommended Approach* is the design guidance for including bicycle and pedestrian facilities in other transportation projects. It states:

*Bicycle and pedestrian ways shall be established in all urbanized areas unless one or more of three conditions are met:*

- *bicyclists and pedestrians are prohibited by law from using the roadway. In this instance, a greater effort may be necessary to accommodate bicyclists and pedestrians elsewhere within the right of way or within the same transportation corridor.*
- *the cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use. Excessively disproportionate is defined as exceeding twenty percent of the cost of the larger transportation project.*
- *where scarcity of population or other factors indicate an absence of need.*

## State Policies

Following the release of the federal routine accommodation design recommendations, the California Department of Transportation (Caltrans) released its own policy as suggested by TEA-21. In 2001, Caltrans approved Deputy Directive 64 (D.D. 64) stating that:

*The Department fully considers the needs of non-motorized travelers (including pedestrian bicyclists and persons with disabilities) in all programming, planning, maintenance, construction, operations and project development activities and products. This includes incorporation of the best available standards in all of the Department's practices. The Department adopts the best practice concepts in the U.S. DOT Policy Statement on Integrating Bicycling and Walking into Transportation Infrastructure.*

California Assembly Concurrent Resolution 211 (ACR 211) passed the California state assembly in 2002 on Bike to Work Day. It encourages cities and counties to implement Caltrans' Deputy Directive 64 at the local level. ACR 211 uses the same language as D.D. 64 and also references the U.S. Department of Transportation's design guidance document on integrating bicycling and walking when making road improvements.

## Regional Policies

In 2001, the same year D.D. 64 went into effect, MTC adopted the *Regional Bicycle Plan* with the principle goal to: "Ensure that bicycling is a convenient, safe, and practical means of transportation throughout the Bay Area for all Bay Area residents." This was the first mention of a bicycle or pedestrian policy at the regional level in the Bay Area. Since 2001, MTC adopted similar language in the regional transportation plan (RTP): *Transportation 2030 Plan for the San Francisco Bay Area*. One of the report's "Calls to Action" states that:

*Bicyclists, pedestrians and wheelchair users must be full partners in the planning process, and bicycle facilities and walkways must be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities.*

This means that consideration for routine accommodations are necessary, as prescribed by MTC, in all transportation projects in the region. In addition, the Call to Action pledges "MTC will monitor routine accommodation of nonmotorized transportation needs in its programming process." Therefore, the federal government, Caltrans, and the Bay Area Regional transportation planning agency now all recommend including routine accommodations in transportation projects.

## Funding Policies

Some funding sources for Bay Area transportation projects encourage the routine inclusion of facilities for non-motorized travel in projects. For example, Measure A in Marin County, the one-half cent sales tax increase passed in November 2004, provides \$87.9 million (27% of measure funds) to maintain, improve, and manage the County's local transportation infrastructure. Its Transportation Sales Tax Expenditure Plan, which includes funding for bikeways, sidewalks, and pathways, states that:

*Where feasible, locally defined bicycle and pedestrian projects will be implemented at the time a roadway is improved. Improvements could include striping and signing of bicycle lanes and bikeways, sidewalk improvements, curb ramps, and other accessibility and safety improvements.*

TAM will work with city engineers in Marin County to include these facilities in projects when feasible. Included as a part of Measure A is a Technical Advisory Committee and a Citizen Oversight Committee to evaluate how the tax funds are spent on projects and to ensure that they are used consistent with Measure A's expenditure plan. This statement in Measure A helps tie facilities for non-motorized transportation users to specific funding.

Another countywide policy that influences funding of transportation projects is Measure B in Alameda County. Measure B was a ballot measure passed by the County's voters in 2000 that created a half-cent sales tax between 2002 and 2022 for transportation improvements. The Alameda County Transportation Improvement Authority (ACTIA) is responsible for overseeing the expenditure and strategic plan for the sales tax. Of the measure's money, five-percent of the funds collected by Measure B is dedicated to bicycle and pedestrian projects; more pertinent to this report, there is a policy in the 2004/2005 Strategic Plan that highlights non-motorized transportation improvements in other types of transportation projects. The ACTIA policy states that:

*The Alameda County Transportation Improvement Authority (ACTIA) and its project sponsors recognize that certain traffic signal design features may provide benefit to pedestrian/bicycle and transit mobility. Therefore, ACTIA encourages project sponsors to include the following elements into Measure B-funded capital projects and the costs are eligible for reimbursement with Measure B funds.*

The two non-motorized transportation elements Measure B refers to are: audible pedestrian signals and adjustable pedestrian timings. The policy also suggests other facilities that would assist in bicycle and pedestrian travel, including: pedestrian countdown clocks, lighted crosswalks, and enhanced

pavement markings such as ladder crosswalks. These improvements can be incorporated when a signal is either added or replaced.

Contra Costa Transportation Authority's Measure J sale tax (2004) included the following language:

*Moreover, as appropriate, components for routine accommodation of bicycle and pedestrian travel shall be incorporated as part of construction projects."*

In addition to the adopted policies above, the Napa Country Sales Tax (ballot June 2006) includes the following requirements for pedestrian and bicycle accommodation:

Projects funded all or in part with Authority revenues must include bicycle and pedestrian facilities at those locations called for by applicable bicycle plans ... unless the addition of that bicycle or pedestrian facility exceeds ten percent of the cost of the project without that facility. The cost of removal and replacement of existing facilities necessary for the placement of the pedestrian and/or bicycle facility may be included in the determination of the ten percent threshold at the discretion of the local agency.

Measure A in Marin County, Measure B in Alameda County, and Measure J in Contra Costa County are all examples of local funding policies that promote routine accommodation approved by the voting public. The effectiveness of these new policies is still to be determined, but the policies indicate growing support at the county level for the regular inclusion of non-motorized needs in transportation projects.

### Transit Access Policies

Bicycle and pedestrian facilities are also critical at more particular locations. MTC's Transit-Oriented Development policy recognizes the needs of non-motorized users to access Bay Area transit stations. This policy calls for station access and circulation plans for non-motorized access that:

*Clearly identify any barriers for pedestrian, bicycle and wheelchair access to the station from surrounding neighborhoods, and propose strategies that will remove these barriers and maximize the number of residents and employees that can access the station by these means.*

There are over 20 transit agencies in the Bay Area and many of them also have bicycle and pedestrian policies. Transit agencies' policies often relate to developments surrounding stations and for accessing the service. For example,

Bay Area Rapid Transit (BART) includes bicycles and pedestrians in its 2003 BART Station Access Guidelines. These guidelines establish a five-level hierarchy of transportation modes, with walking as the first in importance. Access issues to stations for pedestrians are:

- Directness and speed of route
- Safety and security
- Pedestrian-friendly design
- Information

Bicycling access is also important for BART stations. This mode of transportation ranks third in the modal hierarchy and the transit agency has an exclusive Bicycle Access and Parking Plan. Key considerations for bicycles included in the BART Station Access Guidelines are:

- Access
- Convenient, available parking
- Secure, sheltered parking

The City of San Francisco's Transit-First Policy, located in the City Charter, Section 16.102, guides the city's investments in transportation. This policy clearly supports walking and bicycling in addition to transit. The first three principals of the policy are:

1. To ensure quality of life and economic health in San Francisco, the primary objective of the transportation system must be the safe and efficient movement of people and goods.
2. Public transit, including taxis and vanpools, is an economically and environmentally sound alternative to transportation by individual automobiles. Within San Francisco, travel by public transit, by bicycle and on foot must be an attractive alternative to travel by private automobile.
3. Decisions regarding the use of limited public street and sidewalk space shall encourage the use of public rights of way by pedestrians, bicyclists, and public transit, and shall strive to reduce traffic and improve public health and safety.

To implement the policy, the city revised the Public Works Code to include the following:

Whenever the Department or other Municipal Excavator undertakes a project involving the planning, construction, reconstruction or repaving of a public right-of-way, such project shall include, to the maximum extent practicable and feasible... transit, pedestrian and bicycle improvements...

To the maximum extent practicable and feasible, the Director shall condition all excavation and street improvement permits on the inclusion of the improvements set forth (above).

There are many policies that make non-motorized transportation facilities a priority in projects. These range from federal legislation to city plans and transit station planning guidelines.

### County and City Bicycle and Pedestrian Plans

In addition to the funding policies noted above, all nine counties in the Bay Area have bicycle plans and several have pedestrian plans. For example, Contra Costa and Marin County both have Bicycle and Pedestrian Plans while Solano County has separate bicycle and pedestrian plans. Some cities within the Bay Area have combined bicycle and pedestrian plans, while many cities include bicycle networks in their general plans. The number of cities with these varying types of bicycle plans is shown in Table 1. According to information collected by MTC in 2004 and 2005, over 70 percent of Bay Area cities have some type of bicycle plans (general plan, city plan, adopted countywide plan).

These plans are important because MTC's Transportation Development Act Article 3 (TDA-3) allocation procedures require that in order for a bicycle project to receive funds, it must be included in "a detailed bicycle circulation element or plan included in a general plan or an adopted comprehensive bikeway plan." Furthermore, a city is only eligible for Caltrans Bicycle Transportation Account (BTA) funds if there is an approved bicycle plan less than five years old on file.

In some cases, cities choose to adopt bicycle and/or pedestrian plans prepared at the county level. However, local bicycle plans typically include more local detail and community input than the county plans. For example, the *Palo Alto Bicycle Transportation Plan* identified a much denser bicycle network within the city boundaries compared to the *Santa Clara County Bicycle Plan* network.

Please note in the table below each city is only counted one time based on the type of plan adopted based on the following rank:

1. Stand-alone bicycle and/or pedestrian plan
2. Adoption of county bicycle and/or pedestrian plan
3. General plan element including bicycle and/or pedestrian plan

Table 1 -Adopted Bicycle Plans\*

County	Cities in County	Cities with bike plan	Cities adopted county bike plan	Cities with bike elements in general plan	Cities in counties with bike plan or element in general plan	Cities without bike plan or bike element in general plan	Cities without any bike plan or bike element in general plan
Alameda	14	8	0	4	86%	2	14%
Contra Costa	19	7	0	6	68%	6	32%
Marin	11	8	1	0	82%	2	18%
Napa	5	3	0	2	100%	0	0%
San Francisco**	1	1	0	0	100%	0	0%
San Mateo	20	5	1	4	50%	10	50%
Santa Clara	15	7	0	3	67%	5	33%
Solano	7	1	3	3	100%	0	0%
Sonoma	9	5	2	0	78%	2	22%
<b>Total</b>	<b>101</b>	<b>45</b>	<b>7</b>	<b>21</b>	<b>72%</b>	<b>27</b>	<b>27%</b>

\*information collected in 2004 & 2005

\*\* San Francisco has a city/county plan and elements are adopted in the general plan

There are far fewer pedestrian plans in the Bay Area than bicycle plans. Of 101 cities, only three have specific pedestrian plans, seven have a combined pedestrian and bicycle plan, while 89 percent of cities in the Bay Area do not have pedestrian plans. The 2005 pedestrian plan inventory results are shown in Table 2.

Table 2 - Adopted Pedestrian Plans\*

County	Cities in County	Cities with Ped Plan	Cities combined ped/bike plan	Cities adopted county ped or ped/bike plan	Percent of cities without any ped plan
Alameda	14	2	5	0	50%
Contra Costa	19	0	1	0	95%
Marin	11	0	1	1	78%
Napa	5	0	1	0	80%
San Francisco	1	1**	0	0	0%
San Mateo	20	0	0	0	100%
Santa Clara	15	0	0	0	100%
Solano	7	0	0	0	100%
Sonoma	9	0	0	1	99%
<b>Total</b>	<b>101</b>	<b>3</b>	<b>8</b>	<b>2</b>	<b>87%</b>

\*information collected in 2005

\*\*San Francisco Bicycle Plan is in development (2005/6)

There is no link between pedestrian planning and funding currently. It appears that the bicycle planning requirement for both TDA and BTA programs has success encouraging cities and counties to prepare and adopt bicycle planning documents.

#### *IV. Interviews and Results*

##### **Project List Development**

MTC staff interviewed transportation project managers to gain a better understanding of how existing policies impact the decision to include routine accommodations for bikes and pedestrians in the planning, design and construction process. 35 managers were interviewed and spoke about various project types, including:

- Local roads
- Mass transit
- Highway interchanges
- Highway expansions
- Highway HOV lane developments

The original project list was created from MTC's WebFMS system (online at: <http://apps06.mtc.ca.gov/webfms/home>) and originally included more than 3,000 archived and active projects from the 1999, 2001, 2003, and 2005 Transportation Improvement Program (TIP). That list of projects was shortened to create a reasonable length list to survey over the course of 4-6 weeks.

First, all bicycle and/or pedestrian oriented projects were removed since this report focuses on other types of transportation project types that are not bicycle or pedestrian specific. Next, most interstate transit projects were removed from the list because these facilities do not allow bicycles and pedestrians. This is consistent with the FHWA routine accommodation policy. Transit projects were mostly removed as well. Finally, projects funded before 1999 were removed because these projects began before D.D. 64 came into effect in California. These reductions left a list of 120 eligible projects to survey. During July and August 2005, an attempt was made to interview every project manager on that list; 35 successful interviews were completed.

Information was garnered from transportation project managers in phone interviews. Depending on the detail of conversation, most interviews ranged from 10 to 30 minutes. In the interviews, interviewees were directed with specific questions regarding non-motorized facility planning in transportation projects. The survey is shown in Appendix 2 and the complete results from the questionnaire are in Appendix 3. As shown in Table 3, most interviews were with local road project managers.

Table 3 - Completed Surveys by Project Type

Project Type	Number	Percent of Total
Highway - Interchange	8	23%
Highway - Other Widening	3	9%
Local Roads - Other	3	9%
Local Roads - Rehabilitations & Overlays	20	57%
Mass Transit - Buildings & Other	1	3%
<b>Total</b>	<b>35</b>	<b>100%</b>

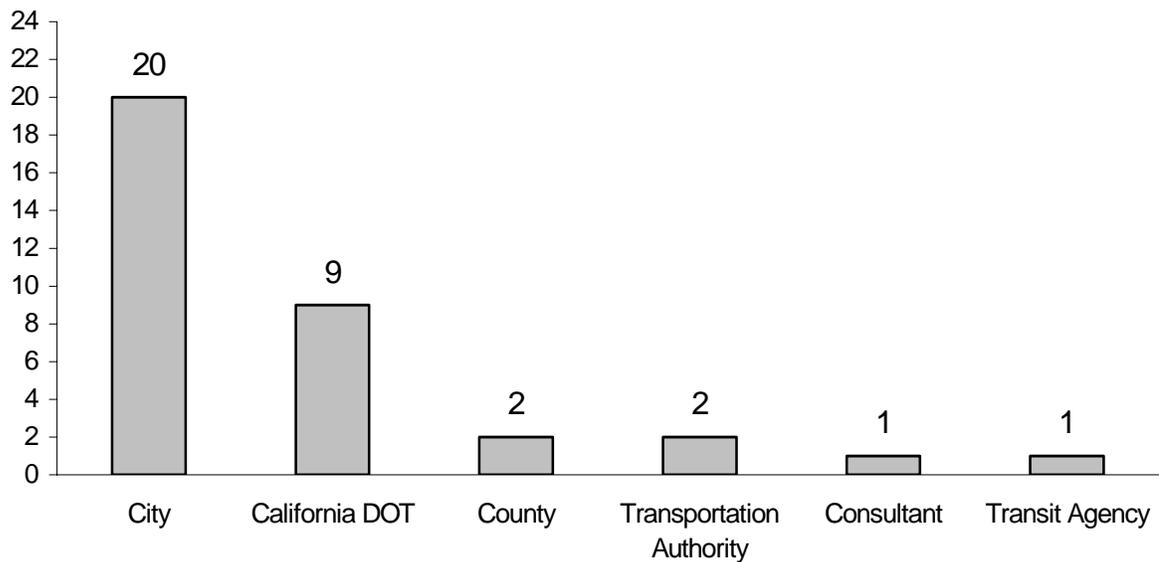
MTC recognizes that this is not an exhaustive list of transportation projects. The intent was to find a list of transportation projects designed or completed since the signing of D.D. 64 in 2001. Due to the short time since D.D. 64 was adopted, and the time transportation projects take in planning, design, and construction phases, only a small number of projects met the report's criteria. The sample does not perfectly represent the number of these types of transportation projects planned, designed, and constructed since D.D. 64's adoption.

While not exhaustive, this report represents the first, project-level data collection effort and helps inform routine accommodation recommendations. It should be noted the study did not attempt to assess the quality of the non-motorized improvements that were included in each project, an effort that would require extensive qualitative assessment.

### Quantitative Results

Figure 1 shows the number of interview responses from different types of agencies. Most responses to the local roads projects were from cities, as reflected by the larger number of city respondents. Of the 35 project managers interviewed, 20 of them were from Bay Area cities.

Figure 1 - Responding agencies to interviews



Most Bay Area counties and transportation authorities are project managers on larger, more complex projects which take longer to develop compared to other projects. This partly explains the relatively small number of interviews conducted with project managers from these larger agencies. Also for the report, only five project managers were interviewed from Caltrans, a small number compared to the number of state projects in the planning, design, and construction phases of development.

Project managers were asked if they consulted a bicycle plan in the process. As shown in Figure 2, most project managers consulted a bicycle plan, whether it was the MTC Regional Bicycle Plan, a county bicycle plan, or a city bicycle plan. As Figure 3 conveys, of respondents that said "yes" to reviewing a plan, only three consulted the *Regional Bicycle Plan*. Comparing the other bicycle plans reviewed by traffic managers, city plans were reviewed most often. Also, in the interviews, only one project manager specifically cited D.D. 64 as a reason to add non-motorized user facilities.

Figure 2 - Responding agencies who referenced a bicycle plan

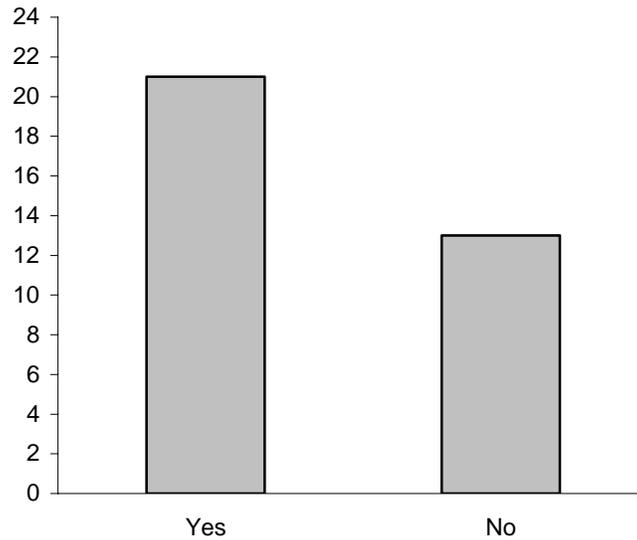
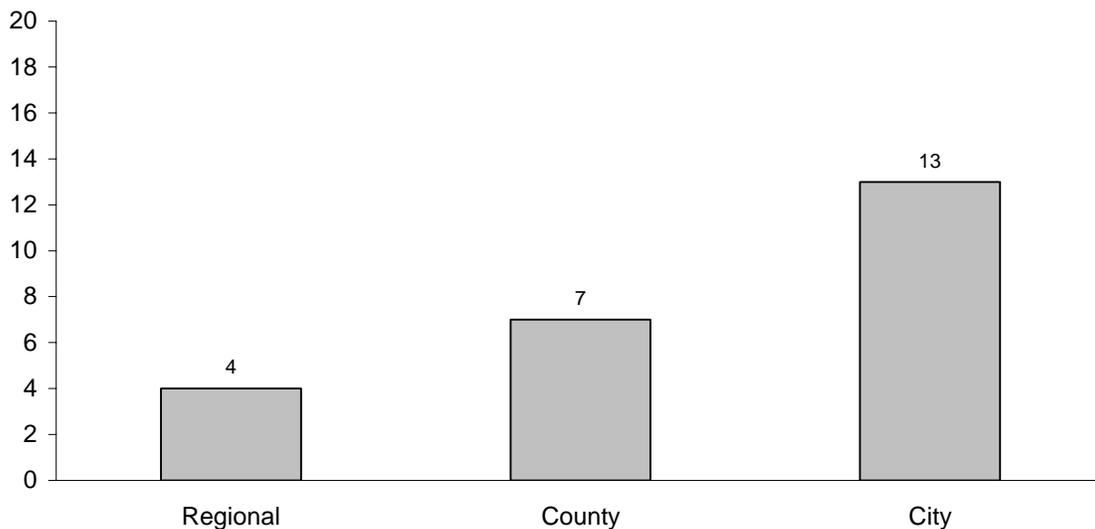


Figure 3 - Types of bicycle plans reviewed by project managers



Of the 35 project managers interviewed for this report, 20 (57%) confirmed bicycle and/or pedestrian facilities are or will be included in the project. These include any bicyclist and/or pedestrian facility, other than facilities specific to persons with disabilities. Thus, a majority of the projects surveyed accommodate non-motorized travelers to some extent. These results can be seen in Figure 4 below.

Figure 4 -Plan review and inclusion of new facility

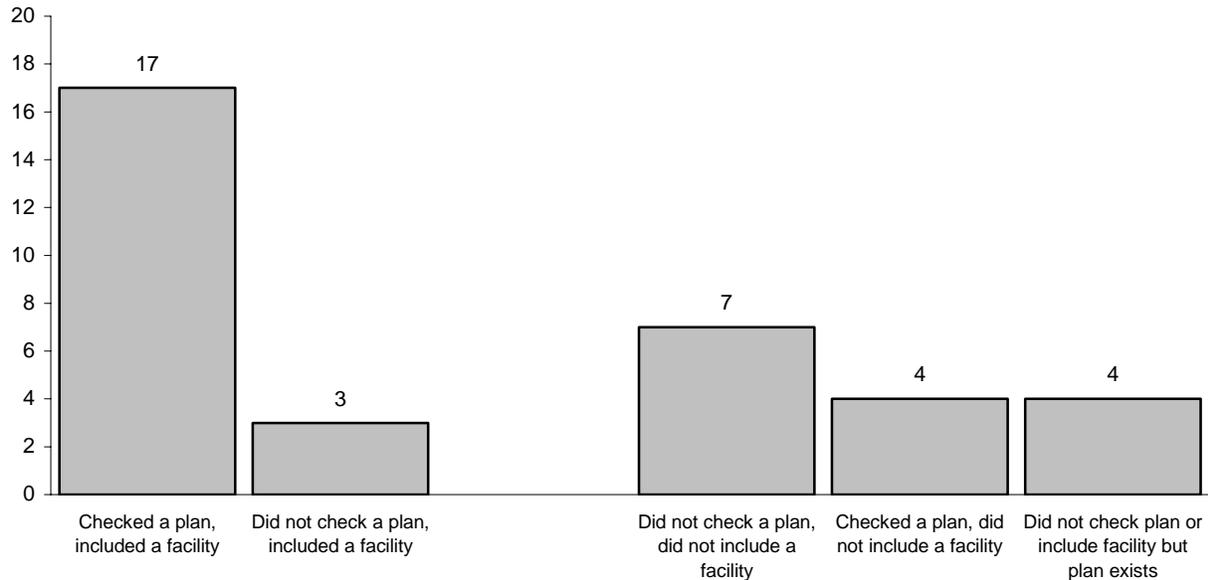


Figure 4 shows the clear relationship between a project manager reviewing a non-motorized plan and including non-motorized accommodations. *In locations where there was a plan and it was reviewed, facilities were included 17 out of 35 times.* This is a key finding of the study and indicates the importance of non-motorized planning.

There are a few other interesting results worth commenting on. Figure 4 also shows four instances when project managers stated there was not a plan for the location when in fact there was one. Further, as noted elsewhere in the study, it does not attempt to distinguish between the quality of the non-motorized improvements (e.g. is a bike lane or ladder crosswalk “better” than a signed bike route or a standard crosswalk respectively). This qualitative effort was beyond the available resources for the study, but it would certainly be useful information for project managers considering non-motorized accommodations.

## Qualitative Results

### *Why Accommodations are Routinely Included*

Other than the project managers associated with the results in Table 1, more than 30 other conversations took place with transportation planners and engineers at local, county, and state levels of government. Some of these interviewees are members of the Regional Bicycle Working Group and the

Regional Pedestrian Committee; others were referenced in various project manager surveys. Bicycle, pedestrian, and persons with disability advocates were also interviewed to get the most thorough information considered in the planning of these and other Bay Area transportation projects.

Interviewees provided insight as to why routine accommodations may or may not be included in projects. These conversations provided numerous ideas why this may occur as well as potential solutions for ensuring these facilities are included in transportation projects in the future. The respondents gave several reasons why facilities for non-motorized travel are included in projects.

#### Documented in a plan

In many cases, non-motorized facilities are included in project design and development because they are included in a bicycle and/or pedestrian plan ranging from the regional bicycle plan to a neighborhood circulation plan. When municipalities or neighborhoods have non-motorized transportation plans that include maps of designated routes and key districts, and preferred design alternatives transportation project designers are more likely to follow them.

#### Presence of bicycle/pedestrian staff

About five percent of CMAs, counties, and cities in the Bay Area have paid staff working exclusively on bicycle and/or pedestrian planning. Among other things, these employees work with outside advocacy groups, other public agencies, city departments, and project engineers to include non-motorized transportation facilities into projects. Bicycle/pedestrian staff also makes certain that the most appropriate facilities are established in the best places. While many cities, counties, and CMAs have a designated a bicycle/pedestrian staff person, this work could be any portion of their overall job responsibilities.

One bicycle/pedestrian staff person interviewed is currently working with engineers to include bicycle and pedestrian infrastructure on a road rehabilitation project where there is a gap between non-motorized facilities. This effort entails working with project engineers and area advocates to determine which improvements to include based on state design standards and the needs of non-motorized transportation users. Staff stated that without their bicycle/pedestrian position in the agency, the project would not have included these non-motorized facilities.

#### Internal advocates within agency

In the Bay Area, accommodation of non-motorized transportation users is often the result of proactive employees or commissioners. These internal advocates are often bicycle commuters or recreational bicyclists who understand the importance of providing for non-motorized transportation users where possible.

At the staff level, they are personally motivated to seek out policies, whether it is D.D. 64 or a local planning document that allows them to pursue the inclusion of these facilities. Local planning officials, such as planning commissioners, can also be internal advocates for non-motorized transportation facilities; one interviewee stated that bicycle and pedestrian facilities are important when “important people care.” Not only do these decision makers promote projects specific for these facilities but they also motivate transportation staff to include them in other types of transportation projects.

For example, in a Bay Area city that does not have a set protocol for bicycle and pedestrian facilities in projects, bicycle facilities that were not in any planning document were included in a road construction. According to the interview, this was a direct result of one planner’s efforts because often, under normal circumstances in this agency, engineers do not think of including these types of facilities in projects. In this example, the road accesses a major Bay Area destination, making these non-motorized facilities especially beneficial.

### *Why Routine Accommodations are Not Included*

Despite the policies and guidelines established at various levels of government in the Bay Area, routine accommodations for non-motorized vehicles are often not included in transportation projects or the best routine accommodation alternatives are not chosen during a project design and development. As gleaned from interviews with engineers, planners, and advocates in transportation, there are many reasons why this is the case. This section of the report discusses several overall reasons why non-motorized facilities are not routinely included in transportation projects or why the best facilities are not always developed.

#### New policies and standards take time to take effect

National legislation that included policies supporting the routine consideration, as an aspect of other transportation facilities, was not passed until 1998. California did not have its own directive supporting routine consideration for non-motorized travelers until 2001 – making this a relatively new guideline necessary for planners and engineers to incorporate into transportation project development. In several interviews, public agency employees stated that historically transportation design engineers have been trained to consider design standards for vehicles based on the California *Highway Design Manual* and that they need a better understanding of transportation facilities for bicycles, pedestrians, and wheelchairs. Also, based on the interviews for this report, there is a deficiency in transportation design professionals’ training in facility design for non-motorized transportation users.

#### Facilities can be incrementally expensive and dedicated funding is insufficient

Based on interview results for this report, another explanation for inadequate routine accommodations for non-motorized transportation users is funding. Respondents indicated the marginal cost of adding non-motorized facilities can add to the expense of the project and there is a lack of funds to cover these costs. While it is unclear how much bicycle and pedestrian facilities add to total project costs, some staff estimate that ADA-related facilities can add 20 percent to the cost of a project. As a result, non-motorized facilities are often omitted from projects.

### Retrofitting existing facilities

Most cities and counties include bicycle and pedestrian facilities in their general plan standards for arterial and collector streets. Unfortunately, cities and counties are adding relatively few new streets. When new arterial or collector streets are constructed, they generally include these facilities, but many existing streets do not include them. As noted elsewhere in this report, retrofitting existing streets can be difficult and often expensive. Many streets do not have adequate right-of-way to add bicycle lanes or sidewalks without removing parking or a travel lane. While this is sometimes possible, often additional right-of-way is needed which is expensive to acquire, especially in more urban areas. Changes to existing streets are sometimes resisted by adjoining property owners or by other users.

### Review at various agency levels

Many different public agencies including Caltrans, Bay Area congestion management agencies (CMAs), transit operators, counties and cities, have roles in the project development, design, and construction processes. These agencies also manage different aspects of the funding process. This potentially makes coordination and review difficult. Furthermore, coordination between city departments, or between cities, counties, CMAs, MTC, and Caltrans on a single project can confuse the responsibility for non-motorized accommodations.

At the local level, it is common for city and county bicycle and pedestrian advisory committees (BPACs) to have little input into project development or design. BPACs are established as part of the public planning process to review bicycle and pedestrian plans and programming, not specifically to review other transportation projects. However, these committees may present a useful forum for project managers to discuss their projects and solicit feedback. The Caltrans District 4 Bicycle Advisory Committee regularly engages in this process. Furthermore, coordination between city departments, or between cities, counties, CMAs, and Caltrans on a single project can confuse the responsibility for routine accommodations. This is especially important on projects where a state facility interfaces with local roads.

MTC’s online TIP application, the *Project Screening Criteria - Step 6* as shown in Figure 5, asks questions regarding routine accommodations for non-motorized users. This form presents a new opportunity to examine how cities and counties address non-motorized needs during the project development process.

Figure 5 - Online TIP application’s Step 6, relating to D.D. 64 in WebFMS

**WebFMS - Universal Application** Welcome, Applicant.  
You are signed into the WebFMS Secured Portal

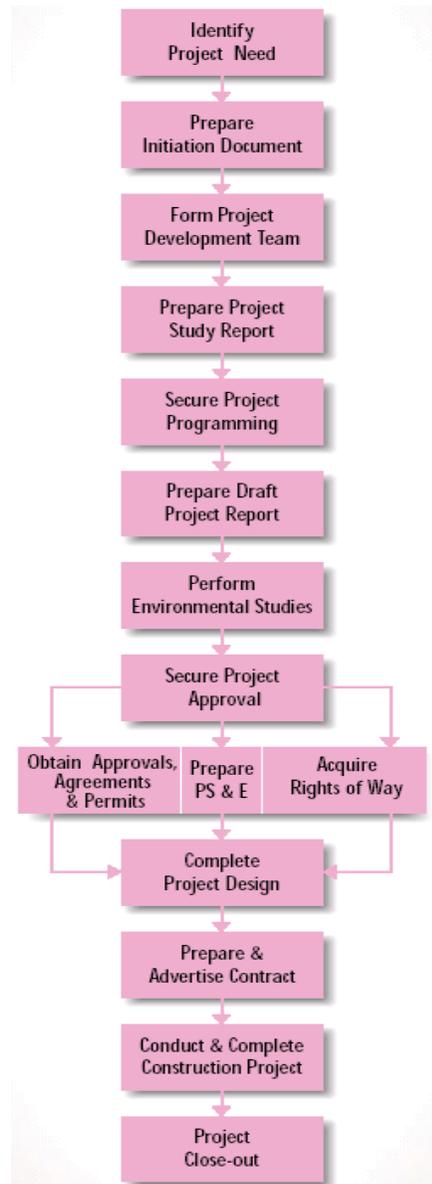
Step 1 General Information	Step 2 Description	Step 3 Location	Step 4 Funding	Step 5 Delivery Milestones	Step 6 Screening Criteria	Step 7 Sponsor Information	Final Step Review
Project Screening - Step 6					Glossary	Application Assistant	Contact Us
<p>* Have the needs of non-motorized travelers been considered in the design of the project and is the project consistent with Caltrans Deputy Directive 64? <a href="#">Click here for more information on Caltrans Deputy Directive 64</a> <input type="text"/></p> <p>* Is non-motorized travel impeded by this project? <input type="text"/> If yes, has a cross-facility, non-motorized access been included in the project? <input type="text"/></p> <p>* Has a parallel non-motorized facility been designed to accommodate non-motorized travelers? <input type="text"/></p> <p>* Have you reviewed local county, and regional bike plans for roadway design consistency? <input type="text"/></p> <p>If applicable, please attach an excerpt from the bike plan in the vicinity of your project (Acceptable file formats are jpg, gif, png, pdf, doc): <input type="text"/> Browse...</p> <p>* Is project consistent with MTC's RTP, other regional, local plans and programs (e.g. most recently adopted Short Range Transit Plan)? <input type="text"/></p> <p>SRTP Reference: FY Adopted: <input type="text"/> SRTP Page: <input type="text"/> RTP Reference: FY Adopted: <input type="text"/> RTP Page: <input type="text"/> RTP Reference Number: <input type="text"/></p> <p>List other applicable plans: <input type="text"/></p> <p>* Is project supported by an adequate financial plan with all sources of funding identified and has <input type="text"/></p>							

This is a new form developed in late 2004 that will provide MTC an opportunity to monitor results of regional and state routine accommodation policies. MTC expects to revise this form to collect more meaningful project data while providing more useful information to project sponsors.

At the state level, Caltrans requires a project initiation document (PID) for projects on the state highway system. These documents, required at the beginning of the project development process, outline the purpose and need of a project. The PID is shown as the second step in Figure 6, “How Caltrans Builds Projects.” The PID does not currently require project managers to specifically address the needs of non-motorized users. Nor, in Project Study Reports (PSR), do the documents prepared by project managers during the course of transportation projects' design and construction, include questions relating to routine accommodation requirements. Caltrans is now considering modifications to the requirements for these documents, which presents an opportunity to improve non-motorized accommodations. Since cities, counties, and transportation consultants, in addition to Caltrans staff, regularly sponsor projects on the state highway system and complete PIDs and PSRs, it is important to have standards to address non-motorized needs no matter the author.

Appendix 4 includes a checklist used by Pennsylvania DOT to evaluate pedestrian and bicycle needs during project planning. Both Illinois and Iowa DOTs have similar forms in use.

Figure 6 - “How Caltrans Builds Projects”



## V. Case Studies

These case studies are examples of results found in the interviews. They are three transportation projects that included or hope to include routine accommodations. The case studies incorporate background information and how the non-motorized accommodations came to be in the projects.

### Case Study 1: SR-152/SR-156

State Routes 152 and 156 intersect in southern Santa Clara County near Hollister, California. They are both two-lane, rural highways that currently meet at an at-grade intersection as shown in Figure 7. There are wide

**Figure 7: SR 152/156 existing conditions - surface, 2-lane state highways with shoulders**



**Figure 8: SR 152/156 proposed - grade-separated overpass facility**



shoulders on the routes that bicyclists use, though no bicyclists were observed during traffic counts. West of the intersection, State Route 152 connects Gilroy and San Jose and State Route 156 connects Hollister and Monterey. Where they connect, State Route 156 ends and State Route 152 becomes the Pacheco Pass Highway, the only route for bicyclists to the Central Valley. Caltrans owns the right-of-way for both routes, but Santa Clara Valley Transportation Authority is leading an effort and coordinating with the DOT to improve the intersection due to its a high average accident rate and vehicle delay.

The original design for the \$33 million project, as partially seen in Figure 8, was to reconfigure the existing at-grade intersection to a grade-separated interchange. Bicyclists would be permitted to use the wide shoulders, but potentially dangerous merges would exist. In the original design bicyclists would not be able to go westbound on State Route 152 from eastbound State Route 156 like they can presently.

The VTA BPAC initially discussed bike access as a result of a presentation to the BPAC in 2004 on the project from VTA's Highway Design group. Neither highway is identified in VTA's Countywide Bike Plan as a cross-county bicycle corridor, and observed traffic conditions and the condition of the roadways did not indicate bicycle facilities were needed. However, the BPAC's concerns led to internal staff meetings with VTA's Highway Design team to discuss options. At the time of BPAC review, engineering drawings were at 35% design and work continued with consideration of bicycles using the corridor. The result of this work was presented to the BPAC several months later in drawings close to 100% design. VTA was able to include, although not immediately fund, a new bicycle facility as part of the interchange, even though it would probably not meet the needs analysis criteria under FHWA guidelines.

As of summer 2005 a separate Class I facility for bicyclists is being designed for the interchange. The facility will be the original gravel maintenance road converted to a paved path and will cost an additional \$250,000 (estimated 0.8% of project cost). Unfortunately, since this improvement was not in the original project plans, it is not included in the project's budget and funding package. Project sponsors applied for additional funds from the BTA to pay for the maintenance path improvements.

Due in part to this process, VTA staff established a standing item on the BPAC agenda to discuss project review and design issues. This step will help ensure that non-motorized needs are fully considered during project development.

### Case Study 2: Highway 101 - Marin-Sonoma Narrows

The Marin-Sonoma Narrows is a section of Highway 101 in Marin and Sonoma counties. A portion of the project is now an expressway with six local intersecting streets and about as many driveways. This portion of Highway 101 is unique, because to the north and south the highway is a freeway with on and off ramps. **Figure 9 - Segment of the Marin-Sonoma Narrows Project. West of Highway 101 is a Class II bikeway (solid line) and Class I bikeway (dashed line).**



off ramps. Part B of the Narrows project will change eight miles of expressway into freeway and requires accommodations for bicycles because currently they are allowed on the expressway's shoulders. One segment is shown in Figure 9.

As a result of the Narrows project, a series of bike and pedestrian paths will connect with frontage roads. These improvements have been included since planning for the project began. Caltrans is leading this project and working with several environmental and bicycle advocacy groups to make certain that appropriate facilities are developed. This route is a part of the North/South bikeway in Marin County, a key component in the Marin County Bicycle and Pedestrian Plan (1999). Further, Caltrans is developing these accommodations for non-motorized users because bicycles are currently permitted on the shoulder and therefore they are required to do so. The inclusion of non-motorized access early in the project development effort is a good example of how routine accommodation can happen on any transportation project and will ultimately lead to the construction of this portion of the countywide bicycle and pedestrian network.

### **Case Study 3: Golf Course Drive Overlay**

In July 2004 the Rohnert Park City Council voted to include traffic calming measures in its future overlay projects. The first overlay project after the council's action was on Golf Course Drive. Golf Course Drive is an arterial in Rohnert Park, Sonoma County. Originally, the road had 12-foot wide lanes with no bicycle lanes. The posted speed limit is 35 miles per hour.

The Public Works Department worked with the city's Bicycle Advisory Committee to develop Class II bicycle lanes on both sides of the street by narrowing the travel lanes. The traffic lanes were reduced to 10 feet with bicycle lanes on either side. As a result of the new striping plan, the number of vehicles traveling over 55 miles per hour dropped by 73 percent in the westbound and 88 percent in the eastbound direction. Public Works staff see this as an effective measure and plan to routinely include bicycle lanes when there is space in the existing right-of-way in all of its repainting and overlay projects on arterial and collector streets.

## VI. Recommendations

Our findings indicate that some form of bicycle and pedestrian accommodations are included in a majority (57%) of projects that were reviewed. Based on discussion with project managers, local agencies, Caltrans, and stakeholders, this section of the report provides recommendations to encourage greater levels of routine accommodation. Making the accommodation of non-motorized users routine will require the cooperation and support from various levels of government responsible for both distributing funds and planning, designing, and constructing the transportation infrastructure.

Recommendations are sorted into three major categories:

- ❖ Project Planning and Design
- ❖ Project Funding and Review
- ❖ Training

FHWA's, *Accommodating Bicycle and Pedestrian Travel: A Recommended Approach* states: "Retrofitting the built environment often provides even more challenges than building new roads and communities." Recommendations for improving the funding and review, and design of projects so the best routine accommodations are included at the outset of projects are discussed below to facilitate safe and convenient travel for all non-motorized users.

### PROJECT PLANNING and DESIGN

These recommendations ensure that routine accommodations are in the final design of transportation projects and that they are the best facilities for projects. The 2001 Director's Policy for *Context Sensitive Solutions* and the new Caltrans *Pedestrian and Bicycle Facilities in California* (2005) technical reference guide can aid in this process. They will provide California transportation project designers the most practical routine accommodation improvements for each project.

The Caltrans *Pedestrian and Bicycle Facilities in California* (2005), VTA's *Bicycle Technical Guidelines* (1999), and VTA's *Pedestrian Technical Guidelines* (2003) all serve as examples for designing routine accommodations in projects. They include descriptions, technical information, and an array of details pertaining to bicycle and pedestrian facilities in various environments. These documents are valuable to planners and engineers.

Caltrans District 4 staff also discussed the need for more careful coordination between their project initiation document (PID) /project study report (PSR) process and bicycle and pedestrian planning activities. Given the number of studies underway in District 4 at any point in time, this will be a difficult issue to address. The following recommendations, however, should be explored:

1. *Recommendation:* Caltrans and MTC will make available routine accommodations reports, publications available on their respective websites.
2. *Recommendation:* Caltrans District 4 will maintain a database and share a list of ongoing Caltrans and local agency PIDs and PSRs either quarterly or semi-annually at the District 4 Bicycle Advisory Committee to promote local non-motorized involvement.

## FUNDING and REVIEW

As previously shown in Tables 1 and 2, nearly 30 percent of cities in the Bay Area do not have a bicycle plan or bicycle element in the general plan and almost 90 percent of cities do not have a pedestrian plan. As demonstrated in the interviews, these plans appear to be a key component of successful non-motorized accommodation in combination with staffing and institutional support. These planning documents serve as a reference for transportation planners and engineers, helping them understand the need for these facilities within their cities. Also, a bicycle or pedestrian plan can include a priority list of projects on the network, design elements including best practices for the development and inclusion of facilities, and goals, policies, or benchmarks for a city's future bicycle or pedestrian facilities. It should be noted that the presence of specified route preferences in a bicycle plan do not negate the need for safe travel by bicyclists and pedestrians on all roadways where they are permitted.

Pursuant to the FHWA's *Accommodating Bicycle and Pedestrian Travel: A Recommended Approach*, when costs for non-motorized accommodations are less than 20 percent of total construction, non-motorized travel is legal, and there is demand in the area for these improvements, they should be included in the final project. If routine accommodations are not proposed in the project due to funding constraints, project managers should seek funds for construction of bicycle and pedestrian accommodations.

As previously shown in Figure 2, the MTC TIP application for federally funded transportation projects includes questions relating to D.D. 64 and bicycle and pedestrian facilities. These questions were incorporated into the online

application in 2004 and only a few project sponsors have used the new application. The questions should be modified as needed to gather the best information, while keeping the process brief. MTC should review the success of the application process and ensure project application responses include adequate designs for non-motorized users wherever appropriate and feasible.

MTC's TDA Article 3 guidelines require counties and cities to have a Bicycle Advisory Committee (BAC) to review and prioritize projects spending these funds. At this time, there are no requirements that counties or cities review non-bicycle/pedestrian projects with these committees. Given the complicated and lengthy project development process already in place, it is important to balance project review with project delivery requirements. VTA staff is currently developing a process to ensure that the VTA BAC is involved with project design when it reaches 35 percent. This example should serve as a model for other project sponsors in the region.

One way to improve the review process is to have designers complete a checklist that formalizes the consideration of bicycle, pedestrian and disabled needs in the design of transportation facilities and review their results early in the planning process. For example, as shown in Appendix 4, the Pennsylvania Department of Transportation (PennDOT) has an established bicycle and pedestrian facilities checklist.

Also, at the local agency level, there are different viewpoints in current BACs or BPACs due to varying representation of non-motorized users. Resolution 875, which outlines the requirements for the TDA Article 3 program, states that BACs should be composed of both bicyclists and pedestrians. However, there are often more bicycle advocates than pedestrian advocates. Agencies should form balanced BPACs to understand the needs of bicyclists, pedestrians and the disabled community. If this is not possible, BACs should be made aware of different non-motorized users' needs in transportation projects, including bicyclists, pedestrians, and persons with disabilities.

3. *Recommendation:* MTC will continue to support the use of TDA funds for bicycle and pedestrian planning, with special focus on the development of new plans.
4. *Recommendation:* MTC's regional discretionary fund programming policies shall ensure project sponsors consider the accommodation of non-motorized travelers consistent with Caltrans' Deputy Directive 64. Projects funded all or in part with regionally discretionary-funds must include bicycle and pedestrian facilities at those locations called for in applicable plans and standards unless those facilities exceed 15% of the total project cost.

5. *Recommendation:* TDA Article 3, Regional Bike/Ped, and TLC funds shall be reserved for improvements to existing sub-standard facilities that are not part of a roadway rehabilitation project, or in cases where the non-motorized costs exceed 15% in #4 above. Further, TDA Article 3, Regional Bike/Ped, and TLC funds shall not be used to fund new non-motorized facilities that need to be built to mitigate roadway construction activities.
6. *Recommendation:* MTC will monitor how the needs of non-motorized users of the transportation system are being considered and accommodated in the design and construction of transportation projects by auditing candidate TIP projects.
7. *Recommendation:* Caltrans shall develop an online form to serve as a checklist review for state highway and interchange projects at their earliest conception or design phase. Consider requiring this form as part of the PSR and PID stage. Caltrans shall monitor select projects based on their online forms and the proposed checklist.
8. *Recommendation:* Caltrans, CMAs and local agencies shall have BPACs review projects during the design stage to ensure that appropriate bicycle and/or pedestrian facilities are included in projects. BPACs shall include members that understand the range of transportation needs of bicyclists, pedestrians and the disabled.

## TRAINING

MTC has the potential to improve the routine accommodations for bicycle and pedestrians in projects with training and education programs for project managers and project designers. At the regional level, MTC should look to examples in and outside of the Bay Area for techniques for developing bicycle and pedestrian facilities. The program could inform public professionals of bicycle and pedestrian tools and manuals, the various types of facilities available to include in project designs, and the best practices for developing bicycle and pedestrian facilities in projects. In May 2005, MTC hosted two, one-day training sessions on designing pedestrian facilities that should serve as examples in the future.

Caltrans can continue to train its own staff to promote D.D. 64 through their context sensitive design and the new Caltrans *Pedestrian and Bicycle Facilities in California Technical Reference Guide*. In addition, Caltrans can be a valuable partner in training and outreach efforts at the city and county level.

9. *Recommendation:* Caltrans and MTC will continue to host project manager and designer training sessions to staff and local agencies to promote routine accommodation Deputy Directive 64.

## *VII. Conclusion*

This report summarizes the results of interviews with 35 project managers, and almost as many interviews with bicycle and pedestrian planners, engineers and advocates. The results indicate that a majority of projects accommodate bicyclists and pedestrians to some extent and that many local jurisdictions have existing policies that support routine accommodation. Based on these findings and interviews, in consultation with Caltrans District 4 staff, the study establishes recommendations to improve bicycle, pedestrian, and disabled accommodation in Bay Area transportation projects.

These recommendations will be strengthened by implementation at all levels of government, from city to state. This is the first study of its kind for MTC and will serve as a benchmark for future evaluations of routine accommodations. MTC will continue to work with partner agencies to increase the regular accommodation of all users into transportation projects.

## Appendix

### 1. Web Resources:

Alameda County Transportation Improvement Authority, Strategic Plan for Measure B:

[http://www.acta2002.com/WHAT\\_IS\\_ACTIA/FullISP0405Final%20070804-1.doc](http://www.acta2002.com/WHAT_IS_ACTIA/FullISP0405Final%20070804-1.doc)

Americans with Disabilities Act homepage:

<http://www.usdoj.gov/crt/ada/adahom1.htm>

BART Station Access Guidelines:

[http://www.bart.gov/docs/planning/access\\_guidelines.pdf](http://www.bart.gov/docs/planning/access_guidelines.pdf)

California Assembly Concurrent Resolution 211:

[http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab\\_0201-0250/acr\\_211\\_bill\\_20020820\\_chaptered.html](http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab_0201-0250/acr_211_bill_20020820_chaptered.html)

Caltrans Deputy Directive 64:

[http://www.dot.ca.gov/hq/tpp/offices/bike/Appendix\\_B.pdf](http://www.dot.ca.gov/hq/tpp/offices/bike/Appendix_B.pdf)

Caltrans Pedestrian and Bicycle Facilities in California:

<http://www.dot.ca.gov/hq/traffops/survey/pedestrian/pedbike.htm>

Caltrans Project Development Procedures Manual, Chapter 8 - Overview of Project Development:

[http://www.dot.ca.gov/hq/oppd/pdpm/chap\\_hm/chapt08/chapt08.htm](http://www.dot.ca.gov/hq/oppd/pdpm/chap_hm/chapt08/chapt08.htm)

Caltrans Project Development Procedures Manual: Chapter 31 - Non-Motorized Transportation Facilities

[http://www.dot.ca.gov/hq/oppd/pdpm/chap\\_pdf/chapt31.pdf](http://www.dot.ca.gov/hq/oppd/pdpm/chap_pdf/chapt31.pdf)

Federal Highway Administration: Accommodating Bicycle and Pedestrian Travel: A Recommended Approach:

<http://www.fhwa.dot.gov/environment/bikeped/design.htm>

Federal Highway Administration: Improving Conditions for Bicycle and Walking, A Best Practices Report:

<http://www.bicyclinginfo.org/rd/planning.htm#improve>

Illinois Department of Transportation: Bureau of Local Roads & Streets Manual, Bicycle Facilities Chapter and Checklist:

<http://www.dot.state.il.us/blr/manuals/Chapter%2042.pdf>

Iowa Department of Transportation: Iowa Trails 2000, Bicycle and Pedestrian Accommodation Guidance: <http://www.dot.state.ia.us/trails/AppendixC.html>

Marin County Transportation Sales Tax Expenditure Plan (Measure A): [http://www.tam.ca.gov/Uploads//pdfs/TSTEP\\_050604\\_FINAL.pdf](http://www.tam.ca.gov/Uploads//pdfs/TSTEP_050604_FINAL.pdf)

MTC 2001 Regional Bicycle Plan for the San Francisco Bay Area: <http://www.mtc.ca.gov/planning/bicycle/>

MTC Bike/Pedestrian Toolbox: <http://www.mtc.ca.gov/planning/bicyclespedestrians/tools.htm>

MTC Transportation 2030 Regional Plan: [http://www.mtc.ca.gov/planning/2030\\_plan/](http://www.mtc.ca.gov/planning/2030_plan/)

MTC WebFMS: [http://www.mtc.ca.gov/funding/fms\\_intro.htm](http://www.mtc.ca.gov/funding/fms_intro.htm)

Pennsylvania Department of Transportation, Bicycle/Pedestrian Facilities Checklist: <http://www.bicyclecoalition.org/presentations/padotchecklist.htm>

City of San Francisco Transit First Policy [http://www.bicycle.sfgov.org/site/dptbike\\_index.asp?id=3179](http://www.bicycle.sfgov.org/site/dptbike_index.asp?id=3179)

Taking Steps: An assessment of Metropolitan Planning Organizations support for Bicycling & Walking: [http://www.bikewalk.org/assets/Reports/steps\\_booklet.pdf](http://www.bikewalk.org/assets/Reports/steps_booklet.pdf)

Thunderhead Alliance, Complete the Streets Report: <http://www.thunderheadalliance.org/doc/Thunderhead%20Complete%20Streets%20Report%2012-11-04.pdf>

Transportation Development Act and Training: <http://www.dot.ca.gov/hq/MassTrans/tdao.htm>

Valley Transportation Authority: Bicycle Technical Guidelines <http://www.vta.org/news/vtacmp/Bikes/Bike%20Tech%20Guidelines.pdf>

## 2. Project Manager Survey

1. Name:
2. Title:
3. Agency:
4. Project Name:
5. Project Type:
6. Please provide a brief project description:
7. Where was the project located?  
City:  
County:
8. What agency was the project sponsor?
9. Were there other project sponsors? If so, who?
10. What was the setting of the project?  
 a. Urban  b. Suburban  c. Rural
11. What was the total cost?
12. If this was a roadway project, on what type of road did it occur?  
 a. Interchange  
 b. State Highway  
 c. Local Road  
 d. Not a roadway project
- 12B. If this was a local road project, how was the local road classified in FHWA standards? As a(n):  
 a. Arterial - Provides the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control.  
 b. Collector - Provides a less highly developed level of service at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterials.  
 c. Local - Primarily provides access to land with little or no through movement.  
 d. None of the Above  
 e. Not a local road project
- 12C. If a road project, please provide details about its characteristics not related to bike and/or pedestrian facilities (*i.e.* - *number of lanes, street trees, sidewalk characteristics, posted speed limit, presence of signals, etc.*):
13. Under CEQA, what level of environmental review took place prior to the project's selection?  
 a. An Environmental Impact Statement or an Environmental Impact Report  
 b. A Notice of Exemption was filed due to categorical exemption or no possible significant effect  
 c. No environmental review took place

14. What processes were used to determine whether or not bike and/or pedestrian facilities should be included in the project (circle all that apply)?

- a. Review of Federal Highway Administration (FHWA) policies
- b. Review of state policies (cite: \_\_\_\_\_)
- c. Review of regional policies (cite: \_\_\_\_\_)
- d. Review of local policies (cite: \_\_\_\_\_)
- e. Public outreach/involvement (type(s): \_\_\_\_\_)
- f. None of the above

15. If other bike and/or pedestrian plans were reviewed during the project's planning process, what type were they (circle all that apply)?

- a. the Regional Bicycle Plan
- b. County bike plan(s)
- c. City bike plan(s)
- d. County pedestrian plan(s)
- e. City pedestrian plan(s)
- f. Other public bike and/or pedestrian documents
- g. No bike and/or pedestrian plans were reviewed during the project's planning process

16. Other than bike and pedestrian plans, what other types of plans were reviewed during this project's processes?

- a. City/County Master Plan(s)
- b. Regional Master Plan
- c. Park Plan(s)
- d. Trail Plan(s)
- e. Other: \_\_\_\_\_
- f. None

17. Specifically, what types of bike and/or pedestrian facilities were included in the project?

18. Were facilities included in the design but not in the final project? If so, what were they?

Why weren't they included?

19. Did nearby land uses (*i.e.* - *school, library, transit stop*) affect your bike and/or pedestrian planning decisions?

- a. Yes       b. No

20. If bike and/or pedestrian facilities were included in the planning process, who helped inform this decision? Please list below those that were involved in the decision-making. Other Public Agencies and Committees (*i.e.* - *Planning Department, Bicycle/Pedestrian Advisory Committees, etc.*):

Advocate/Interest Groups:

21. How did including bike and/or pedestrian facilities affect the project's budget? If bike and/or pedestrian facilities were *not* included due to cost, how much would they have increased the project's budget? Was this budget increase more or less than 20 percent of the project's total budget?

22. Do you have any other comments about the bike and pedestrian planning involved or not involved in this project? Also, do you have opinions about your agency's policies for considering bicycle and/or pedestrian facilities in projects?

23. Please provide us with your phone number and email address so we can contact you if we have additional questions.

Phone:

Email:

### 3. Questionnaire Results

Number	Project Type	Status	Type of Agency	Cost	Setting	Type of Road	Local Road FHWA Classification	Road/Station Characteristics	Environmental Review	Policies & Plans Reviewed	Public Involvement
1	Highway - HOV	In Construction	Transportation Authority	\$141,754,000	Urban	Interchange	Not a roadway project	4 interchanges in project, 3 are local roads with state highway	EIS/EIR		public env'tal meeting
2	Highway - HOV	In Construction	DOT	\$11,800,000	Urban	Interchange	Not a roadway project	no existing interchange	CatExempt or NegDec	State design guidelines	
3	Highway - Interchange	Design	Transportation Authority	\$27,250,000	Rural	State Highway	Arterial	Intersection of two 2-lane state highways at t-intersection.	EIS/EIR		public env'tal meeting
4	Highway - Interchange	In Construction	City	\$7,600,000	Urban	Interchange	Not a roadway project	clover interchange, state highway	CatExempt or NegDec		
5	Highway - Interchange	In Design	DOT	\$6,300,000	Urban	Interchange	None of the above		EIS/EIR		
6	Highway - Interchange	In Design	City	\$2,000,000	Urban	Interchange	Collector	Multi-lane roads with signals. AM peak problem	CatExempt or NegDec		public meetings
7	Highway - Interchange	In Design	DOT	\$30,000,000	Suburban	Interchange	Not a roadway project	Two state highways intersect	CatExempt or NegDec		too early
8	Highway - Interchange	Complete	DOT	\$75,455,000	Urban	Interchange	Arterial	freeway interchange	EIS/EIR	Bike Coord. Meetings	
9	Highway - Other Widening	In Design	DOT		Urban	State Highway	None of the above	Convert expressway to freeway	EIS/EIR	DD 64	public meetings, work with bike groups
10	Highway - Other Widening	In Design	DOT	\$9,000,000	Rural	State Highway	None of the above	add a lane for uphill traveling trucks	CatExempt or NegDec		public hearing
11	Highway - Other Widening	In Design	DOT	\$220,000,000	Urban	State Highway	Not a roadway project	Currently, there are three bores with two lanes each	EIS/EIR		public meetings
12	Local Roads - Other	Complete	DOT	\$12,000,000	Urban	Local Road	Local	Originally a freeway and parking underneath	EIS/EIR	Bay Trail	public meetings
13	Local Roads - Other	Need Construction funding	City	\$14,000,000	Urban	Local Road	Arterial	4 lane overcross	CatExempt or NegDec	City policy to include bike lanes in projects	
14	Local Roads - Other	Need Construction funding	City	\$14,000,000	Urban	Local Road	Arterial	4 lane overcross	CatExempt or NegDec	City policy to include bike lanes in projects	
15	Local Roads - Pavement	Out to Bid	City	\$85,000	Suburban	Local Road	Collector	2 lanes, 2 sidewalks, 25 mph, no signals	CatExempt or NegDec	ADA compliance, General Plan	Ad Hoc Committee
16	Local Roads - Pavement	Complete	City		Urban	Local Road	Collector	4 lanes, 2 sidewalks, no median, 35 mph, 2 signals	CatExempt or NegDec		
17	Local Roads - Pavement	Complete	County		Rural	Local Road	Collector	5 streets, 2 lanes, no sidewalks, 45 to 55 mph, 1,000 to 2,000 ADT	CatExempt or NegDec		
18	Local Roads - Pavement	Complete	Consultant		Urban	Local Road	Arterial	2 to 4 lanes, partial sidewalks, 25 to 30 mph, no signals, 2 - 3 miles	CatExempt or NegDec		

Number	Reviewed Regional Bike Plan	Reviewed County Bike Plan*	City bike/ped Plan Exists	Reviewed City Bike Plan	Reviewed County Pedestrian Plan**	Other Types of Plan Reviewed (ie - Park Plan, Trail Plan)	Type of bike/ped facilities included	Land Uses affected bike/ped facilities	Other public agencies consulted	Advocates involved	Comments
1	No	No	Yes	No	Yes	Trail Plan	continued bike lanes over 2 of the intersections. Lost bike lanes over 1 because made it into off-ramp. Marked crosswalks on 2 intersect.	No		Trail Group	Need different design standards where highways meet with local streets. Context Sensitive Design. This PM bicycles
2	No	No	Yes	Yes	No	None	Class III 5ft shoulder, added crosswalk/signals to fill gap on either side of interchange	No			PM is a bicyclist – “there should be more \$ allocated for bike/ped by making it a priority in Sacto.”
3	No	Yes	Yes	No	Yes	None	Bike Path in Design	No			Bicycle safety review performed to look at conflicts. Agency doesn't want to make facilities worse.
4	No	No	No	Yes	No	None	crosswalks and sidewalks, no bikelanes	No		Bike Advocate Group	This project started pre-DD64, so bike lanes are not included. City has bike/ped bridge planned north of interchange and parallel route needing more funds. Major challenge for small agencies is accumulating funds including bike/ped projects. Aware of DD 64
5	No	No	Yes	No	No	None	None	No			no bike lanes or sidewalks "because there are none on the other side of interchange"
6	No	No	Yes	No	Yes	None	Existing crosswalks & existing Class II bikeway (on 1 street)	No	Neighborhood Assoc.		Early in the process for this project.
7	No	No	No	Yes	No	None	none	No			Site has bicycle designations in County Plan & working on adjac. facility instead that hopes to be completed by project completed
8	No	No	Yes	Yes	No	Regional Master Plan	bike lanes eb, painted shoulder & bike lanes after overcross wb; sidewalks on southside of interchnng	No			
9	No	Yes	Yes	No	No	None	Type I to Type II facilities on service road parallel to highway. Funding not included in original project budget	No	policy advisory group	Bike Advocate Group, envt'l advocates	Bike path funds come from separate sources as road funds. Bike/ped funds higher on list than others so they don't lose attention.
10	No	No		No	No	None	existing bike path is being rebuilt, no additional amenities	No			Designer stated additional funding needed for new facilities
11	No	No	Yes	No	No	None	None, separate feasibility study for bike/ped crossover	No	Neighborhood Assoc.	BFBC, EBBC	
12	No	Yes	Yes	No	No	City/County Master Plan	Class II bike lanes on both sides with central median (10 ft), landscaping, 3 gateways	No	Community Aesthetics Committee		
13	No	No	Yes	No	Yes	None	bike lanes & possible ped facilities	No	BPAC, Business Assoc.		
14	No	No	Yes	Yes	No	None	bike lanes & possible ped facilities	No	BPAC, Business Assoc.		
15	No	No	Yes	No	No	City/County Master Plan	ADA ramps	Yes	Council Members	Local ADA Group, General Community	City is pretty good about including bike/ped facilities. It is included in the General Plan
16	No	No	No	No	No	None	5 foot bike lanes on both sides of street	Yes			Traffic engineer decided to put bike lanes because there was room. Marked crosswalks already exist at signals
17	No	No	No	No	No	City/County Master Plan	None	No			Project was five rural road overlays - maintenance with low ADT. Roads are 22 ft so there are restrictions.
18	No	No	Yes	No	No	Trail Plan	None	No			There is a parralel trail to the road. The town tries to included bike/ped on major streets with designated routes

\*all counties have bicycle plans

\*\*Contra Costa, San Francisco and Solano Counties have pedestrian plans

Number	Reviewed Regional Bike Plan	Reviewed County Bike Plan*	City bike/ped Plan Exists	Reviewed City Bike Plan	Reviewed County Pedestrian Plan**	Other Types of Plan Reviewed (ie - Park Plan, Trail Plan)	Type of bike/ped facilities included	Land Uses affected bike/ped facilities	Other public agencies consulted	Advocates involved	Comments
19	Local Roads - Pavement	Planning	County		Urban	Local Road	Arterial	6 to 8 lanes, discontinuous sidewalk, 45 mph, median	CatExempt or NegDec	County Tax Measure, Bicycle Guidelines	
20	Local Roads - Pavement	Complete	City	\$942,000	Urban	Local Road	Arterial	4 lanes, 2 sidewalks, landscaped median, street trees, bike lanes, 25 mph, ped scaled lighting	EIS/EIR	ADA compliance	Neighborhood Meetings
21	Local Roads - Pavement	Complete	City	\$135,000	Rural	Local Road	Arterial	2 lanes, continuous walking path, 35 mph no median	CatExempt or NegDec		
22	Local Roads - Pavement	Complete	City	\$152,000	Suburban	Local Road	Arterial	2 lanes, informal walking path, no median, left turn pockets, one signal	CatExempt or NegDec	State Traffic Manual	
23	Local Roads - Pavement	Planning	City	\$194,000	Urban	Local Road	Arterial	4 lanes, median, 31000 ADT, 30 mph, 5 signals	CatExempt or NegDec	ADA compliance	
24	Local Roads - Pavement	Planning	City	\$59,000	Urban	Local Road	Arterial	2 lanes, median, 45 mph, 2 signals at ends, no sidewalks or bike lanes	CatExempt or NegDec		
25	Local Roads - Pavement	Complete	City	\$271,000	Urban	Local Road	Arterial	4 lanes, median, 35 mph, 1 signal, sidewalks	CatExempt or NegDec		
26	Local Roads - Pavement	Complete	City	\$449,000	Suburban	Local Road	Arterial	2 lanes, no median, 40/45 mph, 2 signals	CatExempt or NegDec	ADA compliance	
27	Local Roads - Pavement	Complete	City	\$598,000	Urban	Local Road	Arterial	4 lanes, median, 35 mph	CatExempt or NegDec		
28	Local Roads - Pavement	Complete	City	\$753,000	Urban	Local Road	Arterial	2 lanes, no median, 35 mph, street trees, no signals	CatExempt or NegDec	ADA compliance	Neighborhood Meetings
29	Local Roads - Pavement	Complete	City	\$709,430	Suburban	Local Road	Collector	2 lanes, parking on both sides, bike lanes, no medians, two signals	CatExempt or NegDec	ADA compliance	
30	Local Roads - Pavement	Planning	City	\$203,000	Suburban	Local Road	Local	2 lanes, street trees, 25 mph, no median, stop signs	CatExempt or NegDec		
31	Local Roads - Pavement	In Construction	City	\$297,000	Urban	Local Road	Arterial	4 lanes, school at one end and half residential, sidewalks	EIS/EIR		public meetings
32	Local Roads - Pavement	Complete	City	\$75,000	Rural	Local Road	Arterial	no sidewalks, one crosswalk, 2 lane road	CatExempt or NegDec		
33	Local Roads - Pavement	Complete	City		Suburban	Local Road	Arterial	two 12 foot lanes to two 10 foot lanes	CatExempt or NegDec		
34	Local Roads - Pavement	In Construction	DOT		Urban	State Highway	Arterial	4 lanes, sidewalks, crosswalks	CatExempt or NegDec	ADA compliance	2 public meetings
35	Mass Transit - Buildings & Other	In Construction	Transit Agency		Suburban	Not a Roadway Project	None of the above	Poles, Shelters	CatExempt or NegDec	ADA compliance	

19	Yes	No	Yes	No	No	Other Plan	Undesignated bike use shoulder with specific areas at intersections.	No	BAC	Agency is proactive and positive for bike/ped planning
20	No	No	Yes	Yes	No	None	bike lanes (5 feet), ADA ramps	Yes	Plann. Comm.	
21	No	No	No	Yes	No	City/County Master Plan	bike lanes (5 feet) both sides	Yes	BAC, Town Council	This is on the main road through town. The town supports bike/ped facilities when funds are available
22	No	Yes	No	No	No	None	Repainted bike lanes in both directions, repainted crosswalks, repaint ped signal crosswalk	Yes	City Council, Trans. Subcommittee	Town includes facilities where shown on Bikeway Plan.
23	No	Yes	Yes	Yes	No	None	Marked Pedestrian Crossings, ADA ramps	No		Town has an active BAC and meets ADA requirements
24	No	No	No	No	No	None	Overlay on only oneseide of street. ADA ramps improved, 8 foot shoulder, replace 2 existing crosswalks, sidewalks are on perpendicular streets not on this street	No		City does not have bike/ped plans. Replace what exists and upgrade if mandated. This city could do more and doesn't consider these facilities during an overlay because funds aren't allocated to them.
25	No	No	Yes	No	No	None	ADA ramps if necessary, replaced existing marked crosswalks	No		Pedway around city, bikeway map, making ADA improvements
26	No	Yes	Yes	No	No	City/County Master Plan	Class III, 8 foot shoulder, ADA ramp, repainted existing crosswalks	Yes	Transplan - regional transportation planning committee	Agency processing advocate opinions that vary depending on group. There are both rec. and commuting bikers. Figuring best review of the many groups/users. Active bike/ped Planning Commissioner & so is manager - Manager thinks this helps when planning these facilities.
27	No	No	No	No	No	None	Only repainting crosswalks if existing	No		City has PBAC. "Doing a good job, do what they can."
28	No	No	No	No	No	None	New Crosswalk at T-intersection, narrower appearance of street	Yes	Neighborhood Assoc.	Consider bicycle and pedestrian facilities whenever possible and balancing two. Focusing more on ped facilities but it is difficult. Ped facilities slow traffic. Aging community that doesn't like change
29	No	No	No	Yes	No	City/County Master Plan	bikes lanes (5ft), apa ramps, 1 crosswalk	No		Bikeway map in General Plan. Add bike improvements when rehabing. Missing side links included in plan. Des. standards make sidewalks condition for new developments. Bike comm. vocal, ped not
30	Yes	No	No	No	No	City/County Master Plan	Existing bike lanes on 1 street repainted, other street NO. ADA ramps where necessary	No		Planning Director bikes everyday and aware of issues. Bike program linking city to lateral park & bike path. Annual sidewalk improve. project upgrades sidewalks near schools. New projects more than 27k must have sidewalks as condition of approval
31	No	No	Yes	Yes	No	None	Still in Design	Yes	Traffic & Safety Comm. appointed by city council	This project is to complete a gap in bike facilities. This PM implements bike plan. Need more funding.
32	No	Yes	No	No	No	None	one crosswalk	Yes		This was town \$, other didn't go through. Not designated this bike route so none were put in. existing crossing restriped.
33	No	No	Yes	Yes	No	None	bike lanes on both sides	No		Going to council with proposal to add bike lanes for traffic calming on arterials...inexpensive.
34	Yes	No	Yes	Yes	No	None	ADA compliance. Special request crosswalk striping in different cities	No	Bike Advocate Group	
35	No	No	NA	No	No	Other Plan	ADA ramps	Yes	Citizen Adv. Comm, VTA, MUNI, local cities	Agency focuses bike/ped facilities near one mode more than others

\*all counties have bicycle plans

## 4. Pennsylvania Department of Transportation Bicycle and Pedestrian Checklist

### 4A. Planning and Programming Checklist

PENNDOT BICYCLE/PEDESTRIAN FACILITIES CHECKLIST  
July 16, 2001

Project \_\_\_\_\_  
 SR \_\_\_\_\_ Segment \_\_\_\_\_ Offset \_\_\_\_\_  
 Team Members \_\_\_\_\_  
 \_\_\_\_\_ Date \_\_\_\_\_

Item	Considerations	Check	Comments
1. Consistency with Bicycle/Pedestrian Planning Documents	Is the transportation facility included in or related to bicycle and pedestrian facilities identified in a master plan? <ul style="list-style-type: none"> <li>• MPO/LDD bike/ped plan.</li> <li>• Local planning documents.</li> <li>• BicyclePA Routes.</li> <li>• Statewide Bicycle and Pedestrian Master Plan.</li> </ul>		
	Will the transportation facility provide continuity and linkages with existing or proposed bicycle/pedestrian facilities?		
	Is the transportation facility included in or related to a regional/local recreational plan? <ul style="list-style-type: none"> <li>• Rails-to-Trails.</li> <li>• Greenways.</li> <li>• Local, State, National Parks.</li> </ul>		
2. Existing and Future Usage	Do bicycle/pedestrian groups regularly use the transportation facility? <ul style="list-style-type: none"> <li>• Bike clubs.</li> <li>• Bicycle commuters.</li> <li>• Hiking, walking, or running clubs.</li> <li>• Skateboarding or rollerblading groups.</li> <li>• Bicycle touring groups.</li> <li>• General tourism/sightseeing.</li> </ul>		
	Does the existing transportation facility provide the only convenient transportation connection/linkage between land uses in the local area or region?		
	Could the transportation facility have favorable or unfavorable impacts upon the bike tourism/economy of an area/region? Consider: <ul style="list-style-type: none"> <li>• Local businesses</li> <li>• Chamber of Commerce.</li> <li>• Tourism Promotion Agencies.</li> </ul>		
	Existing and Future Usage (cont'd)	Are there physical or perceived impediments to bicycle or pedestrian use of the transportation facility?	
	Is there a higher than normal incidence of bicycle/pedestrian crashes in the area?		

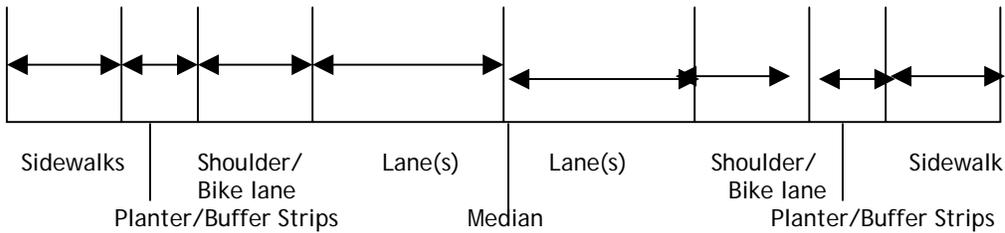
3. Safety	Is the transportation facility in a high-density land use area that has pedestrian/bike/motor vehicle traffic?		
	Is there a high amount of crossing activity at intersections? <ul style="list-style-type: none"> <li>• Midblock</li> <li>• Night crossing activity</li> <li>• Adequate lighting</li> </ul>		
	Would the transportation facility (and all users) benefit from widened or improved shoulders or improved markings (shoulders, crosswalks)?		
4. Community and Land Use	Is the transportation facility in a city, town, municipality or village?		
	Is the transportation facility within/near a community or neighborhood?		
	Is the transportation facility the "main street" in a community or town?		
	Could bicycle or pedestrian usage impact economic development?		
	Are sidewalks needed in the area? <ul style="list-style-type: none"> <li>• Presence of worn paths along the facility.</li> <li>• Adjacent land uses generate pedestrian traffic.</li> <li>• Possible linkages/continuity with other pedestrian facilities.</li> </ul>		
	Is the transportation facility a link between complementary land uses? <ul style="list-style-type: none"> <li>• Residential and commercial.</li> <li>• Residential and business.</li> </ul>		
	Is the transportation facility in close proximity to hospitals or elderly care facilities, or the residences or businesses of persons with disabilities?		
	Is the transportation facility within or near educational institutions?		
	Is the transportation facility in close proximity to transit stops or multi-modal centers (including airports, rail stations, intercity bus terminals, and water ports)?		
5. Transit	Is the transportation facility on a transit route?		
	Is the transportation facility near park-and-ride lots?		
	Are there existing or proposed bicycle racks, shelters or parking available? Are there bike racks on buses?		
6. Traffic Calming	Is the community considering traffic calming as a possible solution to speeding and cut-through traffic?		

## 4B. Scoping Checklist

July 16, 2001

Project \_\_\_\_\_  
 SR \_\_\_\_\_ Segment \_\_\_\_\_ Offset \_\_\_\_\_  
 Team Members \_\_\_\_\_  
 \_\_\_\_\_ Date \_\_\_\_\_

### Right-of-Way Needs Diagram



Element	Number Required	Width Required	Total Width
Sidewalks			
Buffer Strips			
Shoulders			
Lanes			
Median			
Total Right-of-Way Required			

### Pedestrian Facilities

Item	Considerations	Check	Comments
1. Sidewalks	Appropriate width: <ul style="list-style-type: none"> <li>• 1.5 m - 2.1 m (5'-7') for residential, commercial, and industrial.</li> <li>• 2.5 m (8') minimum for high use areas/CBD.</li> <li>• 2.1 m (7') width for bridges.</li> <li>• 0.6 m (2') shy distance for vertical barriers.</li> <li>• 1.2 m - 2.1m barrier separating traffic from pedestrians on bridges.</li> </ul>		
	Applicability of planter or buffer strips.		
Sidewalks (cont'd)	Connectivity with other pedestrian facilities.		
	Proximity to transit bike/ped generators: <ul style="list-style-type: none"> <li>• Transit stops.</li> <li>• Schools.</li> <li>• Park &amp; rides</li> <li>• Nursing homes</li> <li>• Offices</li> <li>• Business environments</li> <li>• Athletic fields</li> <li>• Recreation facilities</li> </ul>		

	Observe pedestrian patterns for special needs such as: <ul style="list-style-type: none"> <li>• Midblock crossings.</li> <li>• Islands and refuges.</li> <li>• Night crossing activity.</li> </ul>		
	ADA needs and concerns.		
2. Signalized Intersections	Crosswalks provided and marked.		
	Intersection bike/ped crash history reviewed.		
	Is there a dedicated pedestrian phase, if so how long?		
	Crossing distance is minimized.		
	Ped heads and ped pushbuttons provided.		
	ADA needs and concerns.		
3. Traffic Calming	Is the community considering traffic calming as a means to curb speeding and cut-through traffic?		

### Bicycle Facilities

Item	Considerations	Check	Comments
1. Bikelanes/Paved Shoulders	Appropriate width of bike lane: <ul style="list-style-type: none"> <li>• 1.5m (5') adjacent to curb.</li> <li>• 1.8m (6') standard</li> </ul>		
	Connectivity with other facilities. <ul style="list-style-type: none"> <li>• Bike lanes</li> <li>• shared use trails</li> <li>• trail heads/parking areas</li> </ul>		
	Maximize width of shoulders and provide appropriate markings as per <i>AASHTO Green Book</i> .		
	3 m (10') vertical clearance from fixed obstructions (excluding road signs).		
	Angle and smoothness of railroad crossings. Avoid angles of incidence of <70 degrees or redesign		
	Bridge accesses provided/pinch points avoided.		
	Parking parallel or angled.		
2. Signalized Intersections	Inventory existing bicycle facilities.		
	Intersection bike/ped crash history reviewed.		
	Crossing distance is minimized.		
	Considerations for bikes making turns.		
	Bike detection.		
	Elevated push buttons		
3. Traffic Calming	Is the community considering traffic calming as a means to curb speeding and cut-through traffic?		

#### 4C. Final Design Checklist

July 16, 2001

Project \_\_\_\_\_  
 SR \_\_\_\_\_ Segment \_\_\_\_\_ Offset \_\_\_\_\_  
 Team Members \_\_\_\_\_  
 \_\_\_\_\_ Date \_\_\_\_\_

#### Pedestrian Facilities

Item	Considerations	Check	Comments
1. Sidewalks and Signalized Intersections	Crosswalks are at least 3 m (10') wide.		
	Crosswalks are prominently marked using continental style markings.		
	Pedestrian signals are provided.		
	Pushbuttons are provided and accessible.		
	Minimize crossing distance.		
	Maximize pedestrian visibility at crossings.		
	Coordination of turn phases with walk/don't walk signs.		
	Proper lighting type and placement.		
2. ADA Requirements	Pushbuttons accessible.		
	Pushbutton height 1.0 m - 1.1m (3.5'-4.0').		
	Large pushbuttons used.		
	1.5m (5') recommended passage (sidewalks).		
	5% maximum grade recommended (sidewalks).		
	2% cross-slope maximum		
	Curb cuts include "truncated dome" texturing along lower 24 inches.		
	2 curb cuts per corner at intersections.		
	Curb cuts flush with street surface 0.6 cm. (1/4") tolerance		
	Running slope of new curb cuts 1 in 12 max.		
	Longer signal cycles.		
	Audible crossing signals.		
	Level landings on perpendicular curb ramps.		
	Proper head/shoulder clearance for visually impaired.		
	Coordinate utilities with ADA requirements.		
Proper lighting.			
Analyze landscaping growth potential for future obstructions.			
ADA Requirements (cont'd)	Any conflicts with minimal distance that should be included in the project.		
	Coordinate and minimize signage conflicts.		
3. Traffic Calming	Consider traffic calming as a means to improve pedestrian and general traffic safety.		

## Bicycle Facilities

Item	Considerations	Check	Comments
1. Bikelanes/ Bikeways	Bicycle safe grates, RC-34, Sheet 3 of 9.		
	Manhole covers flush with roadway surface.		
	Inlets flush with roadway surface.		
	Rumble strips type and placement.		
	Driveway aprons.		
	Conflicts eliminated with: <ul style="list-style-type: none"> <li>• Turns at intersections.</li> <li>• Through movements.</li> <li>• Bicycle and pedestrian conflicts.</li> <li>• Parked cars, angled vs. parallel.</li> <li>• Driveway aprons.</li> </ul>		
2. Signage	3 m (10') vertical clearance from signs and structures.		
	"Share the Road Signs".		
	"Wrong Way Signs".		
	Lane stenciling.		
	Bike lane designation signs.		
	No parking signs.		
	Bike lane striped.		
	Transition from bike lane to bikeway.		
	Consistent width on roadways, bridges, and intersections.		
	Overlap bike lane/shoulder stripe over pavement joints.		
Meet or exceed AASHTO criteria.			
3. Traffic Calming	Consider traffic calming as a means to improve pedestrian and general traffic safety.		

## Credits

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*San Mateo County*

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*State Business, Transportation and  
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