Appendix A: Illustrative Cross Sections

The sample cross sections illustrate design features that would support the priority modes for the street network. These features are not intended to be used as absolute guides for street layouts at specific locations in the Plan area. When used in future planning efforts, the cross sections should be adapted to fit the context of the street being studied. As a next step, the design features described below can be developed into a multimodal connectedness checklist of basic and enhanced design features associated with land use and transportation projects.

DESCRIPTION OF ACTIVE MODE DESIGN FEATURES

The sample cross sections in Chapter 5 include enhanced design features for active modes and transit vehicles. This section describes the most common design features suggested by the Plan.

<u>Buffered bicycle lanes.</u> These can include physical barriers, such as raised curbs or landscaped strips, or they may be painted markings on the road surface. In some communities the barriers are actually art pieces. The extra space enhances safety, provides width for avoiding obstacles and opening car doors, and lowers the

stress of cycling on the road. There is often a choice to be made between having a buffer and devoting that extra width to the bike lane itself. This decision is typically made with consideration for the fact that wide bike lanes can be mistaken by drivers for travel lanes.

Physical barriers provide increased comfort for cyclists and are typically more effective along streets with few driveways. Painted buffered bicycle lanes are also effective buffers and require minimal additional maintenance beyond typical bicycle lane striping.

<u>Cycle track</u>. This is an exclusive, enhanced width bicycle lane that features a buffer (physical or marked) between the vehicle travel lane and bicycles, as well as prominent marking, such as colored pavement. These bicycle treatments can be designed for two-way bicycle traffic. The protected environment of a cycle track accommodates cyclists of all levels, including those who would be uncomfortable riding with traffic on a high volume/high speed street.

<u>Wide bicycle lanes</u>. The sample cross sections show bicycle lanes of between six and seven feet. Many existing bike lanes are less than five feet. Extra width provides separation between the bicyclist and motor vehicles and creates a more comfortable riding experience for bicyclists.

<u>Wide sidewalks with landscaping</u>. Some cross sections feature eight to twelve foot sidewalk widths. This allows room for recreational use of the sidewalk (such as on coastal streets) as well as room for street furniture and businesses to spread seating onto the sidewalk and still allow passage. There is more width for landscaping as well. In very high pedestrian volume areas, sidewalk widths of greater than 12 feet may be appropriate. <u>Pedestrian refuge islands.</u> These are median areas that are well marked and raised relative to the street surface, that shorten the crossing distance across wide intersections. They may be buffered and enhanced with landscaping where there is space.

<u>Travel Lane Width</u>. Benefits of narrower travel lanes on lower-speed urban streets could include a shorter pedestrian crossing distance, lower construction cost and potentially to accommodate more lanes in a constrained right-of-way. On arterial streets with a target speed of less than 35 miles per hour, travel lanes are typically between 10 and 12 feet wide. On collector streets travel lanes are typically between 10 and 11 feet. The travel lane width is based on the target speed, design vehicle (largest frequently used vehicle), right-of-way constraints, and width of adjacent bicycle and parking lanes.

SOQUEL DRIVE, A MULTIMODAL CORRIDOR

Soquel Drive, as a Multimodal Corridor, prioritizes motor vehicles along with pedestrian, bicycle, and transit buses, with transportation system management (TSM) and smart street measures to accommodate all modes of transportation. Pedestrian connectivity and safety are important along a Multimodal Corridor like Soguel Drive. Raised medians with refuge areas for pedestrians make it safer for pedestrians crossing this wider street, which has more than two lanes of vehicular traffic in each direction. Bus shelters with amenities such as benches and overhangs to protect waiting passengers from the sun or inclement weather are also recommended for highridership stop locations. Curb extensions (also called bulb-outs) extend the sidewalks into the parking lane to narrow the pedestrian crossing distance and provide additional pedestrian space. Curb extensions enhance

pedestrian safety by increasing visibility of the street, shortening crossing distances, slowing turning vehicles, and separating bus traffic from bicycle traffic. A cycle track provides a protected facility for cyclists.

On the Multimodal Corridor, TSM measures such as adaptive signal timing and intelligent transportation systems (ITS) could be used to improve vehicle travel time reliability and help to optimize the steady, safe, and orderly flow of vehicle traffic on congested streets. These TSM measures are not typically considered capacity enhancements; rather, they are operational improvements designed to complement vehicle trip reduction strategies.

1) Soquel Drive near Cabrillo College

This sample cross section illustrates a location with sufficient right-of-way available to provide an adequate experience for each mode of transport.

For motorists and the bus, there are four travel lanes of adequate width, though narrower than the existing width, parking on one side, and space for a bus shelter. The bus would stop within the travel lane, which is positive for transit operations and contributes to decreased trip time. However, this would increase delay for vehicles during busy periods. Cyclists are accommodated by a seven foot, painted and protected lane, while pedestrians have wide sidewalks, buffers from vehicle traffic, and access to a median that can be used for landscaping and drainage mid-block, and as a mid-crossing refuge at intersections. Pedestrians would, however, have to cross the cycle lane to reach the bus shelter. There is a landscape buffer on one side and landscape/bioswale median to provide greenery, a pleasant environment, and biologic treatment of surface drainage.



2) Soquel Drive between Aptos Rancho Road and Aptos Wharf Road

East of State Park Drive, Soquel Drive narrows to one lane in each direction, with a two-way left turn lane serving adjacent land uses. The travel lanes are narrowed, which matches the posted 25 mile per hour vehicle speed.

The Rancho Del Mar Shopping Center attracts many residents from the neighborhood who walk or bike to run errands at the various retailers. Widened sidewalks would improve the space for pedestrians accessing the shopping center from Soquel Drive. Enhanced bus shelters would make the experience of waiting for buses more comfortable for passengers and potentially encourage people to ride transit to and from this area rather than drive.

This is area that would benefit from the acquisition of additional right of way in a few areas. In the area of the rail trestle and historic 2-lane bridge, additional right of way is particularly needed to better accommodate pedestrians and cyclists. Bike/Ped bridges alongside the historic bridge could be considered for either the south and/or north sides of the vehicular bridge. In the area fronting the Rancho Del Mar shopping center, additional right of way could accommodate construction of a pullthrough bus lane which would prevent obstruction of the travel lanes. Trees and greenery could also be added, and additional width could be considered for travel lanes and bicycle lanes. If future development or renovation projects occur at the Rancho Del Mar site or sites across



the street along the north side of Soquel Drive, that include buildings that activate the street frontages, then wider sidewalks that allow outdoor uses such as outdoor café seating should also be considered.

Currently, the bicycle lane disappears entirely where the road crosses Aptos Creek on the narrow, historic Aptos Bridge. This is a well-known "pinch point" for bicyclists. When the Monterey Bay Sanctuary Scenic Trail network (MBSST) improvements are constructed, pedestrians and cyclists will be able to cross Highway 1 from the Seacliff Area, connecting to Aptos Wharf Road which is located right at this pinch point. This is the area where the possibility of bike/ped bridge(s) could be considered on the south and/or north sides of the historic bridge. Currently, this section of the MBSST is designated as one of the lowest priority sections for construction (Monterey Bay Sanctuary Scenic Trail Network Master Plan, 2013). If the rail trestle is ever re-built, designing more width between the abutments could be considered to better accommodate connections for cyclists and pedestrians. Given uncertainties in the timing of implementing this challenging section of the MBSST, the County could consider short-term alternatives to improve the situation for bicyclists and accessibility. These alternatives might include colored bicycle lanes, additional signage and striping.

3) Brommer Street, a Bicycle Connector

Brommer Street is designated on the network map as a Bicycle Connector, indicating that bicycle travel is the priority mode. The bicycle lanes are buffered from vehicle traffic and should be continuous from 7th Avenue to the City of Capitola. In some locations along Brommer Street there is a five-foot, separated sidewalk that was constructed relatively recently This illustrates the types of trade-offs that will be necessary in various locations to provide a street that prioritizes bicycle travel with continuous protected bicycle lanes.

4) Soquel – San Jose Road, Rural Connector

Soquel-San Jose is a rural connector that does not have sidewalks beyond Merlin Way, and on which vehicle speeds can be high. Rural connectors would prioritize vehicles and bicycles. This sample cross section provides for vehicles in two 12-foot travel lanes. Sharrow lanes would be provided for bicycles in the downhill direction, and in the uphill direction cyclists would be provided with two feet of buffering along six feet of paved shoulder that is maintained free of vegetation. In the downhill direction bicycles would typically travel at speeds expected in the vehicle travel lane. While the Rural Connector would not be designed for pedestrians, the downhill shoulder could be accessed by pedestrians even though pedestrian traffic is not common in these rural areas.

Maintaining wide paved shoulders free of landscaping is a strategy that can be used throughout the unincorporated area where sidewalks and bike lanes do not exist. The County should ensure that private property owners do not inappropriately encroach upon public right of way in a manner that reduces area available for pedestrians and bicyclists.





Appendix B: Transportation Improvements

INTRODUCTION

This list of multimodal infrastructure improvements has been compiled from ideas and suggestions gathered through the process of preparing the Sustainable Santa Cruz County Plan (Plan). The purpose of this list is to highlight improvements that will strengthen connectivity and multimodal transportation in the Plan area. The projects range from small to large investments, acknowledging that in the right locations relatively inexpensive improvements, such as colored intersection markings, painted bicycle lanes and bicycle lane buffers in existing right of way, can contribute substantially to the comfort of pedestrians and bicyclists and therefore to achieving the sustainability goals and objectives of the Plan (see Chapter 2, "Vision and Guiding Principles").

The purpose of this list is also to document the most promising ideas that were gathered, and to position the projects for consideration when important transportation plans such as the Regional Transportation Plan (RTP), prepared by the Santa Cruz County Transportation Commission, and the Santa Cruz County Capital Improvement Program (CIP) are updated. The principles and goals in the 2014 RTP are well aligned with the goals of Sustainable Santa Cruz County Plan and projects on this list that are not in current planning documents should be considered for inclusion in the RTP, CIP, County Bike Plan, and the Circulation Element of the County General Plan, in the future. (Some of these improvements are already addressed in the RTP and County plans, often as part of larger, more general projects. They are included here in more specific form to highlight their importance in achieving the sustainability goals for the Plan area.)

Decisions about transportation improvements involve balancing the many goals we have for our transportation network. While adopting a layered network approach to transportation planning can assist with balancing competing demands (Chapter 5), choices will still be necessary at many locations. Retrofitting an existing road network is a particular challenge. Some projects on this list may involve trade-offs among, for example, lane configuration, parking availability, and right of way dedicated to cyclists and to improving the pedestrian environment. Other projects are more straightforward. In all cases, we will be working toward a network that provides all users with efficiency, comfort and safety, to the greatest extent possible.

Note that many of the projects benefit several or all modes of transportation and therefore could appear in several categories of improvements. Where there is overlap, a single project does not appear in more than one category. In addition to the more defined projects on this list, the following should also be considered:

 Preparation of a master or specific plan for a portion of the medical and employment districts that is likely to undergo substantial change in the near term. The subject area straddles Highway 1, consisting of the portion of Focus Area 1 (Figure 7-2) that is south of Soquel Drive between 17th Avenue and Mattison Lane, and the western half of Focus Area 2 (Figure 7-5), consisting of the area between 17th Avenue and Rodeo Gulch. This area includes the Palo Alto Medical Foundation medical campus that will be developed at the former Skyview Drive-In site on the north side, as well as the Sheriff Service Center, Nigh/Protiva R-UH housing site, and other large parcels on the south side. A master or specific plan would determine the optimal integrated circulation plan for this area and evaluate funding options for circulation improvements.

- 2. Preparation of feasibility study to assess a potential new connection across Highway 1 linking the former Skyview Drive-In site to the housing and employment areas on the south side. In addition, new connections across the highway at 17th Avenue and near Cabrillo College Drive should be evaluated.
- 3. Evaluation of whether there are feasible options for modifying the historic bridge over Aptos Creek to improve conditions for bicyclists on Soquel Drive.

LIST OF MULTIMODAL TRANSPORTATION IMPROVEMENTS

Bicycle Connectivity, Safety, and Cycling Appeal

- Cycle track, Soquel Avenue/Soquel Drive (Figure 7-14 and Figure 1, Appendix A). The cycle track should extend uninterrupted from the County / City of Santa Cruz boundary through the medical district, Cabrillo College, and Soquel Village to Aptos Wharf Road.
- This may be facilitated by a combination of restriping Soquel Drive, modifying storage capacity

in center turn lanes and relocating parking spaces on the south side to Soquel Business Improvement Association parking lots nearby.

- Buffered bicycle lanes (Class I) on Brommer Street, from the City of Santa Cruz to City of Capitola.
- Brookwood Drive bicycle connector and connection through Dominican Hospital campus (work with City of Santa Cruz Department of Public Works).
- Chanticleer Highway 1 bicycle and pedestrian overpass, connecting north and south parts of Live Oak (Regional Transportation Commission project, currently in planning stage) (Figures 7-4, 7-7).
- Frontage road, all modes, on the north side of Highway 1 from 17th Avenue east to a new cul de sac, with an exclusive bicycle / pedestrian connection to the existing cul de sac terminus of Mattison Lane (Figure 7-4).
- Bicycle and pedestrian crossing between Mattison Lane and Research Park sides of South Rodeo Gulch Road (Figures 7-4, 7-10).
- Improved bike lane (Class I) and create pedestrian separation from traffic on East Cliff Drive between 7th Avenue and 12th Avenue.
- Bicycle and pedestrian connection from the Monterey Bay Sanctuary Scenic Trail network (MBSST, also known as the Rail-Trail) where it crosses Highway 1 in Aptos, west to the southeast corner of the Rancho Del Mar shopping center and continuing along the rear portion of the Rancho Del Mar shopping center to State Park Drive (Figure 7-14).

- Bicycle and pedestrian connection from Center Avenue in Seacliff to the Monterey Bay Sanctuary Scenic Trail Network (Figure 7-14).
- Complete streets improvements on Spreckels Drive from Soquel Drive south to Moosehead Drive.
- Mar Vista-Highway 1 overpass connecting Seacliff to Mar Vista School and the north side of Highway 1 (Regional Transportation Commission project, currently in planning stage) and enhanced bicycle lanes and markings on Mar Vista Drive and Searidge Road (Figure 7-14).
- Improve crossing at Highway 1 ramps for bicycles and pedestrians, including dashed green lanes and "yield to bikes" signs (Soquel/ 7th Avenue interchange, 41st Avenue, and State Park interchange).
- Increased bicycle facilities, such as secure bicycle parking, at activity centers, express stops, and Park and Ride lots.

Pedestrian Connectivity, Safety, and Walking Appeal

- Pedestrian improvements on Soquel Drive and Soquel Avenue between 7th Avenue and Thurber Lane, pursuant to "Walking Audit, Issues and Opportunities" (Existing Conditions Report, Figure T-7). This includes projects to decrease crossing length at highway ramps, increase visibility at cross walks, fill in sidewalk gaps and remove sidewalk obstructions on Soquel Avenue and Soquel Drive.
- Complete street enhancements, Soquel Drive

through the medical district (Figure 7-4)

- Complete streets enhancements, Commercial Way between 17th Avenue and Soquel Drive.
- Enhanced streetscape on Chanticleer Avenue between Rodriguez Street and the planned overpass at Highway 1.
- Connection from El Dorado Avenue across the MBSST to Simpkins Swim Center.
- Pedestrian improvements on State Park Drive at Highway 1 pursuant to "Walking Audit, Issues and Opportunities" (Existing Conditions Report, Figure T-8). This includes projects to construct curb bulb outs at Searidge Drive, Canterbury Drive and Old Dominion Court, and a high visibility crosswalk at Old Dominion Court.
- Complete street enhancements, State Park Drive, Seacliff to Soquel Drive (Figure 7-14).
- Complete street enhancements, Soquel Drive from State Park Avenue to Aptos Village (Figure 7-14).

New Vehicle Connections and Traffic Congestion Improvements

- Multimodal circulation improvements in the area between Soquel Drive and Highway 1, in association with development of the PAMF medical campus on the former Skyview Drive In property. Extend Thurber Lane southward and create a standard four way intersection at Commercial Way.
- Extend Chanticleer Avenue north across Soquel Drive to Thurber Lane.

- Create new circulation on the south side of Highway 1 between 17th Avenue and Mattison Lane (Figure 7-7).
- Connect El Dorado Avenue to 17th Avenue and provide internal circulation in the north east quadrant of the area bounded by El Dorado Avenue, 17th Avenue, Brommer Street and the Rail-Trail (Figure 7-13).
- Connect 17th Avenue and Paget Avenue to provide internal circulation for the properties adjacent to the MBSST (Figure 7-13).
- Create new circulation through upper 41st Avenue / Soquel Research Park (Figure 7-10)
- Traffic signal at Soquel Drive and Robertson Road in Soquel.
- Evaluate approaches to modify the routing of the Gross Road / Frontage Road connection to 41st Avenue to decrease impacts of traffic in the residential area.
- Frontage road on the north side of Highway 1 between Old Dominion Way and Mar Vista Drive with a connection north to Soquel Drive near the east side of Aptos Square shopping center (Figure 7-14).

Transit

- Enhanced express bus service along Soquel Avenue between Aptos Village and Dominican Hospital (91X). In Aptos, utilize highway ramps at State Park for stops.
- Enhanced Highway 17 express service, new stops at 41st Avenue and State Park Drive.

- Transit connection hub at a local in the medical district, to include express east-west bus service with access to/from the highway interchange, and elements of Bus Rapid Transit.
- Increase capacity of Park and Ride for the Highway 17 Express bus route.
- Evaluate transit priority at intersections along Soquel Drive (work with RTC and Metro).

Appendix C: AMBAG Population and Employment Trends and Projections

The Association of Monterey Bay Area Governments (AMBAG) is, according to their website, "a Joint Powers Authority (JPA) governed by a twenty-four member Board of Directors comprised of elected officials from each City and County within the region. The AMBAG region includes Monterey, San Benito and Santa Cruz County. AMBAG serves as both a federally designated Metropolitan Planning Organization (MPO) and Council of Governments (COG). AMBAG performs metropolitan level transportation planning on behalf of the region. Among its many duties, AMBAG manages the region's transportation demand model and prepares regional housing, population and employment forecast that are utilized in a variety of regional plans. In 2008, the State of California adopted legislation that required all MPOs, including AMBAG, to prepare "Sustainable Community Strategies" (SCS), which were to incorporate policies for future land use and transportation patterns

and public transportation funding investments that would lead to reduction in greenhouse gas (GHG) emissions. AMBAG has recently adopted the 2035 SCS for this region (called "Moving Forward Monterey Bay") in conjunction with the 2035 Metropolitan Transportation Plan (MTP), and both documents together present strategies for where future housing and jobs can be located, in coordination with transportation improvements, to offer shorter commutes and reduced GHG emissions in the future. In the long term, these shifts can act to slow down potentially adverse effects of climate change on our region, while providing additional benefits for quality of life in urban areas.

POPULATION

AMBAG published its 2035 MTP/SCS for public review and comment in February 2014, along with the Regional Housing Needs Allocation Plan for the next Housing Element Update cycle. These documents and projections were adopted in June 2014, including the following breakdown of statewide forecasts of population, housing units, and jobs through 2035 (Table C-1).

HOUSING UNITS

For the whole of the unincorporated county area ("Balance of County"), the forecast is for the following levels of population and housing unit growth from 2010 to 2035 (Table C-2):

- Population +14,488 persons
- Housing Units + 5,388 units

TABLE C-1 POPULATION

| Geography | 2010 | 2020 | 2025 | 2030 | 2035 | Compound Annual Growth Rate | Change Over Forecast Period |
|-------------------|---------|---------|---------|---------|---------|-----------------------------------|-----------------------------------|
| Santa Cruz County | 262,382 | 279,381 | 287,512 | 298,095 | 308,582 | 0.65% | 17.61% |
| Capitola | 9,918 | 9,119 | 9,427 | 9,758 | 10,088 | 0.07% | 1.71% |
| Santa Cruz | 59,946 | 66,860 | 70,058 | 73,375 | 76,692 | 0.99% | 27.94% |
| Scotts Valley | 11,580 | 11,638 | 11,696 | 11,754 | 11,813 | 0.08% | 2.01% |
| Watsonville | 51,199 | 59,446 | 61,452 | 63,607 | 65,762 | 1.01% | 28.44% |
| Balance of County | 129,739 | 132,318 | 134,879 | 139,601 | 144,227 | 0.42% | 11.17% |

TABLE C-2 HOUSING UNITS

| Geography | 2010 | 2020 | 2025 | 2030 | 2035 | Compound Annual Growth Rate | Change Over Forecast Period |
|-------------------|---------|---------|---------|---------|---------|-----------------------------------|-----------------------------------|
| Santa Cruz County | 104,476 | 111,039 | 113,168 | 117,151 | 120,196 | 0.56% | 15.05% |
| Capitola | 5,534 | 5,534 | 5,534 | 5,537 | 5,553 | 0.01% | 0.34% |
| Santa Cruz | 23,316 | 26,890 | 27,547 | 28,297 | 29,355 | 0.93% | 25.90% |
| Scotts Valley | 4,610 | 4,655 | 4,692 | 4,771 | 4,785 | 0.15% | 3.80% |
| Watsonville | 14,089 | 16,382 | 16,933 | 17,733 | 18,188 | 1.03% | 29.09% |
| Balance of County | 56,927 | 57,578 | 58,462 | 60,813 | 62,3315 | 0.36% | 9.46% |

EMPLOYMENT

TABLE C-3

For the whole of the unincorporated county area ("Balance of County"), AMBAG has projected the following levels of job growth from 2010 to 2025, and then from 2025 to 2035, by industry sector (Table C-3).

SUMMARY OF AMBAG 2010-2035 JOB GROWTH

| Industry Sector | Job Growth 2010-2025 | Job Growth 2025-2035 | Total 2010-2035 | | | |
|-----------------|----------------------------|----------------------------|--------------------|--|--|--|
| Agriculture | +236 | +101 | +337 | | | |
| Construction | +522 | +65 | +587 | | | |
| Industrial | +48 | -17 | +31 | | | |
| Retail | +61 | +19 | +80 | | | |
| Service | +230 | +51 | +281 | | | |
| Public | +3,299 | +1,504 | +4,803 | | | |
| Totals | +4,396 | +1,757 | +6,153 | | | |

Note: Detailed charts of job growth projections by jurisdiction and by sector are presented on pages that follow.

AMBAG REGIONAL FAIR SHARE HOUSING ALLOCATION (RHNA) 2014-2023 FOR UNINCORPORATED AREA

The Regional Housing Need Allocation (RHNA), to be addressed by the next Housing Element Update that must be adopted by December 2015, is only for a portion of the 25-year SCS/MTP forecast timeframe. The time period for the RHNA/Housing Element covers 10 years, from January 1, 2014 through December 31, 2023.

The proposed 2014-2023 RHNA for the unincorporated Santa Cruz area is 1,314 housing units, targeted to income levels as shown below. Santa Cruz County must adopt a Housing Element, and demonstrate with the General Plan and zoning code that land is available to accommodate the following numbers of housing units, in a manner that will make them affordable to households at various income levels. The "very low" income category will also address housing for extremely low income households (Table C-4).

The RHNA reflects forecasted growth of housing units at an average of 131 units per year over the 10-year timeframe. The AMBAG SCS reflects forecasted growth of housing units at an average of 215 units per year over 25-year timeframe. The variance between the two numbers stems from both the methodology used to derive them as well as their purpose in the regulatory landscape. The RHNA represents a bare minimum regulatory requirement, while the SCS forecast functions more as an 'FYI' for local jurisdictions. Both numbers are within the ranges of building permits issued over the 35-year history of the County's Measure J growth management system.

TABLE C-4 INCOME LEVELS

| Income Level | Number of Units (2014-2023) |
|----------------|-----------------------------------|
| Very Low | 317 |
| Low | 207 |
| Moderate | 239 |
| Above Moderate | 551 |
| Total | 1,314 |



Appendix D: Tools For Measuring Performance of The Transportation Network and Related Next Steps

Prepared by Daniel Rubins, Lindsey Hilde, and Matt Haynes, of Fehr & Peers

OVERVIEW

The vision for transportation in the Plan area is to improve the environment and quality of life for residents through a safe, reliable, and efficient transportation network comprised of a range of transportation choices. With a potential shift toward a balanced transportation strategy, as described in the Sustainable Santa Cruz Plan, Santa Cruz County would need to update the methods by which new development and transportation projects are evaluated. This update would include modifications to the Plan Circulation Element General and other implementation documents. This appendix provides a background summary of the Santa Cruz County 1994 General Plan and Local Coastal Program objectives, a description of the current State and regional regulations affecting transportation planning and environmental

analysis, summary of state of practice multimodal analysis methods, discussion of how multimodal level of service (MMLOS) methods apply to Santa Cruz County, the role of the Sustainable Santa Cruz County Plan street type network, and a summary of next steps and recommendations.

The next steps section is a chronological description of the components for updating the Santa Cruz County General Plan Circulation Element, implementation documents. and transportation performance measurement framework in a manner that balances among transportation modes. This framework includes a list of qualitative and quantitative performance measures that may be used for analysis at 1) the system-wide, General Plan level for future cumulative analysis, and 2) the project-level, using a "multimodal connectedness checklist" to evaluate individual development proposals and transportation projects. These performance align with the Sustainable measures would Transportation Analysis & Rating System (STARS) used by the Santa Cruz County Regional Transportation Commission (SCCRTC) in preparing the Regional Transportation Plan, the Caltrans Smart Mobility Framework, and performance measures developed from the forthcoming SCCRTC Santa Cruz County Unified Corridor Investment Plan.

INTRODUCTION

As with many other General Plans in California and across the United States, the Circulation Element of the *Santa Cruz County 1994 General Plan and Local Coastal Program* uses a metric called level of service (LOS) to measure traffic operations. The County Circulation Element also includes an average commute vehicle occupancy objective, a target mode shift and, for

consistency with the Monterey Bay Unified Air Pollution Control District, an objective to reduce vehicle miles traveled (VMT).

The General Plan Circulation Element has a vehicle LOS C policy objective for streets and intersections countywide. However, due to constrained conditions (e.g., construction cost or physical constraints) a vehicle LOS D standard (i.e., minimum acceptable operations) is applied for many of the county streets. The vehicle LOS method only considers automobile delay and is insensitive to walking, bicycling, and transit conditions. Traditional vehicle LOS analysis methods actually consider bicycles and pedestrians to be an impediment.

As a result, performing only a traditional vehicle LOS analysis, while appropriate for some situations, can have unintended consequences for other travel modes and often leads to overbuilt vehicle infrastructure. For example, changing signal timing to reduce automobile delay can affect pedestrian accessibility by increasing the waiting time for pedestrians crossing the street. Because of the drawbacks of traditional vehicle LOS analysis, new goals and policies are being adopted in some jurisdictions to evaluate all modes of transportation when preparing a Countywide transportation system and when assessing the effects of new development or transportation projects.

BACKGROUND

1994 County General Plan Objectives, Policies and Programs

The Circulation Element of the Santa Cruz County 1994 General Plan and Local Coastal Program expresses community transportation objectives, policies, and programs. These are supportive of travel by all modes of transportation in the County, of balancing each travel mode and of avoiding expanded roadways and intersections that conflict with benefits such as the ability to provide enhanced multimodal facilities, urban design amenities, and economic vitality.

The General Plan Circulation Element also has objectives to increase the average commute vehicle occupancy, lower the automobile person mode split for all trips, and manage the increase in vehicle miles traveled. Specifically, the General Plan includes the following multimodal objectives:

<u>Objective 3.1 Vehicle Miles</u>: To limit the increase in Vehicle Miles Traveled (VMT) to achieve as a minimum, compliance with the current Air Quality Management Plan.

<u>Objective 3.2 Vehicle Occupancy</u>: To increase the average number of persons per commute vehicle to 1.35 persons per vehicle while pursuing a goal of reducing automobile trips to a maximum of 60 percent of all trips through encouragement of alternative transportation by transit, bicycles and walking.

The General Plan also has a level of service objective and policy to manage and maintain vehicle capacity on the local street system:

<u>Objective 3.12 Level of Service</u>: To ensure that development shall not create traffic which will exceed acceptable levels of service on surrounding roadways.

Policy 3.12.1 Level of Service (LOS) Policy: In reviewing the traffic impacts of proposed development projects or proposed roadway improvements, LOS C should be considered the objective, but LOS D as the minimum acceptable (where costs, right-of-way requirements, or environmental impacts of maintaining LOS under this policy are excessive, capacity enhancements may be considered infeasible). Review development project or proposed roadway improvements to the Congestion Management Program network for consistency with Congestion Management Plan goals.

Proposed development projects that would cause LOS at an intersection or on an uninterrupted highway segment to fall below LOS D during the weekday peak hour will be required to mitigate their traffic impacts. Proposed development projects that would add traffic at intersections or on highway segments already at LOS E or F shall also be required to mitigate any traffic volume resulting in a 1% increase in the volume/capacity ratio of the sum of all critical movements. Projects shall be denied until additional capacity is provided or where overriding finding of public necessity and/or benefit is provided.

As discussed in the next section, in some cases it may be desirable to elevate the priority of a particular travel mode or set of users (e.g., transit priority street, or bicycle lanes) to enhance local or regional circulation and connectivity, and fit within the local context.

Considering State and Regional Transportation Plans and Regulations Including Draft Updates To CEQA Guidelines

Over the past ten years, the state of California has adopted state legislation to address climate change and streamline CEQA evaluation of transportation (including AB 32, SB 375, SB 743, and AB 1358). Specifically with the passage of Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, the State of California committed itself to reducing greenhouse gas (GHG) emissions to 1990 levels by 2020. SB 375 provides guidance on how curbing emissions from cars and light trucks can help the state comply with AB 32. AMBAG's first MTP/SCS was adopted in June 2014.

With the passage of SB 743 (signed on September 27, 2013) in certain situations a substandard level of service (LOS) may no longer be used as a criterion to identify significant impacts under the California Environmental Quality Act (CEQA). A draft of proposed revisions to the CEQA guidelines to implement SB743 was circulated by the Governor's Office of Planning and Research in August, 2014. The draft revisions recognize new focus on transportation impacts related to vehicle miles traveled (VMT), induced vehicle travel, and local safety. The draft text includes provisions for:

- Vehicle miles traveled to replace vehicle LOS as the sole basis for identifying significant impacts for land use projects.¹ This analysis would include measures to reduce the development project related VMT.
- Evaluation of induced travel to evaluate the effects of roadway capacity expansion on VMT and greenhouse gas emissions. The addition of general purpose highway or arterial lanes in urban areas may generally indicate a significant impact due to induced travel. Whereas, managed lanes, transit, and active mode projects would likely not result in significant impacts.
- Lead agencies may also consider localized effects on transportation safety.

¹ Vehicle miles traveled is the number of vehicles multiplied by the distance traveled by each vehicle.

To meet the objectives of SB 743 regarding transportation evaluation of land use and transportation project under CEQA, the Sustainable Santa Cruz County Plan and General Plan Circulation Element update would need to:

- Promote reduction of greenhouse gas emissions
- Promote the development of multimodal transportation networks
- Promote a diversity of land uses

Assembly Bill 1358, also known as the California Complete Streets Act of 2008, requires cities and counties to include complete streets policies in their general plans. These policies address the safe accommodation of all users, including bicyclists, pedestrians, motorists, public transit vehicles and riders, children, the elderly, and the disabled. These policies can apply to new streets as well as the redesign of corridors. Additional resources and processes for developing complete streets to meet the needs of all users are collected in the "Monterey Bay Area Complete Streets Guidebook", published in August, 2013.

STATE OF PRACTICE FOR MULTIMODAL ANALYSIS

With this focus on a balanced transportation analysis, Santa Cruz County may want to modify how it evaluates the effects of individual development and transportation projects on the transportation system. Implementation of multimodal policies is still evolving, so there is no single method that has been adopted within the industry or local communities. However, there are a number of methods that provide the County with options for various modes and level of quantitative analysis. In addition, many of these methods move away from strictly quantitative methods, user experience, and priority between transportation options. A combination of these methods determined by local community values and resources are typically integrated into a transportation performance measurement framework.

Multimodal Level of Service (MMLOS) Methods

To understand the range of available options, we have prepared a summary of Multimodal Level of Service (MMLOS) methods that have some level of multimodal capabilities. The most appropriate MMLOS method(s) for a local community depends on unique situations related to the mode of evaluation (e.g., auto, transit, bike, etc.) and setting (e.g., urban, suburban, rural). These methods vary in data needs and complexity. The multimodal methods are briefly described below.

- Tiered Level of Service Policy A tiered level of service standard varies the minimum acceptable LOS standard based on the context of the transportation system and adjacent land uses. Typically the tiered level of service standard applies to vehicles. A lower level of service standard provides an incentive for mode change along transit corridors or neighborhood destinations (e.g., parks, schools, library, etc.). This tiered LOS approach used in cities like Morgan Hill, Redwood City, Mountain View, and San Jose, allows neighborhood areas to maintain a visually appealing urban environment and support travel by transit and active modes.
- Multimodal LOS in the Highway Capacity Manual (HCM 2010) – The 2010 Highway Capacity Manual (HCM 2010) provides detailed instruction on calculating LOS for Vehicles, Transit, Pedestrians, and Bicycles on urban streets (at the link and segment levels) and at signalized and 2-way stop intersections. Pedestrian and Bicycle LOS are

integrated into HCM 2010's multimodal LOS, allowing analysis to compare trade-offs between modes; however, this approach is not sensitive to the local context and only considers variables within the right-of-way. Transit LOS is calculated at the segment and facility level for public transit systems operating within the roadway network. Alternatively, simulation models can be used to measure performance (i.e., person-delay) for all modes within a transportation network.

- Person Delay Simulation models can be used to measure performance in terms of "person-delay" for all modes within a transportation network. This method provides a better decision-making tool for developing improvements to promote efficient movement of people, rather than a single mode, through an intersection. It also facilitates the development of the multimodal mitigation measures. It is useful in analyzing higher occupancy travel modes such as bus rapid transit (BRT) or the influence of a grade-separated crossing, as it accounts for benefits or impacts to all facility users.
- Built Environment Factors The built environment is generally understood to have a strong influence on transportation choices and the quality of service for difference modes. While the built environment includes both land use and transportation infrastructure, most LOS applications focus on the latter, identifying elements of the built environment that fall within the public right-of-way and under public control. At the heart of this approach is the question, "To what extent do roadway features that include pedestrian and bicycle friendly designs impact a traveler's perception of that facility?"
- Layered Networks/Street Types This approach, which is suitable for General Plan-level analysis, designates modal emphasis by street to create a complete streets network. Layered networks

recognize that while all traveler types need to be accommodated within a community no single street can accommodate all transportation users at all times. The layered network concept envisions streets as systems, each street type designed to create a high quality experience for its intended users. A layered network approach can also use context sensitive land use and mode overlays to enhance additional transportation modes.

- Pedestrian/Bicycle environmental quality indices (PEQI/BEQI) – The San Francisco Department of Public Health (SFDPH) developed the Pedestrian Environmental Quality Index (PEQI) and Bicycle Environmental Quality Index (BEQI) to measure the impacts of built environment on pedestrian and bicycle environmental quality, activity, and safety. The PEQI and BEQI were developed in consultation with transportation professionals and travel behavior researchers.
- Automobile Trips Generated (ATG) Some jurisdictions, including San Francisco, Paso Robles, Emeryville and others, have recently eliminated or are considering eliminating their LOS policies altogether. Instead, an approach to system evaluation is based on automobile trips generated (ATG) by a new development. The premise is that instead of evaluating transportation impacts on a case by case basis, applicants pay a transportation fee proportional to the number of new automobile trips generated, which in turn funds transportation improvements on a local scale for all travel modes.
- Level of Traffic Stress The Level of Traffic Stress (LTS) method evaluates bicycle Quality of Service (QOS) by measuring *low-stress connectivity*, defined as "the ability of a network to connect traveler' origins to their destinations without subjecting them to unacceptably stressful links." Based on Dutch standards for bicycle facility design, the method

classifies bicycle facilities on a scale from one to four. Better scores are assigned to facilities with low exposure to auto traffic and easy crossings at intersections, indicating low-stress environments which are attractive to many types of cyclists.

Local communities and the Florida Department of Transportation have adapted multimodal methods for local application within their communities, including:

- Charlotte, North Carolina In 2007 the City of Charlotte, North Carolina, developed a method to assess street design features that impact pedestrians and bicyclist crossing signalized intersections. This method can be used as a tool to assess and improve pedestrian and bicycle levels of comfort and safety through intersection design features. The results can be compared with those for motor vehicle LOS of an intersection and weighed according to user priorities.
- Fort Collins, Colorado Fort Collins created MMLOS standards for its streets in the late 1990's and has continued to refine them. Fort Collins standards consider both route characteristics and high priority land uses, such as public schools, that require a higher LOS for pedestrian and bicycle modes. The City prioritizes connectivity in its Bicycle Plan and Pedestrian Plan in order to eventually create a fully-connected grid of bike and pedestrian facilities.
- Florida Department of Transportation (FDOT) Florida DOT (FDOT) developed a multimodal evaluation tool in 2009 based on the 2000 Highway Capacity Manual, Transit Capacity, and Quality of Service Manual, and the Landis Bicycle and Pedestrian LOS Models. The tool allows for two levels of analysis: generalized planning, appropriate for broad applications such as a statewide or regional and long range estimates, and preliminary

engineering, appropriate for facility designs and alternatives analysis at the project level.

The list of multimodal performance measures is continually evolving and in some cases groups of measures are used to evaluate a transportation project. Examples include the STARS tool and the Caltrans Smart Mobility Framework, described below.

- Sustainable Transportation Analysis and Rating System (STARS) – The Santa Cruz County Regional Transportation Commission prepared the 2014 Santa Cruz County Regional Transportation Plan using the STARS tool to select and prioritize the projects on the constrained project list. The STARS tool is a voluntary transportation project planning and evaluation tool similar to Leadership in Energy and Environmental Design (LEED) for building projects. Performance measures address goal and policy topics such as access & mobility, health, safety, equity, economic benefit, cost effectiveness, climate & energy, ecological function.
- **Smart Mobility Framework** The Smart Mobility Framework report creates guidelines for Caltrans and other State agencies to use when planning improvements to the State, regional and local transportation systems in a manner that integrates land use and transportation decisions and responds to the States economic, equity and environmental goals, including benefits to climate change and other sustainability concerns. This system of performance measures is correlated with a system of land use "place types" to describe the full range of contexts and policy objectives throughout California. Innovative performance measures include: location efficiency, reliable multimodal mobility, public health and safety (including speed suitability), climate and energy conservation, social equity, and sustainable economy (including effects on productivity, system

resources, performance optimization, and return on investment).

Vehicle Miles Traveled for Systemwide MMLOS Analysis

Vehicular transportation is a major contributor to greenhouse gas emissions. Growth in vehicular transport is a direct result of population and employment growth, which generate vehicle trips to move goods, provide public services, and connect people with work, school, shopping, and other activities. Growth in travel (especially vehicle travel) is due in large part to an urban development pattern in which these destinations are dispersed. Systemwide measures typically report an aggregate travel characteristic like vehicle miles travel (VMT) which incorporates the availability and effectiveness of multimodal travel options. Specifically, a systemwide performance measure used to quantify the amount of vehicle travel is vehicle miles traveled (VMT). VMT is also an important input to GHG analysis since the amount of travel and conditions under which the travel occurs directly relate to how much fuel vehicles burn. The systemwide VMT performance metric can change with modified multimodal transportation options and land use patterns. Furthermore, SB 743 has focused attention on the analysis of VMT for transportation purposes.

The primary limitation of VMT measurement is that VMT is not directly observed and therefore cannot be directly measured. It is calculated based on the number of vehicles, multiplied by the distance traveled by each vehicle. The amount of VMT can be obtained through extensive surveys of residents, visitors, and employees, or using a validated travel demand model that estimates vehicle demand. VMT estimates derived from TDF models are dependent on the level of detail in the

network and other variables related to vehicle movement through the network. The volume of traffic and distance traveled depends on land use types, density/intensity, and patterns as well as the supporting transportation system.

HOW MMLOS APPLIES TO SANTA CRUZ COUNTY

The remainder of this memorandum discusses the general information that Santa Cruz County should consider when evaluating the form of MMLOS it will use for analyzing project specific impacts on the transportation system.

Methods and Modes Evaluated

Table 1 summarizes which modes of travel can be evaluated with each of the MMLOS methods. Three of the methods focus solely on the pedestrian and bicycles travel modes, and one focuses solely on bicycle travel. The other five methods include procedures for analyzing pedestrian, bicycle, transit, and auto modes. Two of the methods can also be applied to truck access within the community.

Evaluation Approach – Computational, Checklist, or Combination

Implementation of the Sustainable Santa Cruz County Plan and update of the General Plan Circulation Element objectives and policies that prioritize each of the travel modes will need to address key questions including:

- Is this an enjoyable place to walk or bicycle?
- Is transit convenient?

• How are tradeoffs between modes considered in transportation improvements?

Among others, answering these questions can take one or more forms of computational analyses, qualitative checklists, or a combination of analysis and checklist:

- Computational
 - Tiered Level of Service
 - HCM 2010 MMLOS
 - o Person Delay
 - Automobile Trip Generation
- Checklist
 - Charlotte, North Carolina
 - o Built Environment Factors
 - Layered Networks/Street Types
- Combinations
 - o PEQI/BEQI
 - o Fort Collins, Colorado

Because the current state of the practice does not define a single method there is flexibility to adopt, modify or combine techniques from each category that will address the specific needs of the County. Further, each of these techniques requires different levels of data in their application. The computational approaches require a substantial amount of data as compared to the checklist approaches. Therefore, the level and amount of data required should be a key consideration in which analysis techniques the County chooses to implement in order to balance between addressing the policy requirements and the cost to evaluate individual projects.

Table 1 Multimodal Analysis Methods – Modes Analyzed

| Method | Pedestrian | Bicycle | Transit | Auto | Trucks |
|--|--------------|--------------|--------------|--------------|--------------|
| Tiered Level of Service Policy | \checkmark | \checkmark | \checkmark | \checkmark | |
| HCM 2010 MMLOS | \checkmark | \checkmark | \checkmark | \checkmark | |
| Person Delay | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| Built Environment Factors | \checkmark | \checkmark | | | |
| Layered Networks/Street Types | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| PEQI/BEQI | \checkmark | \checkmark | | | |
| Automobile Trip Generation | \checkmark | \checkmark | \checkmark | \checkmark | |
| Level of Traffic Stress | | \checkmark | | | |
| Charlotte, North Carolina | \checkmark | \checkmark | | | |
| Fort Collins, Colorado | \checkmark | \checkmark | \checkmark | \checkmark | |
| Florida Department of Transportation | \checkmark | \checkmark | \checkmark | \checkmark | |

Source: Fehr & Peers 2014.

The STARS tool and the Caltrans Smart Mobility Framework are examples of combined techniques, which use quantitative and qualitative measures to evaluate a proposed plan or project.

SUSTAINABLE SANTA CRUZ COUNTY PLAN: STREET TYPES NETWORK

In order to create a balanced transportation system, the Sustainable Santa Cruz County Plan includes a Street Type network to prioritize movement of people that recognizes the community values. The streets that play key roles in how people travel are categorized into six street "types", based on the forms of travel that are emphasized on the street. The characteristics of the street and surrounding area are taken into consideration when designating the type. In addition, street types help define each street's user priorities and frame the planning context for infrastructure needs. Taken together, these designated streets create a balanced transportation system.

Layered Network/Street Types

The Layered Networks/Street Types network is an emerging approach to multimodal planning that builds upon Complete Streets principles and State regulations and requirements. In some cases, it is also referred to as a Complete Streets Network, Complete Systems, Street Typology, or Layered Network approach, as it assures that all modes are addressed in the larger system of roadways, but acknowledges that trying to serve competing modes on individual streets sometimes fails to result in first-rate facilities. A Street Types network prioritizes certain modes on certain streets, providing continuity for the chosen mode while accommodating other modes or encouraging use on parallel networks. Providing selected treatments for a prioritized mode on selected streets can improve efficiency for that particular mode while ensuring increased safety for all modes. A Street Type network plan is a guiding policy for multimodal transportation system investments by public and private entities to achieve a complete transportation system.

TRANSPORTATION PROJECT PERFORMANCE MEASURES

Performance measures that can help guide the prioritization and implementation of projects, and therefore progress toward the well-connected, balanced transportation network that is envisioned by the Sustainable Santa Cruz County Plan, are listed below. Performance measures are the basis for determining which projects and programs provide the most positive change, and in which areas, for the cost. The following performance measures are recommended to be used to prioritize the transportation improvement projects mentioned in the Plan:

- Improves overall street connectivity
- Improves pedestrian safety and access to activity centers
- Improves bike safety and access
- Creates safe routes to transit and increase opportunities to ride transit
- Improves management of parking supply an access to park-and-ride lots
- Create livable public spaces around activity centers
- Reduces vehicle miles traveled
- Reduces traffic congestion

Consistency with other plans and projects

The following section builds on the Sustainable Santa Cruz County Plan transportation performance measures by providing a chronological description of the components for updating the existing Santa Cruz County General Plan transportation performance measurement framework. Recommendations for system-wide performance measures for Program/General Plan level analysis and for project-level multimodal connectedness checklist for individual land development and transportation projects are described.

NEXT STEPS

The Sustainable Santa Cruz County Plan is the basis of a potential update to the General Plan Circulation Element to promote a balanced transportation system. The County will need to explore MMLOS methods to plan and implement the transportation vision. Below is a summary of key components that could serve as a new Countywide Street Types Network with a combination of system-wide and multimodal performance measures. This is a comprehensive transportation planning approach that builds on the Sustainable Santa Cruz County Plan, with potential benefits including CEQA streamlining, balanced transportation system planning, and enhanced community benefits.

Planning a Countywide Multimodal Transportation System

As the County updates its General Plan policies, the County will continue to monitor and manage traffic operations along streets and intersections as individual developments occur, to ensure that the street system is optimized for steady, safe, and orderly traffic flow operations, and to ensure balance among the modes of travel. Next steps that the County can take toward implementation of a County-wide balanced transportation system would include the following components listed in suggested chronological order:

- 1. Prepare a Countywide Street Type Network and Impact Fee: The expectations for a balanced transportation network should also reflect expectations of funding availability to build and maintain the transportation system. Identifying the mode preference for specific streets will further reflect the community values. This would be an expansion of the Street Types network within the Sustainable Santa Cruz County Plan Area that defines the mode preference and attributes for each street and functional classification. The planned transportation network would take into account available and potential funding sources such as local and state funding sources to address existing deficiencies and an updated Transportation Improvement Area fee program to address future transportation system expansion due to new development.
- 2. Develop Systemwide Performance Measures for Program/General Plan Level Analysis: Using the performance measures listed in the previous section as a starting point, the County would refine and adopt systemwide performance measures such as vehicle miles travel (VMT), to determine consistency with the goals of the land use and circulation elements of the General Plan and to evaluate cumulative conditions. Using VMT as a primary program-level performance measure would make it possible for the County to take advantage of the potential CEQA streamlining of projects within the 2035 Metropolitan Transportation Plan/Sustainable Communities Strategy transit priority areas, and be a helpful metric to evaluate cumulative future conditions.

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- 3. Develop a Multimodal Connectedness Checklist for Project Level Analysis: To complement the Street Type network and program level performance measures, the County would prepare a multimodal connectedness checklist of basic and enhanced design features associated with land use and transportation projects. This checklist could be used to supplement traditional vehicle LOS standards. The checklist could vary based on the street user priorities and may include a mixture of quantitative and qualitative performance measures. To address a spectrum of transportation and land use projects, a combination of a built environment checklist, tiered level of service policy, and person delay analysis would be beneficial.
 - Multimodal Connectedness Checklist: At a minimum, a transportation and/or land use project would be evaluated relative to basic and enhanced built environment factors near a project site (perhaps within a 10 to 30 minute walking/bicycling distance). The main idea is to evaluate activity centers and destinations around projects to ensure that walk times to necessary destinations are minimized and the walking experience is comfortable. This multimodal connectedness checklist would inventory existing pedestrian and bicycle facilities near the site and identify potential enhancements to achieve the desired Street Type mode priority near the project site. Using geographic information systems, travel time for each mode (e.g., walking, bicycles, transit, and vehicles) between the project and surrounding land uses can be used to gauge the degree of accessibility for a project. The County desires to minimize travel time to necessary destinations while minimizing unnecessarv vehicle travel.

 <u>Tiered Vehicle Level of Service and Person</u> <u>Delay</u>: Careful consideration should be given to how vehicle LOS analysis is used, especially in transit corridor areas. Specifically, where there is greater emphasis on transit and active modes of travel it is recommended that other performance measures like person delay also be used to more accurately evaluate the effects on the transportation system and to more accurately evaluate the person mobility at a specific location.

In some locations of Santa Cruz County it may be possible to adopt a vehicle level of service policy of LOS E (with LOS F permissible at locations within transit priority areas and hot spot locations approved by the Board of Supervisors). This tiered LOS policy could support County General Plan objectives, utilize the public investment to its full potential and provide a quantitative performance metric to monitor svstem performance. However, the overall priority of the Sustainable Santa Cruz County Plan is focused on person delay. Funding and constructing a system that is substantially underutilized most of the day and encourages higher vehicle speeds has secondary affects that degrade mobility for pedestrians and bicyclists.

- 4. Update Guidelines and Programs: Update the appropriate County Design Criteria and other existing documents to reflect the Street Types network. These updates should reflect a Complete Streets approach where all modes of travel are routinely accommodated. Other policy guidance documents that should be created or updated include: Parking Master Plan, Street Design Guidelines, and the Safe Routes to School Program.
- 5. Prepare Transportation Demand Management (TDM) Program: To provide guidance and articulate expectations, a TDM program should be established,

including a TDM plan and modification of the Trip Reduction Ordinance (Chapter 5.52 of the zoning code). The purpose of the TDM program is to reduce vehicle trips and provide transportation options to achieve the Sustainable Santa Cruz County Plan vision to improve the environment and quality of life for residents and employees. Santa Cruz County should encourage firms located within the County to use flexible work hours and other traffic demand management strategies to reduce traffic congestion during typical commute periods. To the extent possible, companies should also be encouraged to share parking facilities with adjacent uses through easement agreements. The County should also encourage residential developers to design and build project elements that support TDM such as car-share and bike-share facilities, neighborhood electric vehicle (NEV) operation, transit stop amenities, and neighborhood transportation centers. In areas were schools are in close proximity such as Soquel Village, school day start and end times could be considered for change and/or staggering.

6. Prepare Transportation Impact Analysis (TIA) Guidelines: Develop and adopt transportation impact study guidelines that specify the process by which impacts from new developments are identified. These auidelines should include specific performance measures and thresholds for the identification of impacts and mitigation measures in accordance with the General Plan objectives, including person mobility, reduction in VMT and the development of a balanced transportation network for all modes. Roadway widening should be evaluated in the context of potential impacts to community character, convenience for non-auto modes, environmental cost of additional pavement, safety, and cost/benefit.

- 7. Community Review: The processes and methods of planning for a multimodal transportation system should be presented to decision makers and the public for review and comment. Presentation should be based on project specific examples and include the data needs, information provided and criteria used for determining impacts. Any proposed updates to the General Plan would also include environmental documentation, evaluation and thorough public input.
- 8. Adoption of MMLOS Standards: If the new techniques produce the desired results in terms of evaluating the transportation system, at a reasonable level of effort, the County could adopt a MMLOS for project-level analysis.

Appendix E: GUIDING PRINCIPLES FOR FUTURE OF EAST CLIFF VILLAGE SHOPPING CENTER SITE

The East Cliff Village Shopping Center is a six-acre site located at 21511 East Cliff Drive in the "Live Oak" unincorporated area of Santa Cruz. The Center was originally developed in the 1960s and is considered outdated. The property owner is preparing to propose some new improvements at the site, and is also contemplating more comprehensive improvements in the future. The site is also considered an "opportunity site" within the plan area of the "Transit Corridors Plan for Sustainable Communities" (TCP) being prepared by the County of Santa Cruz. In order to obtain community input regarding possible new uses and to develop a vision for a sustainable and economically vibrant site, two community workshops were held. Information presented by the property owner and the county's economist, and the public comments made at the April 29th Community Workshop were analyzed by county staff and used to

generate the following possible "Guiding Principles".

Land Use Categories. Consider a mix of land uses at the site in order to respond to a range of community needs and ensure the long-term economic viability of the center. Appropriate uses include those such as neighborhood- and community-serving retail, personal and professional services, medical and health-related uses, restaurants and coffee shops, and offices. The location near beaches and the harbor area can also serve tourists and visitors. A hotel development could be appropriate if restaurants and other neighborhoodserving uses are also included on the site. Residential uses may be appropriate at the rear of the site adjacent to existing residential areas. Residential uses may also be appropriate within new 2- or 3-story mixed use buildings over ground floor non-residential uses, however the ground floor spaces must have high ceilings to accommodate modern retail needs. and residential uses should be set or "stepped" back from the lines of the ground floor below so that the upper floor residential uses appear more subordinate to the ground floor uses. Consider the location, size, and configuration of the site when determining the most appropriate land uses.

Ideas from workshop participants:

- "Eyes on the neighborhood" desired
- Need to activate too overparked
- Restaurants and coffee shop with outdoor seating
- Community health clinic and health uses supported

- Office space like Next Space
- o Mixed Use
- Residential set back from street
- **Timing of Development Phases.** Given the likelihood of phased development, consider a development agreement between the County and developers that would require that community amenities such as a coffee shop or restaurant, spaces that accommodate "public" events such as the farmer's market, outdoor seating areas, and high-quality frontage landscaping be included with any proposal for residential development.

Ideas from workshop participants:

- Support phased development but concern will build only residential and won't make other improvements
- Does need to be financially feasible
- Give current businesses right of first refusal
- **Community Space.** The final site plan for the property should incorporate a significant public gathering space appropriate for the continued operation of the Live Oak Farmer's Market and other community events. Further, uses that activate the street frontage through outdoor dining, patios, or café-style seating should be encouraged.

Ideas from workshop participants:

o Love the farmers market

- Activity or event space
- o Build a sense of community
- Comfortable gathering spots and outdoor seating
- Fountain
- o Green area
- Open area for public gatherings
- Dog friendly
- **Circulation Improvements.** Access to the site should be easy and safe for pedestrians, cyclists, and transit users of all ages, as well as for automobiles, and be integrated into the surrounding neighborhood grid to the greatest extent possible. Circulation should ensure that users of the site have safe places to walk to, from, and around the property, and that conflicts between modes of travel are minimized.

Ideas from workshop participants:

- More pedestrian access/walking corridors
- Sidewalks & bike lanes make this kind of place work
- More accessibility to the neighborhoods
- o Accessible (for a wheel chair)
- o Better traffic control
- o Public transportation essential to all

development

- Young families need a nice destination to walk to
- Neighborhood Character. New development should reflect the architectural and natural aspects of the surrounding neighborhood, responding to both the scale and features of other buildings in the area. There are some remaining examples of "Live Oak" architecture that should be considered (farmhouse, rustic, quaint). Recognition of proximity to beaches and the harbor could also be reflected in the character of development. Consider incorporating wide landscaped areas. а water feature. and "green"/recycled materials.

Ideas from workshop participants:

- Keep quaintness
- Signage, identity need to be developed for a "sense of place"
- o Right landscaping/right palette color
- Use of natural materials
- Live Oak needs a visual/architectural identity along thoroughfare
- Attractive landscaping
- o Fountain
- **Site Design.** The East Cliff frontage should be nicely landscaped along the streetscape and include a focal point. Structures should be located at the front of the

property but further back than the usual ten-foot front yard setback; perhaps about twenty feet so that the site offers an inviting and attractive human scale at the frontage. Structures at the front of the property should be single-story, with any second or third story elements being stepped further back. Landscaping should be expanded to soften the streetscape and parking areas, and to maintain an attractive environment for users of the property. Any three story development should be located such that significant shadows are not cast on adjacent residential parcels.

Ideas from workshop participants:

- Second stories should be offset from ground floors
- o A place where people can walk, with plantings
- Store fronts closer to street
- Keep scale low in front
- Make the site inviting, with active uses and visibility through the site to draw people in
- **Desirable Commercial Uses.** Community members expressed very strong support for restaurants, coffee shops and other food uses, especially with related outdoor seating opportunities to enliven the shopping center. A small drug store and "post office" such as a UPS store could be supported.

Ideas from workshop participants:

 Small Grocery Store – perhaps a New Leaf Market, or something like A.J.'s at Soquel/Park Avenue

- Coffee shop/café like Live Oak Coffee or People's
- Restaurant, brewery, pub, winery tasting room
- Deli/sandwich shop/café/bakery like Kelly's or Gayle's or the Buttery
- Ice Cream Shop like Penny Ice Cream who attends the Sunday Farmer's Market
- o Dry Cleaners
- Post Office realize won't be USPS, but perhaps like a private UPS Store
- Pharmacy/Drug Store like the small CVS in Deer Park Center in Aptos
- Small-scale retail, artist's shops/galleries, surf shop
- Uses that recognize the beach-going and surfer-oriented visitors and residents in the area