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Evaluating the Performance of Pedestrian-Oriented Developments: Summary of Site Visits and Research Design Options

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# Evaluating the Performance of Pedestrian-Oriented Developments

## Summary of Site Visits and Research Design Options



The Center for Resource Efficient Communities

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Source: National Association of Housing and Redevelopment Officials

**Victoria Gardens in Rancho Cucamonga is a commercial development featuring unique pedestrian furniture, diverse architecture, and public art.**

# Evaluating the Performance of Pedestrian-Oriented Developments

## Preliminary Research Summary

### 1. Introduction

Pedestrian-oriented developments are those that include a mixture of land uses, shorter distances between likely origins and destinations, and design improvements to the pedestrian environment. Though several such developments have been constructed within California in the last twenty years and planners commonly promote them, there has been little post-occupancy evaluation of their performance in actually increasing pedestrian activity in order to reduce energy use and greenhouse gas emissions. Between September 2009 and June 2010, funded by the California Energy Commission (BOA 246), the Center for Resource-Efficient Communities (CREC) undertook a preliminary study to determine how to best proceed with research that will help planners assess the potential of improvements to the pedestrian

environment to increase walk trips and reduce automobile trips. CREC identified a group of 21 pedestrian-oriented developments across California and collected data about each site, both through site visits and sources such as the U.S. Census. The number of sites available for study and the large amount of data available on each site indicated promising trends toward both increasing build-out of pedestrian-friendly developments and increasing focus on understanding non-automobile travel. The sites studied varied widely in terms of scale, type, mix of land uses, pedestrian design features, and location within the greater metropolitan area, suggesting that alternative research designs will be more fruitful in determining which design factors most strongly contribute to pedestrian activity and trip substitution.

### 2. Preliminary research design

#### Site selection

CREC selected study sites that were examples of pedestrian-oriented development by speaking with experts in the field and reviewing articles on planning and development, promotional literature from the developers of each site, and images of each development. The study sites covered a wide spectrum of development types, including both infill and green-field sites; new developments as well as streetscape improvement projects in historic downtowns; pedestrian-oriented and transit-oriented development; and commercial, residential, and mixed use areas. Study sites were concentrated in the San Joaquin Valley

and Southern California, which contain California's most rapidly growing urban areas. Since research has shown that weather plays a large part in pedestrian behavior, CREC chose sites located in several different climate zones, including inland areas that experience the hottest summer temperatures. For each study site, researchers also selected a comparison site that was adjacent and similar in character to the study site, but lacked the improvements to the pedestrian environment that the study site had received. Figure 2.1 and Table 2.1 summarize the location and key characteristics of the study sites.

Table 2.1: List of study sites

	Site Name	City	Climate Zone	Type	Design Features
1	Theater Way	Redwood City	3	Commercial streetscape	Bicycle lanes and racks, street furniture, street trees, public art
2	Evelyn Corridor TOD	Mountain View	4	Residential streetscape	Bicycle lanes, parallel parking, planting strips
3	The Crossings	Mountain View	4	Residential streetscape	Common green space, trees, all parking on-street, bicycle lanes and racks
4	Castro Street	Mountain View	4	Commercial streetscape	Street trees, bike facilities, transit stops, outdoor dining, diverse architecture
5	Santana Row	San Jose	4	Mixed-use streetscape	Active retail, street art, performance art, diverse architecture, mixed uses
6	Victoria Gardens	Rancho Cucamonga	10	Commercial development	Pedestrian furniture, diverse architecture, public art
7	San Elijo Hills	San Marcos	10	Residential development	Pedestrian connections to trail network, bicycle lanes, traffic calming devices
8	The Esplanade	Chico	11	Mixed-use development	Street trees, pedestrian facilities, traffic calming, historic buildings, mixed uses
9	Fremont Medical Center	Yuba City	12	Medical development	Raised crosswalks, traffic-calming devices, pedestrian-activated beacons, pocket park
10	Aggie Village	Davis	12	Residential infill	High density; proximity to parks, bicycle facilities, and the train station
11	Village Homes	Davis	12	Suburban residential	Homes fronting on common greenspaces, bike/ped paths, narrow streets
12	Fremont Mews	Sacramento	12	Residential infill	Community garden, street art, high density, proximity to parks and historic districts
13	Project Good	West Sacramento	12	Residential infill	High density, community garden, proximity to transit and bicycle routes
14	Laguna West	Elk Grove	12	Residential greenfield	Community center, common greenspace
15	Downtown/Old Lodi	Lodi	12	Commercial streetscape	Mixed uses, historic buildings, pedestrian furniture, traffic calming, landscaping, proximity to train station
16	1st Street	Livermore	12	Commercial streetscape	Pedestrian furniture, pocket parks, street trees, bicycle racks
17	East Main Street	Visalia	13	Commercial streetscape	Street trees and awnings
18	Parkview Cottages	Bakersfield	14	Residential streetscape	High density; proximity to park, school, and commercial district
19	19th & Eyhe Streets	Bakersfield	14	Commercial streetscape	Traffic calming, pedestrian furniture
20	Depot Walk	Orange	8	Infill residential	High density, landscaping, proximity to rail
21	Palm Canyon Drive	Cathedral City	15	Commercial streetscape	Street trees, misters, public art, historical buildings, outdoor dining

Figure 2.1: Map of study sites





Table 3.1: Census data collected for study and comparison sites

<b>Age (% of total population)</b>	Population 65+ years old
<b>Race/ethnicity (% of total population)</b>	White Black Native American Asian Pacific Islander Other Two or more Hispanic or Latino
<b>Families</b>	Families with own children (% of total households) Average household size Average family size
<b>Housing characteristics (% of total housing units)</b>	Vacant Renter-occupied
<b>Housing costs (\$)</b>	Median owner-occupied housing unit value Median gross rent Median vacant housing price
<b>Educational attainment (% of population 25+ years old)</b>	High school Some college Associate's degree Bachelor's degree Graduate degree
<b>Employment status (% of population 16+ years old)</b>	Employed Unemployed
<b>Employment by sector (% of workers 16+ years old)</b>	Mgmt. and professional Service Sales and office Farming Construction Production
<b>Income (\$)</b>	Median household income
<b>Journey to work (% of workers 16+ years old)</b>	Private automobile Carpool Public transportation Walk Bicycle Other Worked from home Mean travel time to work (min)
<b>Vehicle ownership (number of vehicles per household)</b>	None 1 2 3+

### 3. Data collection

Through site visits and research, CREC collected ample data on all study and comparison sites. This data came from several different sources.

#### Census data

The U.S. Census collects data related to transportation, including journey and travel time to work, as well as demographic data on race and ethnicity, family size, housing, income, education, and employment.. Table 3.1 lists the census data collected by CREC for both study and comparison sites.

The demographic and economic characteristics listed in Table 3.1 can play an important role in shaping travel patterns. Elderly residents are less likely to drive, while families with children are more likely to require an automobile than households without children. Rental households may be more flexible and able to locate closer to jobs than homeowners, and affluent households may be better able to afford private automobiles. Meanwhile, the transportation data collected by the census should reflect successful design in pedestrian-oriented developments.

Appendix A contains the census data collected by CREC for all study and comparison sites.

#### Site visits

CREC researchers visited all study and comparison sites and collected data on several factors that affect the quality of the pedestrian environment. Table 3.2 summarizes the characteristics on which researchers collected data.

Though only a small portion of these factors directly describe the pedestrian environment, they all affect the pedestrian experience. The scale and layout of a development affects how far pedestrians are able

to travel within a given site and how direct routes are to destinations both within and outside of the site. The automotive environment affects both real and perceived pedestrian safety. Pedestrians are much more aware of the visual quality of their surroundings, and both architecture and vegetation can have a positive aesthetic impact. Furthermore, mature vegetation can provide much-needed shading in the hotter inland areas of California. If a site is surrounded by diverse destinations within walking distance it will be much easier for residents to accomplish a variety of trip purposes by foot. (Walk Score is an algorithm that rates a neighborhood based largely on the distance to several different types of destinations.) Finally, mild weather makes walking more pleasant. Since CREC conducted site visits during May and June, the weather was generally mild in most sites, with the exception of some inland areas where temperatures exceeded 90 degrees.

The starred factors in Table 3.3 are all used in various measures of walkability and pedestrian level of service that are increasingly common in transportation planning and traffic engineering. It may be worth including these factors in any study of the pedestrian environment in order to build on previous research and existing best practices. However, it's worth noting that such analyses focus almost entirely on safety, and little on accessibility to destinations, comfort, or aesthetic qualities. It should also be noted that CREC did not conduct standardized traffic counts at any sites and simply made qualitative assessments of pedestrian, bicycle, and vehicle volumes. Appendix B contains the observational data collected by CREC for all study and comparison sites.

Table 3.2: Observational data collected for study and comparison sites

<b>Age of development</b>	Year built
<b>Type, scale, and layout of development</b>	Development type Area of development (square miles) Street layout* Block length (miles)*
<b>Pedestrian environment</b>	Width of sidewalk* Width of parking, bike lane, and/or shoulder (feet)* Width of buffer between pedestrians and vehicles (feet)* Width of outside travel lane (feet)* Parking coverage (% of block)* Number of curb cuts per block* Street lights and street furniture Perceived safety
<b>Automotive environment</b>	Number and configuration of travel lanes* Speed limit (mph)* Intersection controls Traffic calming devices Parking layout, costs, and restrictions
<b>Architecture and buildings</b>	Qualitative assessment of architectural quality Building height (stories) Building setbacks (feet) Number of facades per block Estimated occupancy (%)
<b>Vegetation and shading</b>	Estimated canopy coverage (% of block) Distance between street trees (feet) Qualitative assessment of health of vegetation Type of vegetation in buffer
<b>Destinations</b>	Diversity of local destinations Type of open space within/near development Walk Score
<b>Qualitative traffic counts</b>	Observed pedestrians Observed cyclists Observed traffic
<b>Weather</b>	Weather during visit

\* denotes a factor that is currently used in pedestrian level-of-service metrics.

## 4. Findings

### **Census data is not fine-grained enough to control for demographic differences between sites.**

Ideally, study sites and comparison sites would have similar demographic characteristics, while the transportation data would confirm the success of pedestrian-friendly design in study sites. In order to make such a comparison, CREC would require detailed census data that corresponds very closely to the boundaries of the study and comparison sites. However, census data at the block and block-group level does not contain sufficiently detailed demographic or transportation data. The in-depth data required to control for the influence of demographic and economic characteristics upon travel behavior was only available at the tract level or higher, and a census tract is typically many times the size of the average study site. In fact, many of the study and comparison sites were within the same census tract, making it impossible to control for demographic and economic variation between them. Furthermore, all tract-level data was from the 2000 Census, which means that it pre-dated construction of several study sites. More recent data from the American Community Survey was only available at the city level. It is possible that the 2010 Census will contain more up-to-date data at a resolution that is more closely matched to the study sites.

### **Study sites varied significantly.**

Though researchers identified a reassuring number of potential study sites in areas not known for progressive planning, these varied greatly in terms of their scale, type, location relative to jobs and services, and use of pedestrian design features. Some study sites were infill projects located on a single city block,

while others were subdivisions covering several square miles. Some combined several different elements of smart growth and new urbanist design, while others were virtually indistinguishable from conventional suburban sprawl but for some common green space. This variety may make it difficult to isolate the effects of individual design treatments, or to control for surrounding land uses, particularly in infill locations.

### **A matched-set study may not be feasible.**

CREC's preliminary research focused on assessing the feasibility of a matched-set analysis, in which researchers would compare travel surveys and/or pedestrian counts in a pedestrian-oriented development to data from a counterpoint site with similar socio-demographic characteristics in a similar location. Matched-set studies yield defensible conclusions if good matches can be found. This preliminary effort revealed that creating good matches is very difficult for pedestrian-oriented developments, largely because of the variation between study sites described above. There are few nearby comparable sites for key downtown commercial areas, infill developments are often too small-scale for site-level pedestrian design to matter much compared to the characteristics of the surrounding environment, and many of the suburban residential study sites are too disconnected from potential destinations to have high pedestrian mode shares in the first place. Also, a matched-set study does not control for self-selection. It could easily be argued that any differences observed between study and comparison sites are due not to design elements, but instead to the simple fact that people who are inclined to walk chose to live in more walkable environments.

## 5. Next steps

Based on this preliminary research, CREC recommends several alternative research approaches.

### Travel survey study

Under this approach, researchers would select a group of pedestrian-oriented developments and collect detailed travel diaries from both residents living within the developments and those in the surrounding area in which they describe the destination, mode, purpose, and distance of all trips taken over a given period. Researchers would then geo-locate all responses and then regress the dependent variable of walk trips and non-work auto trips on a variety of socio-economic and geographic variables. If the sites selected are commercial corridors, then the question of interest is whether living within walking distance of the corridor increases walk trips and decreases non-work auto trips. If the sites selected are residential or mixed-use PODs, then the question of interest is whether people living within those developments have fewer non-work auto trips and more walk trips, and which variables are most likely to correlate with high levels of walking.

This approach would offer relatively good experimental control and would allow researchers to compare conclusions between commercial and residential areas. The survey approach also allows researchers to ask additional questions about behavioral change and self-selection in pedestrian-oriented developments, such as why the respondent moved into their current residence and whether they feel that they walk more now than they once did. However, travel diary surveys could be costly

and difficult to generate in large numbers, and may create concerns about confidentiality among potential responses. Travel diaries also capture a short time period, which may or may not be comparable to typical behavior for a given respondent or to other respondents' surveys. Metropolitan planning organizations (MPOs) typically conduct travel surveys every decade to inform their travel models. While many surveys are out-of-date and contain only small samples of responses from pedestrian-oriented developments, some MPOs have recently conducted surveys that collect larger samples from developments in denser, mixed-use areas. These may provide useful supplemental data for this research approach.

### Site variable study

Under this approach, researchers would take counts of pedestrians in several types of pedestrian-oriented developments located in different contexts and then regress pedestrian volumes on a variety of physical variables in the streetscape. This approach may work well given the diversity among potential study sites, since it does not attempt to control for external variables and instead examines whether any specific physical variable works to increase pedestrian volumes regardless of context. Discovery of such variables would be a striking finding and would be of particular interest to site designers, retailers and others who care about increasing the sheer number of people on local sidewalks. This method would also make good use of the database on streetscape variables that CREC has already compiled, and would be an original contribution to research on pedestrianism since most studies don't try to incorporate fine-scale variables.

The disadvantage of this approach is that it would not offer any degree of experimental control nor take into account the context surrounding a given site. Therefore, the conclusions of such a study might require substantial repetition and validation before being incorporated into transportation planning practice. Furthermore, planners and policymakers are often less interested in the number of pedestrian trips and more in whether these trips substitute for automobile trips and therefore reduce congestion, air pollution, and greenhouse gas emissions. Since this research would not collect information on the purpose or destination of walk trips, its conclusions may not produce conclusions that contribute to a better understanding of how pedestrian-oriented design can create more resource-efficient communities.

#### **Contextual study**

Instead of creating matched pairs of study sites and comparison sites, researchers could compare pedestrian counts, land uses, socio-economic characteristics, and physical variables at study sites and in the half-mile area surrounding each study site. Researchers would then regress pedestrian volumes not on the other variables, but on the difference in these variables between the study site and the surrounding area. This approach is not as well suited as a matched-set analysis for yielding conclusions about the impact of specific design improvements on pedestrian volumes. Instead, it would provide information about what types of pedestrian-oriented development can have the greatest impact—at what scale, in what context, and at what degree of divergence from their surroundings.

The results of this approach would be especially useful for developing metropolitan areas dominated by conventional development patterns that are looking to stimulate pedestrian activity in areas with the most potential. Like the site variable study above, this study would draw on the large database that CREC has already compiled. However, the area surrounding a given study site may have such different land uses and socioeconomic characteristics that it may not be instructive to compare the two. This may especially be true in small downtown commercial areas and in suburban residential developments, so this approach may be best suited to infill developments and streetscape improvements within larger commercial areas. Furthermore, this study would not control for self-selection or inform about whether walk trips substitute for automobile trips. Supplemental travel surveys could provide more information about the purpose of pedestrian travel in different contexts.

#### **Context-specific study of improvements near transit**

Finally, instead of studying a broad set of pedestrian-oriented developments, CREC could instead focus on pedestrian design approaches in a specific context. For instance, several MPOs offer grants to improve pedestrian connectivity between new developments near transit and transit stations. Under this approach, researchers would conduct pedestrian counts in station areas that have received such improvements and compare them to unimproved routes to the same station or nearby station areas without pedestrian design features. Regressing walk

counts on a variety of physical and land use variables would help researchers determine which factors best correlate to the number of people walking to transit.

The advantage of this approach is that it focuses on a specific trip purpose that planners are concerned with, both because grants for station area pedestrian improvements are a common incentive for smart growth and because long-distance transit trips are more likely to substitute for automobile trips. Furthermore, transit agencies often collect data on boardings by station, which may allow

researchers to compare ridership before and after pedestrian improvements and to control for ridership at different stations. However, this study would only apply to a small number of the study sites that were surveyed by CREC in this preliminary research. Though it would not be difficult to find additional study sites since several projects that have received MPO grants have already been built out, these projects are mostly located in large coastal metropolitan areas with ample transit service, not the rapidly-developing inland areas that CREC focused on during this preliminary research.

**Pedestrian-oriented  
development encourages  
alternative modes of  
mobility by providing  
appropriate infrastructure  
such as multi-use paths.**



## 6. Conclusion

During this preliminary research effort, CREC collected in-depth data from a wide variety of pedestrian-oriented developments all across California. It is encouraging to note that so many potential study sites do exist, and that there is a move toward pedestrian-oriented design even in developing metropolitan areas. However, the variety among sites

will make it difficult to conduct a matched-set analysis that will yield concrete conclusions about the impact of specific design improvements to the pedestrian realm. Instead, a research approach that either accounts for the variation between study sites or focuses more narrowly on a subset of pedestrian-oriented developments may produce more useful results.

**The Sacramento light-rail system connects to other public transit, linking pedestrian-oriented developments like Project Good and Metro Place at Washington Square with the capitol city's downtown core.**



Source: iStock Photo



## Appendix A: Census Data for CREC Study and Comparison Sites

In cases where sites span more than one census tract, data is listed for each tract.

ID	Site	City	Census Tract	Age	Race / Ethnicity								Families		Vehicle Ownership				
					Population 65+	White	Black	Native American	Asian	Pacific	Other	Two or more	Hispanic or Latino	Families with own children	Average household size	0	1	2	3+
1.1	Theater Way	Redwood City	6102.02	9%	52%	14%	1%	9%	1%	19%	5%	41%	25%	2.2	3.2	24%	52%	20%	4%
2.1	Evelyn Corridor TOD	Mountain View	5097	11%	73%	2%	0%	15%	0%	5%	4%	16%	23%	2.2	2.9	3%	43%	39%	15%
3.1	The Crossings	Mountain View	5094.04	9%	52%	3%	1%	20%	0%	20%	4%	36%	26%	2.6	3.3	8%	50%	32%	10%
4.1	Castro Street	Mountain View	5096	6%	72%	2%	0%	19%	0%	4%	3%	12%	40%	1.9	2.8	4%	49%	35%	12%
5.1	Santana Row	San Jose	5064.01	10%	58%	6%	1%	16%	1%	13%	6%	24%	29%	2.5	3.0	6%	41%	37%	16%
6.1	Victoria Gardens	Rancho Cucamonga	20.07	4%	66%	7%	1%	9%	1%	12%	6%	27%	57%	3.4	3.6	2%	18%	53%	28%
7.1	San Elijo Hills	San Marcos	171.05	5%	91%	1%	0%	5%	0%	1%	2%	6%	55%	3.1	3.6	2%	18%	53%	28%
7.1	San Elijo Hills	San Marcos	200.1	37%	88%	1%	0%	4%	0%	4%	2%	9%	19%	2.2	2.6	6%	40%	43%	12%
8.1	The Esplanade	Chico	6.04	2%	80%	3%	1%	6%	1%	5%	5%	12%	17%	2.5	3.0	10%	36%	33%	22%
8.1	The Esplanade	Chico	7	12%	88%	2%	1%	2%	0%	3%	4%	7%	21%	2.0	2.7	11%	44%	32%	13%
9.1	Fremont Medical Center	Yuba City	501.02	21%	76%	3%	1%	3%	1%	12%	4%	21%	33%	2.5	3.2	18%	41%	31%	10%
10.1	Aggie Village	Davis	105.01	0%	54%	3%	0%	32%	0%	5%	6%	11%	42%	2.4	2.8	12%	65%	21%	2%
11.1	Village Homes	Davis	105.07	4%	72%	2%	0%	17%	0%	4%	5%	9%	31%	2.7	3.1	4%	35%	38%	23%
12.1	Fremont Mews	Sacramento	12	11%	71%	10%	2%	4%	1%	6%	6%	15%	5%	1.3	2.4	42%	44%	10%	4%
13.1	Project Good	West Sacramento	53	6%	43%	30%	3%	10%	0%	7%	6%	20%	35%	2.3	3.5	48%	29%	15%	8%
14.1	Laguna West	Elk Grove	96.19	7%	54%	10%	0%	23%	1%	5%	7%	13%	43%	2.8	3.2	5%	21%	53%	21%
15.1	Downtown/Old Lodi	Lodi	42.04	18%	85%	1%	1%	2%	0%	7%	5%	15%	25%	2.2	2.9	17%	36%	34%	14%
16.1	1st Street	Livermore	4515.03	11%	83%	1%	1%	6%	0%	4%	5%	13%	40%	2.8	3.2	6%	27%	46%	21%
17.1	East Main Street	Visalia	12	15%	66%	2%	3%	4%	0%	23%	3%	44%	30%	2.3	3.3	25%	42%	20%	13%
18.1	Parkview Cottages	Bakersfield	16	8%	47%	8%	3%	6%	0%	30%	6%	43%	29%	2.4	3.5	42%	40%	14%	5%
19.1	19th and Eye Street	Bakersfield	16	8%	47%	8%	3%	6%	0%	30%	6%	43%	29%	2.4	3.5	42%	40%	14%	5%
20.1	Depot Walk	Orange	759.01	6%	69%	2%	1%	2%	0%	23%	3%	44%	33%	2.7	3.3	12%	39%	37%	13%
21.1	Palm Canyon Drive	Cathedral City	450	10%	75%	1%	1%	1%	0%	19%	4%	49%	30%	2.7	3.5	11%	36%	31%	22%
<b>Comparison Sites</b>																			
1.2	Middlefield Road	Redwood City	6102.02	9%	52%	14%	1%	9%	1%	19%	5%	41%	25%	2.2	3.2	24%	52%	20%	4%
2.2	Villa Street	Mountain View	5097	11%	73%	2%	0%	15%	0%	5%	4%	16%	23%	2.2	2.9	3%	43%	39%	15%
3.2	Ortega and Mora Street	Mountain View	5094.04	9%	52%	3%	1%	20%	0%	20%	4%	36%	26%	2.6	3.3	8%	50%	32%	10%
4.2	Villa and Castro Street	Mountain View	5097	11%	73%	2%	0%	15%	0%	5%	4%	16%	23%	2.2	2.9	3%	43%	39%	15%
5.2	Olsen Drive	San Jose	5063.01	12%	60%	6%	1%	21%	0%	7%	5%	15%	21%	2.2	2.9	7%	47%	33%	13%
6.2	Terra Vista Promenade	Rancho Cucamonga	21	6%	51%	12%	1%	5%	0%	25%	7%	43%	37%	2.8	3.4	6%	46%	37%	11%
6.2	Terra Vista Promenade	Rancho Cucamonga	20.06	4%	61%	11%	1%	10%	0%	12%	6%	26%	43%	2.7	3.2	2%	35%	48%	15%
6.2	Terra Vista Promenade	Rancho Cucamonga	20.07	4%	66%	7%	1%	9%	1%	12%	6%	27%	57%	3.4	3.6	2%	18%	53%	28%
6.2	Terra Vista Promenade	Rancho Cucamonga	22.03	1%	46%	19%	2%	2%	0%	25%	6%	42%	46%	3.1	3.6	9%	37%	34%	20%
7.2	Olive Hills	San Marcos	200.22	6%	78%	2%	1%	5%	0%	10%	5%	23%	44%	3.0	3.3	1%	27%	51%	21%
8.2	E. 1st Avenue	Chico	6.04	2%	80%	3%	1%	6%	1%	5%	5%	12%	17%	2.5	3.0	10%	36%	33%	22%
9.3	Camelot Medical Park	Yuba City	501.02	21%	76%	3%	1%	3%	1%	12%	4%	21%	33%	2.5	3.2	18%	41%	31%	10%
10.2	Old East Davis	Davis	106.02	10%	68%	3%	1%	14%	0%	8%	6%	5%	15%	2.1	2.8	3%	50%	26%	10%
11.2	Stonegate	Davis	105.08	8%	80%	1%	1%	13%	0%	2%	3%	7%	27%	2.4	2.9	3%	34%	46%	17%
12.2	Central Oak Park	Sacramento	27	7%	33%	32%	2%	7%	0%	18%	8%	31%	34%	2.7	3.6	24%	46%	25%	5%
12.2	Central Oak Park	Sacramento	28	10%	21%	34%	3%	14%	1%	21%	7%	35%	42%	3.4	4.1	21%	48%	20%	12%
13.2	Metro Place	West Sacramento	101.01	12%	55%	4%	3%	9%	1%	23%	7%	43%	35%	2.9	3.7	24%	38%	30%	8%
13.2	McDowell Lane Street	West Sacramento	101.01	12%	55%	4%	3%	9%	1%	23%	7%	43%	35%	2.9	3.7	24%	38%	30%	8%
13.2	Elizabeth and 6th Street	West Sacramento	101.01	12%	55%	4%	3%	9%	1%	23%	7%	43%	35%	2.9	3.7	24%	38%	30%	8%
14.2	Minnie and Ahmed Street	Elk Grove	93.09	16%	86%	1%	0%	5%	0%	3%	5%	9%	31%	2.7	3.1	6%	25%	42%	27%
15.2	Downtown/Old Lodi	Lodi	42.04	18%	85%	1%	1%	2%	0%	7%	5%	15%	25%	2.2	2.9	17%	36%	34%	14%
15.2	Downtown/Old Lodi	Lodi	45	11%	32%	15%	2%	22%	1%	21%	7%	37%	40%	3.1	3.8	15%	54%	23%	8%
16.2	Downtown Livermore	Livermore	4516.01	9%	88%	1%	1%	4%	0%	3%	3%	9%	36%	2.6	3.1	4%	25%	40%	31%
17.2	E. Center Ave	Visalia	12	15%	66%	2%	3%	4%	0%	23%	3%	44%	30%	2.3	3.3	25%	42%	20%	13%
17.2	E. Center Ave	Visalia	13.02	9%	63%	3%	1%	7%	0%	21%	4%	38%	49%	3.1	3.5	11%	35%	36%	18%
18.2	17th Street	Bakersfield	16	8%	47%	8%	3%	6%	0%	30%	6%	43%	29%	2.4	3.5	42%	40%	14%	5%
18.2	17th Street	Bakersfield	17	18%	83%	3%	1%	2%	0%	7%	4%	17%	23%	2.1	2.8	9%	44%	34%	12%
19.2	Downtown Bakersfield	Bakersfield	17	18%	83%	3%	1%	2%	0%	7%	4%	17%	23%	2.1	2.8	9%	44%	34%	12%
20.2	Hampton Court	Orange	761.01	8%	64%	1%	1%	9%	0%	21%	5%	51%	41%	3.5	3.9	9%	31%	38%	22%
21.2	Hampton Court	Orange	759.01	6%	69%	2%	1%	2%	0%	23%	3%	44%	33%	2.7	3.3	12%	39%	37%	13%
21.2	S. Indian Canyon Drive	Palm Springs	446.01	15%	62%	13%	1%	1%	0%	19%	4%	37%	26%	2.4	3.3	15%	48%	29%	8%

Census Data

Housing Characteristics/Cost					Educational Attainment					Employment			Journey to Work							
Vacant housing units	Renter-occupied	Median owner occupied value	Median gross rent	Median vacant housing price	High school	Some college	Associate degree	Bachelor degree	Graduate degree	Employed	Unemployed	Median household income	Drive alone	Carpool	Public transportation	Walk	Bicycle	Other	Work at home	Mean travel time to work (min)
4%	6%	\$32,900	\$839	n/a	38%	22%	4%	11%	3%	31%	2%	\$36,699	47%	19%	13%	17%	0%	3%	1%	24.0
5%	40%	\$557,100	\$1,224	n/a	14%	13%	7%	29%	24%	69%	2%	\$72,167	78%	5%	4%	5%	3%	5%	4%	20.3
2%	39%	\$435,800	\$1,184	n/a	11%	17%	5%	24%	24%	70%	2%	\$61,699	66%	16%	9%	2%	3%	3%	3%	23.5
8%	27%	\$547,100	\$1,441	n/a	6%	10%	6%	39%	32%	83%	1%	\$73,017	81%	5%	4%	4%	2%	2%	4%	23.2
2%	27%	\$457,900	\$894	\$625,000	17%	23%	7%	24%	14%	69%	4%	\$52,786	77%	10%	3%	3%	2%	2%	5%	24.0
2%	87%	\$187,300	\$1,165	\$163,900	21%	32%	0%	19%	9%	73%	4%	\$72,280	83%	11%	2%	0%	0%	1%	3%	33.7
4%	80%	\$575,500	\$1,166	\$490,900	8%	24%	7%	35%	25%	66%	1%	\$102,363	83%	4%	1%	1%	0%	1%	11%	30.2
9%	89%	\$246,900	\$1,116	\$271,400	18%	31%	8%	25%	10%	44%	42%	\$58,593	81%	8%	1%	1%	0%	1%	8%	28.1
3%	10%	\$147,800	\$543	n/a	15%	27%	15%	24%	8%	58%	8%	\$15,603	64%	14%	3%	6%	9%	11%	3%	17.7
4%	42%	\$127,800	\$544	\$128,100	10%	28%	11%	33%	13%	66%	4%	\$27,906	69%	12%	1%	6%	8%	9%	4%	17.4
6%	38%	\$92,800	\$446	\$92,200	28%	27%	7%	5%	2%	41%	9%	\$23,166	74%	18%	2%	1%	2%	2%	3%	21.6
2%	5%	\$207,400	\$589	n/a	4%	9%	5%	35%	45%	35%	17%	\$21,393	27%	5%	3%	18%	37%	39%	9%	16.5
7%	43%	\$254,000	\$800	\$350,000	6%	11%	6%	31%	44%	65%	2%	\$42,813	61%	11%	8%	2%	15%	15%	4%	21.2
7%	4%	\$156,000	\$457	n/a	15%	29%	8%	27%	6%	59%	6%	\$18,341	50%	11%	16%	14%	4%	5%	3%	21.6
13%	11%	\$92,500	\$205	n/a	28%	20%	6%	3%	1%	22%	33%	\$13,750	18%	24%	18%	23%	17%	17%	0%	29.8
4%	88%	\$181,500	\$562	\$195,700	10%	25%	10%	33%	15%	71%	3%	\$72,500	83%	10%	3%	0%	1%	1%	3%	31.4
5%	49%	\$160,600	\$503	\$143,800	27%	26%	8%	16%	7%	57%	6%	\$36,418	73%	11%	0%	5%	3%	3%	8%	21.7
2%	98%	\$280,000	\$882	\$260,400	22%	21%	8%	18%	12%	64%	3%	\$65,948	85%	6%	2%	1%	2%	3%	2%	30.0
8%	23%	\$126,700	\$425	\$137,500	23%	29%	7%	8%	5%	56%	14%	\$24,038	60%	23%	2%	3%	0%	10%	3%	19.0
17%	18%	\$83,600	\$387	n/a	26%	24%	3%	6%	2%	33%	6%	\$17,500	63%	18%	6%	9%	0%	1%	4%	19.1
17%	18%	\$83,600	\$387	n/a	26%	24%	3%	6%	2%	33%	6%	\$17,500	63%	18%	6%	9%	0%	1%	4%	19.1
3%	97%	\$247,700	\$749	n/a	18%	27%	8%	13%	8%	68%	3%	\$45,345	74%	13%	3%	4%	2%	3%	3%	22.5
11%	58%	\$133,800	\$519	\$141,700	20%	28%	5%	8%	5%	58%	6%	\$36,232	67%	15%	6%	3%	2%	5%	5%	19.4
4%	6%	\$32,900	\$839	n/a	38%	22%	4%	11%	3%	31%	2%	\$36,699	47%	19%	13%	17%	0%	3%	1%	24.0
5%	40%	\$557,100	\$1,224	n/a	14%	13%	7%	29%	24%	69%	2%	\$72,167	78%	5%	4%	5%	3%	5%	4%	20.3
2%	39%	\$435,800	\$1,184	n/a	11%	17%	5%	24%	24%	70%	2%	\$61,699	66%	16%	9%	2%	3%	3%	3%	23.5
5%	40%	\$557,100	\$1,224	n/a	14%	13%	7%	29%	24%	69%	2%	\$72,167	78%	5%	4%	5%	3%	5%	4%	20.3
2%	30%	\$368,300	\$1,137	\$350,000	22%	17%	9%	27%	12%	68%	3%	\$56,854	78%	10%	6%	2%	0%	1%	4%	23.0
4%	43%	\$130,300	\$779	\$133,200	24%	27%	9%	10%	4%	66%	4%	\$40,544	78%	15%	2%	1%	1%	2%	2%	28.9
6%	55%	\$158,800	\$974	\$265,300	20%	30%	12%	22%	9%	71%	4%	\$57,293	82%	12%	3%	1%	0%	1%	2%	32.5
2%	87%	\$187,300	\$1,165	\$163,900	21%	32%	12%	19%	9%	73%	4%	\$72,280	83%	11%	2%	0%	0%	1%	3%	33.7
6%	24%	\$109,600	\$870	\$137,500	26%	25%	4%	7%	2%	21%	4%	\$46,750	74%	11%	9%	5%	0%	0%	2%	32.5
0%	0%	\$231,900	\$836	\$506,900	20%	26%	9%	21%	9%	62%	4%	\$51,814	80%	9%	2%	0%	0%	2%	6%	28.5
3%	10%	\$147,800	\$543	n/a	15%	27%	15%	24%	8%	58%	8%	\$15,603	64%	14%	3%	6%	9%	11%	3%	17.7
6%	38%	\$92,800	\$446	\$92,200	28%	27%	7%	5%	2%	41%	9%	\$23,166	74%	18%	2%	1%	2%	2%	3%	21.6
3%	19%	\$196,900	\$676	n/a	14%	15%	4%	31%	26%	63%	3%	\$25,803	48%	10%	5%	12%	23%	24%	2%	20.2
2%	60%	\$260,700	\$905	n/a	5%	11%	3%	33%	48%	68%	2%	\$62,537	76%	5%	4%	0%	9%	9%	7%	21.5
12%	28%	\$79,000	\$530	\$75,000	24%	20%	7%	14%	3%	41%	7%	\$18,766	65%	10%	13%	3%	2%	4%	5%	25.3
12%	45%	\$70,500	\$601	\$33,800	29%	18%	5%	4%	1%	43%	7%	\$21,645	52%	34%	3%	3%	1%	3%	6%	24.3
7%	37%	\$85,600	\$449	\$84,500	28%	18%	5%	4%	1%	44%	6%	\$25,083	63%	24%	5%	2%	1%	3%	3%	21.8
7%	37%	\$85,600	\$449	\$84,500	28%	18%	5%	4%	1%	44%	6%	\$25,083	63%	24%	5%	2%	1%	3%	3%	21.8
7%	37%	\$85,600	\$449	\$84,500	28%	18%	5%	4%	1%	44%	6%	\$25,083	63%	24%	5%	2%	1%	3%	3%	21.8
1%	89%	\$161,100	\$848	n/a	25%	34%	12%	13%	5%	61%	3%	\$60,368	83%	11%	2%	0%	0%	0%	5%	27.1
5%	49%	\$160,600	\$503	\$143,800	27%	26%	8%	16%	7%	57%	6%	\$36,418	73%	11%	0%	5%	3%	3%	8%	21.7
7%	36%	\$97,000	\$528	\$171,900	24%	21%	6%	7%	3%	40%	8%	\$21,148	67%	18%	8%	2%	1%	1%	4%	27.9
2%	64%	\$479,100	\$973	\$366,700	20%	26%	9%	27%	13%	70%	1%	\$75,698	86%	9%	2%	1%	0%	0%	2%	31.8
8%	23%	\$126,700	\$425	\$137,500	23%	29%	7%	8%	5%	56%	14%	\$24,038	60%	23%	2%	3%	0%	10%	3%	19.0
6%	50%	\$121,400	\$591	n/a	20%	28%	9%	10%	5%	53%	8%	\$36,458	77%	14%	2%	0%	0%	1%	6%	18.9
17%	18%	\$83,600	\$387	n/a	26%	24%	3%	6%	2%	33%	6%	\$17,500	63%	18%	6%	9%	0%	1%	4%	19.1
5%	56%	\$124,800	\$490	\$133,300	20%	24%	9%	19%	12%	62%	4%	\$45,290	80%	10%	1%	2%	3%	4%	3%	17.6
5%	56%	\$124,800	\$490	\$133,300	20%	24%	9%	19%	12%	62%	4%	\$45,290	80%	10%	1%	2%	3%	4%	3%	17.6
3%	63%	\$193,200	\$876	n/a	22%	22%	10%	10%	3%	62%	5%	\$49,542	72%	16%	3%	3%	2%	4%	3%	24.7
3%	35%	\$247,700	\$749	n/a	18%	27%	8%	13%	8%	68%	3%	\$45,345	74%	13%	3%	4%	2%	3%	3%	22.5
40%	53%	\$164,400	\$518	\$66,500	20%	23%	4%	15%	9%	50%	4%	\$29,072	61%	17%	4%	7%	1%	2%	10%	25.0

## Appendix B: Observational Data for CREC Study and Comparison Sites

ID	Site	Address	City	County	Year built	Development type	Walk score	Street layout
1.1	Theater Way	2200 Broadway St.	Redwood City	San Mateo	2004	Streetscape	94	Grid
2.1	Evelyn Corridor TOD	455 W Evelyn Ave.	Mountain View	Santa Clara	1994	Infill	89	Grid
3.1	The Crossings	Pachetti Way	Mountain View	Santa Clara	1991	Infill	82	Cul-de-sacs
4.1	Castro Street	Castro St.	Mountain View	Santa Clara		Streetscape	95	Grid
5.1	Santana Row	Santana Row	San Jose	Santa Clara	2001	Infill	91	Grid
6.1	Victoria Gardens	12505 N Main St.	Rancho Cucamonga	San Bernardino	2003	Suburban commercial	69	Grid
7.1	San Elijo Hills	1215 San Elijo Rd.	San Marcos	San Diego	2005	Suburban	42	Loops
8.1	The Esplanade	The Esplanade and 1st Ave.	Chico	Butte	1950	Streetscape (mostly residential)	78	Grid
9.1	Fremont Medical Center	Plumas St. and Del Norte Ave.	Yuba City	Sutter	2007	Streetscape (medical facility)	82	Grid
10.1	Aggie Village	Aggie Ln. and Cottage St.	Davis	Yolo		Infill (residential)	92	Loops and cul-de-sacs
11.1	Village Homes	Creek Hollow and Bree Ln.	Davis	Yolo	1975	Disconnected suburban (residential single family)	40	Loops and cul-de-sacs
12.1	Fremont Mews	14th between P and Q Sts.	Sacramento	Sacramento		Infill (residential apartments)	98	Grid
13.1	Project Good	4th St. and B St.	West Sacramento	Sacramento		Suburban infill (residential)	60	Grid
14.1	Laguna West	W Laguna Dr.	Elk Grove	Sacramento	1989	Disconnected suburban (residential)	38	Loops and cul-de-sacs
14.1a	Laguna West	W Lake Dr.	Elk Grove	Sacramento	1989	Suburban (residential)	38	Loops and cul-de-sacs
15.1	Downtown/Old Lodi	W Oak St. and S School St.	Lodi	San Joaquin	1995	Downtown commercial	97	Grid
16.1	1st Street	1st St. between J St. and M St.	Livermore	Alameda	2004	Streetscape (commercial)	89	Grid
17.1	East Main Street	118 W Main St.	Visalia	Tulare		Streetscape	98	Grid
18.1	Parkview Cottages	21st and R St.	Bakersfield	Kern	2005	Streetscape	92	Cul-de-sacs
19.1	19th and Eye Street	19th St. and Eye St.	Bakersfield	Kern		Suburban infill	86	Grid
20.1	Depot Walk	561 W Maple Ave.	Orange	Orange	2007	Infill (mixed use)	86	Grid
21.1	Palm Canyon Drive	Palm Canyon Dr. between Baristo St. and Arenas St.	Palm Springs	Riverside		Commercial downtown streetscape	88	Grid

### Comparison Sites

1.2	Middlefield Road	Middlefield Rd. and Marshall St.	Redwood City	San Mateo	2004	Streetscape	91	Grid
2.2	Villa Street	Villa St. and View St.	Mountain View	Santa Clara	1994	Infill	74	Grid
3.2	Ortega and Mora Street	Ortega St. and Mora St.	Mountain View	Santa Clara	1991	Infill	78	Grid
4.2	Villa and Castro Street	Villa St. and Castro St.	Mountain View	Santa Clara		Streetscape	69	Grid
5.2	Olsen Drive	Olsen Dr. and Winchester Blvd.	San Jose	Santa Clara	2001	Infill	68	Cul-de-sacs
6.2	Terra Vista Promenade	Foothill Blvd. and Rochester Ave.	Rancho Cucamonga	San Bernardino	2003	Disconnected suburban commercial	65	Parking lot
7.2	Olive Hills	Vereda Rd. between Mulberry St. and Settlers Ct.	San Marcos	San Diego	2005	Disconnected suburban	38	Loops
8.2	E. 1st Avenue	E 1st Ave. between The Esplanade and Citris Ave.	Chico	Butte		Residential streetscape	57	Grid
9.2	Camelot Medical Park	Live Oak Blvd. between Miller St. and Bird St.	Yuba City	Sutter		Streetscape	74	Grid
10.2	Old East Davis	J St. between 2nd St. and 3rd St.	Davis	Yolo		Residential	91	Grid
11.2	Stonegate	Magellan St.	Davis	Yolo		Residential	43	Cu-de-sacs
12.2	Central Oak Park	8th St. and Martin Luther King Jr. Blvd.	Sacramento	Placer		Infill redevelopment	98	Grid
13.2	Metro Place	3rd St. and C St.	West Sacramento	Sacramento		Suburban	82	Grid
13.2	McDowell Lane Street	3rd St. and C St.	West Sacramento	Sacramento		Suburban infill	82	Grid
13.2	Elizabeth and 6th Street	Elizabeth St. and 6th St.	West Sacramento	Yolo		Suburban	62	Grid
14.2	Minnie and Ahmed Street	Minnie & Ahmed Street	Elk Grove	Sacramento		Disconnected suburban	77	Loops and cul-de-sacs
15.2	Downtown/Old Lodi	N Main St. and E Pine St.	Lodi	San Joaquin	1995	Downtown commercial	94	Grid
16.2	Downtown Livermore	2nd St. between J St. and M St.	Livermore	Alameda	2004	Streetscape	95	Grid
17.2	E. Center Ave	Main St. between Garden St. and Orange St.	Visalia	Tulare		Streetscape	98	Grid
18.2	17th Street	17th St. between V St. and S St.	Bakersfield	Kern		Streetscape	97	Incomplete grid
19.2	Downtown Bakersfield	19th St. between F St. and E St.	Bakersfield	Kern		Suburban infill	97	Grid
20.2	Hampton Court	630 Palm Ave.	Orange	Orange	2007	Infill	78	Internal grid
21.2	S. Indian Canyon Drive	Indian Canyon Dr. between La Plaza St. and Arenas St.	Palm Springs	Riverside		Streetscape		Grid

## Administrative Data and Site Overview

ID	Site	Street measured	Curb ramps per block	Area of development	Block length (miles)	Date of visit	Weather and temperature
1.1	Theater Way	Middlefield	1	4 blocks	0.07	6/6/10	Sunny, 80s
2.1	Evelyn Corridor TOD	Evelyn	0	1 block	0.07	6/5/10	Sunny, 80s
3.1	The Crossings	Pachetti	0	2 blocks	0.15	6/5/10	Sunny, 80s
4.1	Castro Street	Castro	0	10 blocks	0.11	6/5/10	Sunny, 80s
5.1	Santana Row	Santana Row	0	0.09 sq. mi.	0.09	6/5/10	Sunny, 80s
6.1	Victoria Gardens	Kews b/t N. & S. Main	1	0.21 sq. mi.	0.08	6/8/10	Sunny, 80s
7.1	San Elijo Hills	Dove Tail Drive at Fallsview	0	0.5 sq. mi.	0.15	6/11/10	Partly cloudy, 70s
8.1	The Esplanade	Esplanade	1	0.4 sq. mi.	0.08	5/25/10	Cloudy with showers, 60s
9.1	Fremont Medical Center	Plumas	4	0.014 sq. mi.	0.11	5/25/10	Cloudy, 60s
10.1	Aggie Village	Cottage	8	0.007 sq. mi.	0.05	5/24/10	Cloudy, 60s
11.1	Village Homes	Creek Hollow	0	0.2 sq. mi.	0.05	5/24/10	Cloudy, 60s
12.1	Fremont Mews	14th	1	1 block	0.06	5/26/10	Partly cloudy, 70s
13.1	Project Good	4th and B	1 (B), 7 (4th)	1 block	0.06	5/26/10	Sunny, 70s
14.1	Laguna West	West Lake	2	6 sq. mi.	0.05	5/26/10	Sunny, 60s
14.1a	Laguna West	West Laguna	3	6 sq. mi.	0.12	5/26/10	Sunny, 60s
15.1	Downtown/Old Lodi	School b/t Oak and Pine	1	36 blocks	0.08	5/19/10	Partly cloudy, 70s
16.1	1st Street	1st b/t J and M	1	0.31 mi. (streetscape)	0.07	5/20/10	Sunny, 70s
17.1	East Main Street	East Main b/t Garden and Orange	0	0.33 mi. (streetscape)	0.06	6/12/10	Sunny, 90s
18.1	Parkview Cottages	21st	0	0.02 sq. mi.	0.12	6/13/10	Sunny, 90s
19.1	19th and Eye Street	19th	0	0.5 mi. (streetscape)	0.05	6/13/10	Sunny, 90s
20.1	Depot Walk	W. Maple b/t Pixely and Depot	3	1 block	0.05	6/10/10	Partly cloudy, 70s
21.1	Palm Canyon Drive	Palm Canyon Drive	1	1 mi. (streetscape)	0.12	6/9/10	Sunny, 90s

## Comparison Sites

1.2	Middlefield Road	Middlefield	4	2 blocks	0.07	6/6/10	Sunny, 80s
2.2	Villa Street	View	4	2 blocks	0.1	6/5/10	Sunny, 80s
3.2	Ortega and Mora Street	Ortega	2	2 blocks	0.06	6/5/10	Sunny, 80s
4.2	Villa and Castro Street	Villa	2	5 blocks	0.06	6/5/10	Sunny, 80s
5.2	Olsen Drive	Olsen	5	2 blocks	0.18	6/5/10	Sunny, 75+
6.2	Terra Vista Promenade		25+	0.03 sq. mi.	0.09	6/8/10	Sunny, 80s
7.2	Olive Hills	Vereda Rd.	12	.2 sq. mi.	0.16	6/11/10	Cloudy, 80s
8.2	E. 1st Avenue	E 1st	8	1.5 sq. mi.	0.1	5/25/10	Cloudy, 70s
9.3	Camelot Medical Park	Live Oak	6	0.0036 sq. mi.	0.08	5/25/10	Cloudy, 70s
10.2	Old East Davis	J	10	0.06 sq. mi.	0.08	5/24/10	Cloudy, 70s
11.2	Stonegate	Magellan	1	0.4 sq. mi.	0.12	5/24/10	Cloudy, 60s
12.2	Central Oak Park	8th	7	0.02 sq. mi.	0.12	5/26/10	Partly cloudy, 70s
13.2	Metro Place	B	8	1 block	0.06	5/26/11	Sunny, 70s
13.2	McDowell Lane Street		2	1/4 block	0.06	5/26/12	Sunny, 70s
13.1	Elizabeth and 6th Street	Elizabeth	25	0.06 sq. mi.	0.14	5/26/13	Sunny, 70s
14.2	Minnie and Ahmed Street	Ahmed	9	0.2 sq. mi.	0.12	5/26/14	Sunny, 70s
15.2	Downtown/Old Lodi	N Main	3-4	.33 mi. (streetscape)	0.07	5/19/10	Partly cloudy, 70s
16.2	Downtown Livermore	2nd	2-3	.38 mi. (streetscape)	0.07	5/20/10	Sunny, 70s
17.2	E. Center Ave	E Main	2	1 block	0.13	6/12/10	Sunny, 90s
18.2	17th Street	17th	1	2 blocks	0.11	6/10/10	Sunny, 90s
19.2	Downtown Bakersfield	19th	4	1 block	0.07	6/13/10	Sunny, 80s
20.2	Hampton Court	Palm Ave.	3	1 block	0.17	6/10/10	Partly cloudy, 70s
21.2	S. Indian Canyon Drive	Indian Canyon Dr.	3	1 mi. (streetscape)	0.12	6/9/10	Sunny, 90s

## Appendix B: Observational Data for CREC Study and Comparison Sites

ID	Site	Width of sidewalk (feet)	Width of parking/ bike lane/ shoulder (feet)	Total buffer distance between peds and vehicle lanes (feet)	Width of outside travel lane (feet)	Proportion of block with on street parking (percent)	Number of travel lanes	Speed limit (mph)
1.1	Theater Way	9.5	8-13	14.5	10	50	1-2	Not posted
2.1	Evelyn Corridor TOD	5	8-13	19.5	12	50	2	30
3.1	The Crossings	6	8	13	12	70	2	Not posted
4.1	Castro Street	8.5	9	12	12	85	3	Not posted
5.1	Santana Row	10.5	0	6	20	0	2	Not posted
6.1	Victoria Gardens	9-12	8	15	12	85	2	25
7.1	San Elijo Hills	5	5-8	10-13	9	45	2	25
8.1	The Esplanade	5	8	12	12	95	6	35
9.1	Fremont Medical Center	8	20	20	17	95	2	35
10.1	Aggie Village	4	8	13	10	65	2	Not posted
11.1	Village Homes	6-8	n/a	15	10	0	1-2	20
12.1	Fremont Mews	3-8	8	20	12	100	2	40
13.1	Project Good	6	8	14	10	50-95	2	
14.1	Laguna West	4.5	8	8	12	45	2	Not posted
14.1a	Laguna West	4-6	8	12	10	50	2	Not posted
15.1	Downtown/Old Lodi	16	14	17	10	50	2	25
16.1	1st Street	14	15	15	8	60	2	15
17.1	East Main Street	7	14	19	14	95	2	25
18.1	Parkview Cottages	6	8	12	15	100	2	Not posted
19.1	19th and Eye Street	8	13	7	19	90	2	Not posted
20.1	Depot Walk	5	8	16	12	75	2	25
21.1	Palm Canyon Drive	7	8	16	10.5	90	3	30
21.1	Cathedral City Country Club	0	0	0	24	0	2	20

### Comparison Sites

1.2	Middlefield Road	5-8	14	0-19	14	60	2	25
2.2	Villa Street	5-8	8	12.5	15	80	2	25
3.2	Ortega and Mora Street	5	8	8	17	70	2	25
4.2	Villa and Castro Street	10.5	7	9	14	80	2	25
5.2	Olsen Drive	5-7	0	0	20	0	2	25
6.2	Terra Vista Promenade	n/a	n/a	n/a	n/a	95	8	5
7.2	Olive Hills	5	8	8	10	60	2	20
8.2	E. 1st Avenue	5	8	21	10	80	2	2
9.3	Camelot Medical Park	8	3	3	17	0	4	40
10.2	Old East Davis	5	8	8	22	75	2	
11.2	Stonegate	4	4	8	12	90	2	
12.2	Central Oak Park	5	8	8-18	12	85	2	30
13.2	Metro Place	5	8	8	10	75	2	
13.2	McDowell Lane Street	8	8	8-18	45			
13.2	Elizabeth and 6th Street	5	8	8	10	75	2	
14.2	Minnie and Ahmed Street	4	8	8	8	80	2	
15.2	Downtown/Old Lodi	9	8	12	14	100	2	
16.2	Downtown Livermore	12	15	15	10	100	2	
17.2	E. Center Ave	6	8	14	12	95	3	25
18.2	17th Street	6	8	7	19	80	2	25
19.2	Downtown Bakersfield	14	9	9	16	90	4	10
20.2	Hampton Court	6	8	8	12	60	2	25
21.2	S. Indian Canyon Drive	15	8	8	12	90	4	30
21.2	Navajo Street	5	8	8	12	60	2	

**Transportation and Street Type Data Overview**

Notes on parking	Street lights and furniture	Intersection controls	Traffic calming devices	Observed level of ped activity	Observed level of bicycling	Observed traffic volumes
Paid parking	Bike racks, benches	Bike racks, benches	Woonerf	Medium-high	Low	Medium
Parking on one side of street	Street lamps	Street lamps	Signage, ped refuges in median	Low	Low-medium	Medium
2 hr time limit	Street lamps	Street lamps	Roundabout	Low	Medium	Low
1 hr time limit	Street lamps	Street lamps	Crosswalks	High	Low-medium	Low
No on-street parking	Street lamps, large planters	Street lamps, large planters	Signage, bollards, raised crosswalks	Very high	Medium	Low
Parallel, paid parking within development plus adjacent garages	Benches and planters	Benches and planters	Bulb-outs	Medium	None	Medium-high
Free parallel parking on residential streets, large garages and driveways	None	None	Barriers, chicanes	High	Low	Medium
Free parallel parking	Street lamps	Street lamps	Ped refuges in median	Low	None	High
Free angled parking, 2 hour time limit, adjacent parking lot	Street lamps and benches	Street lamps and benches	Raised crosswalks, ped flashers, rumble strips	Low	None	Medium
Parallel	Street lamps	Street lamps	None	Low	Medium	None
No on-street parking except for visitor spaces; large garages and driveways	Street lamps, community-provided gardens and benches along paths	Street lamps, community-provided gardens and benches along paths	None	Low	Low	None
Parallel and angled parking, free with 2 hour limit or permit	Street lamps and bike racks	Street lamps and bike racks	Crosswalks	Medium	Medium	High
Parallel, free with permit or 1 hour time limit, small garages and driveways	Street lamps	Street lamps	None	Medium	Medium	Low
Only 6 designated parallel parking spaces	Street lamps and benches	Street lamps and benches	None	None	None	None
Parallel, free during the daytime, large garages and driveways	Street lamps and benches	Street lamps and benches	None	None	None	None
Parallel and angled; free with 30-90 min time limits; lots nearby	Benches, sidewalk dining	Benches, sidewalk dining	Bulb-outs	Low	None	Medium
Free with 90 min time limit; lots behind buildings	Benches, awnings, sidewalk dining	Benches, awnings, sidewalk dining	Bulb-outs	Medium	Low	Medium
Diagonal parking, 2 hr time limit	Street lamps and benches	Street lamps and benches	Bulb-outs	Medium	Low	Medium-high
Parallel	Sidewalk on one side of the street	Sidewalk on one side of the street	Bulb-outs	Low	Low	Medium
90 min time limit	Street lamps	Street lamps	Bulb-outs, bollards	Low	Low	Low
Limited parallel parking for visitors; large garages; adjacent parking lot	Street lamps	Street lamps	None	Medium	Medium	Medium
Parallel with 2 hr time limit	None	None	Raised crosswalks, bulb-outs	Medium	Low	High
Free parallel parking on residential streets, large garages and driveways	yes, in the median	None	Speed bumps; curvy streets	Low	None	None

**Comparison Sites**

2 hour free parking	Street lamps	Traffic light	None	Low	Low	Medium
No parking lines	Street lamps	None	None	Low	Low	Low
	None	None	None	Low	Low	Low
2 hour time limit	None	Traffic light	None	Medium low	Low	Low
	None	Traffic light	None	Low	Low	Low
Large parking lot	None	None	None	None	Low	High
Parallel parking, large driveways and garages	None	None	Bulb-outs	None	None	None
Free parallel, 1 hour time limit	Street lamps	None	None	Medium low	Medium low	Low
Fee parking lot	Street lamps	None	None	None	None	Medium high
Parallel, large garages and driveways, parking lot	Street lamps	None	None	None	Low	None
Parallel, large garages and driveways	Street lamps	None	None	Low	None	None
Parallel, free, parking lot	Street lamps	None	None	Low	None	Medium
Parallel, large driveways and garages	Street lamps	None	None	Medium	High	Low
Free parallel	Street lamps	None	None	Low	Low	Low
Parallel, large garages and driveways	Street lamps	None	None	Low	Low	Low
Parallel, large garages and driveways	Street lamps	None	None	Medium	Low	Low
Parallel, 3 hour time limit	Street lamps	None	None	None	None	Low
Free. 2 hour time limit	Street lamps	None	None	Low	Low	Low
Parallel, 2 hour time limit	Benches	None	None	Low	Low	Low
Parallel	Street lamps	None	None	Low	Low	Low
2 hour time limit	None	Traffic light	None	Low	Low	Low
Parallel with garages	None	None	None	Medium	Medium	High
Parallel	Street lamps	Traffic light	None	None	None	High
Parallel, large garages and driveways	None	None	None	Low	None	Medium

## Appendix B: Observational Data for CREC Study and Comparison Sites

ID	Site	City	Qualitative vegetative canopy coverage (percent estimated)	Distance between street trees (feet; estimated)	Qualitative health of vegetation/landscaping/street trees	Open space within or within 1/4 mile of development
1.1	Theater Way	Redwood City	30	23	High	Public plaza
2.1	Evelyn Corridor TOD	Mountain View	80	24.5	Medium high	Interior spaces in development
3.1	The Crossings	Mountain View	70	20	Medium high	Interior spaces in development
4.1	Castro Street	Mountain View	65	28	High	Yes
5.1	Santana Row	San Jose	80	30	High	In center median
6.1	Victoria Gardens	Rancho Cucamonga	70	18-20	High	No
7.1	San Elijo Hills	San Marcos	90	40	High	Yes
8.1	The Esplanade	Chico	95	10-20	High	Yes
9.1	Fremont Medical Center	Yuba City	100 (east) 25 (west)	20	High	Small park
10.1	Aggie Village	Davis	98	60	High	Yes
11.1	Village Homes	Davis	90	10	High	Yes
12.1	Fremont Mews	Sacramento	80	20	High	Yes
13.1	Project Good	West Sacramento	25	10	Medium high	Yes
14.1	Laguna West	Elk Grove	45	20	High	Yes
14.1a	Laguna West	Elk Grove	40	Varied	High	Yes
15.1	Downtown/Old Lodi	Lodi	75	20	High	Yes
16.1	1st Street	Livermore	95	20	High	Yes
17.1	East Main Street	Visalia	65	25		No
18.1	Parkview Cottages	Bakersfield	0	n/a	Low	Central Park and Mill Creek Park
19.1	19th and Eye Street	Bakersfield	20	32	Low	No
20.1	Depot Walk	Orange	15	Varied	Medium low	Yes
21.1	Palm Canyon Drive	Palm Springs	50	25	High	Yes

### Comparison Sites

1.2	Middlefield Road	Redwood City	25	31	Medium high	Courthouse
2.2	Villa Street	Mountain View	25	26	Medium	No
3.2	Ortega and Mora Street	Mountain View	60	n/a	Medium	Park
4.2	Villa and Castro Street	Mountain View	65	33	Medium	No
5.2	Olsen Drive	San Jose	10	45-50	Poor	No
6.2	Terra Vista Promenade	Rancho Cucamonga	10	n/a	High	No
7.2	Olive Hills	San Marcos	0	n/a	Medium	Yes
8.2	E. 1st Avenue	Chico	95	10	Medium high	Yes
9.3	Camelot Medical Park	Yuba City	0	n/a	Medium low	No
10.2	Old East Davis	Davis	4	Varied	Medium	Yes
11.2	Stonegate	Davis	20		Varied	Yes
12.2	Central Oak Park	Sacramento	70	40	Medium high	Yes
13.2	Metro Place	West Sacramento	50	Varied	High	Yes
13.2	McDowell Lane Street	West Sacramento	50	n/a	Varied	Yes
13.2	Elizabeth and 6th Street	West Sacramento	20	Varied	Medium	Yes
14.2	Minnie and Ahmed Street	Elk Grove	45		Varied	Yes
15.2	Downtown/Old Lodi	Lodi	50	n/a	n/a	No
16.2	Downtown Livermore	Livermore	20	20	Medium	Yes
17.2	E. Center Ave	Visalia	20	25	Low	No
18.2	17th Street	Bakersfield	20	30	Low	Yes
19.2	Downtown Bakersfield	Bakersfield	0	0	n/a	No
20.2	Hampton Court	Orange	15	n/a	High	Yes
21.2	S. Indian Canyon Drive	Palm Springs	30	25-50	High	Yes

**Vegetation, Urban Design and Land Use Data Overview**

Trees and landscaping in buffer?	Qualitative assessment of aesthetic environment	Building height (stories)	Set back between façades and sidewalks (feet)	Number of façades per block	Estimated occupancy (percent)	Non-residential destinations in area	Perceived safety
Yes	High	2-3	1	5	80	Theater	High
No	Medium	3	10-12	8	80	None	High
No	Medium	3	12	14	100	None	High
No	High	1	3	16	90	Retail	High
Yes	High	4-5	0	28	100	Retail	High
Yes	High	2-3	0	12-16	100	Restaurants and retail	High
Yes	High	1-2	20-50	25	75	Parks	High
Yes	High	1-2	20-50	8	95	Businesses and transit stops	High
Yes	Low	1	8-20 (hospital); 50(medical building)	1	100	Medical facilities	Medium
Yes	High	1	15-40	8	95	Businesses, downtown commercial area, parks	High
Yes	High	1-2	n/a	Varies	80	Parks, gardens	Medium
Yes	High	3	3	8	98	Parks, retail, restaurants, schools, government buildings	Medium
Yes	High	2-3	5-10	4-5	70	One restaurant, downtown commercial area	Low
Yes	High	1-2	1-2	n/a	90	Strip mall	High
Yes	Medium	1-2	20	18	90	Strip mall	High
Yes	High	3	0	15	90	Restaurants, retail, offices, hotels, transit	High
Yes	High	1	0	25	90	Downtown commercial area	Medium
Yes	Medium	1-2	0	19	90	Downtown commercial area	High
No	Low	1-2	18	8	70	None	Medium
Yes	Low	1-3	0	12	20	None	Low
Yes	Medium-high	2-3	15	7	100	Transit station, retail, commercial	High
Yes	Medium-high	1-2	0-16	16	95	Retail, restaurants	High

**Comparison Sites**

No	Medium low	1-2	1	3	80	None	High
No	Medium low	2	2	6	80	None	High
Yes	Low	3	25	1	100	None	High
No	Medium	2	2	8	90	Retail	High
No	Low	2	40	2	100	None	High
Yes	Low	1	0	1	100	None	Low
No	Medium	2	50	10	90	None	High
Yes	High	1-2	20	8	80	School, downtown commercial, parks	High
No	Low	3-5	n/a	2	50	Medical	Low
Yes	Medium	1-4	20	10	75	Retail	Medium
No	Medium low	1-2	30-40	14	80	Park, retail	Medium
Yes	Low	1	20	9	75	Community center	Medium low
No	Medium	2	20	8	80	None	Medium low
Yes	High	3	10	8	90	None	Medium low
No	Low	1-2	0-50	12	80	None	Medium
No	Medium	1-2	10-20	16	80	Strip mall, school, park	High
No	Low	2-3	0	10	35	Commercial downtown	Medium low
Yes	Medium	1	0	7	90	Retail	Medium high
Yes	Low	1-3	0	6	90	Retail	Medium
Yes	Medium low	1-2	15-20	20	65	Low	Medium
Yes	Medium low	1-2	15-20	6	20	Low	Medium low
No	Medium	2	28	0	80	Station	High
Yes	Medium	1-2	0	10	50	Transit station, retail, commercial	Medium



## Appendix B: Observational Data for CREC Study and Comparison Sites

	Study Site Notes	Comparison Site Notes
<p><b>Site 1:</b>  <b>commercial streetscape</b>  <b>Redwood City</b>  <b>(Climate Zone 3)</b></p>	<p>1.1 Theater Way: a recently redeveloped commercial district, with bicycle facilities, street furniture, street trees, and public art.</p>	<p>1.2 Middlefield Road: contains some street trees and street furniture but fewer pedestrian and bicycle facilities and lacks land use diversity. More of an office zone than a commercial district.</p>
<p><b>* Site 2:</b>  <b>residential streetscape</b>  <b>Mountain View</b>  <b>(Climate Zone 4)</b></p>	<p>2.1 Evelyn Corridor TOD: a new urbanist residential area near a CalTrain station, with bike lanes, parallel parking, and a vegetative buffer along sidewalks. However, houses have two-car garages.</p>	<p>2.2 Villa Street: A residential area with both single- and multi-family homes, with few pedestrian amenities apart from the occasional street tree. It is in the same census tract as site 2.1.</p>
<p><b>* Site 3:</b>  <b>residential streetscape</b>  <b>Mountain View</b>  <b>(Climate Zone 4)</b></p>	<p>3.1 The Crossings: A dense TOD with townhouses and some commercial. The site has common green space and young trees, only offers on-street parking, and there are bike lanes and facilities at the station.</p>	<p>3.2 Ortega Street: An older, mixed-density residential street with mature street trees but no particular pedestrian facilities. It is in the same census tract as site 3.1.</p>
<p><b>Site 4:</b>  <b>commercial streetscape</b>  <b>Mountain View</b>  <b>(Climate Zone 4)</b></p>	<p>4.1 Castro Street: A revitalized main street with healthy street trees, well-designed bike facilities and transit stops, outdoor dining, and varied architecture.</p>	<p>4.2 Villa Street: A nearby commercial street without sidewalk dining and bicycle facilities and mature street trees.</p>
<p><b>Site 5:</b>  <b>mixed residential/  commercial streetscape</b>  <b>San Jose</b>  <b>(Climate Zone 4)</b></p>	<p>5.1 Santana Row: A well-known, upscale mixed-use development with active retail, street art and performers, and diverse architecture. It's designed for (and popular with) pedestrians, but many visitors arrive by car.</p>	<p>5.2 Olsen Street: A nearby street leading to Santana Row with few buildings fronting the sidewalk, with little retail or commercial development.</p>
<p><b>Site 6:</b>  <b>commercial developments</b>  <b>Rancho Cucamonga</b>  <b>(Climate Zone 10)</b></p>	<p>6.1 Victoria Gardens: A redesigned mall that has pedestrian furniture, diverse architecture, and public art, but is surrounded by a huge parking lot and has no transit connections to surrounding areas.</p>	<p>6.2 Terra Vista Promenade: A strip mall with minimal shade and no pedestrian nor bicycle facilities.</p>
<p><b>Site 7:</b>  <b>residential developments</b>  <b>San Marcos</b>  <b>(Climate Zone 10)</b></p>	<p>7.1 San Elijo Hills: A greenfield subdivision consisting of homogenous single family homes. It connects to San Marcos' trail network and has bike lanes and traffic calming on arterials, but little pedestrian connectivity to commercial areas.</p>	<p>7.2 Olive Hills: A residential subdivision that is also connected to San Marcos' trail network, but lacks traffic calming. Property values are very different for the two sites.</p>

	Study Site Notes	Comparison Site Notes
<p><b>Site 8:</b>  <b>mixed-use (75% residential) early 20th century Chico developments (Climate Zone 11)</b></p>	<p>8.1 The Esplanade: A parkway leading to downtown Chico and the university, with mature street trees, pedestrian facilities, traffic calming, and a mix of uses, densities, and architectural styles, including historic buildings. Bus and bicycle routes are on adjacent streets. The hot summers and cool winters here provide an opportunity to study the effects of thermal comfort on pedestrians and cyclists.</p>	<p>8.2 E. First Avenue: A street perpendicular to the Esplanade with similar architecture and land uses. It is a bus and bike route, but lacks many of the traffic calming and pedestrian facilities of The Esplanade and is less well maintained. One of the more recently constructed business routes may be a more appropriate comparison site.</p>
<p><b>Site 9:</b>  <b>medical developments Yuba City (Climate Zone 12)</b></p>	<p>9.1 Fremont Medical Center: An improved streetscape in a medical center with raised crosswalks, traffic-calming rumble strips, a flashing pedestrian-activated beacon, and a pocket park. These improvements mainly serve to increase safety for pedestrians traveling from the parking lot to the center.</p>	<p>9.2 Camelot Medical Park: A new development containing multiple free-standing office units in a parking lot, with no pedestrian, bicycle or public transit facilities.</p>
<p><b>* Site 10:</b>  <b>residential infill developments Davis (Climate Zone 12)</b></p>	<p>10.1 Aggie Village: A newer high-density development with single-family homes and duplexes. There is only one entrance for cars, and the site is adjacent to city parks and bicycle and pedestrian paths and within walking distance of the train/bus station and downtown retail area. Census data indicates a relatively high percentage of renters and households with children in this development.</p>	<p>10.2 Old East Davis: An older downtown residential development with a mix of multi- and single-family units with the same location advantages as Aggie Village.</p>
<p><b>* Site 11:</b>  <b>suburban residential developments Davis (Climate Zone 12)</b></p>	<p>11.1 Village Homes: A Radburn-style development with homes fronting communal gardens and greenspaces lined with bicycle and pedestrian paths. Garages front the street, which are narrow and offer only a few visitor parking spaces. The development is well connected to city bus and bicycle routes.</p>	<p>11.2 Stonegate: A suburb with single-family homes and duplexes organized around wide streets and cul-de-sacs. The streets lack sidewalks and bike lanes and street trees are sparse, but it is adjacent to Davis' bike and bus routes.</p>
<p><b>Site 12:</b>  <b>residential infill developments Sacramento (Climate Zone 12)</b></p>	<p>12.1 Fremont Mews: An apartment complex that includes a community garden and lots of street art. The development is surrounded by other multi-family developments, historic buildings, and parks, and the one-way streets bordering the block are also bicycle and bus routes. Though there is on-street parking, the development provides additional of-street parking for residents.</p>	<p>12.2 Central Oak Park: A redeveloped community center surrounded by older neighborhoods, near a bus and bicycle route. This site is not an appropriate comparison site because of differing demographics, property values, and development types. However, Fremont Mews is worth studying, and a different comparison site should be easy to find.</p>

## Appendix B: Observational Data for CREC Study and Comparison Sites

	Study Site Notes	Comparison Site Notes
<p><b>Site 13:</b>  <b>residential infill developments</b>  <b>Sacramento</b>  <b>(Climate Zone 12)</b></p>	<p>13.1 Project Good: An in-progress development with energy-efficient townhouses, a community garden, and nearby bike and bus routes leading to downtown. There is street parking in addition to one garage space per unit. This would be a good study site if it were more complete. Project Good is in the same census tract as its potential comparison sites.</p>	<p>13.2a Metro Place at Washington Square: A mixed-density development consisting of single-family townhouses, duplexes, and multi-unit buildings. Internal streets include water features, pedestrian alleys, and a tree-lined pedestrian mall. This site is older than Project Good, and could make a better study site.</p> <p>13.2b McDowell Lane Town Homes: A relatively new development with town houses facing an internal driveway. Units have more off-street parking than Project Good.</p> <p>13.2c Elizabeth Street and 6th Street: A neighborhood of older homes, with privacy fences up to the sidewalk that make the neighborhood seem unfriendly and unsafe. Elizabeth Street is a bus route.</p>
<p><b>Site 14:</b>  <b>residential greenfield development</b>  <b>Elk Grove</b>  <b>(Climate Zone 12)</b></p>	<p>14.1 Laguna West: An established suburb with homes that back onto a man-made water feature with pedestrian access and street furniture. Although the development includes a community center, park and amphitheatre, it is not connected to adjacent commercial areas, and seems more like a conventional suburb than a smart growth development.</p>	<p>14.2 Minnie and Ahmed Street: A suburban development with no pedestrian facilities that is surrounded by high-traffic arterials. In spite of this, researchers observed many cyclists and pedestrians.</p>
<p><b>* Site 15:</b>  <b>commercial main street streetscape</b>  <b>Lodi</b>  <b>(Climate Zone 12)</b></p>	<p>15.1 Downtown/Old Lodi: A revitalized downtown with diverse land uses, historic architecture, pedestrian facilities, traffic calming, attractive landscaping, and good access to Amtrak. In spite of these positive qualities, there are several vacancies and a lack of street life.</p>	<p>15.2 Downtown/Old Lodi: An untouched section of Lodi's main street lined by bars, seedy hotels, and vacant lots, with no bike or pedestrian facilities.</p>
<p><b>* Site 16:</b>  <b>downtown commercial streetscape</b>  <b>Livermore</b>  <b>(Climate Zone 12)</b></p>	<p>16.1 1st Street Improvements: A revitalized main street with pedestrian furniture, pocket parks, street furniture, and a double row of trees flanking parking. There is no bike lane, but plenty of bike parking. Though the climate is mild, this would make an excellent study site.</p>	<p>16.2 2nd Street: Though clean and well maintained, this street lacks the pedestrian amenities and landscaping on 1st street, with many stores fronting on off-street parking lots.</p>

	Study Site Notes	Comparison Site Notes
<p><b>* Site 17:</b>  <b>downtown commercial streetscape</b>  <b>Visalia</b>  <b>(Climate Zone 13)</b></p>	<p>17.1 E. Main Street: A revitalized main street with street trees and awnings to shade the street during extreme summer heat.</p>	<p>17.2 E. Center Street: A segment of Visalia's commercial downtown that has recently received new street furniture and newly-planted trees, but can still be uncomfortably hot.</p>
<p><b>Site 18:</b>  <b>downtown residential and commercial streetscapes</b>  <b>Bakersfield</b>  <b>(Climate Zone 14)</b></p>	<p>18.1 Parkview Cottages: A high-density group of single-family townhouses adjacent to a greenway, park, elementary school, and downtown commercial districts. There is a bus route and bike lanes, but also plenty of garages and street parking. The development is not completely built out and still has empty lots and immature trees, but may make a good study site once completed.</p>	<p>18.2 17th Street between S and V Streets: A stretch of older single- and multi-family units near Mill Creek park with few trees and several "for rent" signs indicating vacancies.</p>
<p><b>* Site 19:</b>  <b>downtown residential and commercial streetscapes</b>  <b>Bakersfield</b>  <b>(Climate Zone 14)</b></p>	<p>19.1 19th and Eye Street: A commercial street recently converted from two-way to one-way, with bollards to calm traffic and new pedestrian facilities. However, the street still contains several empty storefronts and was virtually empty on a Saturday night.</p>	<p>19.2 19th Street between E and F Streets: A stretch of the above street that has not received traffic calming or pedestrian improvements. The businesses seem to be more successful here, but are not geared toward pedestrian access.</p>
<p><b>* Site 20:</b>  <b>residential infill developments</b>  <b>Orange</b>  <b>(Climate Zone 8)</b></p>	<p>20.1 Depot Walk: A series of dense townhouses near a commuter rail station, with ample off-street parking (in addition to the park-and-ride lot at the station) and immature landscaping.</p>	<p>20.2 Hampton Court: A low-density gated community just behind Depot Walk.</p>
<p><b>Site 21:</b>  <b>main street commercial streetscape</b>  <b>Palm Desert</b>  <b>(Climate Zone 15)</b></p>	<p>21.1 Palm Canyon Drive: A very shady commercial streets with misters to mitigate high summer temperatures, as well as public art, some historical buildings, and outdoor restaurant seating. The street was recently converted to a one-way street and is a main bus route.</p>	<p>21.2 Indian Canyon Drive: A commercial street that has also been recently converted to one-way and contains a bus line, but lacks landscaping, misters and art. This street provides access to parking lots serving the districts retailers. It is a good comparison site, but a more recent strip mall might be better.</p>



## Evaluating the Performance of Pedestrian-Oriented Developments

The Center for Resource Efficient Communities