Santa Cruz County Regional Transportation Commission's

Interagency Technical Advisory Committee (ITAC)

AGENDA
Thursday, June 20, 2013
1:30 p.m.

RTC Conference Room
1523 Pacific Avenue, Santa Cruz, CA

1. Call to Order

2. Introductions

3. Oral communications

   The Committee will receive oral communications during this time on items not on today's agenda. Presentations must be within the jurisdiction of the Committee, and may be limited in time at the discretion of the Chair. Committee members will not take action or respond immediately to any Oral Communications presented, but may choose to follow up at a later time, either individually, or on a subsequent Committee agenda.

4. Additions or deletions to consent and regular agendas

CONSENT AGENDA

All items appearing on the consent agenda are considered to be minor or non-controversial and will be acted upon in one motion if no member of the Committee or public wishes an item be removed and discussed on the regular agenda. Members of the Committee may raise questions, seek clarification or add directions to Consent Agenda items without removing the item from the Consent Agenda as long as no other committee member objects to the change.

5. Approve Minutes of the May 16, 2013 ITAC meeting - *Page 3*

REGULAR AGENDA

6. Status of ongoing transportation projects, programs, studies and planning documents - Verbal updates from project sponsors

7. Provide input on contents of the Monterey Bay Area Complete Streets Guidebook - *Page 6*
   a. Staff report, Grace Blakeslee

8. Provide input on Sustainable Communities Strategy Scenarios - *Page 86*
   a. Presentation from AMBAG, Anais Schenk
   b. Alternative Sustainable Communities Strategy (SCS) Scenarios

9. Provide input on Scenario Planning – STARS Transportation Investment Analysis - *Page 91*
   a. Staff Report, Ginger Dykaar
   b. STARS Qualitative Analysis of Transportation Investments in Alternative Scenarios

10. Receive 2014 State Transportation Improvement Program (STIP) update
    a. Verbal update, Rachel Moriconi

11. Next Meeting: Staff recommends that the ITAC move the next ITAC meeting to 1:30pm on August 22, 2013 (one week later than the regular schedule of August 15, 2013). The meeting will be held in the SCCRTC Conference Room, 1523 Pacific Avenue, Santa Cruz, CA. There are no RTC board or committee meetings in July.

HOW TO REACH US: *Santa Cruz County Regional Transportation Commission*
1523 Pacific Avenue, Santa Cruz, CA 95060; phone: (831) 460-3200 / fax (831) 460-3215
email: info@sccrtc.org / website: www.sccrtc.org

AGENDAS ONLINE: *To receive email notification when the Committee meeting agenda packets are posted on our website, please call (831) 460-3200 or email rmoriconi@sccrtc.org to subscribe.*

ACCOMMODATIONS FOR PEOPLE WITH DISABILITIES: *The Santa Cruz County Regional Transportation Commission does not discriminate on the basis of disability and no person shall, by reason of a disability, be denied the benefits of its services, programs, or activities. This meeting location is an accessible facility. If you wish to attend this meeting and require special assistance in order to participate, please contact RTC staff at 460-3200 (CRS 800/735-2929) at least three working days in advance of this meeting to make arrangements. People with disabilities may request a copy of the agenda in an alternative format. As a courtesy to those person affected, Please attend the meeting smoke and scent-free.*

SERVICIOS DE TRADUCCIÓN/ TRANSLATION SERVICES: *Si gusta estar presente o participar en esta junta de la Comisión Regional de Transporte del condado de Santa Cruz y necesita información o servicios de traducción al español por favor llame por lo menos con tres días laborables de anticipo al (831) 460-3200 para hacer los arreglos necesarios.* (*Spanish language translation is available on an as needed basis. Please make advance arrangements at least three days in advance by calling (831) 460-3200).*

S:\ITAC\2013\June2013\June13ITACagenda.docx

Santa Cruz County
Regional Transportation Commission
Interagency Technical Advisory Committee (ITAC)

DRAFT MINUTES

Thursday, May 16, 2013
1:30 p.m.
Watsonville Main Library Meeting Room
275 Main St., Suite 100, 2nd Floor
Watsonville, CA

ITAC MEMBERS PRESENT

Heather Adamson, AMBAG
Taylor Bateman, City of Scotts Valley Planning and Public Works Proxy
Teresa Buika, UCSC
Erich Friedrich, Santa Cruz METRO
Murray Fontes, City of Watsonville Planning Proxy
Maria Esther Rodriguez, City of Watsonville Public Works
Chris Schneiter, City of Santa Cruz Public Works and Planning Proxy
Steve Wiesner, County Public Works

STAFF PRESENT
Ginger Dykaar
Rachel Moriconi

OTHERS PRESENT
Anais Schenk, AMBAG - alternate

---

1. Call to Order – Chair Chris Schneiter called the meeting to order at 1:40pm.

2. Introductions – Self introductions were made.

3. Oral communications – Members reported that the Highway Safety Improvement Program webinar recently hosted by Caltrans emphasized that this grant cycle will be data driven, based on crash reduction.

4. Additions to consent and regular agendas – Information about road maintenance in Santa Cruz County was distributed for Item 8.

CONSENT AGENDA (Bateman/Buika) approved

5. Approved minutes of the April 18, 2013 ITAC meeting

REGULAR AGENDA

6. Status of ongoing transportation projects, programs, studies and planning documents - Verbal updates from project sponsors

Watsonville: Maria Rodriguez and Murray Fontes reported that the City is working on design for several projects and submitting grant applications.

RTC: Rachel Moriconi reported that construction continues on the Highway 1 Soquel-Morrissey Auxiliary Lanes project. The draft Environmental Impact Report for the Monterey Bay Sanctuary Scenic Trail (MBSST) will be released soon. Bids are due for the rail line structures construction.

Santa Cruz METRO: Erich Friedrich reported that new summer service starts June 6 and includes new schedules for Big Basin. Work on the new CNG fueling station and operations building continues. The kick-off meeting for the short range transit plan (SRTP) is May 17.

County of Santa Cruz: Steve Wiesner reported that construction on Green Valley Road will be completed in a couple of weeks. Storm damage repairs on several roads, including Empire Grade, Alba Road, and Eureka Canyon continue. Construction of three bridge deck repair projects will begin within the next two months. The Corralitos Road at Bradley Elementary School project is out to bid, with award expected by the end of June. Sidewalk repairs are being done on lower 41st Avenue. Sewer repair projects are underway on Soquel, Minto Road and Meidl Avenue; and the Mid-Peninsula Housing project at Minto Road is under construction.

Scotts Valley: Taylor Bateman reported that the light at the Scotts Valley Drive/Quarry intersection is being reset.

Santa Cruz: Chris Schneiter reported that the Safe Routes to Schools construction project near Gault Elementary School is half way done. The cold-in-place recycling pavement projects on Front, River, and Cathcart streets are done, with final striping completed May 15. Installation of EV charging stations is also underway.

Watsonville: Maria Rodriguez encouraged ITAC members to attend the APWA BBQ next week in Corralitos.

7. Scenario Planning for 2014 Transportation Plans

Anais Schenk and Ginger Dykaar made a joint presentation on the sustainable communities strategy (SCS) scenarios and long-range transportation plan updates. They provided an overview of how the scenario planning will be used to select projects for the constrained Regional Transportation Plan (RTP) and Metropolitan Transportation Plan (MTP) project list and provided a summary of each of the scenarios being evaluated. AMBAG staff emphasized that implementation of goals and the final project list may differ between each county. One function of the SCS is to show the consequences of not advancing certain types of projects. Staff noted that the majority of funding is dedicated to certain types of projects and that in all scenarios those dedicated funds will continue to go to those functions (e.g. existing/status quo roadway

maintenance, transit service), with the scenarios focused on discretionary/more flexible funding.

ITAC members asked questions about how specific types of projects, especially those with multi-modal components (e.g. Freedom Boulevard roadway rehabilitation that includes some bike, transit, sidewalk modifications/enhancements) would fit into each scenario. Teresa Buika expressed concern that some scenarios are not relevant to Santa Cruz County/focused on Monterey County/Highway 101 corridor. It was suggested to include a scenario with a higher level focus such as jobs, economic diversity and access/connection to Santa Clara County. Members suggested including certain types of projects under specific scenarios. Members identified challenges associated with advancing some projects: for instance Bus Rapid Transit and complete streets projects are sometimes restricted by roadway right-of-way. Some jurisdictions are working on requiring set backs from the roadway during development so that in the future additional right-of-way could be acquired for sidewalks and bicycle lanes, but this is oftentimes opposed by business owners. It was noted that bus preemption and signal synchronization are mutually exclusive.

AMBAG will be refining the scenarios based on input received. Heather Adamson noted that there are/have been several public workshops on the scenarios and that there is an online survey being used to receive additional public input. The RTC will receive a presentation on the scenarios and types of projects in each scenario at its June 26 Policy Workshop.

8. Local Streets and Roads Needs

Rachel Moriconi provided information from the 2012 California Statewide Local Streets and Roads Needs Assessment, which shows Santa Cruz County roads ranked among the most severely deteriorated in the state. Consistent with discussions at past ITAC meetings, staff recommended that public works departments work collectively to develop a summary report on the condition of and funding needs for the local road system. She requested updates to a spreadsheet with information on pavement conditions, annual budgets, and the cost to address the maintenance backlog. Attendees agreed to provide updated information by June 3. Staff will work with City of Santa Cruz Public Works staff to develop a summary report of the cost to operate and maintain the local road network. Santa Cruz METRO staff indicated interest in providing similar information on the condition of transit facilities/vehicles.

The meeting adjourned at 3:15 p.m. The next ITAC meeting is scheduled for **June 20, 2013** at **1:30 PM** at the RTC Conference Room in Santa Cruz.

Minutes prepared by: Rachel Moriconi

\\Rtcserv2\shared\ITAC\2013\May2013\May13ITACmin.doc

AGENDA: June 20, 2013

TO: Interagency Technical Advisory Committee

FROM: Grace Blakeslee, Transportation Planner

RE: Development of Monterey Bay Area Complete Streets Guidelines

---

RECOMMENDATIONS

Staff requests that the Interagency Technical Advisory Committee provide input on the contents of the Monterey Bay Area Complete Streets Guidelines.

BACKGROUND

A complete streets analysis is part of the development of the 2014 Santa Cruz County Regional Transportation Plan and Association of Monterey Bay Area Governments (AMBAG) sustainable communities strategy. The complete streets analysis consists of both a needs assessment and development of complete streets guidelines. Complete streets is a key strategy for reducing greenhouse emissions and promoting healthier communities by encouraging active transportation. Complete street guidelines will identify strategies for transitioning auto-oriented streets into complete streets and guidance for incorporating complete streets policies into circulation elements of local jurisdictions' general plans as required by AB1358. Results of the complete streets assessment were presented to the Interagency Technical Advisory Committee at the April meeting.

DISCUSSION

Development of the Complete Streets Guidelines

The Monterey Bay Area Complete Streets Guidelines are being developed as a collaborative effort amongst the Santa Cruz County Regional Transportation Commission, Transportation Agency for Monterey County, and the San Benito Council of Governments, in coordination with the Association of Monterey Bay Area Governments. The guidelines are intended to outline a strategy for transitioning auto oriented streets to complete streets, particularly in areas that have been identified for growth and more intensified use. The strategies articulated in the Monterey Bay Area Complete Streets Guidelines will be incorporated into the sustainable communities strategy.

The Monterey Bay Area Complete Streets Guidelines are intended to achieve the following goals:

- Serve as a resource for implementing AB1358;

- Improve safety, especially for the most vulnerable users;
- Better integrate land use and transportation to reduce vehicle miles traveled;
- Establish a collaborative process for integrating planning and designing streets;
- Identify types of improvements needed to accommodate growth and address congestion in areas of compact development; and,
- Understand the impacts of implementing complete streets policies.

The goals for the guidelines were established based on input from surveys of jurisdictions, feedback received from the public and stakeholder during the development of draft regional transportation plan goals and policies, and in response to state requirements for greenhouse gas reduction and general plan policies supporting complete streets.

Complete Streets Guidelines Rough Draft

Staff representing the three regional transportation planning agencies for Santa Cruz, Monterey, and San Benito counties has developed a rough draft for the Monterey Bay Area Complete Streets Guidelines (Attachment 1). The rough draft incorporates work completed on similar and successful efforts across the United States. At this time, not all of the guidelines' content has been developed and some areas are more developed than others.

Staff is proposing the following chapters be included in the Monterey Bay Area Complete Streets Guidelines:

- Chapter 1: Vision, Goals and Policy provides guidance and examples for achieving AB 1358.
- Chapter 2: Performance Measures & Targets - provides tools to measure the effectiveness of complete streets policy.
- Chapter 3: Complete Streets Action Plan - provides context for how Complete Streets should be integrated into current systems and procedures
- Chapter 4: Complete Street Types - explains how to develop projects based on land use context and street functional classifications.
- Chapter 5: Design Treatments - gives example design treatments for complete streets
- Chapter 6: Projects and Implementation - Recommends how to address complete streets from planning and design to implementation.
- Chapter 7: Education, Enforcement and Encouragement - Examples of programs that enhance or are improved by complete streets projects
- Chapter 8: Talking about Complete Streets - Strategies for communicating the benefits of complete streets and engage the community

RTC staff requests that the Interagency Technical Advisory Committee provide input on the contents of the Monterey Bay Area Complete Streets Guidelines (Attachment 1). RTC staff is requesting input from stakeholders at

this early stage in the development of the guidelines to ensure that the content reflects the opportunities and issues unique to the Monterey Bay Area. The draft complete streets guidelines will be brought back to the Interagency Technical Advisory Committee at the August meeting.

SUMMARY

The Monterey Bay Area Complete Streets Guidelines are being developed as a collaborative effort amongst the Santa Cruz County Regional Transportation Commission, Transportation Agency for Monterey County, and the San Benito Council of Governments, in coordination with the Association of Monterey Bay Area Governments. Complete street guidelines will identify strategies for transitioning auto-oriented streets into complete streets and guidance for incorporating complete streets policies into circulation elements of local jurisdictions' general plans as required by AB1358. RTC staff is requesting input from stakeholders at this early stage in the development of the guidelines to ensure that the content reflects the opportunities and issues unique to the Monterey Bay Area. The Interagency Technical Advisory Committee will be asked to consider the Draft Monterey Bay Area Complete Streets Guidelines at the August meeting.

Attachments:

1. Rough Draft Complete Streets Guidelines

S:\RTP\2014\StaffReports\ITAC\2013\ITAC0620\CompleteStreetsGuidelines_roughdraft.docx

Transportation Agency for Monterey County, Santa Cruz County Regional Transportation Commission, San Benito County Council of Governments, in coordination with the Association of Monterey Bay Area Governments

MONTEREY BAY AREA Complete Street Guidelines

DRAFT

6/1/2013

Funded through the Strategic Growth Council and completed in support of the Sustainable Communities for the Monterey Bay Area including the counties of Monterey, Santa Cruz, and San Benito.

Contents

APPENDICES

EXECUTIVE SUMMARY

To be developed.

INTRODUCTION

Purpose

The purpose of the Monterey Bay Area Complete Streets Guidelines is to provide a procedure, from planning to implementation, for developing streets in the Monterey Bay Area including the counties of Monterey, Santa Cruz, and San Benito that meet the needs of all users including non-drivers of all ages and abilities, and provide the best possible streets to accommodate growth. The policy and recommendations herein can be adopted by jurisdictions in order to comply with Complete Streets legislation AB 1358, to incorporate regional transportation funding recommendations for ensuring all users are considered in the planning process, to reduce vehicle miles traveled consistent with SB 375, and achieve objectives in local jurisdiction specific Climate Action Plans.

What are Complete Streets?

- "Complete streets are roadways designed to safely and comfortably accommodate all users, including, but not limited to motorists, cyclists, pedestrians, transit and school bus riders, delivery and service personnel, freight haulers, and emergency responders. "All users" includes people of all ages and abilities".
- Complete streets do not prescribe "one size fits all" facilities and does not necessarily mean that each facility overtly provides for each user in its own area.

Why Complete Streets?

- Different travelers may expect different things from a street. A street design solution that works well for a motorist, for example, may or may not work well for a pedestrian or a bicyclist.
- Growing population but limited opportunities to increase roadway capacity through physical expansion.
- Recognition that there is a positive correlation between a diversified transportation network and healthier communities, stronger economy and cleaner environment.
- Need to improve safety, especially for the most vulnerable users.
- Cost of transportation increasing as fuel prices increase and limited alternatives to the automobile.
    - The number of non-drivers is increasing as the baby boom population ages there could be a higher demand for mass transit and paratransit while generation Y is choosing more and more to take alternative transportation (many moving into cities where more transportation options are available) and see the value in using travel for personal or work time instead of driving.

Goals of the Complete Streets Guidelines

- Serve as a resource for implementing AB1358
- Identify types of improvements needed to accommodate growth and address congestion in areas of compact development
- Improve safety, especially for the most vulnerable users
- Better integrate land use and transportation to reduce vehicle miles traveled
- Establish a collaborative process for integrating planning and designing streets
- Understand the impacts on communities of implement complete streets policies

How to Use the Guidelines

1. Guidance and examples for achieving AB 1358 (Chapter 1: Vision , Goals and Policy)
2. Measure the effectiveness of complete streets policy (Chapter 2: Performance Measures & Targets)
3. Provide context for how Complete Streets can affect current systems and procedures (Chapter 3: Complete Streets Action Plan)
4. Develop projects based on land use context and street functional classifications (Chapter 4: Complete Street Types)
5. Design treatments for complete streets (Chapter 5: Design Treatments)
6. Address complete streets from planning and design to implementation (Chapter 6: Projects and Implementation)
7. Programs that enhance or are improved by complete streets projects (Chapter 7: Education, Enforcement and Encouragement)
8. Communicate the benefits of complete streets and engage the community (Chapter 8: Talking about Complete Streets)

Background

- California Complete Streets Legislation (AB 1358) passed in 2008. The bill requires that any major revision of a jurisdiction's General Plan include modification to the circulation element to "plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads and highways".
- In 2011, the Association of Monterey Bay Area Governments (AMBAG), which services as the Metropolitan Planning Organization for the three county region of Monterey, Santa Cruz and San Benito Counties, in coordination with the three Regional Transportation Planning Agencies (Monterey, Santa Cruz and San Benito Counties) received a grant from the Strategic Growth Council to conduct a complete streets assessment and develop complete streets guidelines specific to the Monterey Bay Area.

Regional Complete Streets Needs Assessment

- In coordination with local jurisdiction planning departments, AMBAG, identified areas that are expected to accommodate future growth and defined land use place types.
- Regional Transportation Agency staff worked with key stakeholders from each jurisdiction to develop criteria for evaluating streets for their ability to serve all users.

- A regional complete streets needs assessment was completed in April 2013, in coordination with local jurisdictions, regional transportation planning agencies and AMBAG. The study focused on both the need for Complete Streets policy in the county as well as infrastructure improvements.
- Regional Transportation Agency staff developed complete streets project list for addressing all users in key locations throughout the Monterey Bay Area to be considered for the planning horizons 2020 and 2035.

Adoption

This manual is suitable for adoption by local and regional agencies to guide planning and design of streets. This is a necessary first step in properly incorporating the provisions of the street manual. However, agencies will have to take additional steps to ensure that their implementation practices are modified to reflect the recommendations of this manual. Local agencies will likely need to review their stepwise approach to street design through all stages of the process, from advance planning through preliminary design and construction. Critical points will include project identification, preliminary cost estimates for funding, and a multi-disciplinary approach to preparation of design drawings (LA Living Streets).

Chapter 1: GENERAL PLAN VISION, GOALS & POLICIES

Purpose

The California Complete Streets Act (Assembly Bill 1358) requires that jurisdictions incorporate complete streets policies in the circulation element of the general plan during "any substantive revision" (California Government Code section 65302(b)(2). The most effective complete streets policies are present in more than one element of the general plan.

This chapter of the Complete Streets Guidelines provides suggestions for how communities can meet Assembly Bill 1358 requirements. Guidance for developing a vision statement and circulation element and land use element goals is provided.

Vision

The vision statement of a general plan encapsulates community values and desires and provides inspiration for goals and policies. Developing a vision statement that considers complete streets is often a precursor to adopting complete street goals and policies. A vision statement may be included in the circulation element of the general plan focusing entirely on the community's vision, or may appear at the beginning of the circulation element. Vision statements are generally developed as a consensus-driven, collaborative community engagement process. When developing a vision statement the following questions should be considered:

- "What are the benefits of adopting a Complete Streets policy in our community?"
- "What reason for adoption (such as health, safety or providing transportation choice) will consistently rally support from the community, its transportation professionals and its leaders?"
- "What is our vision for Complete Streets?"

The model vision language below is provided not to prescribe what a community's vision should be, but to offer an example of a detailed vision and demonstrate the range of goals that can be considered in setting out a vision statement.

Sample Transportation Vision Statement

The community of [Jurisdiction] envisions a safe, balanced and environmentally-sensitive multimodal transportation system that supports greater social interaction, facilitates the movement of people and goods, and encourages active living, mobility independence, and convenient access to goods and services for all users including but not limited to pedestrians, bicyclists, children, seniors, persons with disabilities, motorists, movers of commercial goods and transit.

Goals & Policies

Communities may include the entire sample complete streets policy in the general plan circulation element as a complete policy package, or may selectively adopt specific objectives or policies. Communities are encouraged to tailor the policy and implementation measures to local needs, concerns, and conditions, and to identify the local agency or department responsible for implementation. Most circulation elements already include goals, objectives, and policies addressing the needs of motorists and movers of commercial goods, so the package below focuses on other types of users. In tailoring the package for your jurisdiction you may wish to include the entire package as a separate policy set with cross-references to other pre-existing provisions of the circulation element, or you may choose to use some or all of the goals, objectives, and policies below for amendments to existing provisions.

Sample general plan goals and policies are shown in Appendix A of this Guidebook.

Chapter 2: COMPLETE STREET PERFORMANCE MEASURES

Purpose

Performance measurement is an important tool in the implementation of complete streets. Performance measures can inform planners, decision makers and public how effective complete streets policies and projects are at reaching community goals. Performance measures are particularly important in today's environment where there is strong competition for limited transportation funds.

The Complete Streets Guidelines provide a list of relevant performance measures for evaluating the effectiveness of complete street policies and projects. The suggested performance measures may be used in several different ways to facilitate the implementation of complete streets policies. First, performance measures can be used for needs assessment: to identify problems in the system and to assess their relative severity.) Second, performance measures can be used to rank projects for funding in the programming process. Third, performance measures can be used in impact assessments. In this application, the probable impact of a proposed development project on the performance of the street system is projected, and the result is used as the basis for impact fees or other exactions, such as requirements to provide bicycle and pedestrian facilities. Fourth, performance measures can be used to evaluate the effects of a policy or project on the performance of the system and to assess whether it achieved its goal. (McCann, Barbara and Rynne, Suzanne. 2010. Complete Streets: Best Policy and Implementation Practices. *American Planning Association, 559, 54-55.)*

Table 1 lists performance measures that can be used to gauge the effectiveness of five complete streets policy objectives (safety, health, access, economic benefit and equity). These suggested performance measures support the goals of the Metropolitan Transportation Plan and the Regional Transportation Plans for Monterey, Santa Cruz and San Benito Counties.

Table 1 Complete Streets Performance Measures

	Objective	Measure/Source
Safety	Reduce collisions involving bicycles and pedestrians	Collisions, SWITRS
	Improve speed suitability through street design	Number of bicycle routes on low speed streets
	Increase the number of local traffic calming plans	Number of traffic calming plans adopted by local jurisdictions
	Decrease the number of citations for jaywalking, reckless behavior or missing helmet (if under 18 years)	Pedestrian and bicycle observation surveys
	Reduce the number of bicycle and pedestrian hazards	Number of bicycle and pedestrian facilities repaired
Health	Increase the percent of people who walk, bike and take transit	American Community Survey or local survey
	Increase the number of students walking, bicycling or taking transit to school	Bicycle and pedestrian counts and surveys
	Increase the number of events that promote alternative transportation	Number of events held in Santa Cruz County that promote alternative transportation
Access	Increase number of households within 1/4 mile of transit stop	GIS, Census Data
	Increase the percent of people who walk, bike and take transit	American Community Survey
	Increase transit headways on high quality transit corridors	Transit Agency
	Improve the quality of walk, bike, and transit trips	MMLOS or QOS
	Increase the % of population within a 30 minute walk, bike or transit trip of key destinations	GIS Street Network and Place Type Designations
Economic Benefit	*To be determined after Economic Framework Analysis for Complete Streets is done*	
Equity	Increase the number of improvements completed near key destinations for transportation disadvantaged populations such as near schools, hospitals, transit stops	GIS Project Location and Key Destinations for Transportation Disadvantaged, Census Data

Level of Service

The traditional performance measure for street design is level of service as calculated based on the current version of the Highway Capacity Manual (HCM) published by the Transportation Research Board. This measure, in all its forms, is a function of the ratio of the number of cars on a road to the road's carrying capacity, and it is expressed by assumed delay for each vehicle. Historically, it has been used to

calculate how much road capacity is needed to serve a given volume of vehicles, and it is directly tied to the goal of reducing congestion and delay. In most common use, LOS A represents free-flowing automobile traffic, and F represents complete congestion. Although it has the advantage of being highly standardized and widely used, traditional vehicular LOS is not a relevant measure as does not account for all users of a roadway nor tradeoffs between different modes.

The revised version of the Highway Capacity Manual, adopted in 2010, includes methods for measuring the quality of travel for bicyclists and pedestrians, including comfort and sense of safety. In the absence of establish standards, communities have been developing their own methods for measuring bicycle, pedestrian, and transit LOS. In general, bicycle, pedestrian, and transit LOS measures tend to be more complex than vehicle LOS; they attempt to measure the quality of the travel experience rather than just throughput.

One of the common issues with using MMLOS is that it requires substantial data that may not be regularly or reliably collected. If data does not exist for the study area, new data must be collected in order to proceed. This sort of data collection can be time intensive and expensive. Some communities are not pursuing new LOS measures, instead choosing more qualitative measures of success. The Santa Cruz County Regional Transportation Commission recently tested a Quality of Service (QOS) measure to evaluate how transportation investments affected the quality and convenience of bicycle, pedestrian and transit trips (Appendix C). Also, the performance measures recommended in Table 1 provide a range of options for evaluating the effectiveness of complete streets policies and projects while recognizing limited data and resources available to project sponsors.

Chapter 3: COMPLETE STREETS ACTION PLAN

Action Plan

Implementing complete streets begins in policy develop planning and is continued into planning, project delivery and maintenance and operations. This requires collaboration amongst several departments and stakeholders. A variety of processes, manuals, standards and guidelines outline the requirements for achieving department or function specific tasks such as planning policy and project delivery. To ensure successful implementation of “complete streets,” direction for the handling of complete streets must be addressed. The Complete Street Guidebook provides a sample action plan (Appendix D) that can be tailored to each communities need to facilitate the integration of complete streets at every step in the development of communities (i.e. policy, planning, design).

Legal Standing of Street Manual

Local jurisdictions generally follow some established standards for designing streets. Confusion exists as to what they must follow, what is merely guidance, when they can adopt their own standards, and when they can use designs that differ from existing standards. Appendix E discusses the myriad of accepted design documents and is adopted from the *Los Angeles County Model for Living Streets Design Manual*. It is critical for cities and counties to understand how adopting the Complete Streets Guidebook in part or in whole meshes with other standards and guides.

Chapter 4: COMPLETE STREETS TYPES

Purpose

Complete streets are context sensitive. When designing complete streets it is important to not only consider the street functional classification, but the surrounding land use and community context as well. Understanding the land use and community context helps planners and engineers identify potential roadway users that can be better served. The needs of roadway users should guide the design of a complete street.

This chapter contains a discussion of **user needs** and a description of **complete street types** that provide a nexus between **street functional classification** and **land use place types** developed through the Sustainable Communities Strategy planning process (Appendix F). The intent is to provide information about how to match relevant street elements to the existing or desired land uses along the street. The complete street types are an alternative to functional street classifications. Sample street cross sections are offered for each complete street type and additional cross sections can be found in Appendix G. Cross sections for complete streets types are adopted from the Charlotte Department of Transportation *Urban Street Design Guidelines*.

User Needs

New roads and road rehabilitation projects should accommodate all applicable users including but not limited to:

- Pedestrians (all ages and abilities)
- Bicyclists (all ages and abilities)
- Transit (riders and operators)
- Motorists
- Commercial/agricultural large vehicle drivers
- Commuters
- Tourists
- Active/recreational users

Each user group has different needs and measures of service for any given roadway. These needs and measures of service should be considered when designing or rehabilitating a roadway in order to accommodate all users. Table 2 describes the needs specific to each user group and examples of design solutions.

One of the greatest challenges of planning for and designing complete streets is balancing the often conflicting needs of different roadway users. For example, motorists generally want uninterrupted quick travel, wide lanes and large turning radii whereas pedestrians prefer to travel along streets with low volumes of slow traffic, small turning radii and frequent crossings (see Table 3 Roadway Users Needs).

Table 2 Roadway User Needs

ROADWAY USER NEEDS MATRIX		
GROUP	NEEDS/DESIRED PERFORMANCE	DESIGN SOLUTIONS/APPLICATIONS
Pedestrians – Commuters/Residents	Minimal crossing delay, separation from moving vehicles, low traffic volumes, multiple access points to destination, ADA access, shade, well-lit walkways and crossings	Pedestrian signal actuation and adequate crossing time, traffic calming, continuous sidewalk network, short blocks planting strip/on-street parking, ADA ramps, street trees and pedestrian-scale lighting
Pedestrians – Seniors, disabled and children	Large gaps in traffic, short marked crossings, , ADA access, shade, well-lit walkways and crossings	Adequate crossing time at signalized intersections, curb extensions, high-contrast markings, two-stage actuated crossings, medians, audible countdown pedestrian phase (signalized) and ADA ramps, street trees, pedestrian-scale lighting
Pedestrians – Visitors/Tourists	Pedestrian destinations, way-finding, marked crossings, wide sidewalks, shade, pedestrian amenities, well-lit walkways and crossings	Pedestrian plaza, way-finding signage, high-contrast marked crossings, wide sidewalks, on-street parking, street trees, outdoor seating, public art, public toilets, pedestrian-scale lighting
Bicyclists – Intermediate to Advanced; Commuters	Separation from motorized vehicles (moving and/or parked), direct routes/access to job centers, shopping and major destinations, bicycle detection at signalized intersections, short-term and long-term bicycle parking, commuter facilities	On-road facilities (Class II lanes/Class III shared roadway), well-connected bikeway network, marked bicycle detection, bicycle racks and covered/indoor bicycle parking, public or employer-provided shower facilities, bicycle "fix-it" stations
Bicyclists – Novice; Children	Separation from motor vehicle traffic, well-connected bikeway network, wide right-of-way, bicycle parking	Off-road facilities (Class I paths), complete bikeway network, bicycle racks, bike sharing
Bicyclists – Recreational/Touring	Separation from motorized vehicles, way-finding	Wide paved shoulders, way-finding signage and distance markers
Transit – Riders	Access to and from transit stop, well-lit stop, good visibility, transit route and schedule information, seating, shelter, buffer from moving traffic	Marked pedestrian crossing, curb extensions, ADA ramps, pedestrian-scale lighting, transit shelter facing out to street, real-time traveler information, transit shelter/station
Transit - Operators	Space to operate transit vehicles, minimal conflict, minimal delays	Large turning radius, wide travel lanes, generous merging distance, signal prioritization, street furniture setback from curb
Motorists – Commuters	Minimal travel delays, minimal conflict points at intersections and safe and consistent facilities	Signal optimization/coordination, adding through or turn lanes, roundabouts, medians, bus pullouts to reduce delay caused by transit
Motorists – Seniors	Minimal conflicts, safe and consistent facilities, smooth roads, long sight distance, space to maneuver	Advanced warning signage/striping, regular road maintenance, no speed bumps, limited foliage, large turning radius, wide travel lanes
Motorists – Tourists	Way-finding, parking, transit access, scenic vistas	Way-finding signage to destinations (including transit and parking), on-street parking, traveler information at transit stops, protected view sheds
Large Commercial/Agricultural Vehicles	Space to maneuver, minimal delays, access to intermodal connectors, parking	Wide travel lanes, large turning radius, signal optimization along truck routes, truck parking and rest areas

Land Use Context

Land use place types are a tool for a general classification of towns, cities, and larger areas to be used as a basis for planning. Each place type creates a distinct context for land use and transportation investments. Applying place types allows for better integration of transportation and land use decisions. Place types are intended to be applied at a generalized level of detail, with the understanding that detailed planning for specific places will provide greater differentiation of locations.

In coordination with local jurisdictions, AMBAG established place types based on similar sustainability characteristics and physical and social qualities, such as the scale of housing buildings, frequency and type of transit, quality of the streets, concentration of jobs, and range of services. Place types are divided by density (i.e. urban, town, neighborhood, suburban, and rural as well as use (i.e.residential, commercial, institutional). The AMBAG established place types are intended to create a common way of thinking and communicating about land uses with similar attributes across the three counties (Monterey, Santa Cruz, and San Benito) in the Monterey Bay Area. A detailed description of place types adopted by AMBAG for use in developing the Sustainable Communities Strategyis included in Appendix F.

Street Functional Classification

Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide. Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads.
http://www.fhwa.dot.gov/planning/processes/statewide/related/functional_classification/fc02.cfm

There are three highway functional classifications: arterial, collector, and local roads. All streets and highways are grouped into one of these classes, depending on the character of the traffic (i.e., local or long distance) and the degree of land access that they allow. These classifications are described in Table 3.

Table 3 Functional Street Classification

FUNCTIONAL STREET CLASSIFICATION		
FUNCTIONAL SYSTEM	SERVICES PROVIDED	MOBILITY/ACCESS
Arterial	Provides the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control.	• higher mobility • low degree of access
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.	• balance between mobility and access
Local	Consists of all roads not defined as arterials or collectors; primarily provides access to land with little or no through movement.	• lower mobility • high degree of access

Source: AASHTO Green Book

Typically, travelers will use a combination of arterial, collector, and local roads for their trips. Each type of road has a specific purpose or function. Some provide land access to serve each end of the trip. Others provide travel mobility at varying levels, which is needed en route.
http://www.fhwa.dot.gov/environment/publications/flexibility/ch03.cfm

Complete Street Types

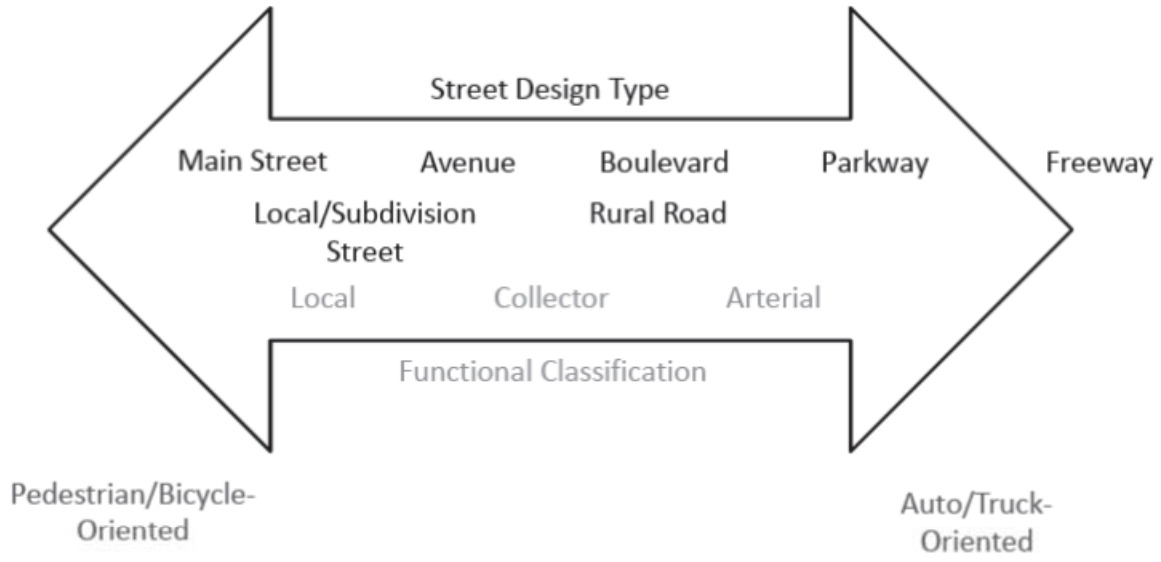
Complete Streets Types take into consideration the various user perspectives and the surrounding land use context, *in addition to* the street function. This section of the Complete Street Guidelines describes the recommended complete street types. For each of the complete street types, specific design elements should be included. Each of the descriptions included in this chapter is intended to accomplish the overall objective of providing safe, functional, multi-modal streets that serve all users.

Table 4 lists complete streets types, provides a description of the transportation and land use attributes. The land use place type associated with the complete street type is also identified. Both the land use place type and complete street type should be identified in planning and designing streets. Cross sections for each complete street type are included in Appendix G. The cross sections recommended in the Monterey Bay Area Complete Streets Guidelines were developed and adopted by the Charlotte Department of Transportation as part of the Urban Streets Design Guidelines. Figure 1 demonstrates how Complete Street Types relate to traditional functional classifications.

Table 4 Complete Street Types

		COMPLETE STREET TYPES		
SEGMENT TYPE	TRANSPORTATION & LAND USE DESCRIPTION	USER PRIORITIZATION	LAND USE PLACE TYPES	EXAMPLES
Main Streets	Pedestrian-oriented "destination" streets; land uses: mixed-use, commercial, entertainment, office, civic; short blocks, grid street pattern; can be used as a flexible space for community events (ex//farmers markets)	1. Pedestrians 2. Bicyclists 3. Transit 4. Autos/Trucks Special accommodations for delivery trucks	Urban Commercial; Urban Mixed-Use; Town Commercial; Town Mixed-Use; Rural-Town Commercial; Institutional	Alvarado Street (Monterey); Ocean Ave (Carmel); Pacific Ave (Santa Cruz); Main St (Salinas)
Avenues (collector)	Bicycle and transit-oriented streets connect neighborhoods to job centers and commercial areas. Higher speeds than main streets; land uses: diverse mix of land uses including but not limited to residential, schools, parks, neighborhood commercial and commercial	1. Bicyclists 2. Pedestrians 3. Transit 4. Autos/Trucks Special accommodations for pedestrians (children and seniors) at crossings	Urban Multi-Family Residential; Multi-Family Residential; Neighborhood Commercial; Town Multi-Family Residential; Town Mixed-Use; Institutional; Open Space/Recreation	Sloat Ave (Monterey); Branciforte Ave (Santa Cruz)
Boulevards (minor arterials)	Higher speeds and volumes of automobile traffic than avenues, but more pedestrian and bicycle-friendly than parkways	• Transit • Bicyclists • Autos/Trucks • Pedestrians	Multi-Family Residential; Neighborhood Commercial; Regional Commercial; Employment Center; Neighborhood Mixed-Use; Institutional; Open Space/Recreation	Munras Ave (Monterey); Capitola Rd (Live Oak/Capitola)
Parkways (major arterials)	Auto-oriented designed to move high volumes of vehicular traffic quickly; land uses: major destinations such as regional commercial, academic institutions and visitor-serving uses	• Autos/Trucks • Transit (BRT/Rail) • Bicyclists • Pedestrians	Regional Commercial; Employment Center; Airport; Institutional; Open Space/Recreation	Imjin Parkway/Rd (Marina); Soquel Drive (Aptos); Canyon Del Rey (Del Rey Oaks)
Local Streets	Low-speed and low-traffic volume shared streets (bicycle, pedestrian & auto) with on-street parking; land uses primarily residential, neighborhood commercial, office, mixed-use, schools and parks	• Pedestrians • Bicyclists • Autos/Trucks • Transit	Urban Single-Family Residential; Urban Multi-Family Residential; Urban Mixed-Use; Single-Family Residential; Multi-Family Residential; Town Single-Family Residential; Town Multi-Family Residential; Rural Town Residential; Institutional; Open Space/Recreation	
Rural Roads	Mostly auto-oriented with bicycle facilities for agricultural workers and long-distance cyclists	• Autos/Trucks • Bicyclists • Pedestrians • Transit Special accommodations for school buses	Agriculture and Rural Residential; Exurban Residential; Industrial and Manufacturing; Open Space/Recreation	
Scenic Roads	Mostly auto-oriented with bicycle facilities, some pedestrian facilities and access to natural resources	• Autos • Bicyclists • Pedestrians • Transit Accommodations for recreational cyclists and hikers	Exurban Residential; Agriculture and Rural Residential; Open Space/Recreation	

Figure 1 Complete Street Design Type and Functional Classification



Chapter 5: DESIGN TREATMENTS

Purpose

Various street design elements must be applied in the right mixes and in the right places. The Complete Street Guidelines provide a list of features to be considered when designing complete street facilities. The design features are reviewed by facility (i.e. traveled way, intersection) and by system features (i.e. pedestrian, bicycle, transit, streetscape, traffic calming).

Exceptions

The design elements and engineering best practices described in this chapter may not be appropriate for use in all jurisdictions. Local policy must be adhered to and engineering judgment applied. For example the City of Monterey restricts the use of speed bumps/humps and uses other methods and measures to calm traffic.

Resources for Design and Engineering

- American Association of State Highway and Transportation Officials' (AASHTO) A Policy on Geometric Design of Highways and Streets ("Green Book")
- U.S. Access Board and Americans with Disabilities Act Accessibility Guidelines
- Highway Design Handbook for Older Drivers and Pedestrians (2001)
- California Highway Design Manual (HDM)
- The Manual on Uniform Traffic Control Devices (MUTCD)
- California Streets and Highways Code
- California Vehicle Code

- California Fire Code
- Local manuals or street design standards

Design Principles

- Design User/Design Vehicle
- Intuitive & Legible
- Direct Routes
- Safety

Traveled Way

- Street Design
    - Users: Pedestrians, bicycles, transit, autos, trucks
    - Traffic Volume and Composition
    - Design Speed
    - Multi-Modal LOS
    - Access Management (including emergency response vehicles/staff)
- Cross Sectional Elements
    - On-Street Parking
    - Bicycle Facilities
    - Transit Facilities
    - Travel Lanes
    - Medians
    - Sample Cross Sections
- Other Geometric Design Elements
    - Vertical Alignment
    - Horizontal Alignment
    - Sight Distance
    - Horizontal Clearance/Clear Zone
    - Traveled Way Lighting
- Local Model Project

Intersections

- Principles
- Intersection Geometry
- Yield and Stop Controlled Intersections
- Signalized Intersections
    - Operational Design
    - Phasing
    - Optimization (Salinas example)
- Roundabouts
    - Advantages and Disadvantages

    - Design
    - Operations and Analysis
    - Configurations
        - Single-Lane
        - Multi-Lane
        - Mini
        - Traffic Circles
- Special User Consideration

Pedestrians

- Universal Pedestrian Access
    - Principles of Universal Pedestrian Access
    - Legal Framework
    - User Needs
        - Mobility Impairments
        - Visual Impairments
        - Cognitive Impairments
        - Children & Seniors
    - Construction Access
- Facility Design
- Wayfinding
- Crossings
    - Types of crossings
    - Pedestrian Crossing Toolbox
        - Marked Crosswalks
        - Raised Crossing Islands/Medians
        - Raised Crosswalks
        - Curb Extensions
        - Pedestrian Scrambles
        - Signs
        - Advanced Yield/Stop Lines
        - Lighting
        - Pedestrian Hybrid Beacon
        - Rectangular Rapid Flash Beacon (RRFB)
        - HAWK (Soquel Ave example)
        - Railroad crossings
        - Audible countdowns (signalized)

Bicycles

- Principles
- Bikeway User Needs & Planning Low-Stress Bikeway Networks

- Bikeway Types & Design
- Street System Integration (and tradeoffs)
- Intersections
    - Bikeway markings
    - Bike Signal Heads
    - Bicycle Signal Detection
    - Bike Boxes
    - Bicycle Countdowns
    - Colored Pavement Treatments
    - Wayfinding
    - Floating Bike Lanes
- End of Trip Facilities
    - Bicycle Parking (including bicycle corrals)
    - Bicycle Fix-It Stands
    - Bicycle Stations/Shower Facilities
    - Charging stations for E-Bikes

Transit Accommodations

- Principles
- Access to Transit
- Bus Stops
    - Placement
    - Amenities
- Signal Treatment
- Bus Bulbs
- Bicycle Connections
- Bus Lanes
- Accommodating Light Rail, Street Cars and BRT
- Park & Ride (Cars and Bikes)

Traffic Calming

- Definition
- Categories
- Safety
- Emergency Response
    - Design Vehicle
- Policy Guidance
    - Planning and Design Processes
        - Speed surveys
        - Collision History

Streetscape Ecosystem

- Principles
- Streetwater Management (look to Salinas as an example?)
- Urban Forestry
    - Street Trees
    - Understory Landscaping
- Street Furniture
    - Seating
    - Bollards
    - Kiosks
    - News Racks
    - Parking meters
    - Signs
    - News Racks
    - Refuse Receptacles
    - Public Art
    - Sidewalk Dining (Salinas has a process)
    - Other Streetscape features
- Utilities

Chapter 6: PROJECTS & IMPLEMENTATION

Purpose

Project sponsors should assess the expectations of a variety of stakeholders in order for streets to best reflect their contexts and intended functions. Designing streets that provide viable transportation options requires an understanding that different users of the street will likely have different expectations of what makes a "good" street. A street design solution that works well for a motorist, for example, may or may not work well for a pedestrian or a bicyclist. Further, even if every "ideal" design element for all of the *travelers* on a street were provided, then the resulting street might not satisfy the expectations of the people who live or work along it (Charlotte Department of Transportation*, Urban Street Design Guidelines, 2007, 13).* Complete street types are intended to provide a framework for developing transportation improvements consistent with the land use and roadway users; however, different stakeholders and their expectations for a street can complicate the design process.

The purpose of this section is to explain how the perspectives of all stakeholders interested in or affected by existing or future streets could be incorporated into the review for planning and designing streets. The recommended process is summarized in the Appendix H- Project Development Checklist. This process was modeled after the work completed in the Charlotte Department of Transportation *Urban Streets Design Guidelines*, and San Francisco Bay Area, *Routine Accommodation Checklist* .

Unlike many guidelines, which tend to be more prescriptive, the Monterey Bay Area Complete Streets Guidelines place greater emphasis on process and the importance of understanding the trade-offs between different design considerations, starting with complete street types. Understanding the trade-

offs between different design considerations is essential in the Monterey Bay Area where right-of-way constraints and funding are two of the biggest challenges faced by project sponsors. This review is intended to ensure that the resulting streets are "complete" streets – streets that provide for the safety and comfort of all users to the best extent possible.

Process for planning and designing complete streets

The proposed process coordinates traditional city planning, urban design, and transportation planning activities by establishing and documenting a sequence of fact finding and decision-making steps. Applying the process to planning and designing streets is intended to support the creation of "more streets for more people."

Flexibility

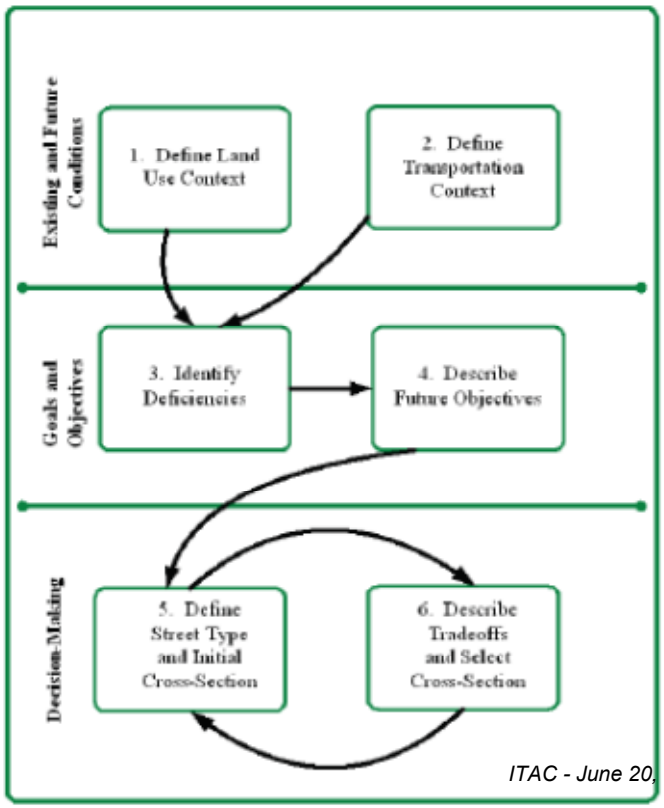
The process described here provides a great deal of flexibility to those involved in the decision-making process. This flexibility is intended to foster creative solutions by ensuring that land use planners, engineers, transportation planners, transportation system users, and others work together to think through the implications of alternative street designs. The six- step process will play an important role in addressing the significant challenge of retrofitting streets with limited right-of-way by means of completing a tradeoff analysis. By establishing a process for planning and design also recognizes that the level of specification amongst projects will vary.

Six Steps

The following three assumptions are built into the six-step process:

1. The process will involve a variety of stakeholders. The number of stakeholders and discussions will vary, depending on the magnitude and consequences of the street(s) to be designed.
2. The resulting street will be as "complete" a street as possible.
3. The documentation will clearly describe the major tradeoffs made among competing design elements, how those were discussed and weighed against each other, and the preliminary and final outcomes. Thorough documentation will ensure that all stakeholders' perspectives are adequately considered in the final design.

Figure 2 shows the review steps to be included in applying the Complete Street Guidelines. Each of the six steps is defined in more detail in the remainder of the chapter. It is important to note that the steps described below can be applied either to a single street or to a collection of streets in an area (such as when an area plan is being developed).



Step 1: Define the Existing and Future Land Use and Urban Design Context

The classification and ultimate design of any street should reflect both the existing and expected future land use contexts. These existing and future

contexts should be considered from the broadest, area wide perspective down to the details of the immediately adjacent land uses. A street is likely to be classified and/or designed differently if it is in an area slated for higher density development, such as a transit station area, versus in a neighborhood of single family houses, where very limited development changes are anticipated.

Step 2: Define the Existing and Future Transportation Context

The transportation assessment should consider both the existing and expected future conditions of the transportation network adjacent to or affecting the street to be designed. The recommended design should reflect the entire transportation context (function, multimodal features, form), rather than that related strictly to capacity on a given segment. Use Complete Streets Checklist in Appendix H to assess and document existing and future conditions. Questions to facilitate dialogue and consideration of existing and future conditions are included in Appendix I.

Step 3: Identify Deficiencies

Once the existing and future land use and transportation contexts are clearly defined and understood from an area wide perspective, the plan/design team should be able to identify and describe any deficiencies that could/should be addressed by the new or modified street. This step should consider all modes and the relationship between the transportation and the land use contexts. Use the Complete Streets Checklist in Appendix H to identify and document deficiencies. Questions to facilitate dialogue and consideration of deficiencies are included in Appendix I.

Step 4: Describe Future Objectives

This step synthesizes the information from the previous steps into defined objectives for the street project. The objectives could be derived from the plans and/or policies for the area around the street, as well as from the previously identified list of deficiencies. The objectives will form the basis for the future street classification and design. Sample questions that can be used to facilitate dialogue about potential issues can be found in Appendix H. Questions to facilitate dialogue and consideration of future objectives are included in Appendix I.

Step 5: Recommend Street Type and Initial Cross-Section

At this point, the plan/design team recommends the appropriate complete streettype (or types if several streets are being analyzed), and cross-section design based on the previous steps. The rationale behind the classification should be documented using the Complete Streets Checklist in Appendix I. Table 4 provides a reference for matching land use place types and street typologies and sample cross-sections. **This step should also include a recommendation for any necessary adjustments to the land use plan/policy and/or transportation plan for that area.** Since the street type and the ultimate design are defined, in part, according to the land use context, subsequent land use decisions should reflect and support the agreed-upon street type and design. This may involve updating land use policies or ordinance.

At this point, any constraints to the provision of the initial, preferred cross-section should be identified including but not limited to:

- Lack of right-of way,
- Existing structures,
- Existing trees or other environmental features,
- Topography, and
- Location and number of driveways.

This step should clearly identify which constraints may prohibit the use or require refinement of the initially defined cross-section.

Step 6: Describe Tradeoffs and Select Complete Street Type

If the recommended complete street type cross-section can be applied, then this step is easy: the initial cross-section is the recommended cross-section. In many cases, though, the initial cross-section will need to be refined to better address the land use and transportation objectives, given the constraints identified in Step Five. Sometimes, the technical team will develop more than one alternative design. **In that case, these multiple alternatives should be presented to the stakeholders.** Any refinements to the initial cross section (or alternatives) should result from a thoughtful consideration of tradeoffs among competing uses of the existing or future public right-of way. The tradeoff s should be related to the requirements of each group of stakeholders and the variety of design elements that can best accommodate those requirements.

The specific method of evaluating the tradeoffs is left open to the plan/design team, as long as the method/discussion/ analysis is documented. All perspectives should receive equal consideration and accountability in the plan/design process. Proper documentation will also generate information useful for future street design projects that might have similarcharacteristics, objectives, or constraints. Once the tradeoffs are evaluated, the team should be able to develop a refined cross-section and suggested design treatments. The culmination of all of the previous steps, including any additional stakeholder comments, should provide sufficient rationale to select the design alternative that best matches the context and future expectations for the street project.

Final Comment s on the Six Steps

The six step process suggests that there is a linear process leading to an ideal solution. Realistically, the process may not follow the exact sequence described above. Some information may not be available or even be applicable for some conditions. **The intent, though, is to ensure that the existing and future contexts are given adequate consideration, that any related plans are modified to reflect the outcome, and that all perspectives are given equal consideration in the process.**

Exceptions

The FHWA (2000) lists three exceptions to providing accommodations for bicycle and pedestrian travel on all streets. They follow the Federal Highway Administration's guidance on accommodating bicycle and pedestrian travel and identified best practices frequently used in existing Complete Streets policies. Project sponsors may find it beneficial to consider these exceptions when evaluating trade-offs.

1. Accommodation is not necessary on corridors where specific users are prohibited, such as interstate freeways or pedestrian malls.
2. Cost of accommodation is excessively disproportionate to the need or probable use. We do not recommend attaching a percentage to define "excessive" as the context for many projects will require different portions of the overall project budget to be spent on the modes and users expected; additionally, in many instances the costs may be difficult to quantify. A cap on amount spent for roadway improvements may be appropriate in unusual circumstances, such as where natural features (e.g. steep hillsides, shorelines) make it very costly or impossible to accommodate all modes. Any such cap should always be used in an advisory rather than absolute sense. For more on the issue of cost, be sure to reference the National Complete Streets Coalition's webinar and fact sheet.

3. A documented absence of current and future need. This exception can be problematic if the method for determining future need is not defined. Ensure that an accountable person or committee is tasked with approving this exception. Many communities have included other exceptions that the Coalition, in consultation with transportation planning and engineering expert, also feels are unlikely to create loopholes:
4. Transit-specific facilities, such as bus shelters, are not required where there is no existing or planned transit service.
5. Routine maintenance of the transportation network that does not change the roadway geometry or operations, such as mowing, sweeping, spot repair, or when interim measures are implemented in temporary detour or haul routes. Be sure to check your internal procedures and policies regarding these activities so that facilities such as bike lanes are swept in a timely manner" (Complete Streets Local Policy Workbook, 2012).

Funding Complete Streets

Funding for complete streets project remains a challenge in the Monterey Bay Area where transportation needs far outweigh available transportation funds. Complete streets projects are currently being considered in the development of the Monterey Bay Area's first Sustainable Communities Strategy as a strategy for reducing vehicle miles traveled in areas identified for growth and more intensified use. Although many complete streets projects may be identified to receive funding through 2035 in the counties long range transportation plan and the Monterey Bay Area Sustainable Communities Strategy, these projects will need to compete for limited transportation resources.

This section provides information about how some communities are funding and prioritizing complete streets improvements.

Traditional Implementation Tools

- Safe Routes to School Programs
- Transportation Development Act
- Regional Surface Transportation Program
- Bicycle Transportation Act

Innovative Implementation Tools

- Multimodal Impact Mitigation Fees allow impact fees to be applied to bicycle, pedestrian and transit projects that would serve a new development.
- Zoning Ordinance language that provides provision for easements for bicycle and pedestrian facilities and requires new development to make improvements consistent with bicycle, pedestrian, transit, and traffic calming plans.
- TBD

Chapter 7: Education, Enforcement and Encouragement

Purpose

Education, enforcement and encouragement programs complement complete street infrastructure programs and can play an important role in achieving complete streets objectives…

Education

- Public Outreach Campaigns
- School Programs

Encouragement

- Community Events
- Bike/Walk to School Day

Enforcement

- Police
- Code Enforcement

Chapter 8: Talking about Complete Streets

Purpose

To be developed.

Community Value

To be developed.

APPENDICES

Appendix A- Sample Complete Streets Goals and Policies

Communities may include the entire sample complete streets policy in the general plan circulation element as a complete policy package, or may selectively adopt specific objectives or policies. Communities are encouraged to tailor the policy and implementation measures to local needs, concerns, and conditions, and to identify the local agency or department responsible for implementation. Most circulation elements already include goals, objectives, and policies addressing the needs of motorists and movers of commercial goods, so the package below focuses on other types of users. In tailoring the package for your jurisdiction you may wish to include the entire package as a separate policy set with cross-references to other pre-existing provisions of the circulation element, or you may choose to use some or all of the goals, objectives, and policies below for amendments to existing provisions.

Sample Complete Streets Goals and Policies

Goal C1: Provide streets that are safe, comfortable, and convenient routes for walking, bicycling, and public transportation to increase use of these modes of transportation, enable active travel as part of daily activities

Objective C1.1: Integrate Complete Streets infrastructure and design features into street design and construction to create safe and inviting environments for people to walk, bicycle, and use public transportation.

- "The City will promote context-sensitive streets (i.e., by designing transportation projects within the context of adjacent land uses to improve safety and neighborhood livability, promote transportation choices and meet land use objectives), consistent with the City's Urban Street Design Guidelines." – City of Charlotte

Implementing Policies:

- **C1.1.1.** In planning, designing, and constructing Complete Streets:
    - Reference existing planning documents such as the Monterey Bay Area Complete Streets Guidebook and Checklist, local bicycle and pedestrian master plans, specific plans, transit master plans and neighborhood traffic calming plans.
    - Include infrastructure that promotes a safe means of travel for all users along the right of way, such as sidewalks, shared use paths, bicycle lanes, and paved shoulders.
    - Include infrastructure that facilitates safe crossing of the right of way, such as accessible curb ramps, crosswalks, refuge islands, and pedestrian signals; such infrastructure must meet the needs of people with different types of disabilities and people of different ages.
    - Ensure that sidewalks, crosswalks, public transportation stops and facilities, and other aspects of the transportation right of way are compliant with the Americans with Disabilities Act and meet the needs of people with different types of disabilities, including mobility impairments, vision impairments, hearing impairments, and others.[i] Ensure that the [Jurisdiction] ADA Transition Plan includes a prioritization method for enhancements and revise if necessary.

- Prioritize incorporation of street design features and techniques that promote safe and comfortable travel by pedestrians, bicyclists, and users of public transportation, such as traffic calming circles, additional traffic calming mechanisms, narrow vehicle lanes, raised medians, dedicated transit lanes, transit priority signalization, transit bulb outs, road diets,[ii] high street connectivity,[iii] and physical buffers and separations between vehicular traffic and other users.
- Ensure use of additional features that improve the comfort and safety of users:
  - Provide pedestrian-oriented signs, pedestrian-scale lighting, benches and other street furniture, bicycle parking facilities, and comfortable and attractive public transportation stops and facilities.
  - Encourage street trees, landscaping, and planting strips, including native plants where possible, in order to buffer traffic noise and protect and shade pedestrians and bicyclists.
  - Reduce surface water runoff by reducing the amount of impervious surfaces on the streets.

- C1.1.2. In all street projects, include infrastructure that improves transportation options for pedestrians, bicyclists, and users of public transportation of all ages and abilities.

COMMENT: This provision, which requires that all street projects on new or existing streets create complete streets, is a fundamental component of a commitment to complete streets.

- Ensure that this infrastructure is included in planning, design, approval, construction, operations, and maintenance phases of street projects.
- Incorporate this infrastructure into all construction, reconstruction, retrofit, maintenance, alteration, and repair of streets, bridges, and other portions of the transportation network.
- Incorporate multimodal improvements into pavement resurfacing, restriping, and signalization operations where the safety and convenience of users can be improved within the scope of the work.
- Develop systems to implement and monitor incorporation of such infrastructure into construction and reconstruction of private streets.
- Allow exclusion of such infrastructure from street projects only upon written approval by [*the City Manager or a senior manager of an appropriate agency, such as the Department of Public Works*], and only where documentation and supporting data indicate one of the following bases for the exemption: (a) use by a specific category of users is prohibited by law; (b) the cost would be excessively disproportionate to the need or probable future use over the long term; (c) there is an absence of current and future need; or (d) significant adverse impacts outweigh the positive effects of the infrastructure.

COMMENTS: This provision provides crucial accountability in the exceptions process by requiring documentation, a transparent decision-making process, and written approval by a specified official. Other exceptions can also be included in this list.

In evaluating whether the conditions of (b) and (c) are met, a jurisdiction may need to conduct latent demand studies, which measure the potential level of use by bicyclists, pedestrians, and others should appropriate infrastructure be provided. Such projections should be based on demographic, school, employment, and public transportation route data, not on extrapolations from current low mode use.

- Provide an annual report to the [*City Council/Board of Supervisors*] listing the street projects undertaken in the past year and briefly summarizing the complete streets infrastructure used in those projects and, if applicable, the basis for excluding complete streets infrastructure from those projects.

- **C1.1.3.** Develop policies and tools to improve [Jurisdiction]'s Complete Streets practices:
  - Develop a pedestrian crossings policy, addressing matters such as where to place crosswalks and when to use enhanced crossing treatments.
  - Develop policies to improve the safety of crossings and travel in the vicinity of schools and parks.
  - Consider developing a transportation demand management/commuter benefits ordinance to encourage residents and employees to walk, bicycle, use public transportation, or carpool.
  - Develop a checklist for [Jurisdiction]'s development and redevelopment projects, to ensure the inclusion of infrastructure providing for safe travel for all users and enhance project outcomes and community impact.
  - As feasible, [Jurisdiction] shall incorporate Complete Streets infrastructure into existing public [and private] streets to improve the safety and convenience of Users, construct and enhance the transportation network for each category of Users, and create employment.
- **C1.1.4.** Encourage transit-oriented development that provides public transportation in close proximity to employment, housing, schools, retailers, and other services and amenities.
- **C1.1.5.** Change transportation investment criteria to ensure that existing transportation funds are available for Complete Streets infrastructure.
- **C1.1.6.** Identify additional funding streams and implementation strategies to retrofit existing streets to include Complete Streets infrastructure.

Objective C1.2: Make Complete Streets practices a routine part of [Jurisdiction]'s everyday operations.

Implementing Policies:

- **C1.2.1.** As necessary, restructure and revise the zoning, subdivision, and [insert by name references to other relevant chapters of the city or county code such as "Streets and Sidewalks" or "Motor Vehicles and Traffic"] codes, and other plans, laws, procedures, rules, regulations, guidelines, programs, templates, and design manuals, including [insert references to all other key documents by name], in order to integrate, accommodate, and balance the needs of all users in all street projects on public [and private] streets.

> **COMMENT:** By opting to apply the requirement to private streets in addition to public streets, a jurisdiction will generally expand the effectiveness of the complete streets policy. However, such a requirement may be more practical in certain jurisdictions than in others. For example, the requirement might be very important in a jurisdiction where there are many private streets in central locations and less important where there are few private streets or where those streets are only in outlying areas.

- **C1.2.2.** Develop or revise street standards and design manuals, including cross-section templates and design treatment details, to ensure that standards support and do not impede Complete Streets; coordinate with related policy documents [such as Pedestrian/Bicycle Plans, *insert other relevant documents*].
- Assess current requirements with regard to road width and turning radii in order to determine the narrowest vehicle lane width and tightest corner radii that safely balance other needs; adjust design guidelines and templates to reflect ideal widths and radii.
- **C1.2.3.** Make training available to planning and public works personnel and consultants on the importance of Complete Streets and on implementation and integration of multimodal infrastructure and techniques.
- **C1.2.4.** Encourage coordination among agencies and departments to develop joint prioritization, capital planning and programming, and implementation of street improvement projects and programs.
- **C1.2.5.** Encourage targeted outreach and public participation in community decisions concerning street design and use.
- **C1.2.6.** Establish performance standards with measurable outcomes to assess safety, functionality, and actual use by each category of users; include goals such as:
    - By [2020], facilitate a transportation mode shift so that [20] % of trips occur by bicycling or walking.
    - By [2015], reduce the number of injuries and fatalities to bicyclists and pedestrians by [__]%.
    - Reduce per capita vehicle miles traveled by [__]% by [insert year].
    - Provide a high proportion of streets ([__]%) with sidewalks, low design speeds, tree canopy, and street furnishings.
    - Increase the miles of bicycle lanes and other bikeways by [__]% by [insert year].

- Increase the miles of sidewalks by [__]% by [insert year]

> **COMMENT**: Other standards could include user satisfaction, percentage reductions in greenhouse gas emissions, and reduction in gaps in the sidewalk network.

- **C1.2.7.** Establish measures of effectiveness for the performance of the circulation system and the effects of new projects on the system, taking into account all modes of transportation including walking, bicycling, and public transportation. Ensure that measures address relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and public transportation; use these measures for planning and in lieu of automobile level of service standards for environmental review.

- **C1.2.8.** Collect baseline data and regularly gather follow-up data in order to assess impact of policies.
  - Collect data for each category of users regarding the safety, functionality, and actual use of the neighborhoods and areas within [Jurisdiction].
  - Track public transportation ridership numbers.
  - Track performance standards and goals.
  - Track other performance measures such as number of new curb ramps and new street trees or plantings.
  - Require major employers to monitor how employees commute to work.
  - All initial planning and design studies, health impact assessments, environmental reviews, and other project reviews for projects requiring funding or approval by [Jurisdiction] shall: (1) evaluate the effect of the proposed project on safe, comfortable, and convenient travel by bicyclists, children, persons with disabilities, pedestrians, users of public transportation, seniors, youth, and families, and (2) identify measures to mitigate any adverse impacts on such travel that are identified.

Objective C1.3: Plan and develop a comprehensive and convenient bicycle and pedestrian transportation network.

> **COMMENTS**: Jurisdictions with existing bicycle or pedestrian plans may have already addressed the policy/action items under this objective. In such jurisdictions, it is not necessary to restate these policy and action items verbatim. Such plans should be reviewed, and, if necessary, revised to complement the complete streets approach. If existing plans address this objective sufficiently, a jurisdiction may incorporate its bicycle and pedestrian plans with language such as: "The provisions set forth in the [Pedestrian/Bicycle Plan] are incorporated into this plan." If this approach is used, be sure that the incorporated plan is internally consistent with the remainder of the general plan.
>
> For jurisdictions that have not developed a detailed bicycle or pedestrian plan, the policies and actions in this section provide a good way to begin addressing those needs in an integrated fashion.

Implementing Policies:

- **C1.3.1.** Develop a long-term plan for a bicycle and pedestrian network that meets the needs of users, including bicyclists, children, persons with disabilities, pedestrians, users of public transportation, seniors, youth, and families.
    - Conduct a demand analysis for each category of user, mapping locations that are already oriented to each mode of travel and type of user and those for which there is latent demand.
    - For each category of user, map out a preferred transportation network with routes that will enable safe, interconnected, direct, continuous, and efficient travel from each major origination area to each major destination area.
    - Encourage public participation in community decisions concerning the demand analysis, preferred route network, and street design and use to ensure that such decisions: (a) result in streets that meet the needs of all users, and (b) are responsive to needs of individuals and groups that traditionally have not participated in public infrastructure design. Include bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, seniors, youth, families, low-income communities, communities of color, and other distinct social groups, and their advocates. Establish ongoing advisory committees and public feedback mechanisms.
    - Identify and prioritize necessary changes in order to implement the preferred network; prioritize neighborhoods with the greatest need and projects that significantly alleviate economic, social, racial, or ethnic inequities.
    - Ensure that the networks provide ready access to healthy sources of nutrition.
    - Explore the use of non-standard locations and connections for bicycle, pedestrian, and public transportation facilities, such as easements, restored stream corridors, and railroad rights-of way.
- **C1.3.2.** Evaluate timeline and funding of the plan.
    - Assess the degree to which implementation of the plan can be coordinated with planned reconstruction of streets, development projects, utility projects, and other existing funding streams.
    - Develop funding strategies for addressing additional needs; actively pursue funding from state, federal, and other sources.
    - Explore imposing development impact fees and dedication requirements on new development to create paths and other Complete Streets infrastructure.
- **C1.3.3.** In collaboration with [*appropriate local agencies and regional transportation planning agencies/metropolitan planning organizations*], integrate bicycle, pedestrian, and public transportation facility planning into regional and local transportation planning programs and agencies to encourage connectivity between jurisdictions.
- **C1.3.4.** Develop programs to encourage bicycle use, such as enacting indoor bicycle parking policies to encourage bicycle commuting, or testing innovative bicycle facility design.

Objective C1.4: Promote safety of bicyclists, pedestrians, and public transportation.

COMMENT: As noted for the previous objective, jurisdictions with existing bicycle or pedestrian plans may also choose to omit these items if already addressed in those plans and instead reference those plans.

Implementing Policies:

- **C1.4.1.** Identify physical improvements that would make bicycle and pedestrian travel safer along current major bicycling and walking routes and the proposed future network, prioritizing routes to and from schools.
- **C1.4.2.** Identify safety improvements to pedestrian and bicycle routes used to access public transportation stops; collaborate with [*public and private transit agencies operating within Jurisdiction*] to relocate stops where advisable.
- **C1.4.3.** Identify intersections and other locations where collisions have occurred or that present safety challenges for pedestrians, bicyclists, or other users; consider gathering additional data through methods such as walkability/bikeability audits; analyze data; and develop solutions to safety issues.
- **C1.4.4.** Prioritize modifications to the identified locations and identify funding streams and implementation strategies, including which features can be constructed as part of routine street projects.
- **C1.4.5.** Collaborate with schools, senior centers, advocacy groups, and public safety departments [*insert additional specific departments as appropriate*] to provide community education about safe travel for pedestrians, bicyclists, users of public transportation, and others.
- **C1.4.6.** Use crime prevention through environmental design strategies[iv] to increase safety for pedestrians, bicyclists, and other users.
- **C1.4.7.** As necessary, public safety departments should engage in additional enforcement actions in strategic locations.

Objective C1.5: Make public transportation an interconnected part of the transportation network.

Implementing Policies:

- **C1.5.1.** Partner with [*public and private transit agencies operating within Jurisdiction*] to enhance and expand public transportation services and infrastructure throughout [Jurisdiction] and the surrounding region; encourage the development of a public transportation system that increases personal mobility and travel choices, conserves energy resources, preserves air quality, and fosters economic growth.
- **C1.5.2.** Work jointly with [*public and private transit agencies operating within Jurisdiction*] to provide destinations and activities that can be reached by public transportation and are of interest to public transportation-dependent populations, including youth, seniors, and persons with disabilities.
- **C1.5.3.** Collaborate with [*public and private transit agencies operating within Jurisdiction*] to incorporate infrastructure to assist users in employing multiple means of transportation in a

single trip in order to increase transportation access and flexibility; examples include, but are not limited to, provisions for bicycle access on public transportation, secure bicycle racks at transit stops, access via public transportation to trails and recreational locations, and so on.

- **C1.5.4.** Ensure safe and accessible pedestrian routes to public transportation stops; relocate stops if safe routes are not feasible at current location.
- **C1.5.5.** Work with [*public and private transit agencies operating within Jurisdiction*] to ensure that public transportation facilities and vehicles are fully accessible to persons with disabilities.
- **C1.5.6.** Explore working with [*public and private transit agencies operating within Jurisdiction*] to provide travel training programs for seniors and persons with disabilities, and awareness training for vehicle operators.
- **C1.5.7.** Explore creation of public transportation priority lanes to improve travel time.
- **C1.5.8.** Partner with [*public and private transit agencies operating within Jurisdiction*] to collect data and establish performance standards related to these steps.

Appendix C- Bicycle and Pedestrian Quality of Service Indicator

To be completed.

Appendix D- Complete Streets Action Plan

Sample Template

NAME: [Jurisdiction] DATE:

COMPLETE STREET ACTION PLAN				
IMPLEMENTATION ACTION*	TIMELINE			LEAD DEPARTMENT
	Short	Long	Ongoing	
General Plan Vision				
General Plan Policy & Goals				
Transportation Plan Policy & Goals				
Performance Measures				
Planning Guidance Manual				
Street Design Standards & Specifications				
Transportation Analysis/ Impact Guidelines				
Maintenance Manuals				
Funding Guidelines				
Training Standards				

*Titles and actions may vary by jurisdiction. This list is meant to serve as an example only.

Appendix E- Legal Standing of Street Manuals

Note: The discussion included in Appendix E is adopted from Los Angeles County Model Design manual for Living Streets, 2011.

Local jurisdictions generally follow some established standards for designing streets. Much confusion exists as to what they must follow, what is merely guidance, when they can adopt their own standards, and when they can use designs that differ from existing standards. The text below untangles the myriad of accepted design documents. It is critical for cities and counties to understand how adopting this manual meshes with other standards and guides. The most important of those standards and guides are the following:

- The American Association of State Highway and Transportation Officials' (AASHTO) *A Policy on Geometric Design of Highways and Streets* (the "Green Book")
- The California *Highway Design Manual*
- Local manuals or street design standards
- The *Manual on Uniform Traffic Control Devices* (MUTCD)
- The California Fire Code
- The California Streets and Highways Code and California Vehicle Code

A discussion of the federal-aid roadway classification system helps to frame the requirements of each of these documents. Local governments that wish to use certain federal funds must use a street classification system based on arterials, collectors, and local streets. These funds are for streets and roads that are on the federal-aid system. Only arterials and certain collector streets are on this system. In Chapter 3, "Street Networks and Classifications," this manual recommends an alternative system. To maintain access to these federal funds, local jurisdictions can use both systems. The federal aid system encourages cities to designate more of these larger streets, and to concentrate modifications along these larger streets. Nevertheless, for the purposes of understanding design standards and guides, this is the existing system of street classification for federal funding.

AASHTO Green Book

The Green Book provides guidance for designing geometric alignment, street width, lane width, shoulder width, medians, and other street features. The Green Book applies only to streets and roads that are part of the National Highway System (NHS). These are Interstate Freeways, principal routes connecting to them, and roads important to strategic defense. These streets and roads comprise about 14 percent of all federal-aid roadway miles in California, and about 4 percent of all roadway miles (Urgo, J., Wilensky, M., and Weissman, S., *Moving Beyond Prevailing Street Design Standards*, The Center for Law, Energy, and the Environment at the Berkeley Law School, 2010). Although the Green Book's application is limited to these streets, some cities apply its recommendations to all streets.

Further, the Green Book provides guidance that cities often unnecessarily treat as standards. The Green Book encourages flexibility in design within certain parameters, as evidenced by the AASHTO publication

A Guide to Achieving Flexibility in Highway Design. For example, 10-foot lanes, which cities often shun out of concerns of deviating from standards, are well within AASHTO guidelines.

California Highway Design Manual

The California *Highway Design Manual* (HDM) applies only to State Highways and bikeways within local jurisdictions. If cities deviate from the minimum widths and geometric criteria for bikeways spelled out in Chapter 1000 they are advised to follow the exemption process or experimental process as applicable. The HDM does not establish legal standards for designing local streets. However, like the Green Book, some cities apply HDM guidance to all streets.

As of the writing of this manual, Caltrans is in the process of revising the HDM to meet Caltrans' commitment to Complete Streets in Deputy Directive 64-R1.

Local Street Manuals

Local jurisdictions follow the Green Book, the HDM, or design guidance from organizations such as the Institute of Transportation Engineers (ITE) out of liability concerns. Neither federal nor state law mandates adoption or adherence to these guides. However, municipalities often adopt them to protect themselves from lawsuits. Further, many don't have the resources to develop their own standards and practices, so they adopt those in the Green Book, the HDM, or another previously adopted manual, or those of other cities.

A question often posed by plaintiffs' attorneys in traffic-related crashes is, "Did they follow established or prevailing designs, standards, and guidance?" If the attorneys can prove that the local jurisdiction deviated from these, they enhance their chances of winning a judgment against the jurisdiction. Therefore, protection from liability is paramount.

Cities are authorized to adopt or modify their own practices, standards, and guidelines that may reflect differences from the Green Book and the HDM. If these changes generally fall within the range of acceptable practice allowed by nationally recognized design standards, the adopting agencies are protected from liability to the same extent they would be if they applied the Green Book or the HDM. Most changes to streets discussed in this manual fall within the range of the guidelines or recommended practices of nationally recognized organizations such as AASHTO, ITE, Urban Land Institute (ULI), and Congress for the New Urbanism (CNU).

Working within previously established regional guidelines generally should result in a design that is protected from liability. The Green Book and the HDM are silent on many design features, and do not consider the needs within unique contexts. In these cases, cities can develop their own guidelines and standards and incorporate international equivalents or practices from other cities. Cities may adopt the guidance in this manual, which compiles best practices in creating living streets. This manual could, in effect, become the legal prevailing standard by which liability would be assessed.

Cities can also utilize designs that fall outside the ranges specified by nationally accepted guidelines and standards, but these practices can potentially increase liability unless done with great care. When

agencies elect to utilize designs that fall outside the guidelines of nationally recognized documents, they need to use additional care to ensure they do not expose themselves to liability.

To minimize liability, local jurisdictions either need to adopt their own standards (which should be based on rationale or evidence of reasonableness), or they can conduct an experimental project. When conducting an experimental project, agencies need to show that they are using the best information that is reasonably available to them at the time, document why they are doing what they are doing, use a logical process, and monitor the results and modify accordingly. This is because the agency may be required in the future to show that its design is reasonable, and the agency may not be able to cite a nationally published guideline or recommendation to support its local action. Often, these experimental projects are conducted because the design engineer has reason to believe that the new or evolved design will be safer or otherwise more effective for some purpose than if the project had prevailing standards and guides been used. These reasons or rationales are based on engineering judgment and should be documented to further minimize exposure to liability.

Unless otherwise noted, everything in this manual can readily be adopted and incorporated without fear of increased liability. In addition, this manual carries the credibility of the many top-level experts who produced it.

In some cases, AASHTO design guidelines may not provide information on innovative or experimental treatments that have shown great promise in early experiments and applications. Since AASHTO is a design guide, agencies have some flexibility to use designs that fall outside the boundaries of the AASHTO guide. Deviation from the range of designs provided in the AASHTO guide requires agencies to use greater care and diligence to document their justification, precautions, and determination to deviate from the guidelines. In California, the precautions to establish “design immunity” should be followed. These include consideration/analysis and approval by a registered engineer qualified to sign the plans, and certification by the city council or reviewing body clearly indicating the agency’s intent. This process documents the engineering judgment that went into the design.

Many cities today use various traffic calming measures to slow traffic and to improve neighborhood livability. Traffic calming measures are not traffic control devices and therefore the state exercises no jurisdiction over them.

Local agencies may currently use many other reports and documents to guide their roadway design and transportation planning. Other documents provide valuable procedure and reference data, but they do not set standards. They can be referred to and defined as standards by local agencies, but the local authority often has the flexibility to selectively endorse, modify, or define how these informational documents can be used or incorporated into its engineering and planning processes. Also, newer versions of these documents have additional information that can conflict with the local historical approach.

The expected results of the design approaches presented in this document are generally intended to improve safety and/or livability. As a result, implementation of these features should generally reduce liability and lawsuits. There is no way to prevent all collisions or lawsuits, but adopting policies, guidelines, and standards and doing experimental projects with reasonable precautions is a defensible approach.

MUTCD

The MUTCD provides standards and guidance for the application of all allowed traffic control devices including roadway markings, traffic signs, and signals. The Federal Highway Administration oversees application of the MUTCD. California cities must follow the California MUTCD, which generally mirrors the federal MUTCD, but not always.

The rules and requirements for the use of traffic control devices are different than for street design criteria. Local agencies have limited flexibility to deviate from the provisions of the California MUTCD in the use of traffic control devices due to the relationship between the MUTCD and state law. The California MUTCD does provide flexibility within its general provisions for items such as application of standard traffic control devices, use of custom signs for unique situations, traffic sign sizes, and sign placement specifics. In contrast, agencies do not generally have the flexibility to develop signs that are similar in purpose to signs within the manual while using different colors, shapes, or legends. Agencies are also not authorized to establish traffic regulations that are not specifically allowed or are in conflict with state law. The provisions of the California MUTCD and related state laws thus make it difficult to deploy new traffic control devices in California. This can result in complications, especially in the areas of speed management, pedestrian crossings, and bikeway treatments.

The State of California and the Federal Highway Administration have procedures that allow local agencies to experiment with traffic control devices that are not included in the current MUTCD. Such demonstrations are not difficult to obtain from the Federal Highway Administration for testing of new devices, especially as they relate to pedestrian and bicycle facilities, but the requesting agency must agree to conduct adequate before-and-after studies, submit frequent reports on the performance of the experimental device, and remove the device if early results are not promising. The State process can be more difficult for obtaining approval. Federal approval must be obtained first. The California Traffic Control Devices Committee advises Caltrans, which must then agree to allow the experiment to be conducted and determine that the experiment is not in conflict with State law. Once approval is granted for the experiment, the city has been given some legal immunity from liability suits. Since the California Vehicle Code is written to mirror the MUTCD, provisions within the Vehicle Code may not allow the experiment to proceed. The need to modify the Vehicle Code can complicate obtaining State permission to experiment.

Both the federal and California MUTCD are amended through experimentation. After one or more experiments have shown benefit, the new devices are sometimes adopted into these manuals. In California, the Vehicle Code must be changed first if the Vehicle Code prevents use of the new device.

The federal MUTCD and California MUTCD establish warrants for the use of some traffic control devices. For example, stop signs, traffic signals, and flashing beacons are expected to meet minimum thresholds before application. These thresholds include such criteria as number of vehicles, number of pedestrians or other uses, distance to other devices, crash history, and more. These warrants often prevent local engineers from applying devices that, in their opinion, may improve safety. For example, trail and/or pedestrian crossings of busy, high-speed, wide arterial streets may need signals for user safety, but they may not meet the warrants.

As with street design guidelines, cities may establish their own warrants or modify those suggested by the California MUTCD to suit their context in order to use some traffic control devices. In special circumstances that deviate from their own warrants, cities need to document their reasons for the exception. For example, they may say the trail crossings or school crossings qualify for certain traffic control devices.

California Fire Code

The California Fire Code can impede street design in limited circumstances. The state legislature has adopted the National Fire Code. The National Fire Code is written by a private agency and has no official legal standing unless states or municipalities adopt it, as has been done in California. The primary barrier caused by this adoption is the requirement for a minimum of 20 feet of an unobstructed clear path on streets. To comply with this, streets with on-street parking on both sides must be at least 34 feet wide. This prevents municipalities from designing “skinny” and “yield” streets to slow cars and to make the streets safer, less land consumptive and more hospitable to pedestrians and bicyclists.

There are ways around this requirement. If the local jurisdiction takes measures such as installing sprinklers and adding extra fire hydrants, or the adjacent buildings are built with fire retardant materials, it may be able to get the local fire department to agree to the exception.

Alternatively, the state legislature could repeal its adoption of the 20-foot clear path requirement due to

- The arbitrary and unresearched nature of the provision
- The safety problems associated with the resulting excessively wide streets
- The contradiction that this provision causes with properly researched guidelines and standards by ITE, CNU, AASHTO, and others for streets under 34 feet wide
- The potential liability that the 20-foot clear provision creates for designers who maintain, modify, or design streets that do not provide 20-foot clear paths

It is likely that the state legislature was unaware of these issues when it adopted the code in its entirety.

California Streets and Highways Code and California Vehicle Code

The California Streets and Highways Code and the California Vehicle Code include laws that must be followed in street design. These are embodied in the California MUTCD. Changes to the Streets and Highways Code and the Vehicle Code may cause the California MUTCD to change.

Appendix F- Land Use Place Type Matrix

Understanding the land use and community context helps planners and engineers identify potential roadway users that can be better served. Land use place types developed through the Sustainable Communities Strategy planning process and linked to the complete streets types are shown here.

Urban Place Types

	Intensity	General Characteristics		Examples
		Land Use	Transportation	
U-1 Urban Single-Family Residential 	Low to Medium Intensity (6 to 18 units per acre)	Single-family homes in close proximity to urban centers, typically laid out in a grid block pattern. Includes occasional duplexes, accessory units, and/or small multi-unit buildings. Compact development pattern with small lots, limited setbacks, and close proximity of structures.	Short blocks, grid street pattern, and proximity to destinations support non-motorized modes of transportation. Complete sidewalks and bicycle infrastructure typically present. Neighborhoods served by bus service with typical 30-minute headways; occasional proximity to multi-modal, regional, or intercity transit stations.	Chestnut Street, Santa Cruz Hellam Street, Monterey
U-2 Urban Multi-Family Residential 	Medium Intensity (12 to 30 units per acre)	Small and large apartment buildings, duplexes, accessory units, and limited single-family homes in close proximity to urban centers. Well-integrated into the surrounding urban fabric. One- to five-story residential buildings on small to medium lots with minimal setbacks from property lines and adjacent structures. Building entrances typically oriented to the street.	Short blocks, grid street pattern, land-use diversity, and proximity of destinations support non-motorized modes of transportation. Complete sidewalks and bicycle infrastructure typically present. Neighborhoods served by bus service with typical 30-minute headways; occasional proximity to multi-modal, regional or intercity transit stations.	Clay Street, Monterey 3rd Street, Santa Cruz
U-3 Urban Commercial 	Low Intensity (FAR 1.0 or less)	A high concentration of retail, service, and office uses organized in a grid block pattern. A pedestrian-friendly environment supported by active ground floor building frontages, entrances oriented to the street, parking located to the rear of lots, and buildings placed at or near property lines.	Short blocks, grid street pattern, land-use diversity, and proximity of destinations support non-motorized modes of transportation. Wide sidewalks support pedestrian circulation; motorists frequently park once to visit multiple destinations. Multiple bus routes typically with 30-minute headways; occasional presence of multi-modal, regional or intercity transit stations.	Downtown Santa Cruz Downtown Monterey

U-4 Urban Mixed Use 	Medium to High Intensity (FAR greater than 2.0)	Commercial, office, and residential uses in medium- to large-scale buildings. Vertical mixed use with residential or office above ground floor retail is typical. A pedestrian-friendly environment supported by active ground floor building frontages, entrances oriented to the street, parking located to the rear of lots, and buildings placed at or near property lines.	High-quality pedestrian infrastructure supports pedestrian circulation. Short blocks, grid street pattern, land-use diversity, and proximity of destinations support non-motorized modes of transportation; motorists frequently park once to visit multiple destinations. Transit typically includes modest to robust bus service, with headways averaging 15 to 30 minutes.	Downtown Santa Cruz Downtown Monterey

Suburban Place Types				
	Intensity	General Characteristics		Examples
		Land Use	Transportation	
S-1 Single-Family Residential 	Low Intensity (3 to 8 units per acre)	Single-family homes in self-contained residential neighborhoods. One- to two-story buildings typically on 5,000 to 15,000 square foot lots with moderate to large setbacks.	Automobile-oriented with resident-serving local, collector, and occasionally arterial streets. Limited local transit service and park-and-ride lots. Sidewalks and bicycle facilities for recreational use.	Cliffwood Heights neighborhood, Capitola Deer Flats neighborhood, Monterey Hillcrest neighborhood, Hollister
S-2 Multi-Family Residential 	Low to Medium Intensity (10 to 25 units per acre)	Duplexes, apartment complexes, subdivided houses, and mobile home parks in a generally low-density setting. Generally one- to four-story buildings on lots of varying sizes, often inward-oriented.	Automobile-oriented, most often found along collector or arterial streets. Limited local transit service and park-and-ride lots. Sidewalks and bicycle facilities for recreational use.	Bay Tree Apartments, Scotts Valley Caputo Court, Hollister Footprints on the Bay, Monterey

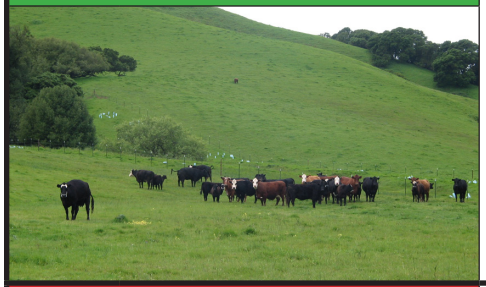
S-3 Neighborhood Commercial 	Low Intensity (FAR less than 0.5)	Stand-alone retail buildings, strip malls, local-serving big-box stores, and smaller-scale offices or office parks. Usually one story buildings occupying low proportion of total lot area; offices in some instances are multi-story. Typically set far back from street.	Automobile-oriented with large parking areas and limited pedestrian access; usually found along arterial streets. Limited local or, in rare instances, intercity transit service. Sidewalks and bicycle facilities usually absent or limited.	Forest Ave-Fairway Shopping Center, Pacific Grove McCray-Meridian Shopping Center, Hollister Kings Village Shopping Center, Scotts Valley
S-4 Regional Commercial 	Low Intensity (FAR less than 0.5) or occasionally Moderate Intensity (FAR 1.0 to 2.0)	Large-scale retail or entertainment uses with a regional draw, including shopping malls, national-chain big-box stores, and tourist destinations. Most frequently occurs as large retail stores with substantial surrounding parking areas, but may also include more pedestrian-oriented or urban forms, especially for tourist destinations.	Automobile oriented, with most shoppers or visitors arriving by car; usually found along arterial streets or in core commercial areas. Transit access varies by setting, but in most instances includes only limited local or, in rare instances, intercity transit service. Except when located in core commercial areas, pedestrian and bicycle access and amenities tend to be limited or absent.	Capitola Mall Cannery Row, Monterey Airline Highway Shopping Center, Hollister Sand Dollar Shopping Center, Sand City
S-5 Employment Center 	Low to Medium Intensity (FAR from less than 1.0 to 2.0)	Office and research-oriented industrial land uses with medium to high employment densities. Buildings typically have low to moderate lot coverage; may have multiple stories or higher lot coverage. Suburban-style office parks, with multi-story office buildings and large parking lots are typical, as are stand-alone office buildings with surrounding parking.	Usually auto-oriented with large areas of surface parking, or occasionally parking garages. May in limited instances include internal pedestrian-oriented features. Transit service is reflective of surrounding place types, but is typically similar to other suburban place types, with limited service and frequency. Larger employment centers may feature private shuttle services.	Tres Pinos Road and Rancho Drive, Hollister Ryan Ranch Office Park, Monterey
S-6 Neighborhood Mixed Use 	Medium Intensity (25 or more units per acre; FAR usually 2.0 or greater)	Multi-family, mixed-use developments with ground-floor, neighborhood-serving retail or office uses. Usually found in newly built traditional neighborhood developments or as infill along existing commercial corridors. Buildings usually have high lot-coverage, with no setbacks and pedestrian-oriented entrances directly fronting the street.	Pedestrian, bicycle, and transit oriented with bicycle parking, limited or tucked-away car parking, and pedestrian amenities. Transit service typically similar to other suburban place types, but with greater potential for increased transit service and facilities.	Capitola Beach Villas Greenfield Village

Town Place Types

	Intensity	General Characteristics		Examples
		Land Use	Transportation	
T-1 Town Single-Family Residential 	Low to Medium Intensity (6 to 15 units per acre)	Single-family homes in close proximity to town centers or pedestrian-oriented commercial corridors, typically laid out in a grid block pattern. Includes some duplexes, accessory units, or small multi-unit buildings. Compact development pattern with small lots, limited setbacks, and close proximity of structures.	Short blocks, grid street pattern, and proximity to destinations support non-motorized modes of transportation. Complete sidewalks often present; bicycle infrastructure typically limited. Neighborhoods served by bus service with 30-minute or more headways; occasional proximity to regional or intercity transit service.	Jewel Box, Capitola Maple Street, Salinas 6th Street, Hollister
T-2 Town Multi-Family Residential 	Medium Intensity (12 to 30 units per acre)	Combination of apartment buildings, duplexes, accessory units, and some single-family homes. Usually located in areas with traditional street patterns. One- to three-story residential buildings, typically with small setbacks from the street and property lines.	Short blocks, grid street pattern, and proximity to destinations support non-motorized modes of transportation. Complete sidewalks often present; bicycle infrastructure typically limited. Neighborhoods served by bus service with 30-minute or more headways; occasional proximity to regional or intercity transit service.	Laine Street, New Monterey Neighborhood East Riverside Drive, Watsonville
T-3 Town Commercial 	Low intensity (FAR 1.0 or less)	Pedestrian-oriented commercial uses in town core commercial areas or along commercial corridors. Usually in areas with traditional street patterns. One-story buildings, often with no setbacks and sometimes with full lot coverage. Entrances usually face the street. Lots occasionally include parking, usually located at rear.	Short blocks, grid street pattern, and nearby residential uses support non-motorized modes of transportation. Complete sidewalks often present; bicycle infrastructure typically limited. Transit typically includes limited local service, with headways as short as 30 minutes. Many visitors arrive by car, particularly when traveling long distances.	Bay and Misstion Street, Santa Cruz Downtown Carmel

T-4 Town Mixed Use 	Low to Medium Intensity (FAR 1.0 to 3.0)	Small-scale, mixed-use buildings typically in core commercial areas or along commercial corridors. Usually in areas with traditional street patterns. Vertical mixed use buildings common with residential and office above ground-floor commercial. Buildings typically built to property lines; parking may be included, usually to the rear of buildings.	Short blocks, grid street pattern, and nearby residential uses support non-motorized modes of transportation. Complete sidewalks often present; bicycle infrastructure typically limited. Transit typically includes limited local service, with headways as short as 30 minutes. Many visitors arrive by car, particularly when traveling long distances.	Capitola Village 5th Street, Hollister Lighthouse Avenue, Pacific Grove

Non-Urban Place Types

	Intensity	General Characteristics		Examples
		Land Use	Transportation	
NU-1 Agriculture and Rural Residential 	Very Low Intensity (1 unit per acre or less)	Isolated single-family homes, farm houses, and other agriculture-related structures in an agricultural or rural setting. Various building heights and sizes, frequently 2-stories or less, often with expansive setbacks from roads and property lines.	Automobile dependent with widely-spaced, generally rectilinear road patterns. Transit absent or restricted to limited and infrequent regional or inter-city service. Sidewalks and other pedestrian/bicycle infrastructure usually absent.	Outlying portions of Greenfield Outlying portions of San Juan Bautista
NU-2 Rural-Town Commercial 	Low Intensity (FAR usually less than 1.0, up to 2.0 in rare instances)	Variety of small commercial buildings usually located in centers of compact, rural towns. Buildings usually one-story with parking at front or rear. In some cases may not include parking and may include second story with upstairs use.	Mixture of pedestrian- and automobile-oriented. Short blocks, grid street pattern, and nearby residential uses support non-motorized modes of transportation; however, cars may be more commonly used, especially by visitors traveling regionally. Transit absent or restricted to limited and/or infrequent regional or inter-city service. Sidewalks generally present, but may be absent in some cases. Dedicated bicycle infrastructure usually absent.	3rd Street, San Juan Bautista Merritt Street, Castroville Alta Street, Gonzales

NU-3 Rural-Town Residential 	Low Intensity (3 to 8 units per acre)	Single-family homes in areas with grid street patterns; close proximity to central areas of compact, rural towns. May include-small multi-family buildings such as duplexes or homes with accessory units. One- or two-story buildings on small- to medium-sized lots. Homes have variable setbacks from property lines and other buildings.	Short blocks, grid street pattern, and proximity to local destinations support non-motorized modes of transportation for intracity trips; however, cars may be more commonly used, especially for regional trips. Transit absent or restricted to limited and infrequent regional or inter-city service. Sidewalks may be absent, but generally low traffic may promote non-motorized transportation. Dedicated bicycle infrastructure usually absent.	6th Street, San Juan Bautista Scott Street, Chualar 9th Street, Gonzales
NU-4 Exurban Residential 	Very Low to Low Intensity (usually 1 unit per acre or less, on rare occasions up to 6 units per acre)	Single-family homes located in neighborhoods on urban fringe. Usually characterized by non-grid street patterns and relatively long distances to noncontiguous urban or town centers. One or two story buildings on large lots with deep setbacks. In rare instances may include smaller "suburban" style lots located far from central areas of towns or cities.	Automobile oriented, often with long distances separating different land uses. Non-grid, typically low-connectivity street patterns discourage non-motirized transportation for non-recreational trips. Transit absent or restricted to limited and infrequent express or regional service; park-and-rides occasionally present. Sidewalks and dedicated bike paths typically for recreational use.	Pasadera Neighborhood, Monterey Fairview Road, Hollister Crescent Drive, Scotts Valley

Other Place Types

	Intensity	General Characteristics		Examples
		Land Use	Transportation	
IND Industrial and Manufacturing 	Various Intensities (FAR from less than 1.0 to 4.0 or higher)	Various industrial and manufacturing uses, including factories, storage facilities, industrial and commercial suppliers, and some research and development uses. Street patterns and building forms vary, ranging from traditional blocks and pedestrian-oriented configurations to isolated facilities inaccessible by non-motorized transportation.	Transportation characteristics vary, with both pedestrian- and auto-oriented development patterns Availability of transit, pedestrian access, and bicycle infrastructure vary depending upon setting.	Industrial Drive, Hollister Los Coches Road, Soledad Estates Drive, Aptos

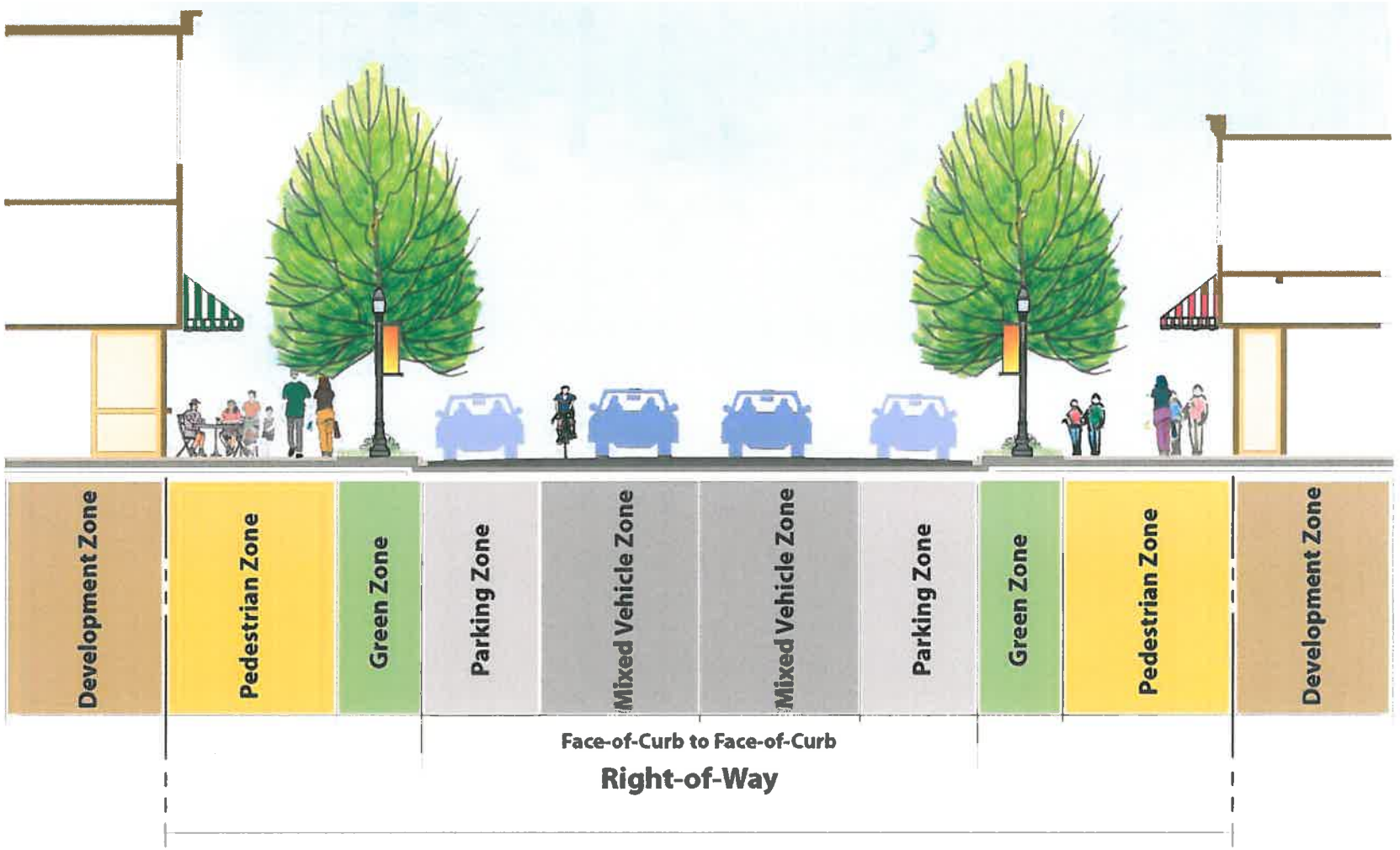
AT Airport 	N/A	Airports.	Transportation characteristics vary.	Monterey Peninsula Airport Hollister Municipal Airport
INS Institutional 	Various Intensities (FAR from less than 1.0 to 4.0 or higher)	Various institutional, civic, public, educational, hospital, and utilities uses located in various settings. Built forms vary by specific use and location.	Transportation characteristics vary, with both pedestrian- and auto-oriented development patterns Availability of transit, pedestrian access, and bicycle infrastructure are all variable, depending upon setting.	UC Santa Cruz Salinas High School Public Libraries Wastewater Treatment Plants
OSR Open Space / Recreation 	N/A	Open space and recreational uses, including local and regional parks, nature preserves, and beaches.	Transit characteristics highly variable. Isolated regional parks or wilderness areas may lack transit connections and pedestrian/bicycle access. Parks in urban centers may have frequent transit service and complete bicycle/ pedestrian infrastructure.	Village Green, Greenfield Ramsay Park, Watsonville Calaveras Park, Hollister

Appendix G- Complete Streets Type Segment Design

Complete street types that provide a nexus between street functional classification and land use place types are suggested as an alternative or supplement to traditional street functional classification. Complete Streets Types take into consideration the various user perspectives and the surrounding land use context, *in addition to* the street function. For each of the complete street types, specific design elements should be included. Cross sections for each complete street type are shown here.

The cross sections recommended in the Monterey Bay Area Complete Streets Guidelines were developed and adopted by the Charlotte Department of Transportation as part of the Urban Streets Design Guidelines.

Main Streets



Main Street

For specific dimensional information refer to the guidelines in this section.

Main Streets

Development Zone:

Important to maintaining Main Street character and function, development should include pedestrian-oriented land use and design, with narrow setbacks, functioning doors and windows facing onto the sidewalk, no expanses of blank walls, and first floor active spaces.

Pedestrian Zone:

Crucial to Main Street purpose and function; because of expected high pedestrian volumes, this zone should include spacious, unobstructed sidewalks and pedestrian scale lighting.

Green Zone:

Very important for supporting the pedestrian character of the Main Street, this zone includes street trees and other landscaping in appropriately designed planters, as well as interspersed street furnishings in a hardscaped amenity zone. This zone also provides extra buffering between pedestrians and vehicles.

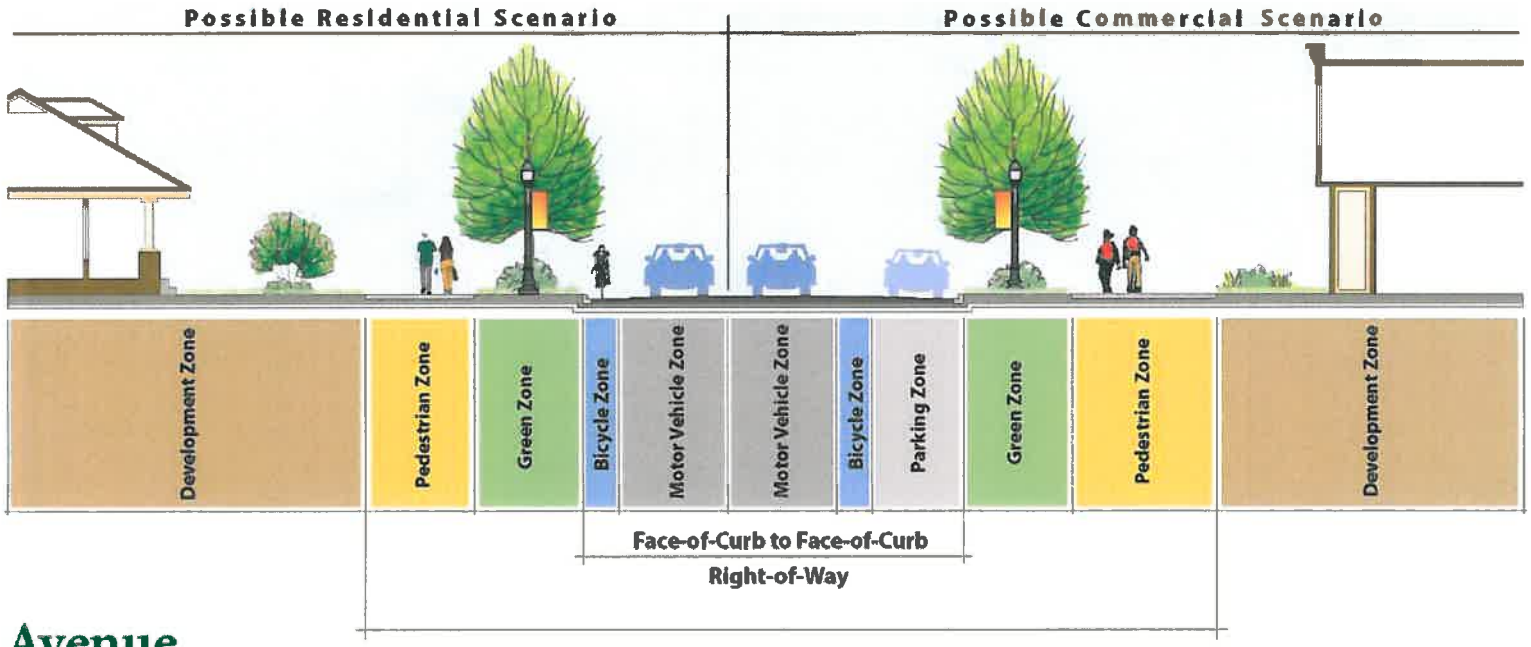
Parking Zone:

Important for supporting Main Street pedestrians and businesses, the parking zone calms traffic, provides parking for businesses, and buffers pedestrians from moving traffic.

Mixed Vehicle Zone:

Because the Main Street emphasis is on the pedestrian, this zone serves cars, trucks, buses, and bicycles as mixed traffic in a limited number of travel lanes. Main Streets are low-speed, relatively low-volume streets.

Avenues



Avenue

For specific dimensional information refer to the guidelines in this section.

Avenues

Development Zone:

Setbacks, design, and land uses will vary, but the basic intent for this zone is that development orients toward and has good functional and visual connections to the street.

Pedestrian Zone:

Very important for modal balance, pedestrian travel should be comfortable on Avenues; this zone should include unobstructed sidewalks, at appropriate widths for adjacent and surrounding land uses.

Green Zone:

To maintain comfortable pedestrian travel and serve an important buffer function, as well as enhancing the street for other users, this zone should include grass, landscaping, and shade trees in spacious planting strips or, in some cases, replaced by or interspersed with hardscaped amenity zones. **In some Avenue configurations, this zone will also include a median or intermittent "islands" with trees and landscaping.**

Parking Zone:

The need for this zone varies on Avenues, but the potential for traffic calming, buffering between vehicles and pedestrians, and access to adjacent land uses should be considered. **Some Avenues will have on-street parking and some will not.**

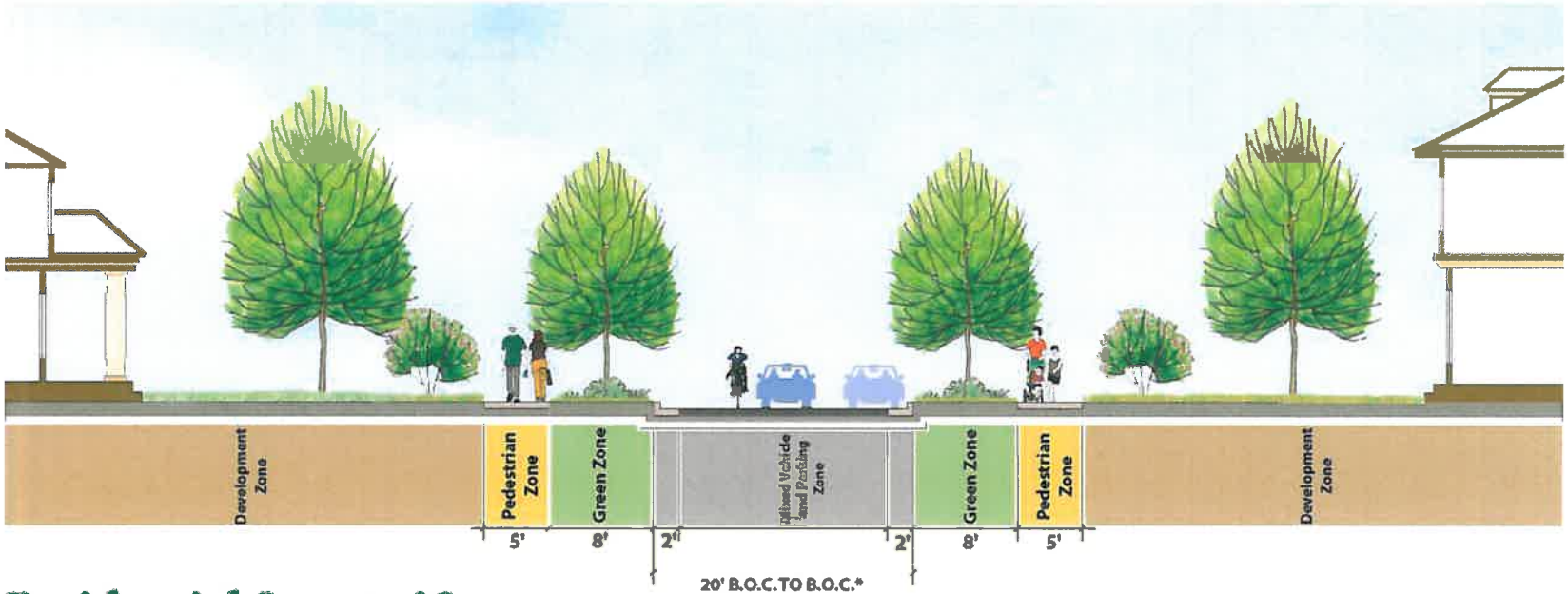
Exclusive Bicycle Zone:

Avenues are higher-speed and volume streets than Main Streets, so cyclists are less likely to feel comfortable in mixed traffic; this zone is important and should be considered for modal balance, safety, and additional buffering for other modes.

Motor Vehicle Zone:

This zone serves motor vehicles, in **a variety of possible lane configurations,** to accomodate higher volumes than Main Streets, while maintaining modal balance.

Local Residential Streets



Residential Street - Narrow

**B.O.C. - Back of Curb*

Local Residential Street - Narrow

Development Zone:

Crucial to maintaining the functionality of the Narrow Residential Street, this zone should typically include only lower-density, large-lot housing, with ample on-site parking.

Pedestrian Zone:

Crucial for safe, walkable neighborhoods, this zone includes sidewalks of adequate width for two adults to comfortably pass one another.

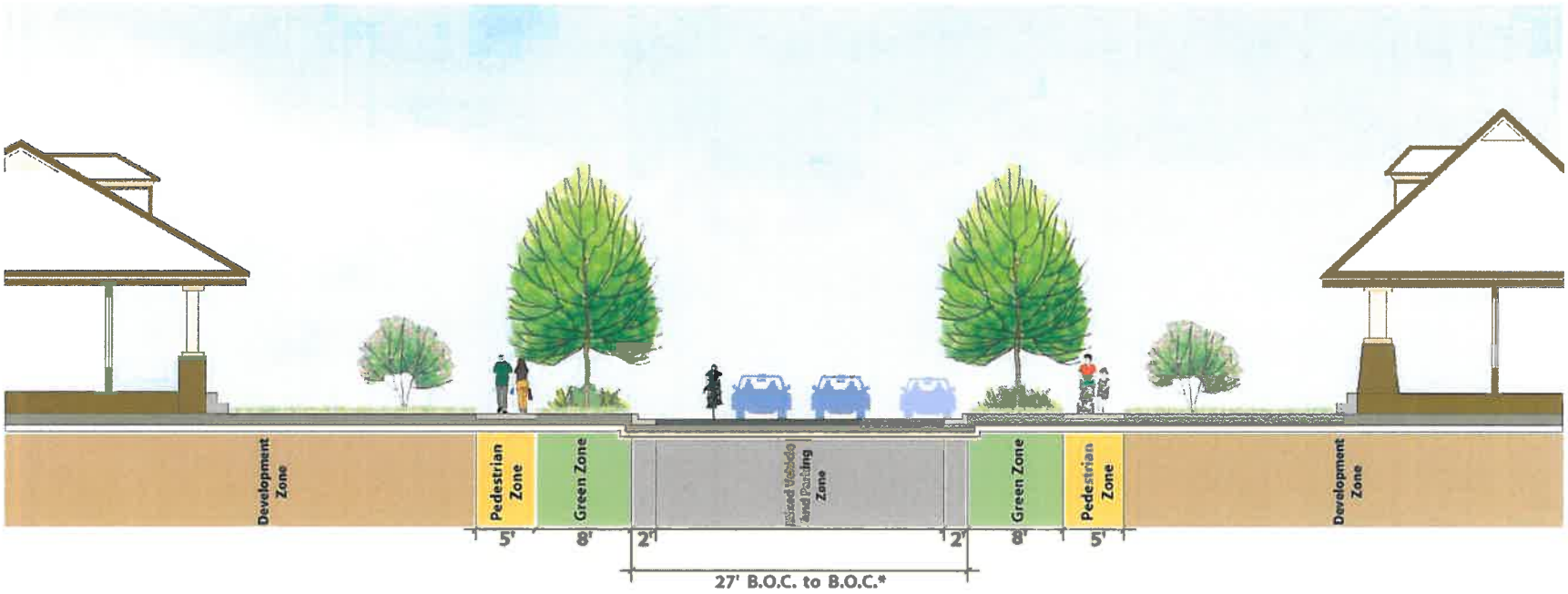
Green Zone:

Very important for pedestrian comfort and neighborhood livability, this zone should include grass, landscaping, and street trees in spacious planting strips. The tree canopy in neighborhoods can also help to calm traffic.

Mixed Vehicle and Parking Zone:

This zone sets the tone for the street's multiple objectives of allowing mobility and accessability for both motor vehicles and bicycles, while maintaining low volumes and speeds and, thereby, contributing to overall neighborhood livability. Parking will be infrequent, but can help to calm traffic.

Local Residential Streets



Residential Street - Medium

**B.O.C. - Back of Curb*

Local Residential Street - Medium

Development Zone:

This zone is characterized by low- to medium-density residential land uses, with direct access via driveways or alleys; on-site parking should be sufficient to allow most cars to be parked off of the street.

Pedestrian Zone:

Crucial for safe, walkable neighborhoods, this zone includes sidewalks of adequate width for two adults to comfortably pass one another.

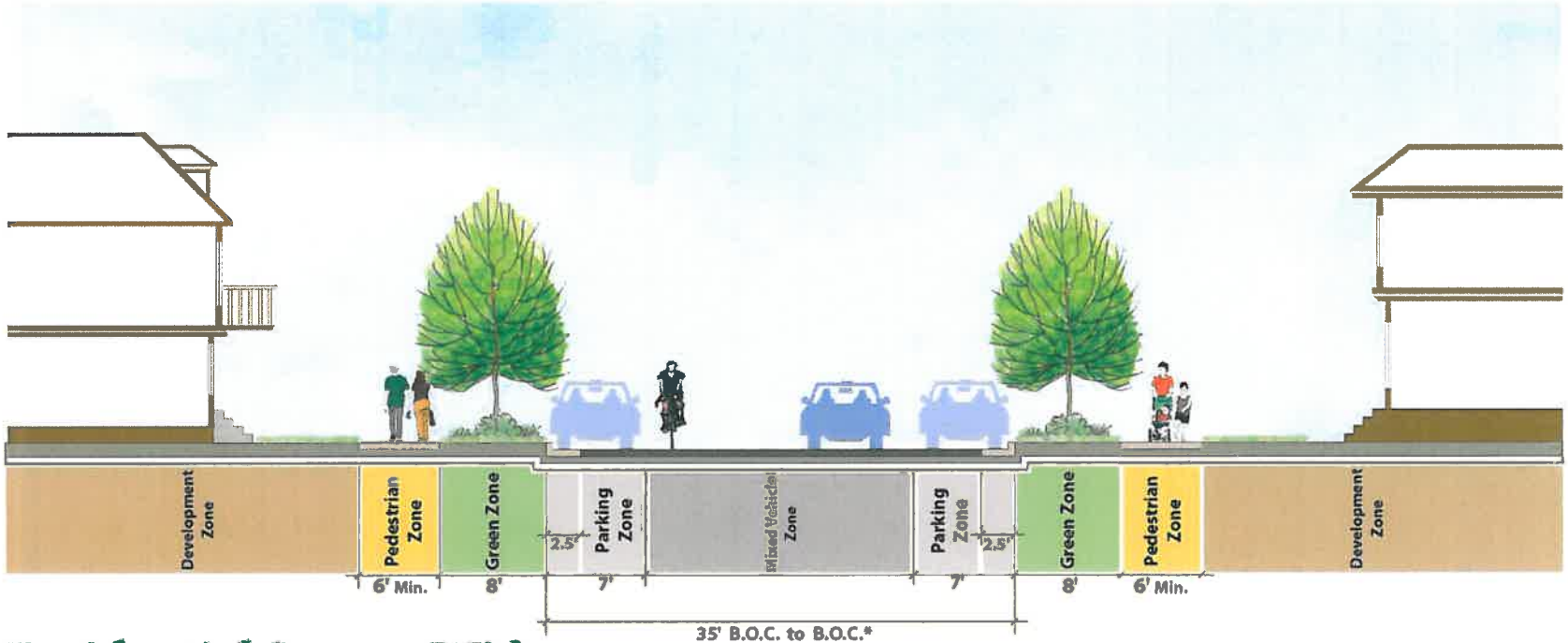
Green Zone:

Very important for pedestrian comfort and neighborhood livability, this zone should include grass, landscaping, and street trees in spacious planting strips. The tree canopy in neighborhoods can also help to calm traffic.

Mixed Vehicle and Parking Zone:

This zone sets the tone for the street's multiple objectives of allowing mobility and accessability for both motor vehicles and bicycles, while maintaining low volumes and speeds and, thereby, contributing to overall neighborhood livability. Parking on the street will occur more frequently than with the Narrow cross-section, helping to calm traffic, but most parking should be on-site.

Local Residential Streets



Residential Street - Wide

**B.O.C. - Back of Curb*

Local Residential Street - Wide

Development Zone:

This zone is characterized by medium- to high-density residential land uses, such as town-houses and other attached, multi-family uses. These land uses have small setbacks with strong functional and visual connections to the street, thereby reinforcing the pedestrian character of this street type.

Pedestrian Zone:

Crucial for safe and walkable neighborhoods and reflecting the higher density land uses characteristic of this street type, this zone includes wider sidewalks than do the other residential street types.

Green Zone:

Very important for pedestrian comfort and neighborhood livability, this zone should include grass, landscaping, and street trees in spacious planting strips or, alternatively, trees and landscaping in amenity zones.

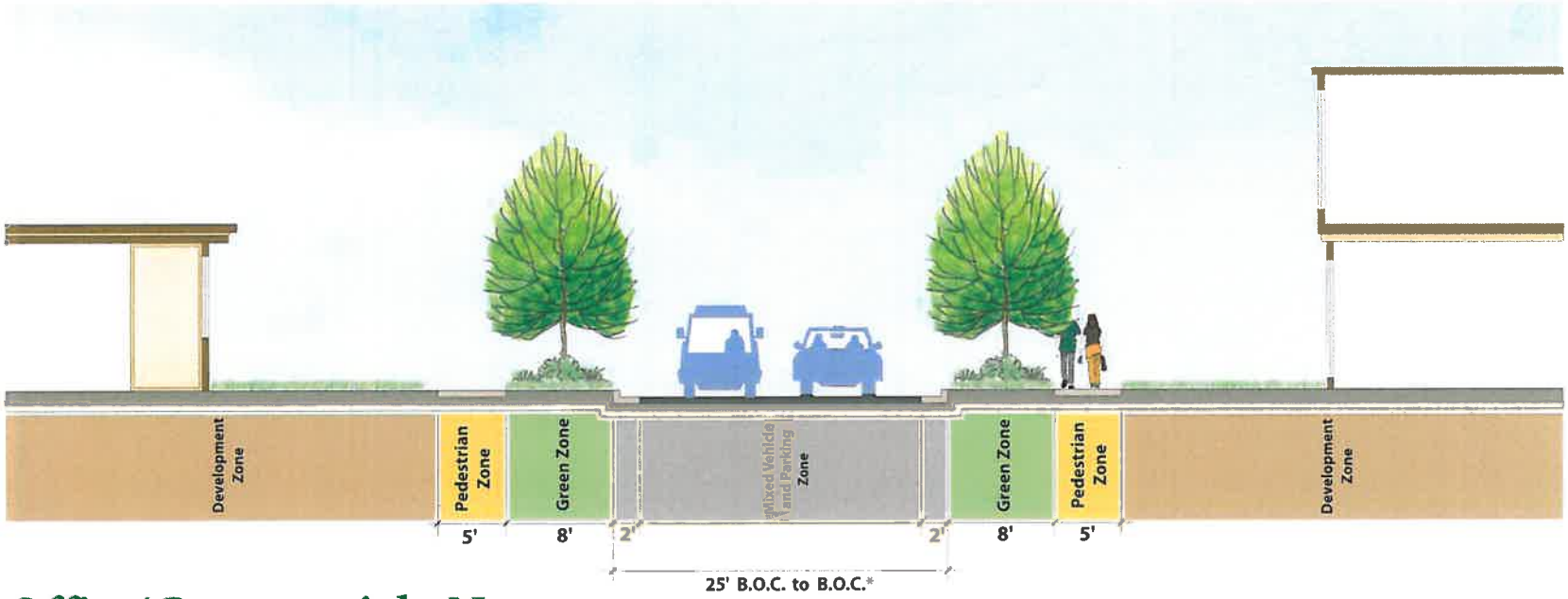
Parking Zone:

Parking is offered in a separate zone for this residential street type, because it is expected that there will be much more demand for on-street parking in these higher-density areas.

Mixed Vehicle Zone:

Speeds and volumes are low enough on this street type for bicycles to operate in mixed traffic.

Local Office/Commercial Streets



Office/Commercial - Narrow

**B.O.C. - Back of Curb*

Local Office/Commercial Street - Narrow

Development Zone:

Important to maintaining the functionality of the narrow street, this zone will typically include office park style development, with ample on-site parking.

Pedestrian Zone:

Crucial for creating a safer, walkable environment, this zone includes sidewalks of adequate width for two adults to comfortably pass one another.

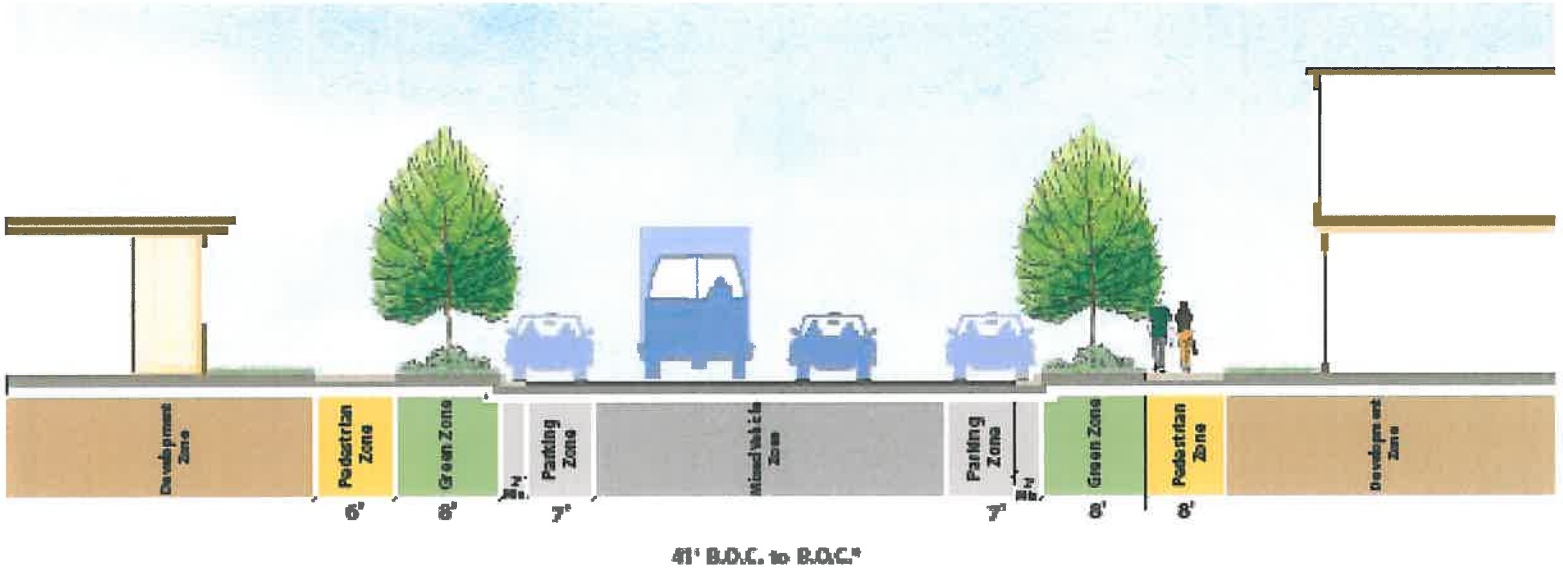
Green Zone:

Very important for pedestrian comfort, this zone should include grass, landscaping, and street trees in spacious planting strips. The tree canopy can also help to calm traffic.

Mixed Vehicle Zone:

This zone sets the tone for the street's multiple objectives of allowing mobility and accessibility for both motor vehicles and bicycles, while maintaining low volumes and speeds. Parking will be on-site, rather than on-street.

Local Office/Commercial Streets



Office/Commercial - Wide

*B.O.C. - Back of Curb

Local Office/Commercial Street - Wide

Development Zone:

Serving a variety of commercial land uses, this zone shares some characteristics with Main Street type development, including higher intensity development, buildings that front the street, and a greater likelihood of mixed uses than with the Narrow Office/Commercial Street.

Pedestrian Zone:

Important for reinforcing the pedestrian nature of this street type, this zone includes spacious sidewalks to complement the pedestrian-orientation of the buildings in the development zone.

Green Zone:

Very important for supporting the pedestrian character of the Wide Office/Commercial Street, this zone includes street trees and other landscaping in a planting strip or, alternatively, in appropriately designed planters in a hardscaped amenity zone. This zone also provides extra buffering between the pedestrian and vehicle zones.

Parking Zone:

Important for supporting the pedestrian character of this street type, the marked parking zone calms traffic, provides parking for businesses, and buffers pedestrians from moving traffic.

Mixed Vehicle Zone:

This zone sets the tone for the street's multiple objectives of allowing mobility and accessibility for both motor vehicles and bicycles, while maintaining low volumes and speeds. Motor vehicles and bicycles operate together in the travel lanes.

Appendix H- Project Development Checklist

COMPLETE STREETS PROJECT REVIEW CHECKLIST

Purpose

This checklist was developed to assist project sponsors in defining and developing projects and local plans using the Monterey Bay Area Complete Streets Guidebook. The checklist is a mechanism for incorporating the perspectives of all stakeholders into the planning and design process for projects. Use of the checklist will result in projects that are consistent with local, regional and state complete street policies, consider adjacent land uses and meet the needs of all users of the roadway.

How to Use the Checklist

The checklist enables project sponsors to document how each existing and future roadway user was considered and accomodated throughout the project development process. Project sponsers are encouraged to reference the Monterey Bay Area Complete Streets Guidebook while going through the checklist for complete streets applications and roadway design ideas.

Public Works and Planning departments should use the checklist to review projects within or affecting the public right-of-way. If projects do not incorporate complete streets design treatments, project sponsors should document why not and what accomodations will be provided for pedestrians, bicyclists and/or transit users unless the project is exempt (**see Guidebook pg. X for exemptions**).

Threshold Requirements

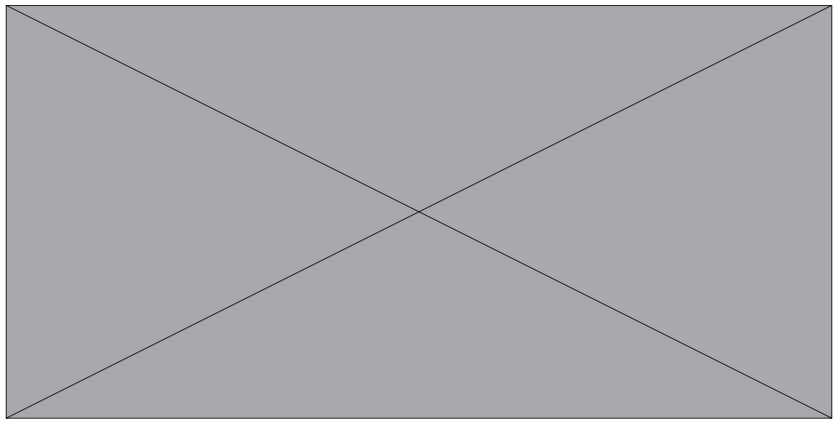
The Complete Streets Checklist should be used to review the following types of projects:

1. Street improvements requiring permits or approvals by the Department of Planning and/or Public Works which requests a change of the public right of way ; or

2. Public Works Department capital projects that alter or maintain the public right of way prior to the issuance of any permit or approval

Such that any one or more of the following apply:

- A traffic study is required
- A signalized intersection is affected
- Repaving/restriping needed
- Rehab/maintenance needed



CHECKLIST - General Project Information

Date

1. Project Title

Project Description

Project Location

Department Review Only

Project #:

2. Contact Information

Implementing Agency

Contact Person

Phone

Fax

Email

3. Project Schedule (**Circle** Current Project Phase)

Project Milestone	Date Started/Anticipated End Date
Planning	
Preliminary Design	
Final Design	
Construction	

PHOTO

CHECKLIST - Existing Conditions

4. Existing Land Uses (check all that apply)

Residential	☐	Park/Open Space	☐
Mixed Use	☐	Visitor-Serving/Commercial	☐
Institutional/School	☐	Senior Housing	☐
Civic/Public Facilities	☐	Rural/Agricultural	☐

5. Safety (***See Complete Streets Needs Assessment Matrix & http://tims.berkeley.edu/***)

Are there percieved safety/speeding issues in the project area? ☐ Yes ☐ No

Is there a history of collisions in the project area?

☐ Pedestrian ☐ Bicyclist ☐ Motorist

6. Congestion

Does the roadway experience congestion? ☐ Yes ☐ No

If so, at what time(s) is it congested? ☐ AM Peak ☐ PM Peak

7. Existing Roadway Conditions/Context

Functional Classification	
ROW Width	Ft
Roadway Pavement Width	Ft
# of Lanes	NB/EB: SB/WB:
2-Way Center Turn lane	☐ Yes ☐ No
Sidewalk Width	Ft
Landscaping/Parking Buffer	☐ Yes ☐ No
Shoulder Width	Ft
Bike Lane Width (<5')	☐ Yes ☐ No
Intersection(s)	☐ Signalized ☐ Unsignalized
Pavement Condition	Poor Fair Good
Posted Speed Limit	
Traffic Volumes (AADT)	
Transit Route/Stops	☐ Yes ☐ No
Truck Route	☐ Yes ☐ No

CHECKLIST - Future Conditions

8. Future Roadway Conditions

Are there planned transportation projects that could affect circulation in the project area? ☐ Yes ☐ No

If so, please list the project(s)

What are the projected traffic volumes in the project area?

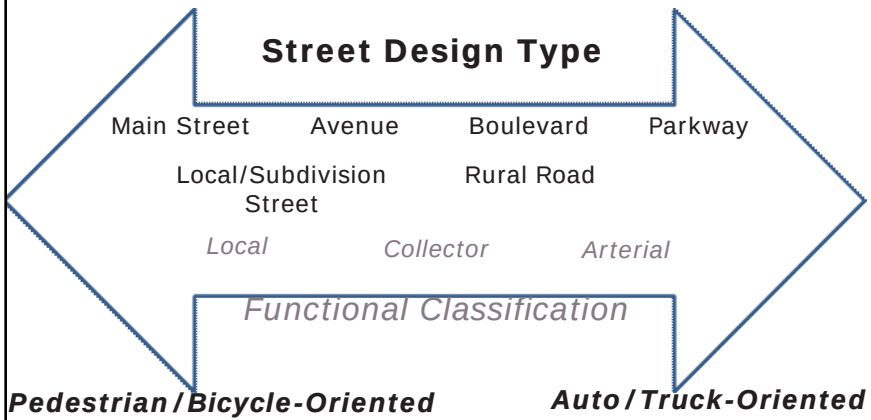
9. Stakeholder Outreach (check all that apply)

Please indicate which stakeholder groups provided input on project scope and design:

Neighborhood Group	☐	Bicycle Committees	☐
Business Association	☐	Pedestrian Committee	☐
School	☐	Senior Group	☐
Property Owners	☐	Transit Agency	
Environmental Group	☐	Transportation Disadvantaged	☐

Specific changes requested by stakeholders? ☐ Yes ☐ No

10. **Circle** the Complete Street Design Type - (***See Table X of Guidebook***)



11. Transportation Network Deficiencies (Refer to Existing Conditions)

Lacking/Insufficient Bicycle Facilities	Lacking/Insufficient Transit Facilities	Lacking/Insufficient Transit Service
Lacking/Insufficient Pedestrian Facilities	Insufficient accomodations for seniors	Insufficient accomodations for disabled
Bicycle/Pedestrian Connectivity	Insufficient accomodations for students/youth	

Given the Existing and Future Conditions the project area is a candidate for*:

Road Diet (3 or more lanes; AADT<20,000; bicycle collisions)	Yes	No
Traffic Calming	Yes	No
Roundabout	Yes	No
Transit-Oriented Development/Transit Corridor (15 min headway)	Yes	No
Neighborhood Shared Street	Yes	No
Pedestrian Place	Yes	No
Transit/Bicycle/Pedestrian Prioritization at Intersections	Yes	No

*** Click on treatment types for definitions and images; more information may also be found in the Guidebook Ch X.**

CHECKLIST - Design

The purpose of this section is to ensure all users have been considered in the design of the project. Complete street design is context-sensitive and a complete street in a rural area may look different than one in an urban area. Refer to safety and special user needs identified in the Existing and Future Conditions sections. The Monterey County Complete Streets Guidebook Chapter X contains design best-practices and sample accomodations for these users.

12. Pedestrian Design (Guidebook Ch X)*

Which, if any, of the following is provided or improved through the project design?

Minimize Driveways	☐ Yes	☐ No	☐ Existing
Sidewalk / Path	☐ Yes	☐ No	☐ Existing
Landscaping / Parking Buffer	☐ Yes	☐ No	☐ Existing
ADA Access	☐ Yes	☐ No	☐ Existing
Street Trees	☐ Yes	☐ No	☐ Existing
Crossing Treatments	☐ Yes	☐ No	☐ Existing
Traffic Calming	☐ Yes	☐ No	☐ Existing
Wayfinding Signage	☐ Yes	☐ No	☐ Existing
Audible Countdown	☐ Yes	☐ No	☐ Existing
Other (Describe)			

13. Bicycle Design (Guidebook Ch X)*

Which, if any, of the following is provided or improved through the project design?

Bicycle Lanes	☐ Yes	☐ No	☐ Existing
Shared-Lane Markings	☐ Yes	☐ No	☐ Existing
Multiuse Path	☐ Yes	☐ No	☐ Existing
Route / Wayfinding Signs	☐ Yes	☐ No	☐ Existing
Bicycle Parking	☐ Yes	☐ No	☐ Existing
Bicycle Detection	☐ Yes	☐ No	☐ Existing
Bicycle Box	☐ Yes	☐ No	☐ Existing
Color-Treated Bike	☐ Yes	☐ No	☐ Existing
Floating Bike Lanes	☐ Yes	☐ No	☐ Existing
Other (Describe)			

*** Click on treatment types for definitions and images; more information may also be found in the Guidebook Ch X.**

CHECKLIST - Design

14. Transit Design (Guidebook Ch X)*

Which, if any, of the following is provided or improved through the project design?

Priority Bus Lane	☐ Yes	☐ No	☐ Existing
Bus Bulbs/Pull-Outs	☐ Yes	☐ No	☐ Existing
Shelter	☐ Yes	☐ No	☐ Existing
Real Time Bus Arrival Info	☐ Yes	☐ No	☐ Existing
ITS/Signal Priority	☐ Yes	☐ No	☐ Existing
Transit Service (15 min headways)	☐ Yes	☐ No	☐ Existing
Wi-Fi	☐ Yes	☐ No	☐ Existing
Stop/Station Amenities**	☐ Yes	☐ No	☐ Existing
Other (Describe)			

*** Click on treatment types for definitions and images; more information may also be found in the Guidebook Ch X.**

**** Transit Amenities include: Bench, lighting, trash can, route information/maps, concessions, music, and public art.**

CHECKLIST - Trade-Offs & Exemptions

15. Project Trade-Offs

Is the recommeneded complete street cross section/design supportable? ☐ Yes ☐ No

If not, explain why:

☐ Lack of ROW width ☐ Existing Structures ☐ Other_____

☐ Trees/Environmental Features ☐ Insufficient Funding ☐ Other_____

Have alternative designs been considered? ☐ Yes ☐ No

What refinements to the cross section / needed were needed?

Removed/partial zones for (Appendix X of ☐ Pedestrians ☐ Bicyclists ☐ Landscaping ☐ Vehicles ☐ Parking

Considered alternative routes/locations for ☐ Pedestrians ☐ Bicyclists ☐ Landscaping ☐ Vehicles ☐ Parking

16. Exemptions (Refer to Ch X of the Guidebook)

Is the project exempt from accomodating certain users? ☐ Yes ☐ No

Cost of accomodation is excessively disproportionate to the need or probably use? ☐ Yes ☐ No

Documented absence of current and future need? ☐ Yes ☐ No

Other_____

Appendix I- Questions for supporting six-step process

Si x Steps

Step 1: Define the Existing and Future Land Use and Urban Design Context

• What does the area look like today?
• What are today's land use mixtures and densities?
• What are the typical building types, their scale, setbacks, urban design characteristics, relation to street, any special amenities, etc.?
• Are there any particular development pressures on the area (the nature of this may vary according to whether the area is a "greenfield" versus an infill area and this type of information is particularly important in the absence of an area plan)?
• What are the "functions" and the general circulation framework of the neighborhood and adjacent areas?
• Is there a detailed plan for the area?
• If so, what does the adopted, detailed plan envision for the future of the area?
• Does the plan make specific recommendations regarding densities, setbacks, urban design, etc.?
• Are there any other adopted development policies for the area?
• If so, what do those policies imply for the area?

Step 2: Define the Existing and Future Transportation Context

• What is the character of the existing street? How does the street currently relate to the adjacent land uses?
• How does the street currently function? What are the daily and hourly traffic volumes? Operating and posted speeds? What is the experience for pedestrians? Cyclists? Motorists?
• What are the current design features, including number of lanes, sidewalk availability, bicycle facilities, traffic control features, street trees, etc.?
• What, if any, transit services are provided? Where are the transit stops?
• What is the relationship between the street segment being analyzed and the surrounding network (streets, sidewalks, transit, and bicycle connections)?
• Are there any programmed or planned transportation projects in the area that would affect the street segment?
• Are there any other adopted transportation policies that would aff ect the classifi cation of the street segment?

Step 3: Identify Deficiencies

• Gaps in the bicycle or pedestrian network near or along the street segment;
• Gaps in the bicycle or pedestrian network in the area (which may increase the need for facilities on the segment, because of the lack of alternative routes);
• Insufficient pedestrian or bicycle facilities (in poor repair, poorly lighted, or not well buffered from traffic, e.g.);
• Gaps in the overall street network (this includes the amount of connectivity in the area, as well as any obvious capacity issues on other segments in the area);
• Inconsistencies between the amount or type of transit service provided along the street segment and the types of facilities and/or land uses adjacent to the street;

• Inconsistencies between the existing land uses and the features of the existing or planned street network.

Step 4: Describe Future Objectives

• What existing policies might or should influence the specific objectives for the street?

• What conditions are expected to stay the same (or, more importantly, what conditions should stay the same)?
• Would the community and the stakeholders like the street and the neighborhood to stay the same or to change?
• Why and how would the community and the stakeholders like the street and the neighborhood to change?
• Given this, what conditions are likely to change as a result of classifying the street (exactly how will the street classification and design support the stakeholders' expectations)?

Step 5: Recommend Street Classification and Test Initial Cross-Section

- What is the recommended cross section?
- Is the cross section supportable considering:
    - right-of way,
    - Existing structures,
    - Existing trees or other environmental features,
    - Topography, and
    - Location and number of driveways.

Step 6: Describe Tradeoffs and Select Cross-Section

- Where alternative design scenarios considered?
- What refinements to the cross section were needed ?
- What was the justification for selecting the final design scenario?

[i] Note that many types of accommodations for people with disabilities are mandated by federal law under the Americans with Disabilities Act.

[ii] A road diet is a transportation technique in which the number or width of lanes dedicated to motor vehicle traffic is decreased, often by combining the two central lanes into a single two-way turn lane, in order to create

additional space within the right of way for features such as bicycle lanes, sidewalks, or buffer zones.

[iii] Connectivity describes the directness of routes and density of connections in a street network. A street network with high connectivity has many short links, numerous intersections, and few dead-end streets. As connectivity increases, travel distances decrease and route options increase, allowing more direct travel between destinations.

[iv] Crime prevention through environmental design (CPTED) involves designing the built environment to deter criminal behavior. CPTED aims to create environments that discourage the commission of crimes by influencing offenders to not commit a contemplated crime, usually due to increased fear of detection.

Future Alternative SCS Scenarios

The following future Alternative SCS Scenarios have been developed to assess how future land use and transportation changes could affect the regional transportation system as well as travel demands or needs. These alternative scenarios combine the trends and variables identified in the 2014 MTP/SCS Policy Goals as adopted by the AMBAG Board.

These alternatives are used to communicate broad concepts for consideration by all stakeholders to weigh and consider transportation choices and priorities. They also provide a common framework for all parties to discuss the economic, social, and environmental costs and benefits of transportation decisions while taking future uncertainties into consideration.

For each of these scenarios, it is assumed that the AMBAG Regional Growth Forecast (three county total) is a constraint (fixed upper limit) to the amount of total development in the region.

2035 SCS Scenario #1 –Regional Transit Corridors

Land Use

- Focus future development adjacent to existing and proposed rail and regional/intercity transit corridors and opportunity areas.
- Encourage higher density urban centers in existing cities.
- Locate higher density residential and mixed use development at transit stations along the transit corridors.
- Strong emphasis on farmland preservation and watershed restoration.

Specific Land Use Changes

- Place types[1] along rail and transit corridors currently designated as "town" or "neighborhood" (whether residential, commercial or mixed use) increase in density/intensity within the existing place type designation.
- Consider new transit oriented development (TOD) style development around high frequency Bus Rapid Transit (BRT), transit centers, or rail transit stops.

[1] Place type categories are meant to act as a common “language” so that the diverse general and specific plans across the Monterey Bay region may be compared in a consistent and standard manner. The place types were developed in preparation for the SCS development process in consultation with the local jurisdictions.

Transportation

- Major investment in regional transit and rail transportation infrastructure.
- Transit improvement to create better connections from housing to regional job centers.
- BRT and regional express between major cities within and around region with dedicated lanes, where possible, or the use of bus on shoulders, to provide time savings.
- Transportation system management strategies that support regional BRT such as queue jumps.
- Investments in high occupancy toll (HOT), high occupancy vehicle (HOV), and reversible lanes to support transit.
- Create transit linkages to/from the proposed High Speed Rail Stations (Gilroy and Diridon).
- Improve commuter rail access within the Monterey Bay region and to the San Francisco Bay Area.
- Re-establish the Coast Daylight/Starlight Express.
- Provide shuttles from passenger rail stations to tourist attractions.

2035 SCS Scenario #2 – Expanded Community Centers/Livable Communities

Land Use

- Focus additional growth within existing neighborhood communities in and adjacent to existing commercial corridors. (Focus on localization vs. regional mobility.)
- Encourage/facilitate a better jobs/housing balance.
- Encourage mixed use development that supports walkability and convenient access to services within community centers.
- Encourage business incubators and green tech businesses. (Emphasis on small business and start ups instead of large scale businesses as referenced in Scenario 4.)
- Support the housing and transportation needs of workers in the hospitality industry, particularly along the Monterey peninsula.
- Improve access to educational facilities, particularly for higher-learning.

Specific Land Use Changes

- In areas currently designated as mixed use, keep the mixed use, but upgrade the density/intensity. Areas currently designated as "neighborhood mixed use" become "town mixed use" and areas currently designated as "town mixed use" become "urban mixed use."
- Transition commercial areas to mixed use. Areas currently designated as "town commercial" become "town mixed use" and areas designated as "neighborhood commercial" become "neighborhood mixed use."

- In specific locations previously identified by local jurisdictions to encourage infill development. For example, "Industrial" or "Institutional" place types become "Residential" or "Commercial" place types.

Transportation

- Focus on creating more “Complete Streets” and encouraging “active” transportation such as walking and biking that are commonly associated with the first and last mile of travel.
- Close local transit gaps and invest in local bus transit services and facilities.
- Significantly improve traffic safety through traffic calming, streetscape landscaping, etc.
- Increase investment in local serving rapid or express bus services
- Facilitate and fund development of new dedicated bicycle and pedestrian facilities that connect key destinations.
- Encourage the development of roundabouts to improve safety and air quality.
- Encourage the development of pedestrian trails.
- Encourage/expand bikes on bus to help with first and last mile of trips.
- Improve access for pedestrians and bicyclists in areas identified for intensified use

2035 SCS Scenario #3 – Dispersed Growth

Land Use

- Encourage future growth in new “greenfield” development areas and expand growth in existing unincorporated communities.
- Focus on opportunities to expand and improve access to tourism.

Specific Land Use Changes

- Areas currently designated as "agricultural" or "open space" may become "exurban-rural" or "rural-town residential” based on input received from local jurisdictions.
- Areas currently designated as “exurban” to “suburban single-family residential” based on input received from local jurisdictions.
- In specific locations, unincorporated areas increase in intensity of use based on input received from local jurisdictions.

Transportation

- Focus on roadway improvements that reduce congestion and travel time.
- Develop improved roadway and transit access that support tourism related jobs.
- Improve/expand highway access between cities particularly at "choke points" with strategies such as BRT, HOV/HOT lanes, auxiliary lanes, ramp metering,

interchanges, left turn lanes, park-and-ride lots and safety improvements for at-grade crossings.

- Construct safety enhancement projects on highways.

2035 SCS Scenario #4 – Targeted Growth and Economic Diversity

Land Use

- Concentrate growth and development for both housing and employment in cities that support low income and minority populations, inclusive of proposed annexations and sphere of influence amendments.
- Improve the jobs/housing balance in those areas that support low income and minority populations.
- Encourage sustainable, pedestrian oriented development that is responsive to the economic needs and social heritage of each respective community.
- Promote housing that supports local economic development, particularly workforce housing.
- Encourage economic development that diversifies the economy instead of promoting one particular industry such as tourism related services, processing and manufacturing, healthcare and medical services as well as general retail businesses.
- Promote access to workforce investment opportunities such as vocational training centers.
- Expand land use development around existing and proposed airport facilities to accommodate goods movement.

Specific Land Use Changes

- Areas currently designated as "exurban", "rural" or “suburban single-family” become "town" or "suburban" place types including commercial and residential uses with additional changes based on input received from the local jurisdictions.
- Growth may be included in areas beyond current spheres of influence/city limits in this scenario.

Transportation

- Focus transportation investments along highways in underserved areas. Examples include:
  - Commuter express services (e.g. express bus, vanpools, etc.)
  - Interchange improvements
  - Safety improvements at at-grade crossings
- Focus transit/transportation services that cater to students as well as low income and minority populations.

- Develop a regional rail transfer facility to enable more efficient transport of goods, particularly produce.

2035 SCS Scenario #5 – System Preservation

Land Use

- Allocate growth according to existing general plans designations for each respective jurisdiction assuming the AMBAG 2035 Regional Growth Forecast for population, housing, and employment. (No specific land use changes proposed for this scenario.)

Transportation

- Focus transportation funding on safety, maintenance, and rehabilitation of existing roadway and transit facilities throughout the region.

AGENDA: June 20, 2013

TO: Interagency Technical Advisory Committee

FROM: Ginger Dykaar, Transportation Planner and Grace Blakeslee, Senior Transportation Planner

RE: Scenario Planning for 2014 Transportation Plans – STARS Transportation Investment Analysis

---

RECOMMENDATIONS

Staff recommends that the Interagency Technical Advisory Committee:

1. Receive information on the results of the initial scenario analysis for the Santa Cruz County Regional Transportation Plan and provide input on the transportation investments that will be considered for the hybrid scenarios as part of the scenario planning for the 2014 Regional Transportation Plan and 2014 Metropolitan Transportation Plan.

BACKGROUND

As the transportation planning agency for Santa Cruz County, the Regional Transportation Commission (RTC) is responsible for developing, implementing, and regularly updating the Regional Transportation Plan (RTP) for Santa Cruz County. RTC staff has been working with the Sustainable Transportation Council (STC) to incorporate a sustainability framework into the 2014 Regional Transportation Plan. This approach was approved by the RTC in January 2012. The goals, policies and targets for the RTP have been developed based on the Sustainable Transportation Analysis and Rating System (STARS). Strategies for advancing these goals/targets will be identified in the scenario planning process.

The RTC also works with the Association of Monterey Bay Area Governments (AMBAG) to produce and implement the Metropolitan Transportation Plan (MTP) for the Monterey Bay region. As part of the 2014 MTP, Senate Bill 375 requires AMBAG to develop a coordinated land use and transportation plan called the Sustainable Communities Strategy (SCS) to show how per capita vehicle miles traveled and associated greenhouse gas emissions will be reduced.

To more efficiently and effectively complete the two transportation plans, the RTC works with AMBAG and regional partners to develop components that can be used for both transportation plans. These long range transportation plans include a policy element, an action element and a financial element. The Action Element identifies

the list of transportation needs in the region through 2035. The preliminary project list was approved by the RTC in March 2013.

Scenario Planning

The Draft RTP project list will be divided into a "constrained" list (projects that could be implemented with foreseeable revenues through 2035) and "unconstrained" list (projects that could be funded if new revenues, above and beyond projections, are generated). In order to determine which projects will be on the "constrained" list in the RTP and MTP, RTC staff has been working closely with AMBAG staff on a scenario planning process. Scenario planning supports both the development of the MTP Sustainable Communities Strategy as well as the STARS analysis for advancing the sustainability goals of the RTP.

The scenario planning has started with five initial scenarios that identify distinctly different land use and transportation investments. AMBAG, with input from the tri-county Regional Transportation Planning Agency staff, Planning Directors, the AMBAG Regional Advisory Committee, and the public have drafted the themes and descriptions of the initial land use patterns and transportation investments to be considered in the Future Alternative SCS Scenarios. *(See Agenda Item 8, Attachment 1 for these descriptions)*. From the analysis of the initial scenarios, hybrid scenarios will be created that will bring together a mix of land use and transportation projects that best achieve regional goals and SB375 greenhouse gas emission targets. The final preferred scenario, selected from the hybrid scenarios, will be the land use and transportation vision for 2035 and will define the transportation projects that are on the constrained list in the RTP and MTP. At each step of the scenario planning process, the scenarios will be analyzed for their ability to advance the RTP and MTP goals.

The scenario descriptions only identify investments proposed for discretionary funding and are above and beyond what would be implemented using dedicated funds. Discretionary, relatively flexible funding makes up approximately 25% of the funding identified for the Santa Cruz County Regional Transportation Plan (including a half cent sales tax measure). The remaining 75% of funding is dedicated to specific types of projects based on federal, state or local regulations.

DISCUSSION

Analysis of Transportation Investment Alternatives

As part of the STARS analysis, the **transportation investments** for the initial scenarios have been analyzed for their ability to advance the targets of the RTP. Transportation projects in the Draft RTP project list have been grouped into financially "constrained" packages of projects under each of the initial scenarios for Santa Cruz County. A qualitative analysis was performed to compare how the package of transportation projects in each of the initial scenarios advances the targets. The results of the analysis can be found in Attachment 1. **This analysis does not include the affect of any land use changes associated with these scenarios.**

For each of the 5 initial scenarios, Attachment 1 lists the types of transportation investments for Santa Cruz County, the funding breakdown based on mode, a comparative assessment of how the targets are being advanced due solely to transportation investments and a brief discussion on the key points of the results. Projects that receive dedicated funding or have already been programmed have been analyzed separately for their ability to advance the targets in order to be able to see more clearly how the affects of the transportation projects funded with discretionary funds vary between scenarios. Analysis of the distinctly different initial scenarios provides information about, "what if funding is invested in…, how will the goals and targets of the RTP be advanced?"

The analysis was performed by scoring all the projects on their ability to advance the targets that have been identified for the RTP. Each project was given an effectiveness rating of either no ability (0), low (1), medium (2), or high (3) ability to advance each of the RTP targets. The effectiveness ratings for transportation project types particular for Santa Cruz County were determined by the Sustainable Transportation Council based on research and best practices. The effectiveness of the entire scenario for advancing the target was then determined by summing the project ratings (weighted by the cost of the project) for all the projects in each scenario. The results provide a rating of how effective each scenario is in advancing each of the targets. A more detailed analysis of the effectiveness ratings were performed for the Highway 1 High Occupancy Vehicle (HOV) Lane alternative project and the Highway 1Transportation System Management Alternative project to determine how these projects would advance the targets.

This qualitative analysis is useful for seeing how the transportation investments in the different scenarios compare in advancing the targets but does not quantify how close we are to meeting the targets. For the hybrid and preferred scenarios, a more detailed quantitative analysis will be performed to quantify how the different scenarios advance the RTP targets.

Transportation Investments for Hybrid Scenarios

AMBAG will be soliciting input on the hybrid scenarios from the tri-county Regional Transportation Planning Agency staff, Planning Directors, the Regional Advisory Committee, and the public. The RTC Bicycle Committee recommends a subset of transportation investments from initial scenarios 1 *(transit)*, 2 *(complete streets)* and 5 *(system preservation)* to be combined into the hybrid scenarios. Strong public support for maintaining our current transportation system has been shown through a phone survey performed by EMC Research for the scenario planning effort. Given the results of the STARS analysis of the transportation projects identified for Santa Cruz County and input received to date, RTC staff proposes the following types of projects be considered for the discretionary funds under the hybrid scenarios.

Transportation Investments for Hybrid Scenario #1

Regional and Local Bus Service Expansion

Pedestrian Facilities that Support Transit
Transit Maintenance
Roadway Maintenance
Projects that Promote Safety
Transportation Demand & System Management that Supports Transit

Transportation Investments for Hybrid Scenario #2
Bicycle and Pedestrian Facilities
Intersection Improvements in Key Destination Areas that support Complete Streets
Traffic Calming
Auxiliary Lanes on Highway 1, which facilitate HOV lanes beyond 2035
Transportation Demand & System Management that Supports Complete Streets

The above mix of transportation projects proposed for each of the hybrid scenarios strive to advance the majority of the targets through the 2035 timeframe.

Staff recommends that the ITAC receive information on the results of the initial scenario analysis and provide input on the types of transportation projects to consider under the hybrid scenarios as part of the scenario planning for the 2014 Regional Transportation Plan and 2014 Metropolitan Transportation Plan.

NEXT STEPS

- July 2013 – AMBAG, with participation from the Regional Transportation Planning Agencies, will provide a series of workshops throughout the tri-county region to solicit input from the public on the hybrid scenarios. There will be two workshops in Santa Cruz County: Thursday, July 18 in Watsonville at 275 Main Street, 4th floor 6:00–7:30 pm and Monday, July 22 in Santa Cruz at the Santa Cruz Police Department Community Room, 155 Center Street, 6:00–7:30 pm.
- July 2013 – RTC staff will work with RTC committee members to provide input on the hybrid scenarios.
- August 2013 - RTC staff will present the hybrid scenarios to the RTC and RTC Committees and receive input on the preferred scenarios.
- September 2013 - AMBAG staff will bring the preferred scenario to their board for approval which will determine the transportation projects on the "constrained" list that will be evaluated in the program-level Environmental Impact Report (EIR) for the MTP/RTP. RTC staff will bring the RTP project list to the RTC at the September Transportation Policy Workshop.
- February 2014 - The draft RTP, MTP and EIR released for public review.
- June 2014 - Final RTP approved by the RTC and SCS/MTP approved by AMBAG.

SUMMARY

RTC and AMBAG staff are engaged in scenario planning to determine the projects that will be on the "constrained" (within projected revenues/higher priority) project list in the 2014 Regional Transportation Plan and 2014 Metropolitan Transportation Plan. Staff recommends that the ITAC receive information on the analysis of the initial scenarios and provide input on the transportation investments that will be considered under the hybrid scenarios as part of the scenario planning for the 2014 Transportation Plans.

Attachments:

1. STARS Qualitative Analysis of Transportation Investments in Alternative Scenarios through 2035

S:\ITAC\2013\June2013\RTP Scenario\SR_RTP-ITAC20130620.docx

Santa Cruz County 2014 Regional Transportation Plan

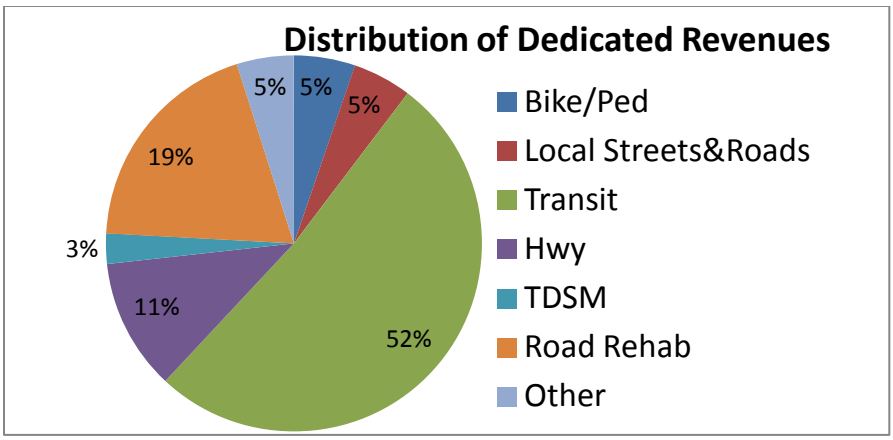
STARS Qualitative Analysis of Transportation Investments
In Alternative Scenarios through 2035

An analysis of the transportation investments in Santa Cruz County for the five initial scenarios has been performed to assess where best to use discretionary funds. Discretionary, relatively flexible funding makes up approximately 25% of the funding identified for the Santa Cruz County Regional Transportation Plan ($690 million which includes a half cent sales tax measure). The remaining 75% of funding ($2.11 billion) is dedicated to specific types of projects based on federal, state or local regulations and will continue to be funded under all scenarios. Analysis of the five distinctly different initial scenarios provides information about, "what if funding is invested in…, how will the goals and targets of the RTP be advanced?" Projects that receive dedicated funding or have already been programmed have been analyzed separately for their ability to advance the targets in order to be able to see more clearly how the transportation projects in each scenario can advance the targets.

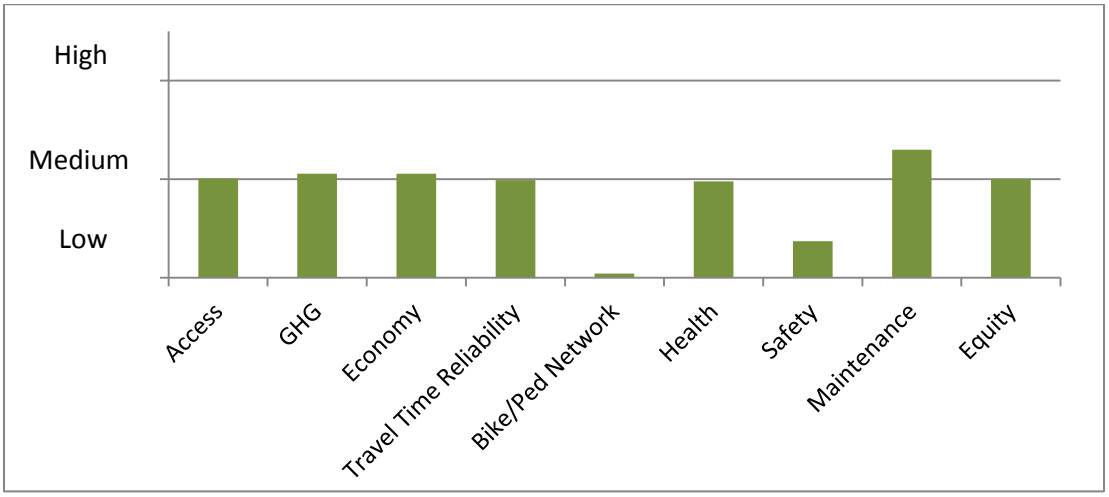
Dedicated and Programmed Projects (Included in all Scenarios)

Transportation Investments – Maintain at existing levels:

- Regional and Local Bus Service
- Specialized Transportation
- UCSC Shuttle Service
- Highway SHOPP projects
- Highway 1 Auxiliary Lanes (41st to Soquel) and Chanticleer Bike/Ped Bridge
- Roadway Maintenance
- Other Previously Programmed Projects



Ability to advance the RTP targets…..

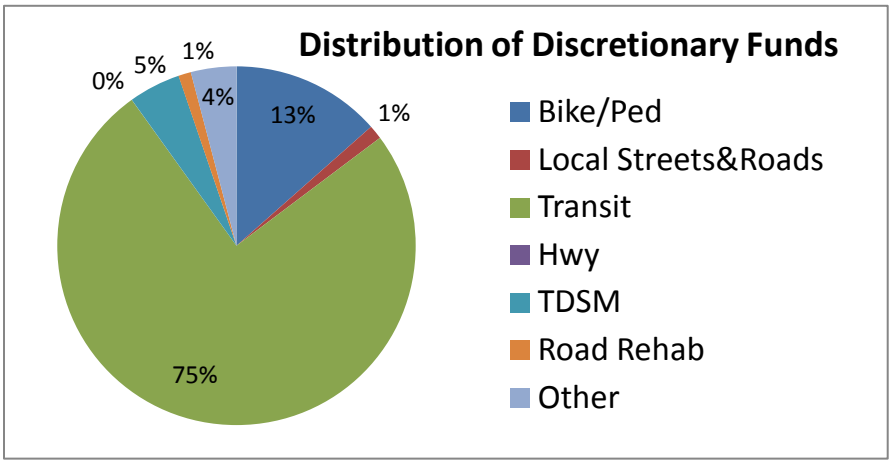


Key Points: The transportation investments for Santa Cruz County from dedicated funds show that almost all the targets are being advanced with the exception of bicycle/pedestrian network quality. Local roadway maintenance is being invested in at existing levels which is only about half of the funds that are needed to maintain local roads.

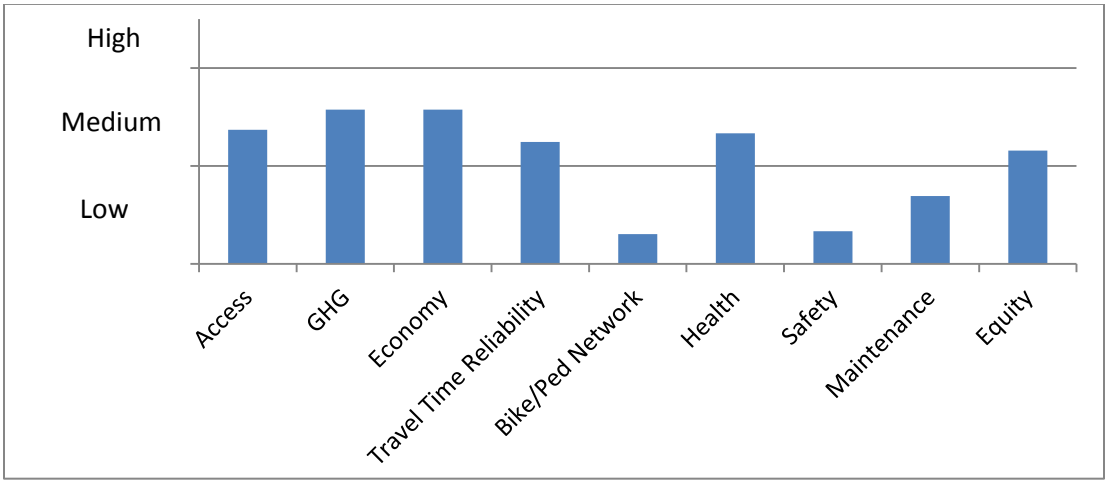
Scenario #1 Regional Transit Corridors

Transportation Investments

- Regional Bus/Rail Service Expansion
- Local Bus Service Expansion
- Pedestrian Facilities that Support Transit
- Transportation Demand & System Management



Ability to advance the RTP targets…..



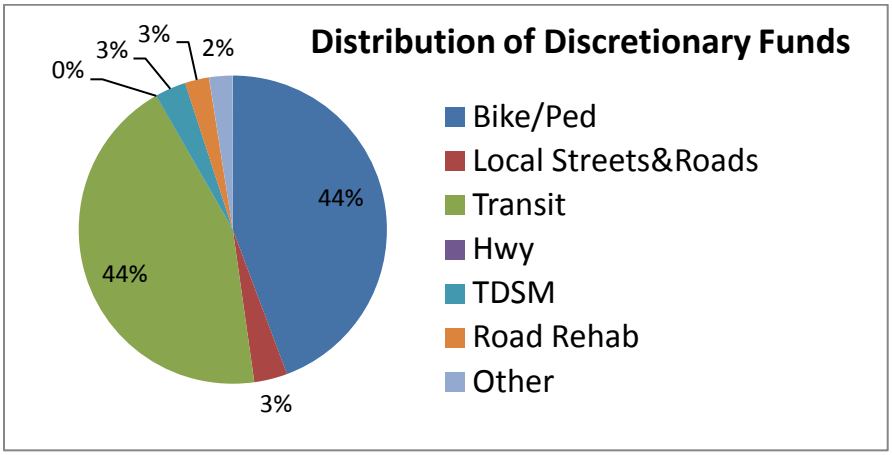
Key Points: Investing primarily in transit will provide benefits to improving access within key destinations, reducing greenhouse gas emissions and improving economic benefits due to reduced fuel consumption, and improving transit travel time reliability and improve health by providing more options for taking transit instead of driving alone. A transit focus does not provide as much benefit in improving the safety of our transportation system or increase the level of service for bicyclists and pedestrians.

Scenario #2 Livable Streets (Livable Communities)

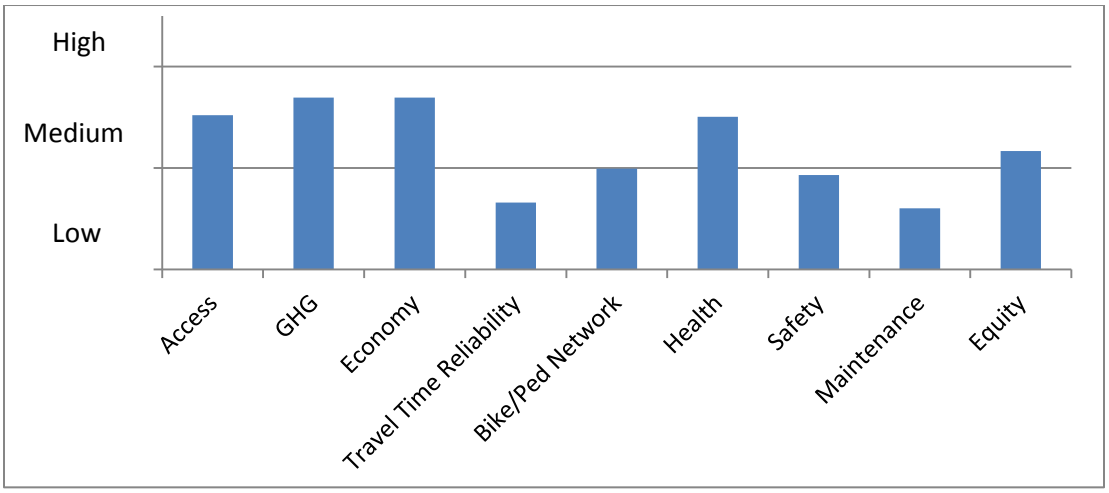
Transportation Investments

Completes Street focus

- Bicycle/Pedestrian Facilities
- Local Bus Service Expansion
- Traffic Calming
- Transportation Demand & System Management



Ability to advance the RTP targets….

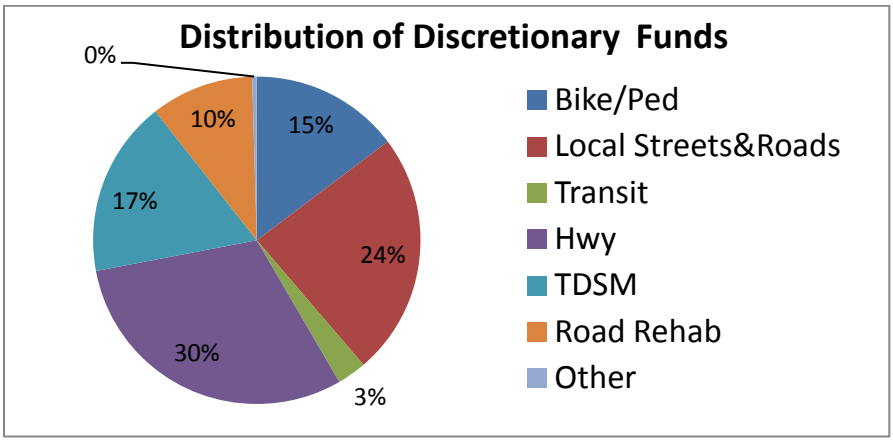


Key Points: Focusing investments on complete streets projects will provide benefits to improving access to key destinations, reducing greenhouse gas emissions and improving economic benefits due to reduced fuel consumption. The health target is advanced by providing more active transportation choices for how people travel and the level of service of the bike/pedestrian network is also the greatest of all the initial scenarios. This qualitative analysis shows that transportation investments focused on livable streets advances all the targets to some degree.

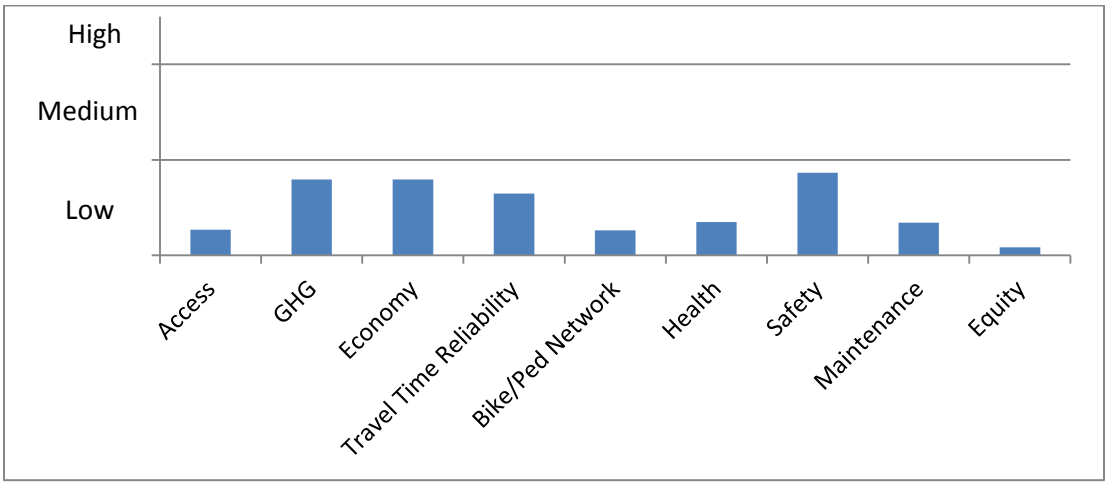
Scenario #3 Highway/Local Street & Roads (Dispersed Growth)

Transportation Investments

- Local Streets & Road Intersection Improvements
- Highway 1 Corridor Transportation System Management Alternative (Auxiliary Lanes, Interchanges, Ramp Meters)
- Transportation Demand & System Management



Ability to advance the RTP targets…

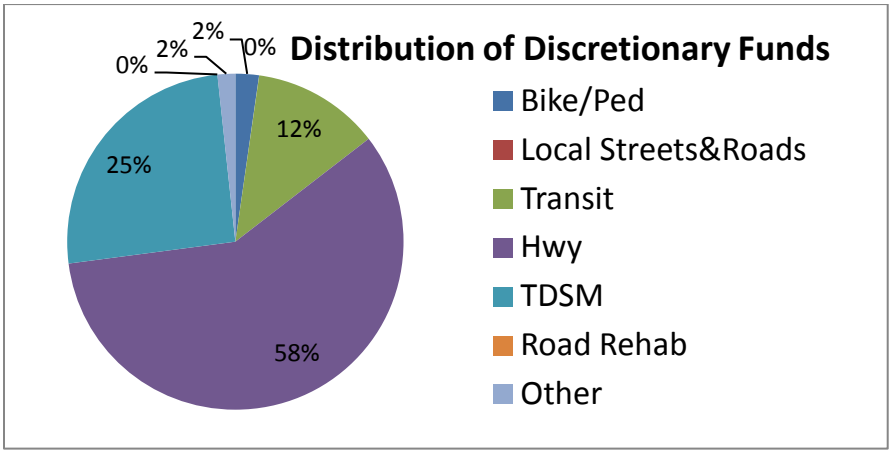


Key Points: An emphasis on intersection improvements on local streets & roads and the Highway 1 Corridor Transportation System Management Alternative provides the least amount of benefit in advancing the RTP targets. The improved safety from the auxiliary lanes projects and intersection improvements is evident in the safety target but the low benefit in the greenhouse gas emission reduction and bike/ped/transit access improvements to key destinations is the lowest of all the scenarios except for the system preservation scenario.

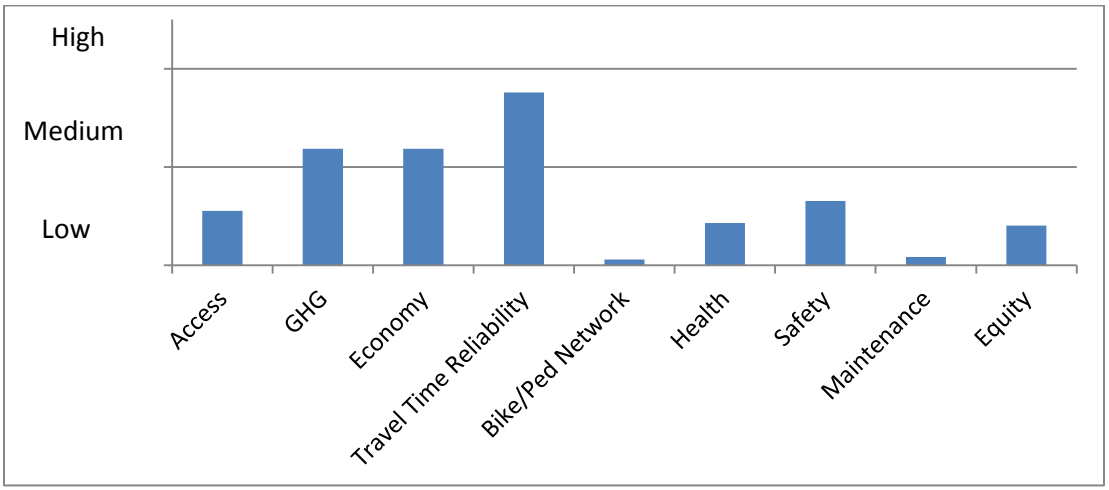
Scenario #4 Highway and Regional Transit (Targeted Growth)

Transportation Investments

- Highway 1 High Occupancy Vehicle lanes
- Regional Bus Service Expansion
- Rail Facility Upgrades
- Park & Ride and Carpool/Vanpool Programs
- Transportation Demand & System Management



Ability to advance the RTP targets…

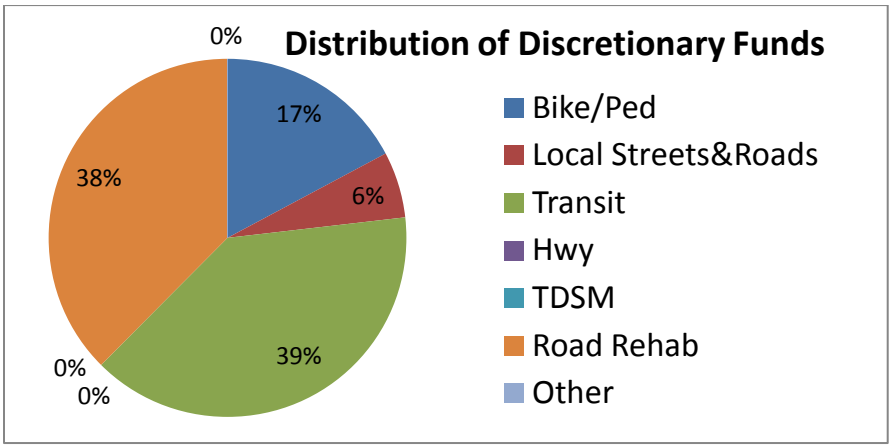


Key Points: An emphasis on the Highway 1 Corridor HOV Lane Alternative coupled with more frequent regional transit provides the greatest benefit in travel time reliability. Although there may be a small amount of increased VMT due to the HOV lane project, the increased benefit in faster travel speeds (less stop and go and improved efficiency reduces greenhouse gas emissions and improves the economy through less expenditure on fuel. The safety target is also advanced due to the improved safety from the auxiliary lanes that are part of the larger HOV lane project. The bicycle/pedestrian network are not advanced in this scenario.

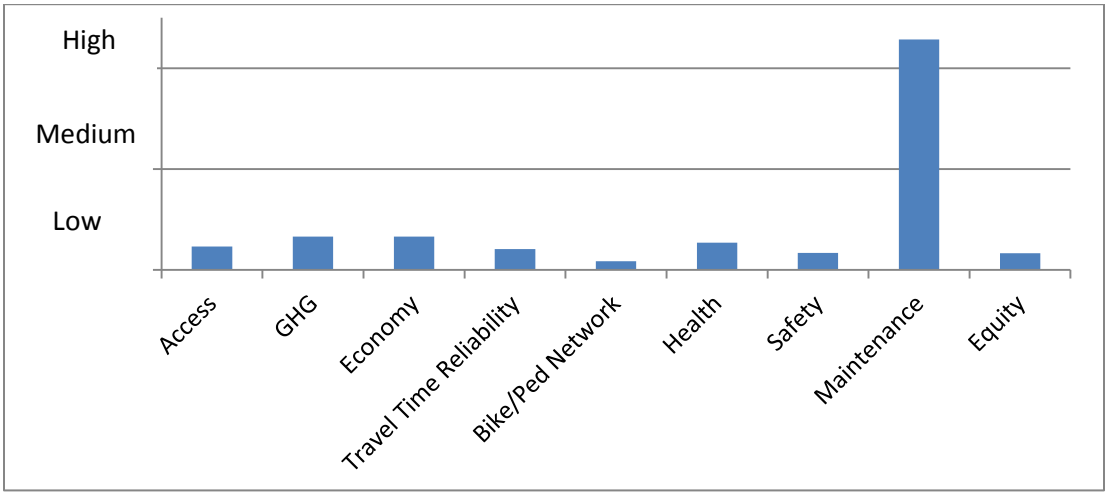
Scenario #5 System Preservation

Transportation Investments

- Local Street and Road Maintenance (increased from existing levels)
- Transit Maintenance (increased from existing levels)



Ability to advance the RTP targets…



Key Points: The transportation investments for the system preservation scenario in Santa Cruz County focus solely on roadway and transit maintenance. If all the discretionary funding (in addition to the dedicated funding that is available directly to the local jurisdictions) would go towards roadway and transit maintenance, the back log of maintenance would be brought to a minimum. Transportation investments in roadway and transit maintenance do not advance the other RTP targets.