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FINAL PROJECT REPORT

RANKING AND PRIORITIZING THE DEPLOYMENT OF COMMUNITY-SCALE ENERGY MEASURES BASED ON THEIR INDIRECT EFFECTS IN CALIFORNIA'S CLIMATE ZONES

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PREFACE

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Ranking and Prioritizing the Deployment of Community-Scale Energy Measures Based on Their Indirect Effects in California's Climate Zones is the final report for the project (Agreement Number PIR-08-030) conducted by Altostratus Inc. The information from this project contributes to Energy Research and Development Division's Energy-Related Environmental Research Program.

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ABSTRACT

Deploying community-scale energy measures that reduce community energy use has the potential to affect energy use and the environment. Direct community-scale energy measures such as controlling heat flow through building envelopes have been relatively well studied. Indirect pathways for community-scale energy measures have not been effectively quantified in different climate zones or in combinations.

The project goal was to develop and apply a modeling system that quantifies and ranks indirect community-scale energy measure effects for any desired climate or location and to provide planners and policy makers with tools and data to help prioritize community-scale energy measures in terms of indirect effects on energy use.

This study used several microclimate locations throughout California to simulate summer conditions. Community-scale energy measure effectiveness in idealized communities was ranked by using all strategies at a particular location and then using all locations for a particular strategy, focusing on air temperature changes. Some measures such as cool roofs were relatively dominant across numerous climates and locations. Other strategies such as urban forestation were relatively more dominant in drier and warmer microclimates. Actual measure rankings varied by location and should be evaluated on a case-by-case basis. No measure resulted in negative impacts such as increased air temperature or the heat-island effect. Heat island effect occurs when heat is trapped near the ground due to relatively dark surfaces that absorb solar heat. Higher surface temperatures occurred mostly in urban settings where there were many dark colored roofs and significant amounts of asphalt paving that raised ambient temperatures relatively close to the ground. Heat island effect indirectly raised cooling energy demand for buildings and degraded air quality. Knowing which measures could effectively be employed at a community scale to reduce urban heat island effect will decrease building energy consumption and improve outdoor air quality.

Keywords: Climate zones, indirect effects, land use, meteorological modeling, ranking of measures, urban heat island

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EXECUTIVE SUMMARY

Introduction

Energy measures deployed at a community scale, called community-scale energy measures (CSEM), can directly affect energy use in buildings (direct effects) and indirectly impact the nearby outdoor environment, which affects energy use (indirect effects). Community-scale energy measures have been evaluated mostly independently of other measures and mainly for their direct effects. Community-scale energy measures have been proposed or implemented to achieve energy-use reduction, improvements in the urban thermal environment and air quality, and urban heat island mitigation. An urban heat island occurs when urban area temperatures are consistently higher than their surroundings, which is mainly due to using materials with higher heat capacity and retention. These materials take longer to dissipate heat back into the atmosphere. Community-scale energy measures that may reduce heat island effects and improve the urban environment include:

- Increased solar radiation reflectivity (albedo) on urban surfaces (roofs, walls, pavements, streets).
- Moisture and runoff control (impervious surface control).
- Increased vegetation cover for both shading and evapotranspirative (water movement from plants and soil to the atmosphere) cooling for buildings, parking lots, and streets.
- Structural shading (sky view factor control).
- Solar photovoltaics.
- Other passive/active solar systems (water heaters, space heaters and coolers).
- Green roofs/green walls.
- Anthropogenic heating control.
- Wind power generation.

Community-scale energy measures have the potential to affect energy use and the environment via several direct and indirect pathways. The direct pathways relate to the reduction in energy use through controlling building envelope heat transfer, such as heat flow through roofs, walls, windows, and the floors/foundations, or via generating power (for example, solar photovoltaic power). These direct CSEM effect pathways have been well studied and understood; however, the indirect CSEM environmental and energy pathways were not equally quantified. Indirect CSEM effects in various possible deployment combinations and in different climate zones have not been well evaluated. These effects include response to variations in temperature, humidity, available sunshine, cloudiness/precipitation, and wind.

Project Purpose

The goal of this project was to quantify and evaluate indirect community-scale energy measure effects in summer using several pathways for California's 16 climate zones as well as for 180 subzones (microclimates). This analysis would provide the basis for ranking and prioritizing the measures for deployment. The information and data gathered in this study would then be

shared with planners and policy makers to make prioritizing community-scale energy measures easier according to their indirect effects on energy use. Researchers intended to evaluate these indirect effects through detailed, advanced state-of-science, fine-resolution meteorological modeling and land-use/land-cover analysis. Researchers also planned to quantify both positive and negative feedback and interactions that can exist among the different pathways.

Project Results

The indirect community-scale energy measure effects were evaluated in two ways. The first method modeled idealized communities in 180 microclimates (subzones) in California to evaluate the measures in standalone fashion and in various deployment combinations. The second method modeled three actual California metropolitan areas (Sacramento, Fresno, and Los Angeles) for various measures and combinations. Several simulations were completed, and the community-scale energy measure effectiveness for idealized communities was ranked in two ways. Results from all strategies at a particular location (location is constant) were first evaluated. The strategic impacts at all locations (measure is constant) were then quantified. The simulation analyses and discussions focused on the change in air temperature and derived quantities such as normalized and non-normalized degree-hours per day.

The modeling results suggested that some measures such as cool roofs were relatively dominant across several climates and locations. Other strategies such as urban forestation were relatively more dominant in the drier and warmer California microclimates; however, the actual measure rankings varied depending on location and should be evaluated on a case-by-case basis. No measure resulted in negative impacts such as increases in air temperature or in the heat island effect.

The modeling showed that qualitatively for all regions the effectiveness of the measures at reducing air temperature from most to least effective was:

1) Increased roof albedo.
2) Increased pavement albedo.
3) Structural and natural shading of buildings.
4) Natural shading of parking lots and streets.
5) Increased street albedo.
6) Increased wall albedo.
7) Impervious-to-pervious surface conversions.
8) Vegetation evaporative cooling for buildings.
9) Vegetation evaporative cooling of parking lots.
10) Vegetation cooling of streets.

This order was reversed in several locations and for certain scenarios. For example, urban forestation was the most effective measure in drier, warmer microclimates.

Researchers recommended that the following aspects be addressed in the future:

- Integrate the impacts of the various measures on winter energy use.
- Update land-use/land-cover data as new, site-specific, or city-specific information becomes available.

This project provided modeling system development and data for information generation that can be used for prioritizing community-scale measures to reduce energy use in buildings and improving the outdoor environment. The project also provided a new understanding of interaction quantifications among community-scale energy measures, their indirect effect pathways, their impacts on the ambient environment in different climate zones, and how they affect energy use.

Project Benefits

The information from this study provided a valuable tool for policy makers, planners, urban designers, and community leaders in prioritizing and deploying community-scale energy measures according to their efficiency in different climates. The study also provided information to develop location-specific plans for energy measure deployment with minimal impacts on the environment. Indirect community-scale energy measure effects can help reduce outdoor air temperatures, which will in term, reduce emissions from power generation facilities and improve air quality locally and regionally.

CHAPTER 1: Introduction

There exist a number of energy technologies that, when deployed at community scale, can impact both energy use in buildings (direct effects) and the ambient outdoor environment (indirect effect). The indirect impacts include those on temperature, moisture, and wind, which in turn can impact energy use. In this study, these technologies will be referred to as community-scale energy measures (CSEM) and include 1) increased albedo on urban surfaces (roofs, walls, pavements, streets), 2) moisture and runoff control (control of impervious surface areas), 3) increased vegetation cover for both a) shading and b) evapotranspirative cooling (for buildings, parking lots, and streets), 4) structural shading (control of view factor), 5) photovoltaics, 6) other passive/active solar systems (water heaters, space heaters and coolers), 7) green roofs / green walls, and 8) control of anthropogenic heating. CSEM have been proposed and deployed in various manners as measures that can potentially achieve energy-use reductions, improvements in the urban thermal environment and air quality, and mitigation of urban heat islands.

CSEM have the potential to impact energy and environment via several direct and indirect pathways. As introduced above, the direct pathways relate to the reduction in energy use via directly impacting the building envelope and, thus, heat flow through roofs, walls, windows, and the substrate, or by generating power. The direct effects have been relatively well studied and quantified. On the other hand, the indirect effects of CSEM, both positive and negative, especially in various combinations of deployment, are not well quantified. In addition, it is not clear as of yet how CSEM combinations compare in terms of effectiveness in various climate zones, such as, due to variations in temperature, humidity, available sunshine, cloudiness / precipitation, and wind. Because of these limitations, there is a lack of general guidance for prioritizing the deployment of CSEM combinations based on the indirect effect in various climates.

To begin addressing these questions, this project quantifies and evaluates the indirect effects of CSEM in California under summer conditions. For each of the original 16 climate zones, as well as for a large number of sub-zones (microclimates) proposed in this project, these indirect pathways are modeled to quantify their impacts on the environment and potential benefits in terms of energy use reduction. As the environmental and metrological impacts of CSEM tend to scale non-linearly with the level of implementation (Taha 2005, 2007), the project also evaluates some of the overlaps and potential negative feedbacks among these pathways.

The ultimate goal of this project is to provide planners, building and urban designers, and policy makers with a tool, data, and a ranking system that can facilitate prioritizing the deployment of CSEM based on maximizing their beneficial indirect impacts on the ambient environment and energy use. As discussed in this report, the tool provides an initial ranking of CSEM deployment combinations in each of the proposed microclimates. The indirect impacts of the measures are evaluated in two manners. In the first, the deployments of CSEM (alone and in several combinations) in an idealized group of communities are modeled. In the second, three

actual metropolitan areas (Sacramento, Fresno, and Los Angeles) are simulated to evaluate the large-scale effects of CSEM and their combinations.

The project uses a state-of-science, fine-resolution meso-urban meteorological model to simulate and evaluate the indirect impacts of CSEM. The models and data generated in this effort can serve as a starting point for future improvements, updates, and applications of the ranking tool. This will contribute to addressing the following issues:

- Building energy models, community-energy planning tools, and land-use models currently used in evaluating energy demand at neighborhood or community scales do not account for indirect effects – thus performance of these models and tools can be improved upon (made closer to observations) and their reliability in forecasting energy consumption be increased if indirect effects are quantified and factored in the calculations,
- Previous studies have shown that the indirect effects can at times be of similar magnitude (or even larger) than the direct effect, and
- In certain cases, planners need a tool to help in evaluating community-scale strategies and provide some prioritization for deployment of most effective measures at specific locations. Thus, a customizable tool for evaluating the indirect effects of various combinations of strategies may be desirable.

CHAPTER 2: Purpose

The purpose of this study is to evaluate and quantify the indirect effects of community-scale energy measures (CSEM) via several pathways for a number of climate zones in California. The modeling and evaluations are performed for representative summer conditions. The modeling results form a basis for ranking and prioritizing the deployment of CSEM in each climate zone. The ultimate goal is to provide planners, developers, building and urban designers, and policy makers with the tools and data that can help facilitate prioritizing and ranking CSEM in terms of their energy impacts via indirect effects. The modeling is performed using detailed, state-of-science, fine-resolution meteorological models. Feedbacks and interactions, both positive and negative that can exist among the different pathways are also evaluated.

It is important to keep in mind that the modeling and results discussed in this report are based on certain assumptions and characterizations of various aspects of land-use, land-cover, fractions of surface types, technical deployment potentials, and so on. In using the modeling system in the future, that information can be input anew as urban-characterization data is continuously updated, improvised upon, and made more site-specific with increased observational resolutions.

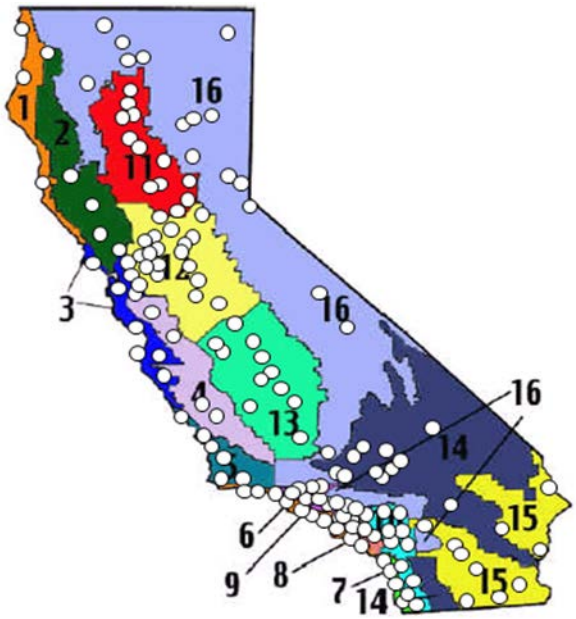
CHAPTER 3:
Approach

3.1 Quantifying the effects of CSEM in idealized communities

In this approach, an idealized California community, such as, a representative development of residential, commercial, agricultural, and industrial land-use mix, is developed for each of 180 city locations / microclimates using the land-use properties of the city location as a template. Each idealized community is then characterized in terms of surface makeup, land-use/land-cover (LULC) characteristics, urban morphology, and fractional areas of roofs, pavements, streets, vegetation, grass, and water, among other surface types. It is also characterized in terms of physical properties such as albedo, roughness length, emissivity, soil moisture, and thermal inertia following the methods of Taha (2005) and Taha (2007). While the actual size of a typical community is on the order of some 100×100 to 700×700 m, in this approach, the characterization and modeling are based on an area of 0.04 km^2 (such as, 200×200 m) per community.

Researchers model such communities in 180 climate sub-zones (microclimates). The proposed sub-zone locations are shown with white circles in Figure 3.1.

Figure 3.1. Proposed Climate Sub-Zones (White Circles) for Modeling Idealized Communities, Shown Relative to the Original 16 Climate Zones in California's Title 24 (Numbered on Map Background).



Map background source: California Energy Commission.

The city locations corresponding to the idealized communities are identified further in Table 3.1. The large number of additional sub-zones is necessary to capture the microclimate variations of relevance to the indirect effect (since the traditional 16 zones are too coarse for this purpose). Such intra-zone variations are caused by geographical location and changes in land use / land cover, topography, urban morphology, proximity to water bodies, soil types, roughness elements, and other factors. The effects of micrometeorological variations are analyzed with mesoscale and meso-urban (fine-resolution) meteorological models.

Table 3.1 California Climate Sub-Zones Modeled in This Study

Original California Climate Zone	Number of sub-zones to be simulated in this project	List of subzones (nearby urban areas) to be simulated in this project (see Figure 3.1 for approximate locations relative to California's original 16 climate zones)
1	5	Crescent City, Arcata, Eureka, Fort Bragg, Mendocino
2	4	Napa, Santa Rosa, Willits, Cloverdale
3	11	San Rafael, San Francisco, Vallejo, Oakland, Redwood City, Milpitas, Fremont, Santa Cruz, Salinas, Monterey, King city
4	6	San Jose, Morgan Hills, Hollister, Mountain View, Atascadero, Paso Robles
5	6	Cambria, San Luis Obispo, Pismo Beach, Santa Maria, Lompoc, Solvang
6	14	Santa Barbara, Goleta, Carpinteria, Ventura, Oxnard, Long Beach, Torrance, LAX, Santa Monica, Malibu, Huntington Beach, Laguna Beach, Newport Beach, Beverly Hills
7	6	San Diego, Oceanside, Carlsbad, Encinitas, Chula Vista, National City
8	10	Century City, Anaheim, Santa Ana, Fullerton, Inglewood, Downey, Orange, Irvine, Tustin, Mission Viejo
9	18	Los Angeles, Thousand Oaks, Canoga Park, Van Nuys, Burbank, Hollywood, Whittier, Rosemead, Covina, Diamond Bar, Glendale, Pasadena, Sherman Oaks, San Dimas, Pomona, Simi Valley, Santa Clarita, Northridge
10	13	Rancho Cucamonga, San Bernardino, Riverside, Temecula, Escondido, Ontario, Pomona, Corona, Sun City, San Jacinto, Hemet, Murrieta, El Cajon
11	15	Redding, Cottonwood, Red Bluff, Tehama, Chico, Paradise, Oroville, Colusa, Sutter, Yuba City, Marysville, Roseville, Nevada City, Anderson, Auburn
12	26	Woodland, Davis, Sacramento, Citrus Heights, Folsom Lake, Dixon, Fairfield, Benicia, Martinez, Concord, Walnut Creek,

		Pittsburgh, Antioch, Lafayette, Dublin, Livermore, Tracy, Manteca, Stockton, Placerville, Modesto, Los Banos, Merced, Turlock, Patterson, Lodi
13	9	Fresno, Visalia, Bakersfield, Kettleman City, Wasco, Hanford, Tulare, Porterville, Chowchilla
14	11	Palmdale, Lancaster, Mojave, Hesperia, Twenty Palms, Barstow, Baker, Ludlow, Victorville, Adelanto, California City
15	11	Palm Springs, El Centro, Ocotillo, Indio, Coachella, Salton City, Glamis, Banning, Desert Center, Blythe, Lake Havasu
16	16	Yreka, Weed, Dunsmuir, Weaverville, Alturas, McCloud, Susanville, Westwood, Chester, Downieville, Tahoe City, South Lake Tahoe, Truckee, Bishop, Independence, Tehachapi
	180	**Total number of sub-zones**

Researchers develop an idealized community for each of 180 locations and characterize it based on analysis of California land-use/land-cover (LULC) using the United States Geological Survey (USGS) Level-II LULC classification scheme (Anderson et al. 2001) which is further adapted for use in this type of modeling applications (Taha 2005,2007). Where more surface detail or site-specificity is needed, for example, in future applications of the modeling and ranking tool, the USGS LULC data can be replaced by or supplemented with more recent, resolved, and accurate data from any available source, including, for example 1) lidar-based urban morphology (Burian et al. 2003), 2) Google Earth PRO (Taha 2007), or 3) from city-specific surveys and characterizations carried out by local organizations. While some of these data are already available in-house (Table 3.2), the drawback of using them in this ranking effort is that the characterization of urban areas and land uses is based on different methodologies, classification schemes, and resolutions, which can skew the modeling results and rankings. Thus to ensure comparability and a consistent inter-comparison among the modeling results of the 180 communities, it was necessary to use one and consistent LULC classification scheme across all regions. Thus the characterization in this effort is based on the USGS Level-II classification scheme. The scheme is discussed in Anderson et al. (2001) and consists of the categories listed in Table 3.3.

Table 3.2 Example Region-Specific Land-Use, Land-Cover, and Morphological Characterizations of Urban Areas (In-House Data)

Land-use fraction (e.g., Level-II 38-USGS, or new system)
Land-cover fraction (paved)
Land-cover fraction (roof)
Land-cover fraction (vegetation)
Land-cover fraction (water)
Building height-to-width ratio
Building wall-to-plan ratio
Connected impervious area
Mean orientation of streets
Mean building height
Vegetation mean height
Zo and Zd (grid level, surface-specific)
Building frontal area density (**multi-directional**) (**ΔZ**)
Building top (roof) area density (**ΔZ**)
Building plan area density (**ΔZ**)
Vegetation frontal area density (**multi-directional**) (**ΔZ**)
Vegetation plan area density (**ΔZ**)
Vegetation top area density (**ΔZ**)
Plan-area weighted mean building height
Sky-view factor (**ΔZ**)

11 Residential
- 111 High-density
  - 1111 Detached
    - 11111 Single-Family
    - 11112 Multi-Family
  - 1112 Attached
    - 11121 Single-Family
    - 11122 Multi-Family
- 112 Low-density
  - 1121 Detached
    - 11211 Single-Family
    - 11212 Multi-Family
  - 1122 Attached
    - 11221 Single-Family
    - 11222 Multi-Family
- 113 High-rise/multi-family
- 114 Condominiums
- 115 Mixed residential (single/multi – attached/detached)
- 116 High-density, mobile homes/parks

12 Commercial
- 121 Low-rise commercial building; low-rise malls and strip malls
- 122 High-rise commercial; high-rise offices

13 Industrial
14 Transportation and utility, Airports, Highways
15 Mixed commercial and industrial
16 Mixed urban
- 161 Mixed commercial and residential
- 162 Mixed residential and transportation (highways)
- 163 Mixed green/open spaces and transportation (highways)
- 164 Mixed residential and recreation
- 165 Mixed residential and high-rise commercial

17 Other urban
18 Open space and/or recreation
19 Services
20 Downtown core
21 Urban high-rise
22 Academic and educational
23 Health services and hospitals
24 Sports
25 Other facilities, military, storage
31 Green / open areas / gold courses / vineyards and hills
99 Water, beaches channels

Table 3.3 USGS Level-II Classification Scheme

LAND USE			
Urban		Wetland	
11	Residential	61	Forested wetlands
12	Commercial/Services	62	Non-forested wetlands
13	Industrial	Barren Land	
14	Transportation/Communication	71	Dry salt flats
15	Industrial and commercial	72	Beaches
16	Mixed urban or built up	73	Sandy areas (not beaches)
17	Other urban or built up	74	Bare rock
Agriculture		75	Strip mines and quarries
21	Cropland and pasture	76	Transitional areas
22	Orchards, groves, Vineyards	77	Mixed barren land
23	Confined feeding operations	Tundra	
24	Other agricultural	81	Shrub and brush tundra
Rangeland		82	Herbaceous tundra
31	Herbaceous rangeland	83	Bare ground
32	Shrub and brush rangeland	84	Wet tundra
33	Mixed rangeland	85	Mixed tundra
Forest		Snow / Ice	
41	Deciduous forest	91	Perennial snowfields
42	Evergreen forest	92	Glaciers
43	Mixed forest		
Water			
51	Streams and canals		
52	Lakes		
53	Reservoirs		
54	Bays and estuaries		

3.2 Quantifying Effects of CSEM in Selected Metropolitan Areas

In this approach, unlike the idealized-communities modeling approach discussed in Section 3.1, the simulations of the environmental impacts of CSEM are carried out for the full geographical extent of urban metropolitan areas and their actual conditions, such as, extent, morphology, land-use and land cover, and density. Three metropolitan areas were selected for this purpose, as summarized in Table 3.4.

Table 3.4 Modeled Metropolitan Areas

Metropolitan area	Original climate zone
1) Sacramento	12
2) Fresno	13
3) Los Angeles	8

As in the approach discussed above (Section 3.1), the characterization of the three metropolitan areas also is based on the USGS Level-II LULC classification scheme. The difference, of course, is that in this task (3.2) the urban characterization is more extensive (tens of orders of magnitudes larger than in 3.1).

3.3 Modeling Episodes

Because the models used in this study are computing-intensive (a result of formulation and fine spatiotemporal resolutions) only summer seasons are simulated for evaluating the indirect impacts of CSEM. In particular, summer episodes that are typically used in regulatory modeling in California were selected. Thus for modeling the three metropolitan areas, the selected periods are July-August 2000 for central and northern California and July 2005 for southern California. For the modeling of 180 idealized communities, the selected period is July-August 2000. It should be emphasized that the model can simulate any time interval of interest (past, present, or future) and for any duration (episodic, seasonal, or multi-annual). However, because of their relevance to air pollution control, energy use, and other regulatory aspects (for example, heat island mitigation), the above episodes were selected. Another reason is that additional field-intensive data from these episodes are available for model input, model performance evaluation, as well as detailed characterization of synoptic conditions during those periods.

3.4 CSEM Deployment Scenarios

For both approaches, : 1) idealized communities and 2) actual metropolitan areas, as discussed in sections 3.1 and 3.2, a number CSEM deployment scenarios and combinations thereof are simulated to quantify their impacts on the ambient environment. The deployment scenarios are summarized in Table 3.4 and discussed briefly here. Not all scenarios are simulated for either first or second approach, but are done in an overlapping manner, as discussed later.

For each CSEM, moderate and high levels of deployment are modeled and evaluated. For surface albedo, the given increases (in Table 3.5) are applied (added) to their respective base-case values. For control of moisture/runoff, the strategy is to convert impervious areas into pervious ones. The corresponding scenarios given in the table represent the percentage of impervious surface areas (in a community) that will be converted into pervious, for example, grass, soil, or porous concrete. Structural shade is intended to reduce incoming solar radiation impinging on building envelopes and mechanical / HVAC systems (for example, cooling towers, air intakes, and pump / condenser units). Thus the indicator given in the table is the

change in sky-view factor. Vegetation increase is given in terms of change in cover (percent of a grid cell) for both of the evapotranspirative- and shading-effect pathways listed. For the last three CSEM (photovoltaics, green roofs, and green walls) the scenarios are given in terms of area change (percent) applicable to the fraction with each entry in the table.

Table 3.5 Deployment Levels for Selected CSEM

CSEM	Moderate	High
Surface albedo		
Roof	+0.20	+0.40
Pavements	+0.10	+0.20
Streets / Highways	+0.07	+0.15
Walls	+0.07	+0.15
Impervious area into pervious (area)	10%	20%
Structural shade (change in SVF)	-10%	-20%
Cover increase (evapotranspiration)		
Buildings	+9%	+18%
Parking lots	+5%	+10%
Streets	+5%	+10%
Cover increase (shading)		
Buildings	+9%	+18%
Parking lots	+5%	+10%
Streets	+5%	+10%
Photovoltaics (roof fraction)	10%	20%
Green roofs (area)	15%	30%
Green walls (fraction of envelope)	15%	30%

CHAPTER 4:
Study Regions

4.1 Idealized Communities

Figure 4.1 shows, in a little more detail than in Figure 3.1, the locations of the 180 idealized communities selected for analysis and simulated in this project. In addition, Table 4.1 lists the longitudes and latitudes corresponding to these communities locations.

Figure 4.1 Locations of Idealized Communities Modeled in This Study

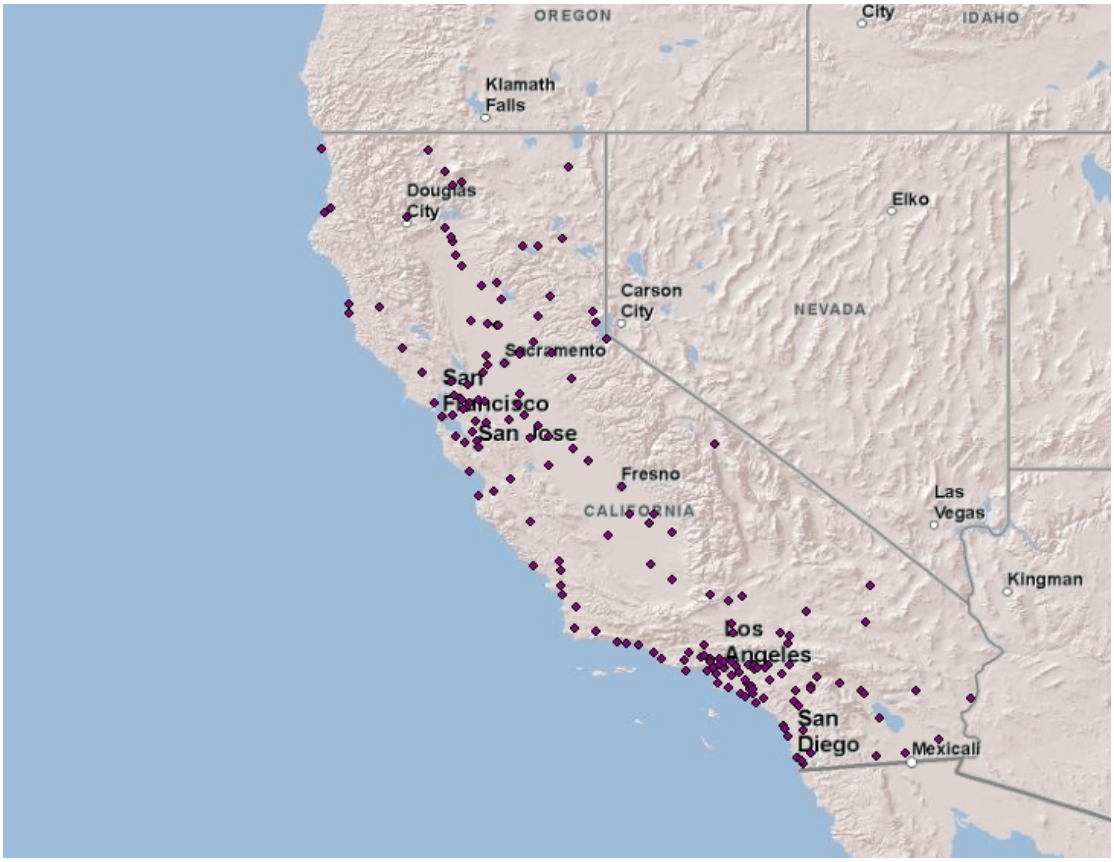


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Table 4.1 Locations of Idealized Communities Modeled in This Study

	City	Long	Lat
1	Crescent City	-124.2017474	41.7559481
2	Arcata	-124.0816667	40.8666667
3	Eureka	-124.1625	40.8022222
4	Fort Bragg	-123.8052935	39.445723
5	Mendocino	-123.7994591	39.3076744
6	Napa	-122.2844444	38.2972222
7	Santa Rosa	-122.7133333	38.4405556
8	Willits	-123.3555656	39.4096079
9	Cloverdale	-123.0172227	38.8054624
10	San Rafael	-122.53	37.9736111
11	San Francisco	-122.4183333	37.775
12	Vallejo	-122.2555556	38.1041667
13	Oakland	-122.2697222	37.8044444
14	Redwood City	-122.2352778	37.4852778
15	Milpitas	-121.9055556	37.4283333
16	Fremont	-121.9875	37.5483333
17	Santa Cruz	-122.0297222	36.9741667
18	Salinas	-121.6544444	36.6777778
19	Monterey	-121.8936111	36.6002778
20	King city	-121.125	36.2127778
21	San Jose	-121.8938889	37.3394444
22	Morgan Hills	-121.6166	37.116
23	Hollister	-121.4005556	36.8525
24	Mountain View	-122.0827778	37.3861111
25	Atascadero	-120.6697222	35.4894444
26	Paso Robles	-120.6910043	35.6266369
27	Cambria	-121.0807468	35.5641381
28	San Luis Obispo	-120.6586111	35.2827778
29	Pismo Beach	-120.6402778	35.1427778
30	Santa Maria	-120.4347222	34.9530556
31	Lompoc	-120.4569444	34.6391667
32	Solvang	-120.1376481	34.5958201
33	Santa Barbara	-119.6972222	34.4208333
34	Goleta	-119.8266667	34.4358333
35	Carpinteria	-119.5175	34.3988889
36	Ventura	-119.2931676	34.2783352
37	Oxnard	-119.1761111	34.1975
38	Long Beach	-118.1883333	33.7669444
39	Torrance	-118.3397222	33.8358333

40	LAX	-118.41666	33.9425
41	Santa Monica	-118.4902778	34.0194444
42	Malibu	-118.8091667	34.005
43	Huntington Beach	-117.9983333	33.6602778
44	Laguna Beach	-117.7822222	33.5422222
45	Newport Beach	-117.9280556	33.6188889
46	Beverly Hills	-118.3994444	34.0736111
47	San Diego	-117.1563889	32.7152778
48	Oceanside	-117.3786111	33.1958333
49	Carlsbad	-117.3497222	33.1580556
50	Encinitas	-117.2911111	33.0369444
51	Chula Vista	-117.0833333	32.64
52	National City	-117.0983333	32.6780556
53	Century City	-118.4178565	34.0555654
54	Anaheim	-117.9136111	33.8352778
55	Santa Ana	-117.8669444	33.7455556
56	Fullerton	-117.9244444	33.8702778
57	Inglewood	-118.3522222	33.9616667
58	Downey	-118.1316667	33.94
59	Orange	-117.8522222	33.7877778
60	Irvine	-117.8222222	33.6694444
61	Tustin	-117.8252778	33.7458333
62	Mission Viejo	-117.6711111	33.6
63	Los Angeles	-118.2427778	34.0522222
64	Thousand Oaks	-118.8366667	34.1705556
65	Canoga Park	-118.5981424	34.2011156
66	Van Nuys	-118.4489711	34.1866718
67	Burbank	-118.3080556	34.1808333
68	Hollywood	-118.3267434	34.0983425
69	Whittier	-118.0319444	33.9791667
70	Rosemead	-118.0719444	34.0805556
71	Covina	-117.8894444	34.09
72	Diamond Bar	-117.8094444	34.0286111
73	Glendale	-118.2541667	34.1425
74	Pasadena	-118.1436111	34.1477778
75	Sherman Oaks	-118.4492482	34.1511173
76	San Dimas	-117.8058333	34.1066667
77	Pomona	-117.7513889	34.0552778
78	Simi Valley	-118.7805556	34.2694444
79	Santa Clarita	-118.5416667	34.3916667
80	Northridge	-118.5367525	34.228337
81	Rancho Cucamonga	-117.5922222	34.1063889

82	San Bernardino	-117.2888889	34.1083333
83	Riverside	-117.3952778	33.9533333
84	Temecula	-117.1475	33.4936111
85	Escondido	-117.0855556	33.1191667
86	Ontario	-117.65	34.0633333
87	Corona	-117.5655556	33.8752778
88	Sun City	-117.1963889	33.7091667
89	San Jacinto	-116.9577778	33.7838889
90	Hemet	-116.9711111	33.7475
91	Murrieta	-117.2130556	33.5538889
92	El Cajon	-116.9616667	32.7947222
93	Redding	-122.3905556	40.5866667
94	Cottonwood	-122.2808356	40.3857087
95	Red Bluff	-122.2347222	40.1786111
96	Tehama	-122.1233228	40.0271015
97	Chico	-121.8363889	39.7286111
98	Paradise	-121.6208333	39.7597222
99	Oroville	-121.5552778	39.5138889
100	Colusa	-122.0094175	39.2143343
101	Sutter	-121.7527482	39.1598915
102	Yuba City	-121.6158333	39.1405556
103	Marysville	-121.5902778	39.1458333
104	Roseville	-121.2869444	38.7522222
105	Nevada City	-121.0160594	39.2615606
106	Anderson	-122.2966667	40.4483333
107	Auburn	-121.0758333	38.8966667
108	Woodland	-121.7722222	38.6786111
109	Davis	-121.7394444	38.545
110	Sacramento	-121.4933333	38.5816667
111	Citrus Heights	-121.28	38.7072222
112	Folsom Lake	-121.133	38.68333
113	Dixon	-121.8222222	38.4455556
114	Fairfield	-122.0388889	38.2494444
115	Benicia	-122.1575	38.0494444
116	Martinez	-122.1330556	38.0194444
117	Concord	-122.03	37.9780556
118	Walnut Creek	-122.0638889	37.9063889
119	Pittsburgh	-121.8836111	38.0280556
120	Antioch	-121.8047222	38.005
121	Lafayette	-122.1169444	37.8858333
122	Dublin	-121.9347222	37.7022222
123	Livermore	-121.7669444	37.6819444
124	Tracy	-121.4241667	37.7397222

125	Manteca	-121.215	37.7975
126	Stockton	-121.2897222	37.9577778
127	Placerville	-120.7975	38.7297222
128	Modesto	-120.9958333	37.6391667
129	Los Banos	-120.8488889	37.0583333
130	Merced	-120.4819444	37.3022222
131	Turlock	-120.8455556	37.4947222
132	Patterson	-121.1286111	37.4716667
133	Lodi	-121.2713889	38.1302778
134	Fresno	-119.7713889	36.7477778
135	Visalia	-119.2911111	36.3302778
136	Bakersfield	-119.0177778	35.3733333
137	Kettleman City	-119.9617998	36.0082865
138	Wasco	-119.34	35.5941667
139	Hanford	-119.6447222	36.3275
140	Tulare	-119.3463889	36.2077778
141	Porterville	-119.0158333	36.0652778
142	Chowchilla	-120.2591667	37.1230556
143	Palmdale	-118.1155556	34.5794444
144	Lancaster	-118.1358333	34.6980556
145	Mojave	-118.1739645	35.0524699
146	Hesperia	-117.3	34.4263889
147	Twentynine Palms	-116.066	34.1333
148	Barstow	-117.0219444	34.8986111
149	Baker	-116.0744571	35.2649814
150	Ludlow	-116.1600117	34.7211004
151	Victorville	-117.2902778	34.5361111
152	Adelanto	-117.4083333	34.5827778
153	California City	-117.985	35.1258333
154	Palm Springs	-116.5444444	33.8302778
155	El Centro	-115.5622222	32.7919444
156	Ocotillo	-115.99418	32.7386713
157	Indio	-116.2147222	33.7205556
158	Coachella	-116.1730556	33.6802778
159	Salton City	-115.9561112	33.2986497
160	Glamis	-115.0719158	32.997542
161	Banning	-116.8755556	33.9255556
162	Desert Center	-115.4022052	33.7125191
163	Blythe	-114.5955556	33.6102778
164	Lake Havasu	-114.38333	34.5
165	Yreka	-122.6344708	41.7354187
166	Weed	-122.3861269	41.4226498

167	Dunsmuir	-122.2719529	41.2082089
168	Weaverville	-122.9419708	40.7309778
169	Alturas	-120.5424555	41.4871146
170	McCloud	-122.1394487	41.2557119
171	Susanville	-120.6519444	40.4163889
172	Westwood	-121.0057931	40.3059999
173	Chester	-121.2319098	40.3062736
174	Downieville	-120.8268905	39.5593405
175	Tahoe City	-120.1388031	39.1721291
176	South Lake Tahoe	-119.9833333	38.9333333
177	Truckee	-120.1822222	39.3280556
178	Bishop	-118.3951101	37.3635404
179	Independence	-120.5135368	38.3490803
180	Tehachapi	-118.4480556	35.1322222

Thus for each of these locations, LULC was analyzed (at 200-m resolution) to develop the communities' land-use and physical properties as discussed in Chapter 3. The modeling domains containing these communities are shown in Figure 4.2 (labeled D03, D04, and D05). Domain D03 encompasses the central parts of California, including Sacramento, the San Francisco Bay Area, Fresno, and as far south as Bakersfield. D04 encompasses southern California including the greater Los Angeles and San Diego regions. Finally, D05 encompasses the far north part of the state (north of Sacramento). The domain resolutions and dimensions are summarized in Table 4.2.

Figure 4.2 Modeling Domains for Idealized Communities

Table 4.2 Coarse-Grid Modeling Domains Used in This Study

Domain ID	Resolution (km)	Dimensions (km) NS x EW	Region covered
D01	27	2403 × 2403	Pacific, western half of US
D02	9	1188 × 1080	Pacific, California, Nevada
D03	3	315 × 387 (→ 200 m analysis)	California central
D04	3	360 × 594 (→ 200 m analysis)	California south
D05	3	360 × 387 (→ 200 m analysis)	California north

Within each of the 3-km grids, calculations are performed at resolutions of 200 m for CSEM deployment at each of the communities identified in Table 4.1. Figures 4.3 through 4.5 provide additional information for domains D03, D04, and D05. At the top of each figure is the characterization of the domain in terms of dominant LULC categories. The middle figure depicts the extent of urbanization (percent cover) in each domain, and the bottom figure shows the relative locations of the idealized communities in each domain. The color keys for the top figures are given in Table 4.3. Note that the figures are not to scale relative to each other.

For each idealized community, some of the thermophysical characterization is developed based on the LULC analysis discussed above. Some of these computed properties are listed in Table 4.4 including 1) albedo, 2) soil moisture content, 3) roughness length, and 4) thermal inertia.

Table 4.3 Colors Key for Land-Use/Land-Cover Classification in Figures 4.3 – 4.5

1	Urban and built-up land	13	Evergreen forest – Broadleaf
2	Dry-land crops and pasture	14	Evergreen forest – Needle leaf
3	Irrigated crops and pasture lands	15	Mixed forest
4	Mixed dry / irrigated croplands / pastures	16	Water
5	Mixed croplands and grasslands	17	Wetland – herbaceous
6	Mixed croplands and woodlands	18	Wetland – wooded
7	Grassland	19	Barren land
8	Shrub land	20	Tundra – herbaceous
9	Mixed grass and shrubs	21	Tundra – wooded
10	Savanna	22	Tundra – mixed
11	Deciduous forest – Broadleaf	23	Tundra – bare-ground
12	Deciduous forest – Needle leaf	24	Snow or ice

Figure 4.3 Domain D03. Top: LULC Distribution, Middle: Percentages of Urban Areas in Domain, Bottom: Idealized Communities to be Modeled in This Domain

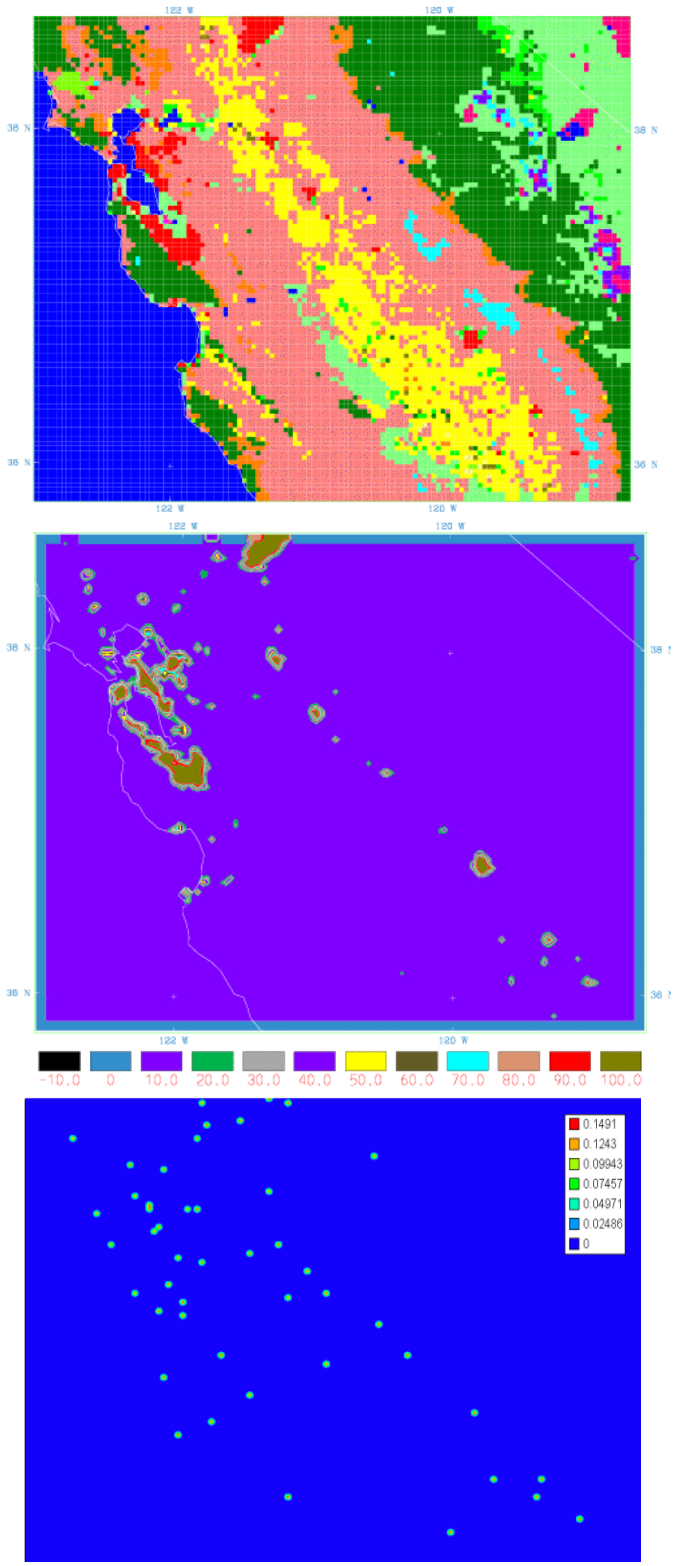


Figure 4.4 Domain D04. Top: LULC Distribution, Middle: Percentages of Urban Areas in Domain, Bottom: Idealized Communities to be Modeled in This Domain

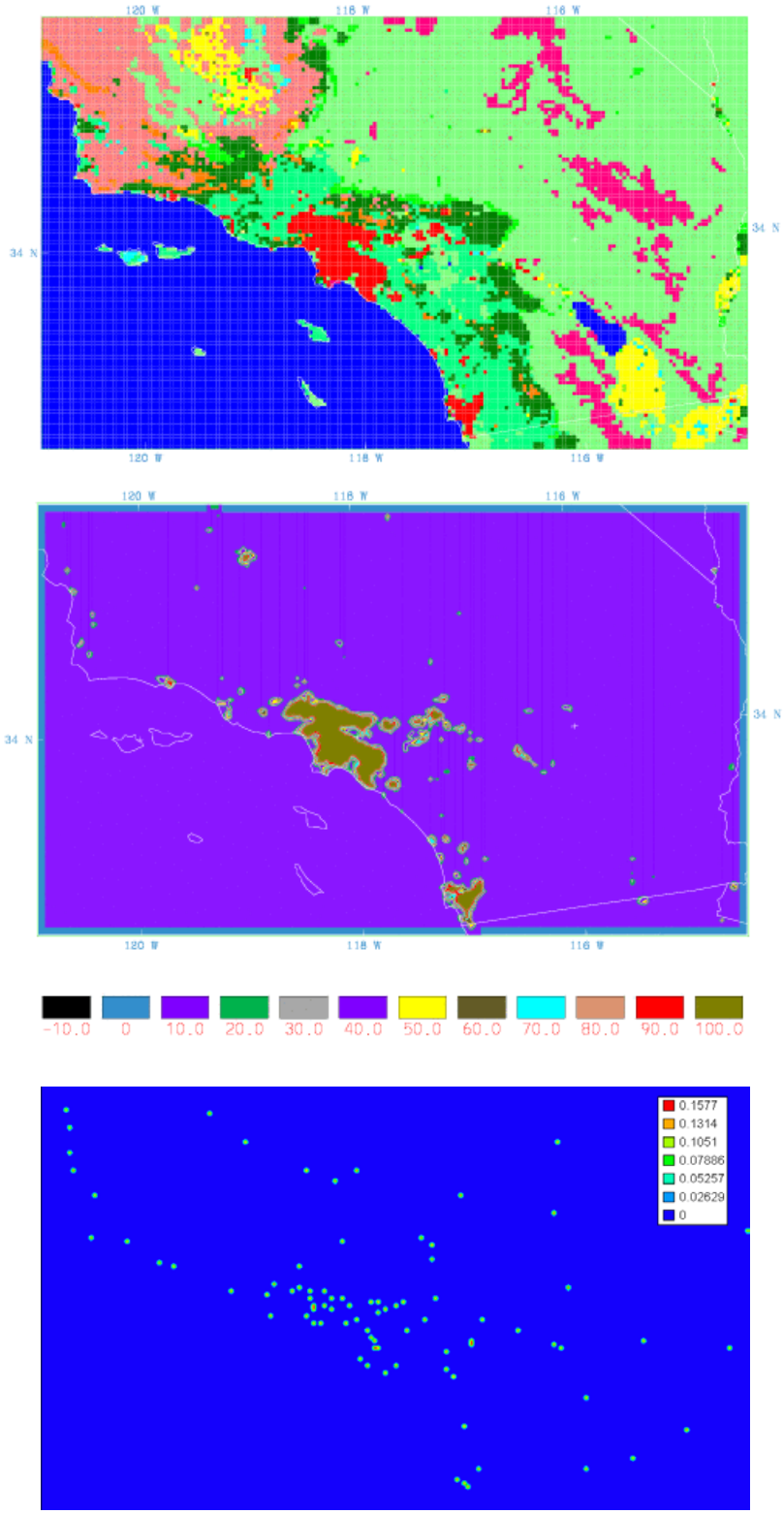


Figure 4.5 Domain D05. Top: LULC Distribution, Middle: Percentages of Urban Areas in Domain, Bottom: Idealized Communities to be Modeled in This Domain

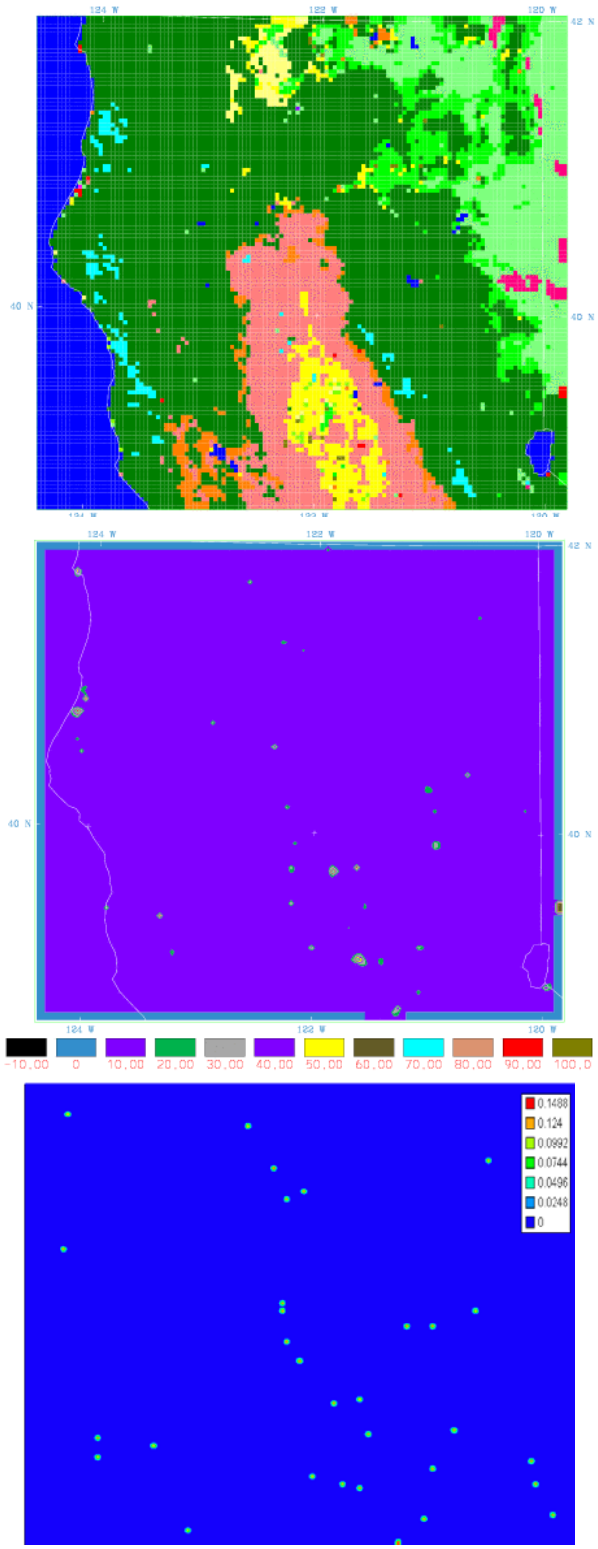


Table 4.4 Computed Parameters for Idealized Communities: Albedo (α, unitless), Soil Moisture Content (η, unitless), Roughness Length (Zo, m), and Thermal Inertia (THC, cal cm^{-2} K^{-1} $s^{-0.5}$)

Domain D03

3km resolution

iy	ix	α	η	Zo	THC
91	23	0.1599	0.2774	0.5565	0.0363
97	11	0.1599	0.2774	0.5565	0.0363
80	16	0.1515	0.3101	0.4833	0.03797
73	19	0.1515	0.3101	0.4833	0.03797
84	24	0.1515	0.3101	0.4833	0.03797
62	24	0.1515	0.3101	0.4833	0.03797
60	34	0.1717	0.2083	0.5667	0.03369
64	31	0.1717	0.2083	0.5667	0.03369
43	30	0.1717	0.2083	0.5667	0.03369
33	40	0.172	0.2156	0.6168	0.03414
30	33	0.174	0.206	0.5038	0.03324
16	56	0.1736	0.2083	0.512	0.03347
57	34	0.1717	0.2083	0.5667	0.03369
48	42	0.1717	0.2083	0.5667	0.03369
39	48	0.1717	0.2083	0.5667	0.03369
58	29	0.1717	0.2083	0.5667	0.03369
105	38	0.1599	0.2774	0.5565	0.0363
100	39	0.1736	0.2083	0.512	0.03347
101	46	0.1736	0.2083	0.512	0.03347
106	52	0.1736	0.2083	0.512	0.03347
105	56	0.1736	0.2083	0.512	0.03347
97	37	0.1599	0.2774	0.5565	0.0363
90	30	0.1599	0.2774	0.5565	0.0363
82	27	0.1599	0.2774	0.5565	0.0363
81	27	0.1599	0.2774	0.5565	0.0363
77	29	0.1599	0.2774	0.5565	0.0363
81	35	0.1599	0.2774	0.5565	0.0363
81	37	0.1736	0.2083	0.512	0.03347
76	28	0.1599	0.2774	0.5565	0.0363
70	33	0.1599	0.2774	0.5565	0.0363
69	38	0.1599	0.2774	0.5565	0.0363
71	48	0.1599	0.2774	0.5565	0.0363
73	54	0.1736	0.2083	0.512	0.03347
67	60	0.171	0.2169	0.5898	0.0338

46	64	0.171	0.2169	0.5898	0.0338
55	75	0.1717	0.2083	0.5667	0.03369
62	64	0.171	0.2169	0.5898	0.0338
61	56	0.166	0.2532	0.6922	0.03539
85	52	0.1599	0.2774	0.5565	0.0363
35	95	0.172	0.2156	0.6168	0.03414
20	109	0.174	0.1457	0.4188	0.03175
8	90	0.1683	0.2216	0.6264	0.03405
20	99	0.172	0.2156	0.6168	0.03414
16	108	0.174	0.1457	0.4188	0.03175
11	117	0.174	0.1457	0.4188	0.03175
48	81	0.172	0.2156	0.6168	0.03414
93	74	0.1683	0.2216	0.6264	0.03405

Domain D04

3km resolution

iy	ix	α	η	Zo	THC
109	9	0.171	0.2169	0.5898	0.0338
114	8	0.171	0.2169	0.5898	0.0338
102	9	0.171	0.2169	0.5898	0.0338
97	10	0.1789	0.1554	0.3986	0.03154
90	16	0.174	0.1897	0.4236	0.03236
78	15	0.174	0.1897	0.4236	0.03236
77	25	0.174	0.1897	0.4236	0.03236
70	38	0.174	0.1897	0.4236	0.03236
71	34	0.174	0.1897	0.4236	0.03236
63	54	0.1789	0.1554	0.3986	0.03154
54	77	0.1789	0.1554	0.3986	0.03154
56	75	0.1789	0.1554	0.3986	0.03154
56	65	0.174	0.1897	0.4236	0.03236
44	90	0.1742	0.1232	0.421	0.03203
40	97	0.1742	0.1232	0.421	0.03203
42	92	0.1742	0.1232	0.421	0.03203
59	77	0.1789	0.1554	0.3986	0.03154
10	117	0.1799	0.1553	0.2829	0.03098
8	120	0.1799	0.1553	0.2829	0.03098
9	119	0.1799	0.1553	0.2829	0.03098
58	77	0.1789	0.1554	0.3986	0.03154
50	93	0.1793	0.1682	0.3567	0.03143
47	94	0.1793	0.1682	0.3567	0.03143
52	92	0.1812	0.1518	0.3792	0.03092

54	79	0.1789	0.1554	0.3986	0.03154
54	86	0.1789	0.1554	0.3986	0.03154
49	94	0.1793	0.1682	0.3567	0.03143
47	95	0.1742	0.1232	0.421	0.03203
42	100	0.1742	0.1232	0.421	0.03203
58	82	0.1789	0.1554	0.3986	0.03154
62	64	0.1789	0.1554	0.3986	0.03154
63	71	0.1812	0.1518	0.3792	0.03092
63	76	0.1789	0.1554	0.3986	0.03154
63	80	0.1812	0.1518	0.3792	0.03092
59	80	0.1789	0.1554	0.3986	0.03154
55	89	0.1687	0.2427	0.7344	0.03508
59	87	0.1789	0.1554	0.3986	0.03154
60	93	0.1812	0.1518	0.3792	0.03092
57	95	0.1789	0.1554	0.3986	0.03154
61	82	0.1812	0.1518	0.3792	0.03092
61	85	0.1812	0.1518	0.3792	0.03092
61	76	0.1789	0.1554	0.3986	0.03154
60	95	0.1812	0.1518	0.3792	0.03092
58	97	0.1789	0.1554	0.3986	0.03154
65	66	0.1812	0.1518	0.3792	0.03092
70	73	0.1812	0.1518	0.3792	0.03092
64	73	0.1789	0.1554	0.3986	0.03154
60	102	0.1812	0.1518	0.3792	0.03092
61	111	0.1812	0.1518	0.3792	0.03092
55	108	0.1812	0.1518	0.3792	0.03092
39	116	0.1809	0.1644	0.2418	0.03066
25	119	0.1809	0.1644	0.2418	0.03066
59	100	0.1812	0.1518	0.3792	0.03092
52	103	0.1812	0.1518	0.3792	0.03092
46	114	0.1809	0.1644	0.2418	0.03066
49	121	0.1812	0.1518	0.3792	0.03092
48	121	0.1812	0.1518	0.3792	0.03092
41	114	0.1809	0.1644	0.2418	0.03066
13	123	0.1799	0.1553	0.2829	0.03098
105	58	0.174	0.1457	0.4188	0.03175
113	48	0.174	0.1457	0.4188	0.03175
77	85	0.174	0.1457	0.4188	0.03175
94	83	0.1809	0.1644	0.2418	0.03066
72	110	0.1812	0.1518	0.3792	0.03092
64	148	0.184	0.133	0.22	0.02843
90	118	0.184	0.133	0.22	0.02843
105	145	0.184	0.133	0.22	0.02843

85	144	0.184	0.133	0.22	0.02843
76	110	0.1812	0.1518	0.3792	0.03092
78	107	0.1812	0.1518	0.3792	0.03092
97	89	0.184	0.133	0.22	0.02843
52	134	0.1812	0.1518	0.3792	0.03092
16	166	0.172	0.2156	0.6168	0.03414
13	153	0.1809	0.1644	0.2418	0.03066
48	144	0.174	0.1457	0.4188	0.03175
47	146	0.174	0.1457	0.4188	0.03175
33	153	0.1809	0.1644	0.2418	0.03066
24	181	0.184	0.133	0.22	0.02843
55	124	0.174	0.1457	0.4188	0.03175
49	169	0.1809	0.1644	0.2418	0.03066
47	193	0.174	0.1457	0.4188	0.03175
80	198	0.174	0.1457	0.4188	0.03175
97	75	0.1813	0.1564	0.2144	0.03029

Domain D05

3km resolution

iy	ix	α	η	Zo	THC
113	11	0.1603	0.2669	0.7773	0.0365
78	10	0.1603	0.2669	0.7773	0.0365
29	18	0.164	0.2648	0.659	0.03586
24	18	0.1603	0.2669	0.7773	0.0365
27	31	0.164	0.2648	0.659	0.03586
5	39	0.164	0.2648	0.659	0.03586
62	61	0.1683	0.2216	0.6264	0.03405
54	62	0.1683	0.2216	0.6264	0.03405
49	65	0.1712	0.2435	0.4077	0.03413
38	73	0.166	0.2532	0.6922	0.03539
39	79	0.166	0.2532	0.6922	0.03539
30	81	0.166	0.2532	0.6922	0.03539
19	68	0.166	0.2532	0.6922	0.03539
17	75	0.166	0.2532	0.6922	0.03539
16	79	0.166	0.2532	0.6922	0.03539
2	88	0.1736	0.2083	0.512	0.03347
21	96	0.166	0.2532	0.6922	0.03539
64	61	0.1609	0.2793	0.5534	0.03612
8	94	0.1599	0.2774	0.5565	0.0363
1	88	0.1736	0.2083	0.512	0.03347
110	53	0.1672	0.2368	0.7366	0.03497

99	59	0.1683	0.2216	0.6264	0.03405
91	62	0.1599	0.2774	0.5565	0.0363
101	109	0.1712	0.2435	0.4077	0.03413
93	66	0.1712	0.2435	0.4077	0.03413
62	106	0.1609	0.2793	0.5534	0.03612
58	96	0.1609	0.2793	0.5534	0.03612
58	90	0.1672	0.2368	0.7366	0.03497
31	101	0.1683	0.2216	0.6264	0.03405
17	120	0.1712	0.2435	0.4077	0.03413
9	124	0.1712	0.2435	0.4077	0.03413
23	119	0.1712	0.2435	0.4077	0.03413

4.2 Metropolitan areas

For the three metropolitan areas (Sacramento, Fresno, and Los Angeles), on the other hand, the modeling domains are shown in Figure 4.6. The horizontal dimensions and resolutions, as well as the corresponding vertical dimensions, are summarized in Tables 4.5 and 4.6. The finest resolution at which CSEM deployment is modeled in the metropolitan areas is 1 km, compared to 200 m for the idealized communities.

Table 4.5 Meteorological Model Grid Configurations for Central California

Meteorological-model domains	D01	D02	D03	D04	D05	D06
Resolution (km)	36	12	4	1	1	1
Dimensions (i,j,k)**	55, 55, 33	91, 91, 33	190, 190, 33	81, 93, 49	133,129, 49	97,85,49

** i and j dimensions are in grid points, k-dimension in full-□□ levels

Table 4.6 Meteorological Model Grid Configurations for Southern California

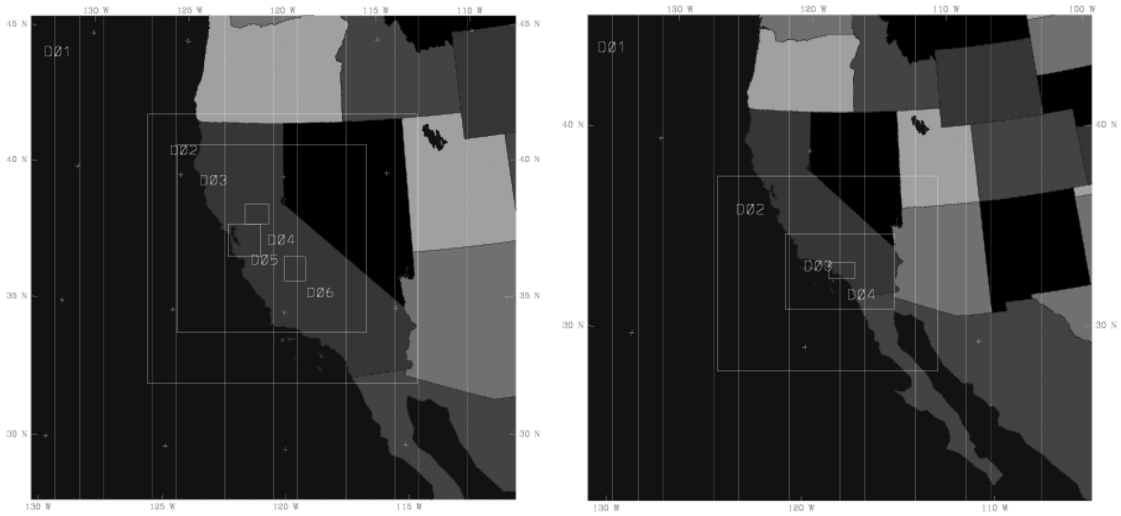
Meteorological-model domains	D01	D02	D03	D04
Resolution (km)	45	15	5	1
Dimensions (i,j,k)**	61,63, 33	73,82, 33	85,121, 33	91,141, 49

** i and j dimensions are in grid points, k-dimension in full-□□ levels

In the coarse-grid simulations of domain D03 (down to 4 or 5 km resolution, depending on region), the first few model vertical levels near the ground are finer in resolution than those typically used for regulatory modeling in California. In the fine-resolution model (1-km grids), discussed later in this report, 12 levels are used near the ground and a total of 16 levels in the canopy layer (the model is run with 49 full σ levels as shown in Tables 4.5 and 4.6). The purpose

of increasing the number of vertical levels near the ground is to more accurately capture the canopy-layer micrometeorology (dynamics and thermodynamics) and its perturbation caused by CSEM deployment. These model configurations are discussed in Taha (2012).

Figure 4.6 (left) Central California Modeling Domains. Figure 4.6 (right) Southern California Modeling Domains



CHAPTER 5:
Meteorological Modeling

5.1 Meteorological Models

Evaluating the indirect effects from deployment of CSEM will be carried out via meteorological modeling using a mesoscale model (MM5) and a meso-urban, fine-resolution model (uMM5) as described below.

5.1.1 Mesoscale Meteorological Model (MM5)

The MM5 is described in a number of sources, for example, Dudhia (1993) and Grell et al. (1991, 1994) and its application to heat island and CSEM-type of studies has been discussed at length in Taha (2005,2007). Thus, the description of the model and its adaptation will not be repeated here. While the MM5 system is being gradually phased out and replaced by the WRF and ARW (Advanced Research WRF) models, a significant development effort for the MM5 and uMM5 has been underway over the past five years at Altostratus Inc. and elsewhere, for example, US EPA, for specific application adaptations and model improvements. The MM5 is also extensively used by the California regulatory agencies, for example, Air Resource Board and air quality management districts. Thus for this effort, the MM5/uMM5 combination will be used.

5.1.2 Meso-Urban Meteorological Model (uMM5)

The purpose of the uMM5 (Taha 2008a,b,c) is to simulate the fine resolution phenomena in the canopy layer, for example, at hundreds of meters in the horizontal and a few meters in the vertical. To achieve this goal, and to accommodate the fine resolutions involved, the model formulation has been modified such that additional source/sink terms are added to the conservation relations to more accurately capture phenomena of interest at such scales. Several parameterizations are incorporated to quantify these sub-grid scale fields and fluxes and improve the model's ability to capture the dynamic and thermodynamic processes in the urban boundary layer. The uMM5 and its soil model SM2-U (Dupont et al. 2004) also can account for many important soil and vegetation effects, including drainage, runoff, evapotranspiration, interception of precipitation or condensation, and evaporation of intercepted water.

The uMM5 is described in detail in Taha (2008b,c) and the modifications of the model for better applicability to evaluating heat islands and CSEM are summarized in Taha (2007). In this section, only a brief highlight of those aspects is provided to show why the model is uniquely suited for the proposed tasks of modeling the CSEM indirect effects in idealized communities and metropolitan urban areas:

- The momentum equations have been modified with two additional source/sink terms; one for momentum due to friction at horizontal (top) surfaces of buildings and vegetation and the other due to pressure and drag on vertical surfaces of buildings, vegetation, and other structures

- In the thermal equation, two additional sink/source terms were introduced. The first is a source term due to sensible heat flux from roofs and vegetation canopies, whereas the second is for anthropogenic heat flux from mobile sources, building operations, and cooling towers
- In the moisture equation, source terms were added to account for 1) evapotranspiration from the vegetation canopy and 2) evaporation of building- and vegetation-intercepted water, for example, from rainfall or condensation
- The turbulent kinetic-energy (TKE) equation was modified with the addition of four source/sink terms to account for the effects of building and vegetation on the flow field. These terms are for accelerated cascade and wake production. In addition, the effect of horizontal building surfaces is accounted for via shear production whereas sensible heat fluxes from building and vegetation surfaces are accounted for via buoyant production of TKE
- The radiative energy balance equation in the model is modified to include additional computations of effective canyon albedo, canyon geometrical impacts, and sky-view factor. Extinction of solar radiation with height inside the urban canyons and vegetation canopies can also be computed
- The soil model includes parameterizations that are suitable to capture the effects of increased urban forest or changing the fraction of impervious surfaces more accurately and handle soil moisture and runoff changes and root zone changes from vegetation cover / urban reforestation, evaporation of intercepted water, condensation and re-evaporation of runoff water, and so forth.
- Input generation, processing, and data ingestion in the model were modified so that region- and site-specific information from remote sensed data as well as from specific local sources and surveys, or urban morphology, where desirable, can be directly imported into the meteorological model
- The friction and drag forces, as well as TKE, can be calculated in each grid cell for the actual wind approach direction using the appropriate morphological indices in that direction, instead of an average value for all directions as in conventional modeling with the roughness length approach.

In this study, a hybrid version of the model (roughness based in addition to drag-force based) is used (Taha 2012).

5.2. Model Input and Data

5.2.1 Initial and Boundary Conditions Input

The mesoscale model requires as input: 1) meteorological initial conditions, 2) meteorological boundary conditions, and 3) surface characterizations (lower boundary characterization). The meteorological information consists of observational upper air and surface data that is supplemented by gridded 4-dimensional analyses. In modeling urban heat islands and their mitigation, Taha (2003a-c, 2005, 2007) used the NCEP / NCAR Reanalysis Project data (NNRP; Kistler et al. 2001) for several reasons, including fine temporal resolutions. In this study,

researchers continue the use of NNRP. The use of NNRP also provides a basis for relatively good model performance in the reproduction of National Weather Service (NWS) weather patterns observed during the selected modeling periods.

In terms of surface characterization, the standard MM5 uses LULC information and a classification scheme based on the USGS land-use characterization system (Anderson et al. 2001). This information is used to indirectly assign, via lookup values, certain physical characteristics in the soil and land-surface models (LSM) as well as in the related boundary-layer calculations. In this study, however, researchers override that approach and substitute it with more detail data, as described in Chapter 6.

The uMM5 requires special input beyond that needed by the standard mesoscale model, as discussed above. Thus in addition to the standard input (for example, meteorological initial and boundary conditions, 4-D analyses, surface characterization, and so forth), the uMM5 requires detailed 3-D fine-resolution morphological/geometrical parameter input (for a full discussion, refer to Taha 2007). These include: Land-use fraction; Land-cover fraction (paved, vegetation, roof, water, and other categories); Mean orientation of streets and urban canyons; Percent of paved surfaces/impervious areas that are linked to drainage system; Building mean heights; Vegetation mean heights; Building Wall-to-plan ratios; Building Height-to-width ratios; Canopy mean heights; Roughness lengths and displacement heights (for several wind approach directions); Frontal area density (function of height) for buildings (for wind approach directions); Vegetation frontal area density (function of height) (for wind approach directions); Top area density for buildings (function of height); Top area density for vegetation (function of height); Plan area density for buildings (function of height); Plan area density for vegetation (function of height); and Sky-view factor, as shown in Table 3.2.

As discussed in Chapter 3, because of the specifics of this study, the surface-characterization approach in the uMM5 relies on LULC characterization, following the method of Taha (2007,2008c)

5.2.2 Ranking-Tool Input

For the idealized communities, the scenarios that are considered and modeled in this effort are summarized in Table 5.1. For the three metropolitan areas, on the other hand, the scenarios are listed in Table 5.2. Of note here is that the terminology (ID) used for the scenarios in these two tables (idealized communities vs. metropolitan areas) is different and are defined in each table, respectively.

Table 5.1 Modeling Scenarios For Idealized Communities

CSEM	Moderate	High
Surface albedo		
Roof	+0.20 (run1M)	+0.40 (run1H)
Pavements	+0.10 (run2M)	+0.20 (run2H)
Streets / Highways	+0.07 (run3M)	+0.15 (run3H)
Walls	+0.07 (run4M)	+0.15 (run4H)
Impervious area into pervious	10% (run5M)	20% (run5H)
Structural shade (decrease in SVF)	-10% (run6M)	-20% (run6H)
Cover increase (evapotranspiration)		
Buildings	+10% (run7M)	+20% (run7H)
Parking lots	+10% (run8M)	+20% (run8H)
Streets	+10% (run9M)	+20% (run9H)
(shading)		
Buildings	+10% (run10M)	+20% (run10H)
Parking lots	+10% (run11M)	+20% (run11H)
Streets	+10% (run12M)	+20% (run12H)

Table 5.2 Modeling Scenarios for Three Metropolitan Areas (Sacramento, Fresno, and Los Angeles)

Standalone CSEM	Moderate	High
Roof albedo	run1M	run1H
Pavement albedo	run2M	run2H
Cover increase (evapotranspiration)	run3M	run3H
Solar photovoltaic	run4M	run4H
Green roofs	run7M	run7H

CSEM combinations	Moderate	High
Roof albedo + pavement albedo	run12M	run12H
Roof albedo + solar PV	run14M	run14H
Roof albedo + cover increase	run13M	run13H
Pavement albedo + solar PV	run24M	run24H
Cover increase + green roofs	run37M	run37H
Cover increase + PV	run34M	run34H

As introduced in Section 5.2, the surface-characterization part of the input to meteorological models is overridden in this analysis with specific and detailed information developed as discussed in this section and in Chapter 6. The surface characterization is based on LULC analysis of each of the idealized communities. Based on this information, the thermophysical characterization of each community (at 200-m scale) is carried out, for example, the community is designed so as to have the same characteristics and fabric makeup of the urban area nearest to it (of which it is an extension). While the model-input data can be updated any time or made more site-specific with recent data, in this section researchers discuss some examples used in preparing the surface-characterization input to the models.

One starting point in developing the surface characterization is to assign certain physical properties to various surface types. Table 5.3 provides an example of base-case representative values used in such calculations. Once these values are specified and later modified, the corresponding effective values of parameters over a 200-m grid cell are computed. Thus to develop CSEM scenarios, the values in Table 5.3 are modified by the respective amounts listed in Tables 5.1 or 5.2, depending on scenario. Based on the LULC characterization for each community (city-location), additional calculations are then performed to compute fractions of roofs, streets, and parking lots in each city (or surrogate city), as well as solar radiation extinction in urban canyons, shading, and other parameters.

Table 5.3 Example Input Data for Surface Characterization (Albedo, Soil Moisture Content, Roughness Length, and Thermal Inertia)

	α	η	Zo	THC
roof	0.20	0.02	1.100	0.03
road	0.15	0.02	0.020	0.03
Parking lot	0.10	0.02	0.020	0.03
sidewalk/driveway	0.20	0.00	0.020	0.03
grass	0.22	0.15	0.200	0.03
barren/soil	0.22	0.02	0.050	0.02
tree	0.15	0.30	1.500	0.04
water	0.06	0.95	0.010	0.06
other	0.12	0.04	0.050	0.03
snow	0.65	0.95	0.050	0.05
ice	0.30	0.95	0.001	0.05

In the rest of this section, some remarks are provided with respect to input data for idealized communities simulations and those for the metropolitan areas.

5.2.2.1. Idealized Communities

- In scenarios 1M/1H, the specification of input is done by directly changing the albedo of the category roof by the given amounts. The changes can vary across various roof types (flat, pitched) and functions (residential, commercial, industrial, and so forth).
- For scenarios 2M/2H, the input is specified by changing the albedo of categories 1) parking and 2) sidewalk/driveway. As with scenario 1, the changes can be type- and function-dependent.
- Scenarios 3M/3H specifications are done by changing the albedo of the category road by the given amounts.
- The changes in albedo for scenarios 4M/4H are parameterized as half of the change in roof albedo (for simplification at this stage until site-specific information on wall-albedo, sky-view factor, surrounding structures, and so forth becomes available).
- Perturbations in scenarios 5M/5H are specified by changing the given fraction of impervious surfaces such as parking and sidewalk/driveway categories into pervious ones such grass. Of note that in this scenario, and since the LULC makeup is changed, not only is soil moisture impacted, but also are albedo, roughness length, and thermal inertia.
- For scenarios 6M/6H, the change in sky-view factor is parameterized as a change in incoming solar radiation at affected surfaces and as a function of roof area in each 200-m grid cell. The model's subroutines are modified to apply these calculations.
- For scenarios 7 through 9, soil moisture fraction is increased to parameterize the evapotranspiration effects of increased vegetation cover as a function of roof area (building cover), street area, or parking-lot area. The example calculations below are for roofs, but apply similarly to roads and parking lots surfaces. Thus, first, a soil moisture content value of 0.15 is assigned for vegetation (trees):

$$\eta_v = 0.15$$

Two levels of increase in vegetation cover (x) are assumed, one is +10 percent and the other +20 percent. These increases are relative to the surface area (cover) of roofs (roads or parking-lots). Thus, in this case, the base soil moisture in a grid cell is (roof fraction × roof moisture):

$$f_r\,\eta_r$$

And for the perturbation scenarios, soil moisture is:

$$f_r\,\eta_r + x\,f_r\,\eta_v = f_r\,(\eta_r + x\,\eta_v) = f_r\,(0.02 + 0.1 \times 0.15) = f_r \times 0.035$$

(for the 10 percent scenario), and

$$f_r\,\eta_r + x\,f_r\,\eta_v = f_r\,(\eta_r + x\,\eta_v) = f_r\,(0.02 + 0.2 \times 0.15) = f_r \times 0.050$$

(for the 20 percent scenario). In above equations, the value 0.02 is the base moisture content of roofs, pavements, or parking lots.

- For scenarios 10 through 12, the goal is to reduce incoming shortwave radiation at the surface (shading). In each community, the reductions are computed as a function of the surface being shaded, for example, roof, parking-lot, or street area depending on scenario at hand, as in Table 5.1.

5.2.2.2. Metropolitan Areas

For the 3 metropolitan areas, the deployment of CSEM is computed for each 1 km grid cell and for the entire modeling domains discussed in Section 4.2. The calculations generate gridded output (for each grid cell in the domain), containing the following information per record (for each of the scenarios in Table 5.2):

- I-index
- J-index
- base case albedo
- base case soil moisture
- base case roughness length
- base case thermal inertia
- increase in albedo total for roofs, pavements, streets, and walls
- increase in albedo for roofs only
- increase in albedo for pavements only, that is streets, parking lots, curbs
- increased moisture from runoff control
- structural shade / roof shading
- increased evapotranspiration from vegetation
- increased shading from vegetation
- increased in solar photovoltaic cover
- increase in green roofs cover
- increase in green walls area

- For scenarios 1 through 3 (Table 5.2), the basis (physical values) for the calculations is similar to those used for idealized communities calculations.
- For scenarios 4M/4H (solar photovoltaics, PV), two deployment levels (low and high) are modeled at the two levels of solar conversion efficiency (ε) listed in Table 5.4, thus four runs.

Table 5.4 Solar Conversion Efficiencies used in Scenario 4

Solar conversion efficiency	Effective albedo
$\varepsilon = 0.15$	$A_{eff} = 0.23$
$\varepsilon = 0.20$	$A_{eff} = 0.28$

- For scenarios 7M/7H, modifications to the roof surfaces are made. The albedo of green roofs is unchanged from the base values (albedo of roof vegetation is roughly similar to that of most bare roofs), but both roof moisture content and roughness length are

increased. For the 10 percent (M) scenario, roof moisture is increased from 0.02 to 0.04 and roughness length from 1.1 to 1.2 m. For the 20 percent (H) scenario, roof moisture is increased from 0.02 to 0.06 and roof roughness length from 1.1 to 1.3 m.

- For scenarios 12M/12H, the albedos of both roofs and pavements are increased simultaneously.
- For scenarios 14M/14H, the roof albedo is increased and solar PV panels are also added. The PV scenarios evaluated in these combination runs are only for a conversion efficiency of 0.15 (effective albedo of 0.23) and for two levels of deployment (moderate and high) where it is assumed that when roof albedo scenario is moderate, the PV scenario is moderate, and when the roof albedo scenario is high, the PV scenario is high too.
- For scenarios 24M/24H, the pavement albedo is increased while solar PV panels are installed on roofs. As with scenarios 14M/14H, the PV deployment evaluated in these combination runs are only for a conversion efficiency of 0.15 (effective albedo of 0.23) and for two levels of deployment (moderate and high).
- For scenarios 37M/37H, ground-level vegetation cover is increased and green roofs are implemented simultaneously. Again, the albedo of green roofs is unchanged relative to that of a bare roofs (relatively similar values), but roof moisture content is increased and so is roughness length. For the 10 percent (M) scenario, roof moisture is increased from 0.02 to 0.04 and roughness from 1.1 to 1.2 m. For the 20 percent (H) scenario, roof moisture is increased from 0.02 to 0.06 and roof roughness from 1.1 to 1.3 m. Increased ground-level vegetation does not affect roughness length because it is similar to that of buildings.
- In scenarios 34M/34H, vegetation cover is increased and solar PV panels are deployed. As with scenarios above, the PV deployment evaluated in these combination simulations are for a conversion efficiency of 0.15 (effective albedo of 0.23) and for two levels of deployment (moderate and high).
- Finally, in scenario 13M/13H, both roof albedo and vegetation cover are increased.

CHAPTER 6:
Land-Use / Land-Cover Characterization and Deployment Potential

This chapter provides background information on the LULC characterization that forms the basis for the calculations discussed in Chapter 5 as well is those discussed later in Chapter 6. It also provides information on computing the deployment potentials for the metropolitan-area simulations.

6.1 Idealized Communities

To develop and simulate an idealized 200×200 m community for each city location (180 locations), the USGS Level-II LULC data was sampled at that resolution for an area of 4 km^2 (100 cells of 200×200 m) at a time, centered over each city-location of interest. A large number of 200-m grid cells was used so as to develop a statistically representative LULC and fabric makeup for each community. For this purpose, a code was written to perform sampling and count all LULC categories (listed in Table 3.3) in those cells where there is at least 5 percent urban land cover. Figure 6.1 summarizes the results from this analysis for a number of representative urban areas. For a side by side comparison of LULC distribution across the selected cities, Table 6.1 shows the mean of LULC cover in each of the selected urban regions.

Figure 6.1(1) LULC Distribution in the Alturas Region

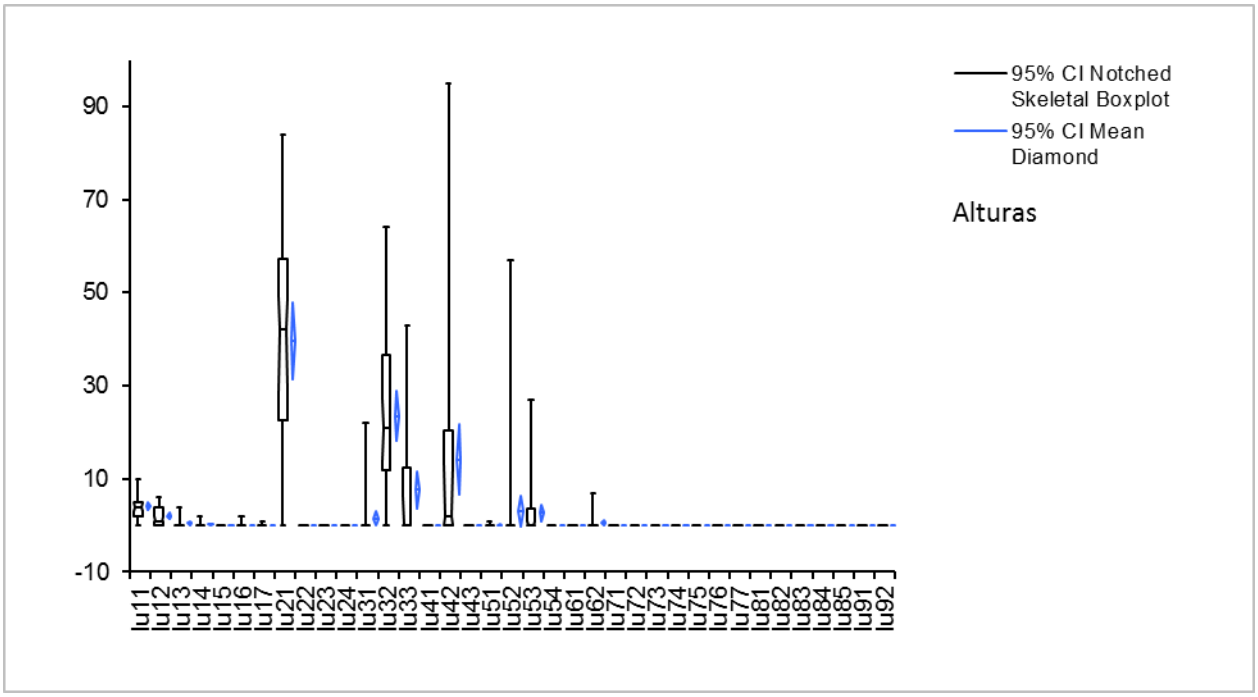


Figure 6.1(2) LULC Distribution in the Bakersfield Region

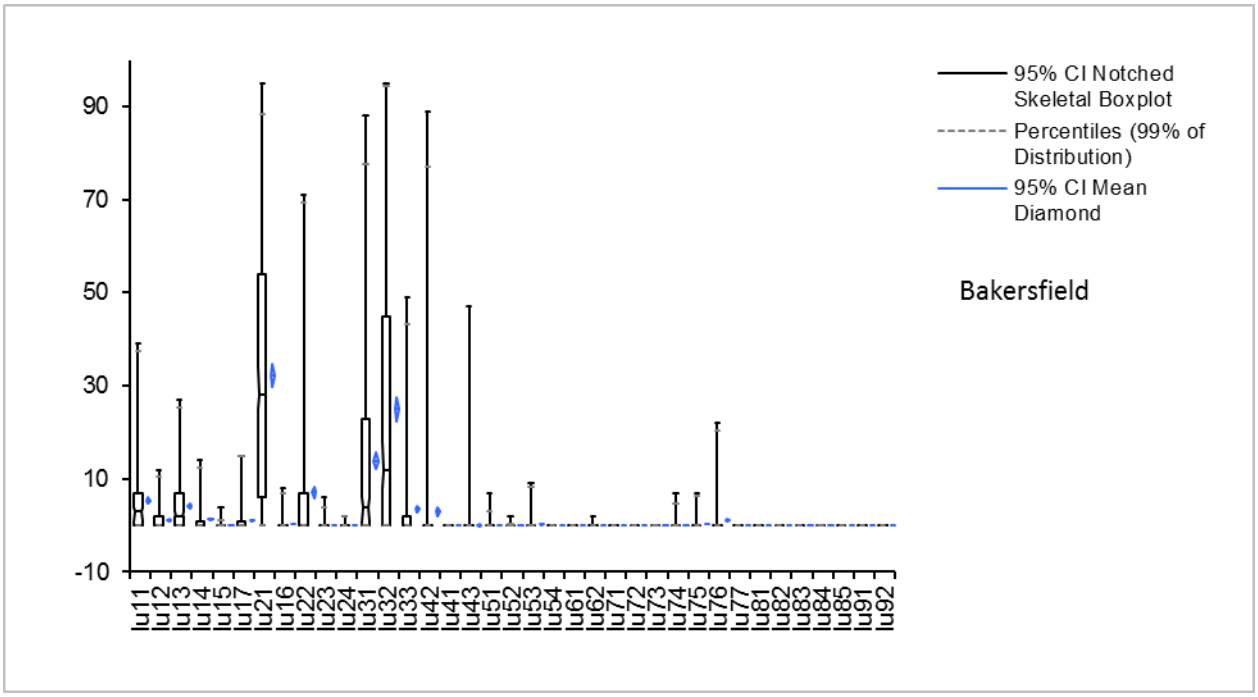


Figure 6.1(3) LULC Distribution in the Chico Region

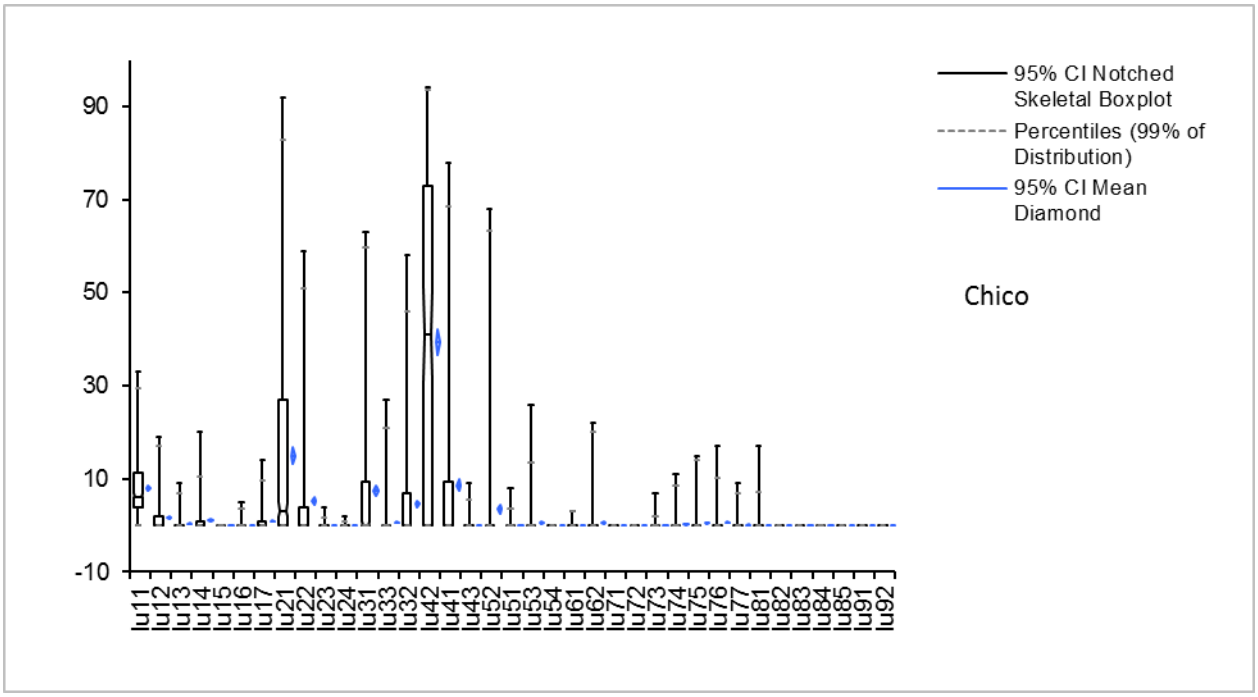


Figure 6.1(4) LULC Distribution in the Death Valley Region .

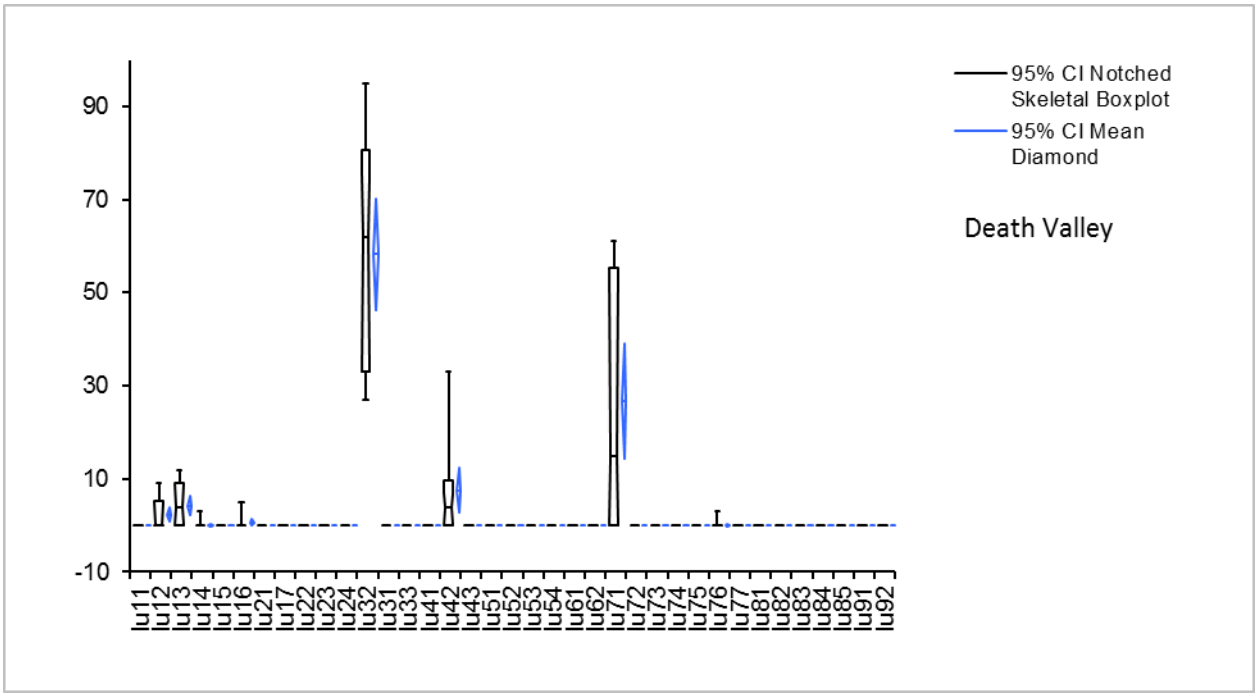


Figure 6.1(5) LULC Distribution in the El Centro Region.

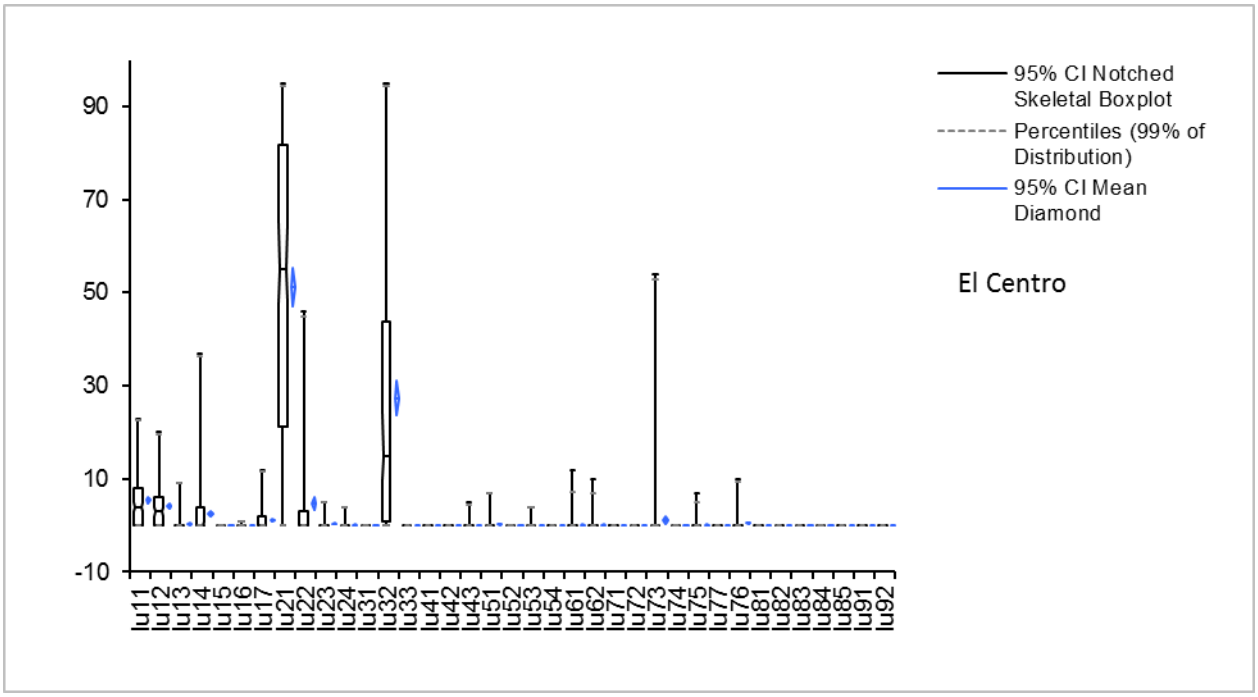


Figure 6.1(6) LULC Distribution in the Eureka Region

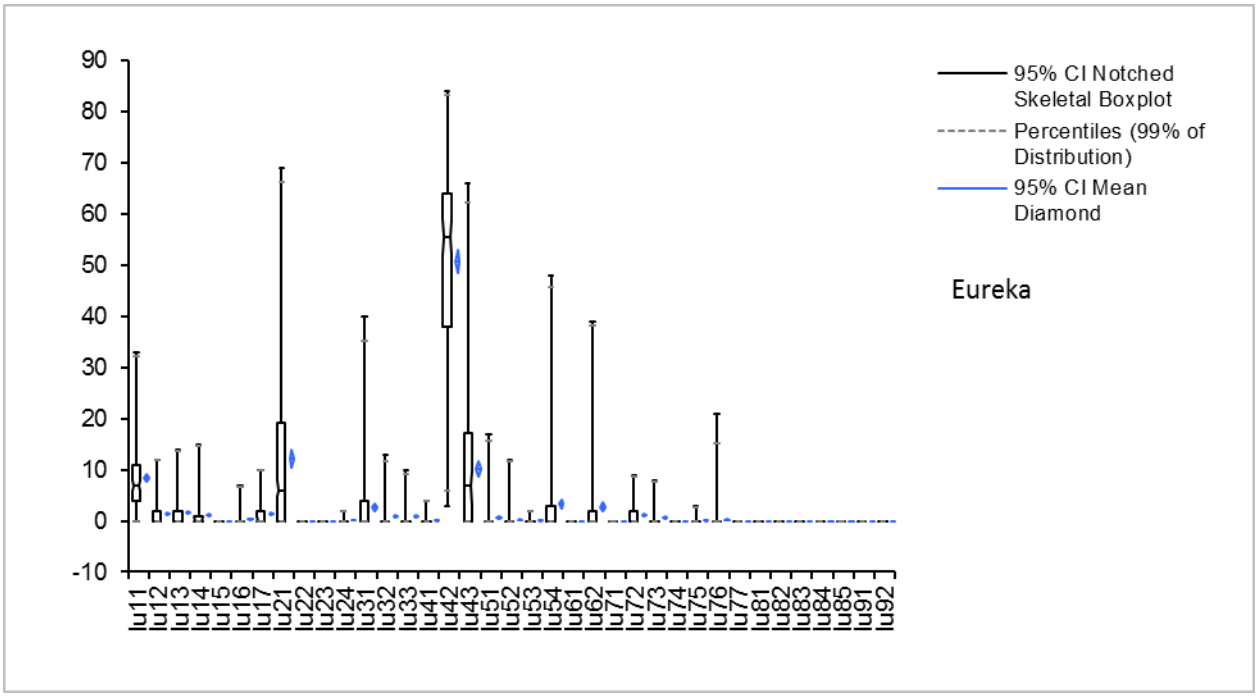


Figure 6.1(7) LULC Distribution in the Fresno Region

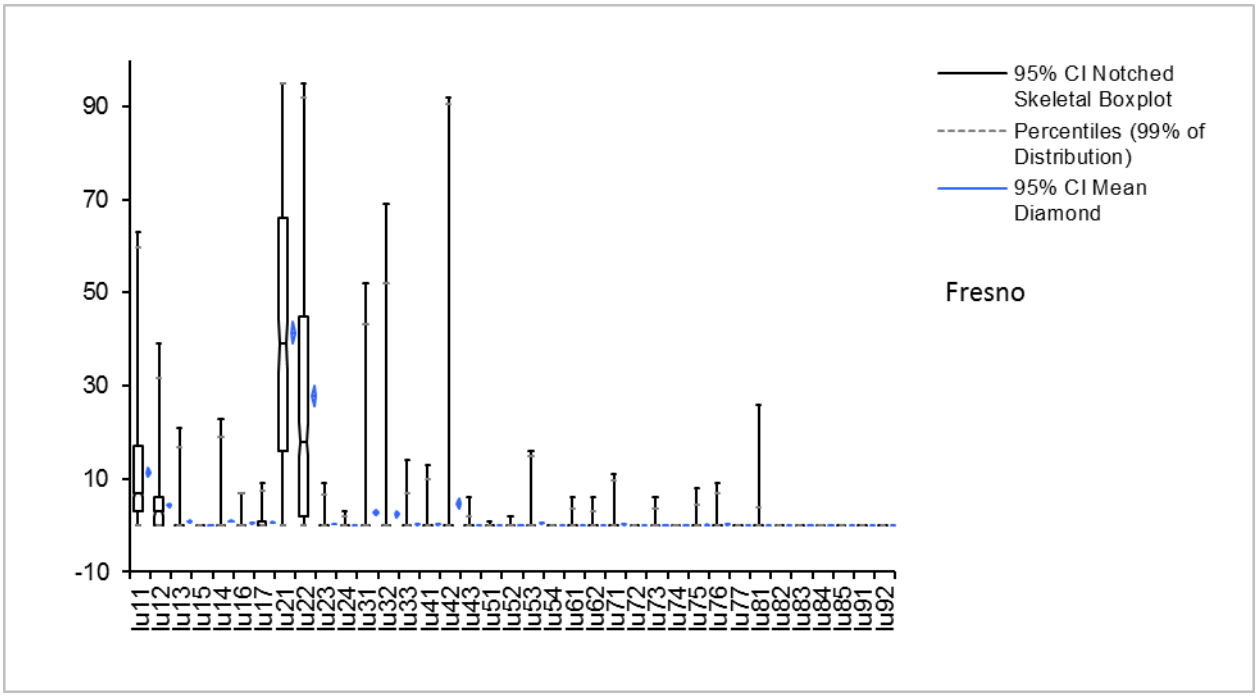


Figure 6.1(8) LULC Distribution in the Goldfield Region

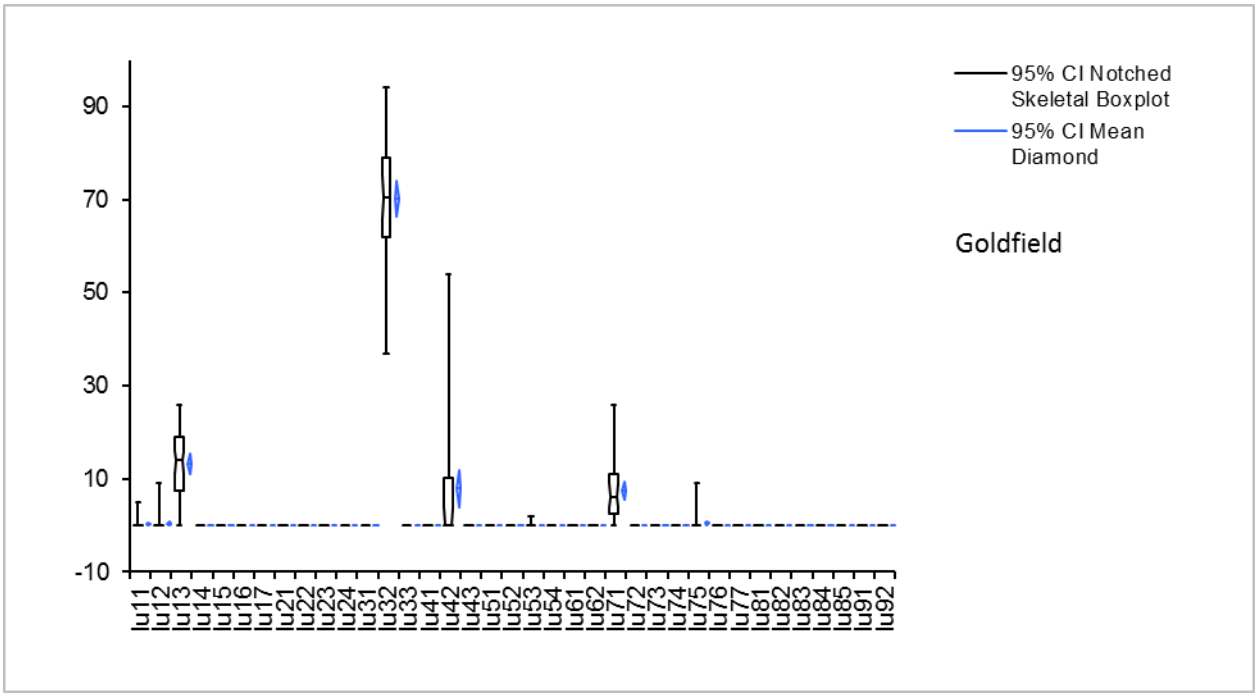


Figure 6.1(9) LULC Distribution in the Huntington Region

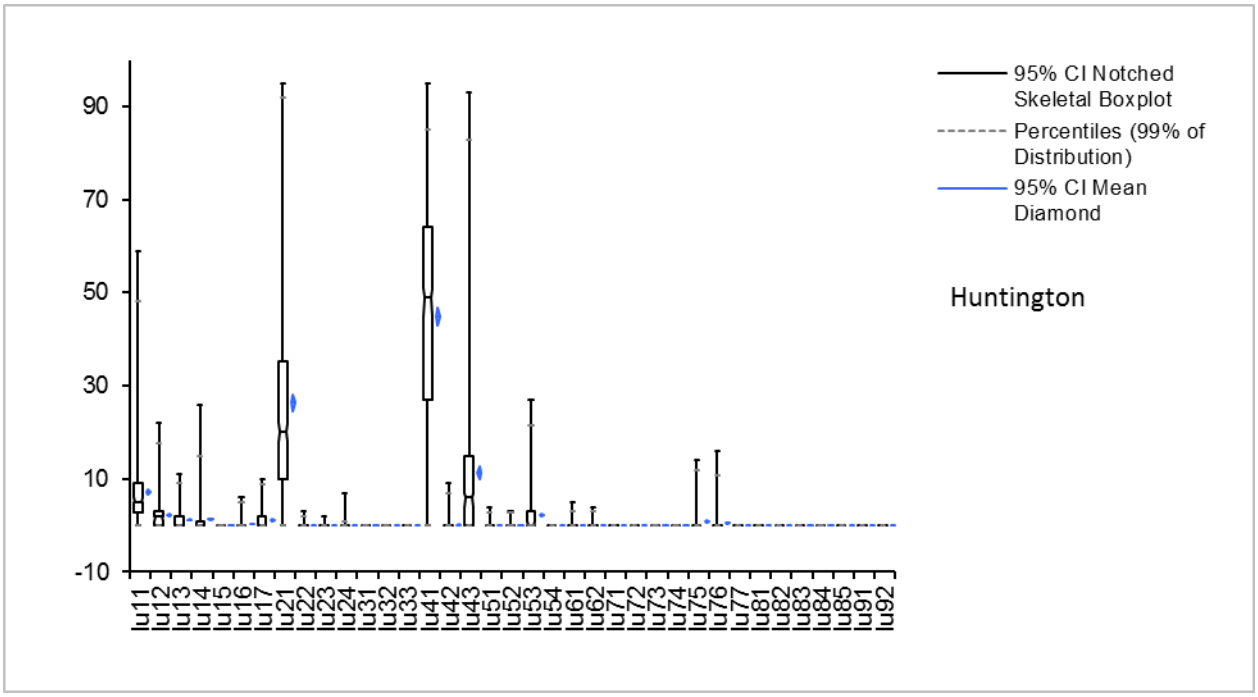


Figure 6.1(10) LULC Distribution in the Kingman Region

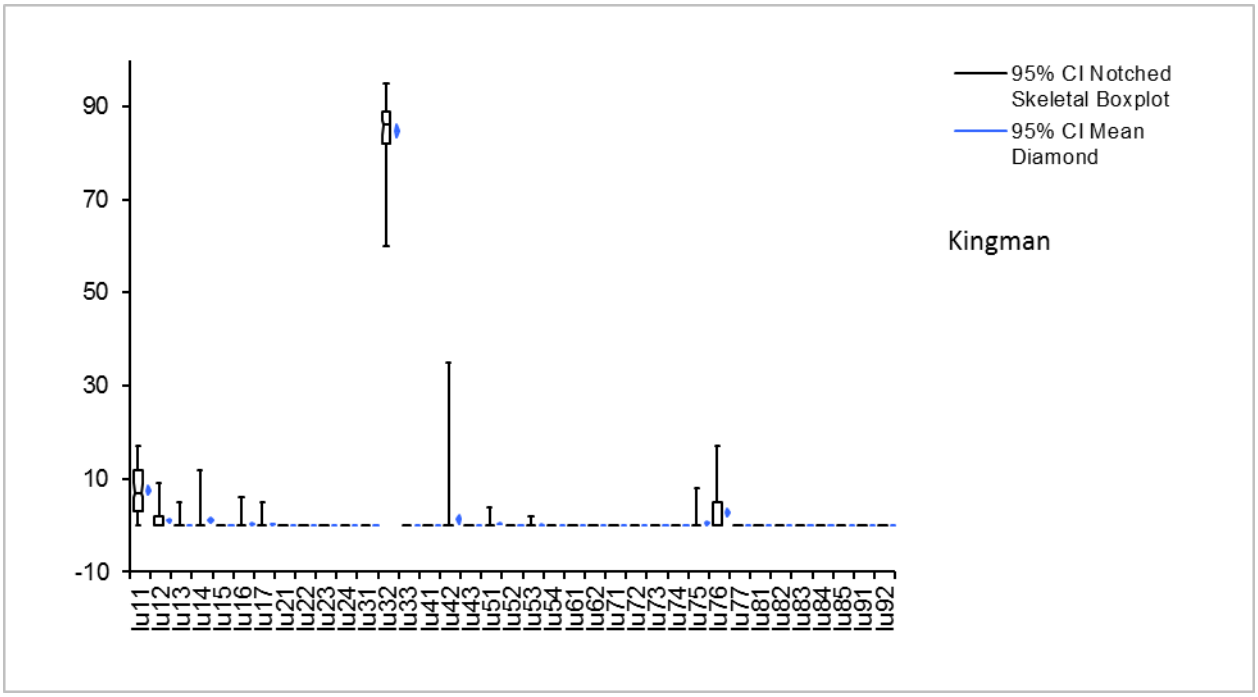


Figure 6.1(11) LULC Distribution in the Klamath Falls Region

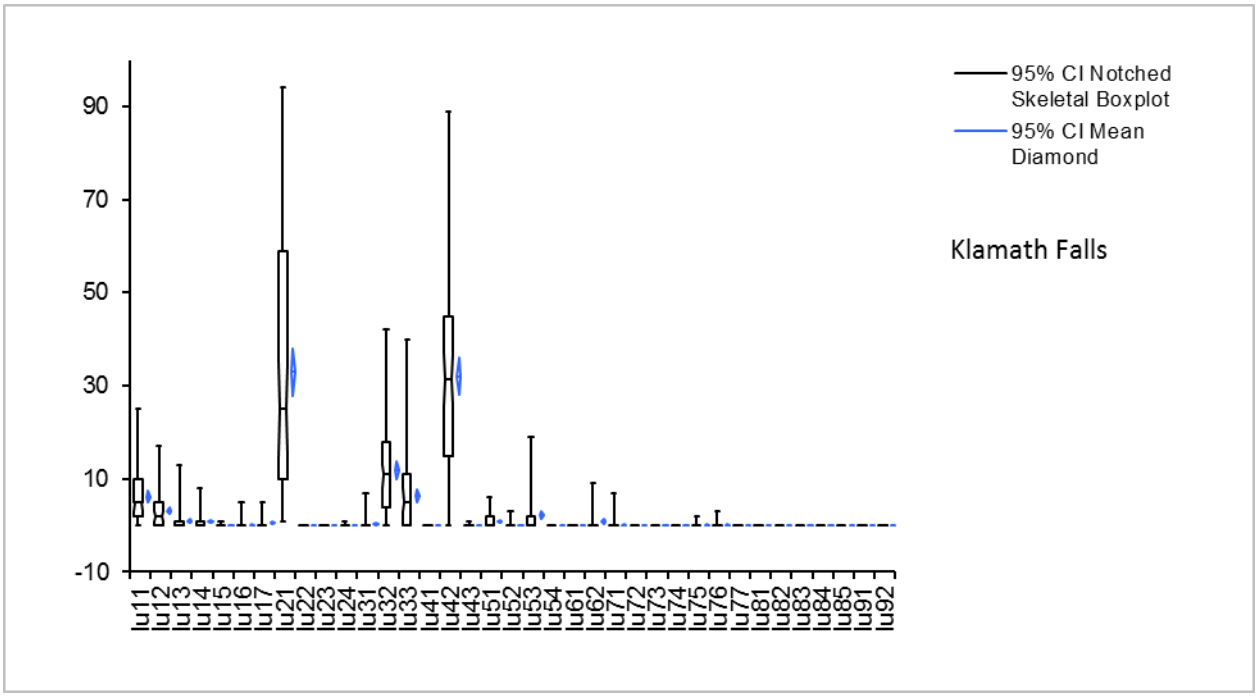


Figure 6.1(12) LULC Distribution in the Long Beach Region

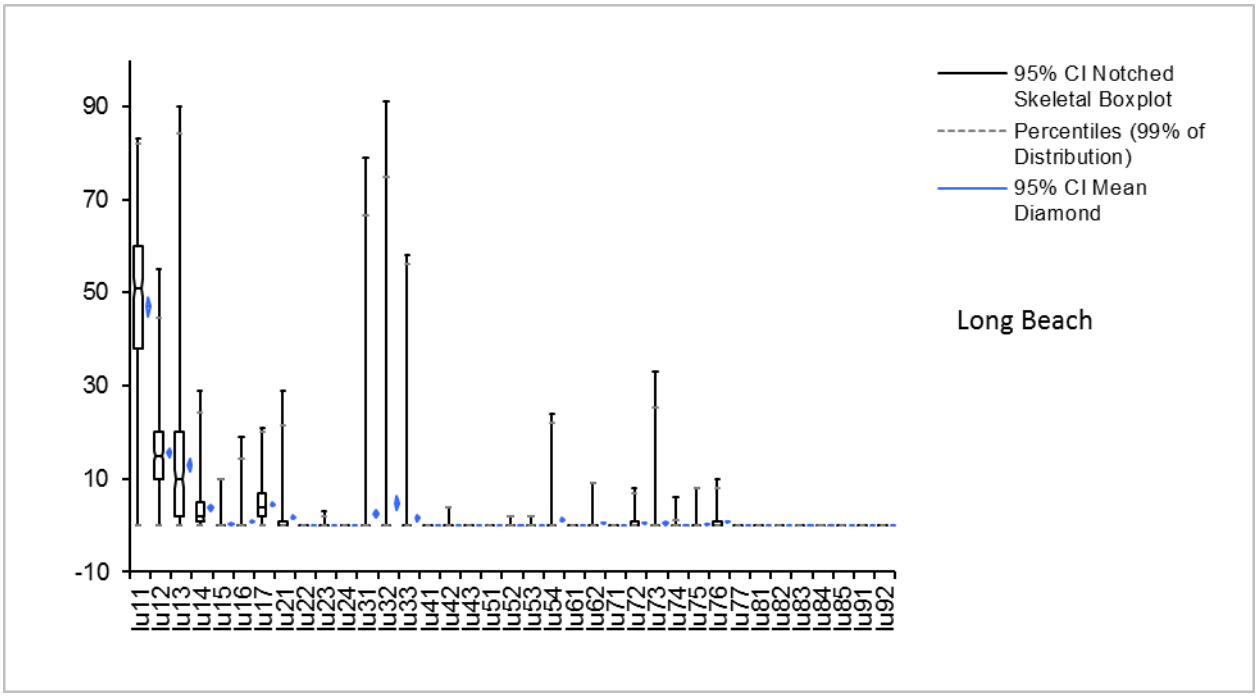


Figure 6.1(13) LULC Distribution in the Los Angeles Region

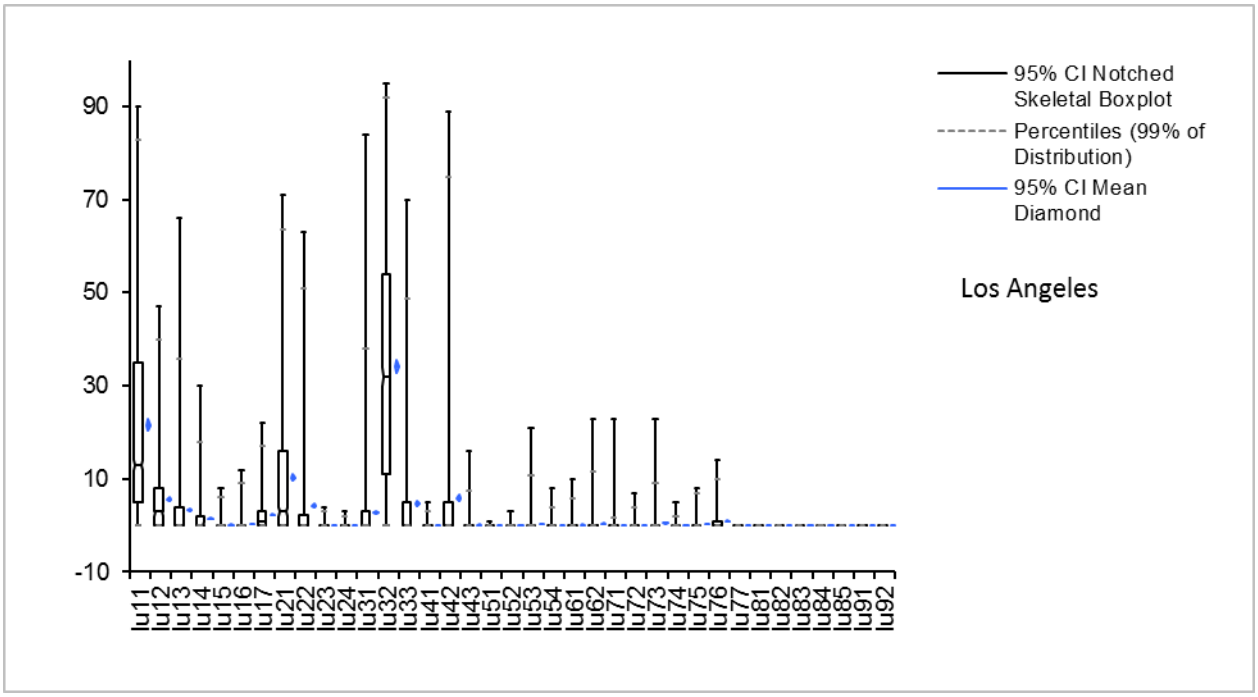


Figure 6.1(14) LULC Distribution in the Lovelock Region

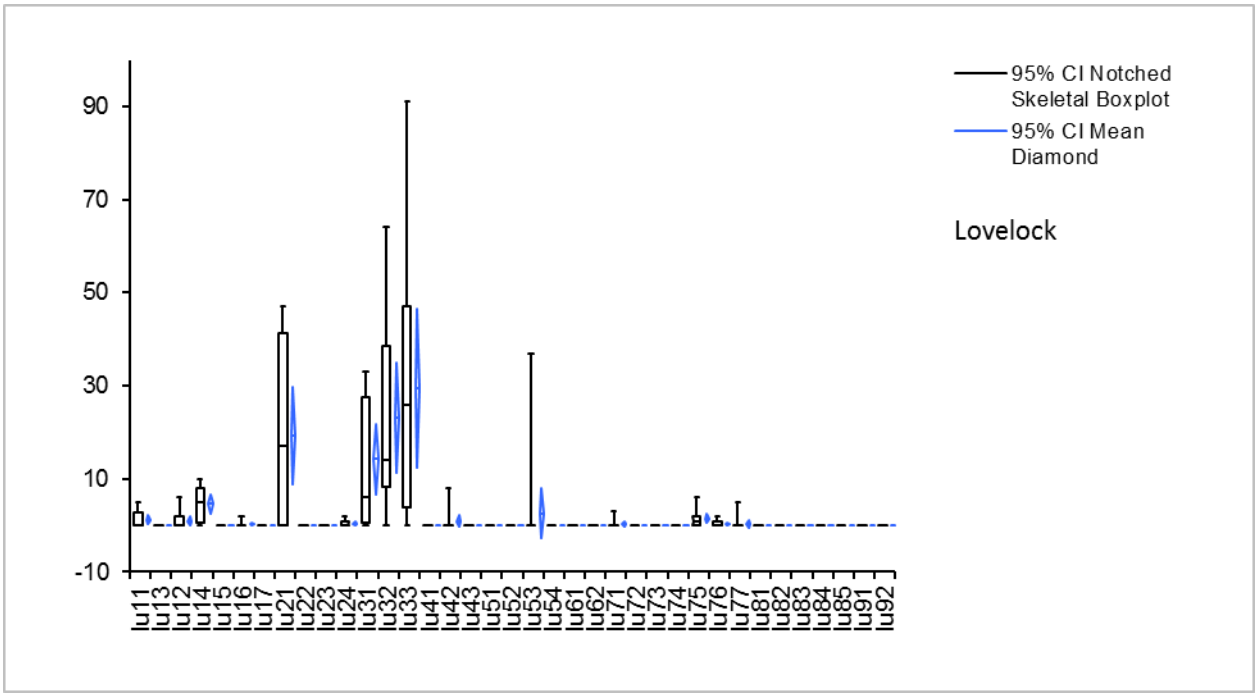


Figure 6.1(15) LULC Distribution in the Mariposa Region

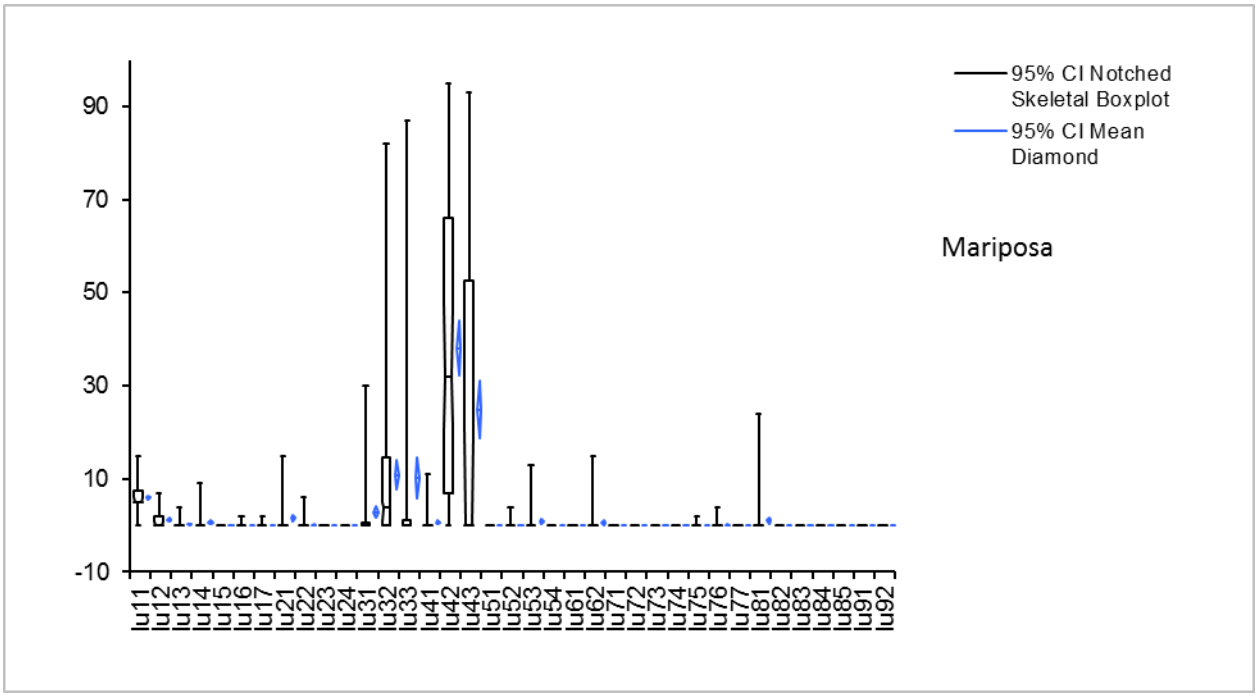


Figure 6.1(16) LULC Distribution in the Monterey Region

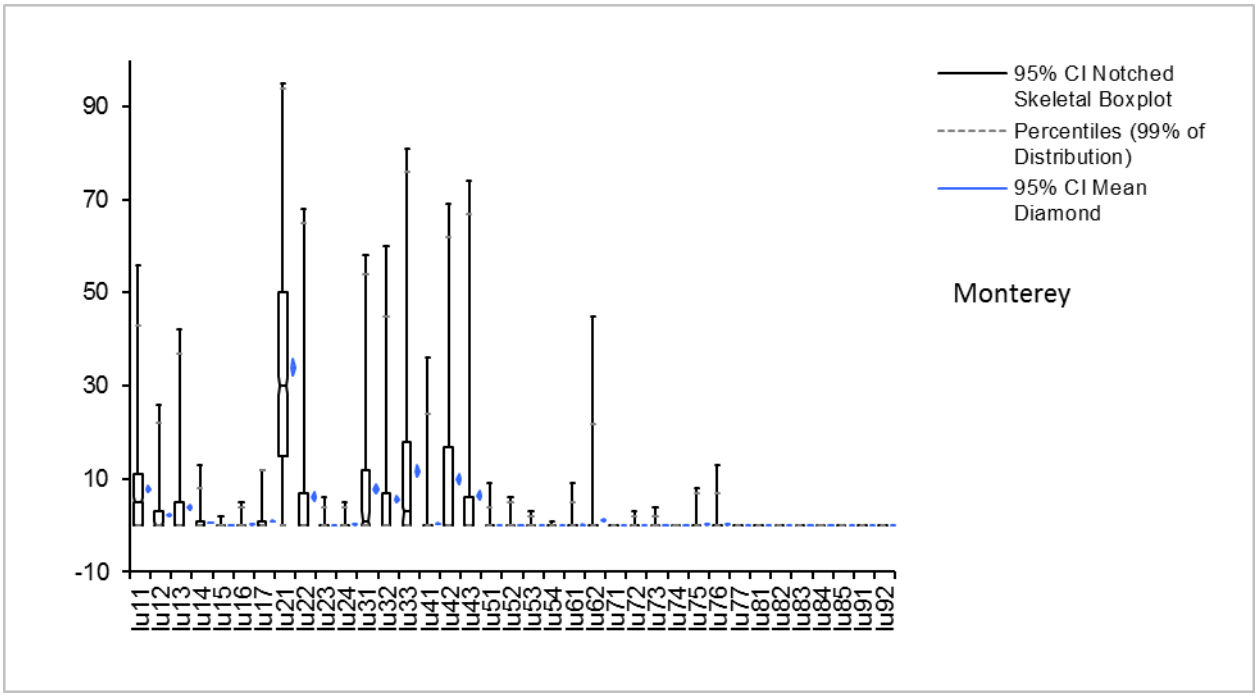


Figure 6.1(17) LULC Distribution in the Needles Region

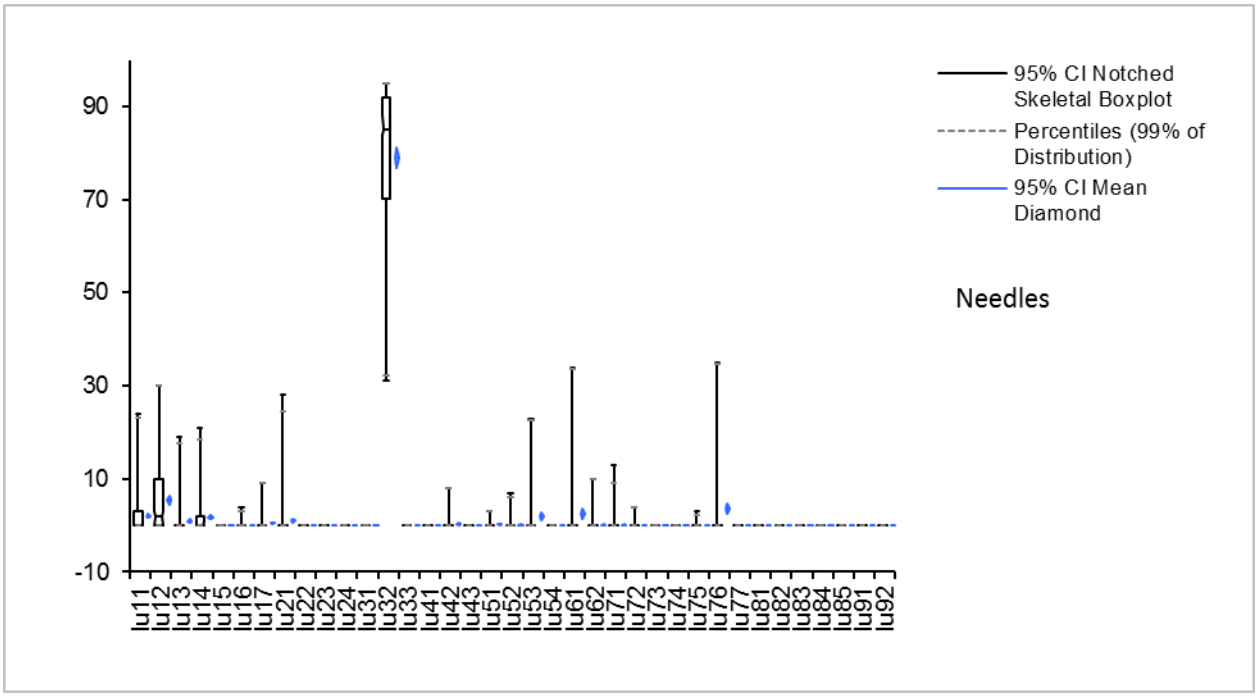


Figure 6.1(18) LULC Distribution in the Redding Region

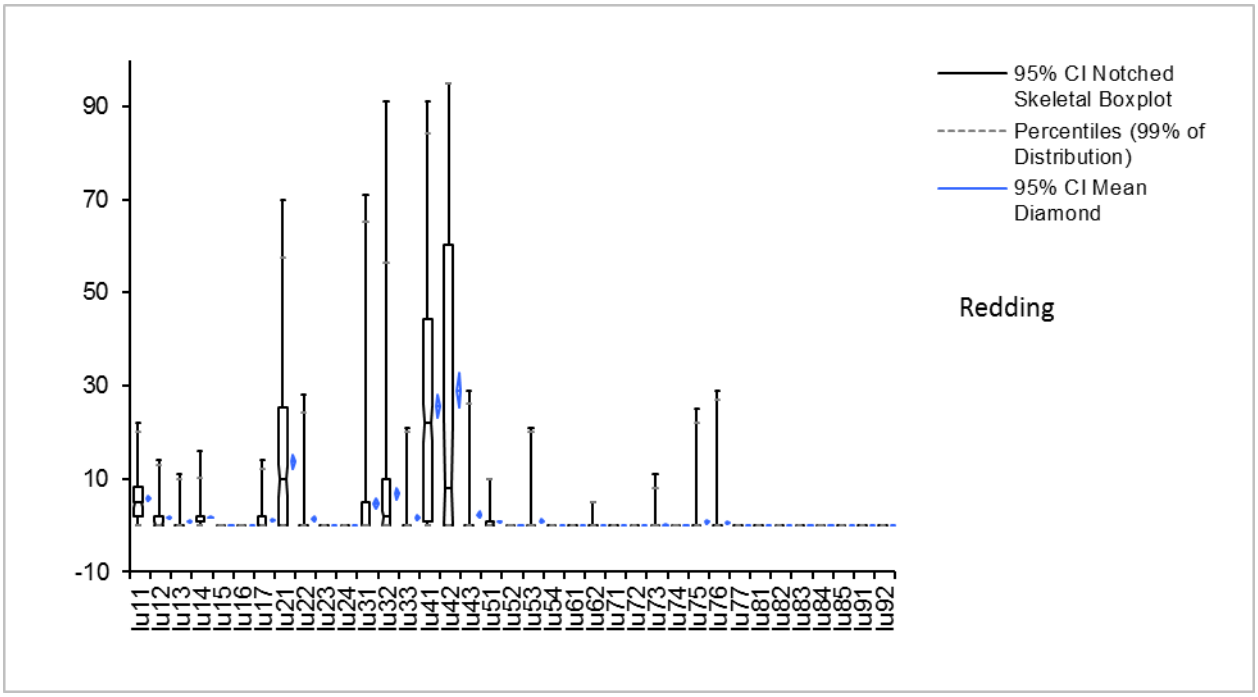


Figure 6.1(19) LULC Distribution in the Sacramento Region

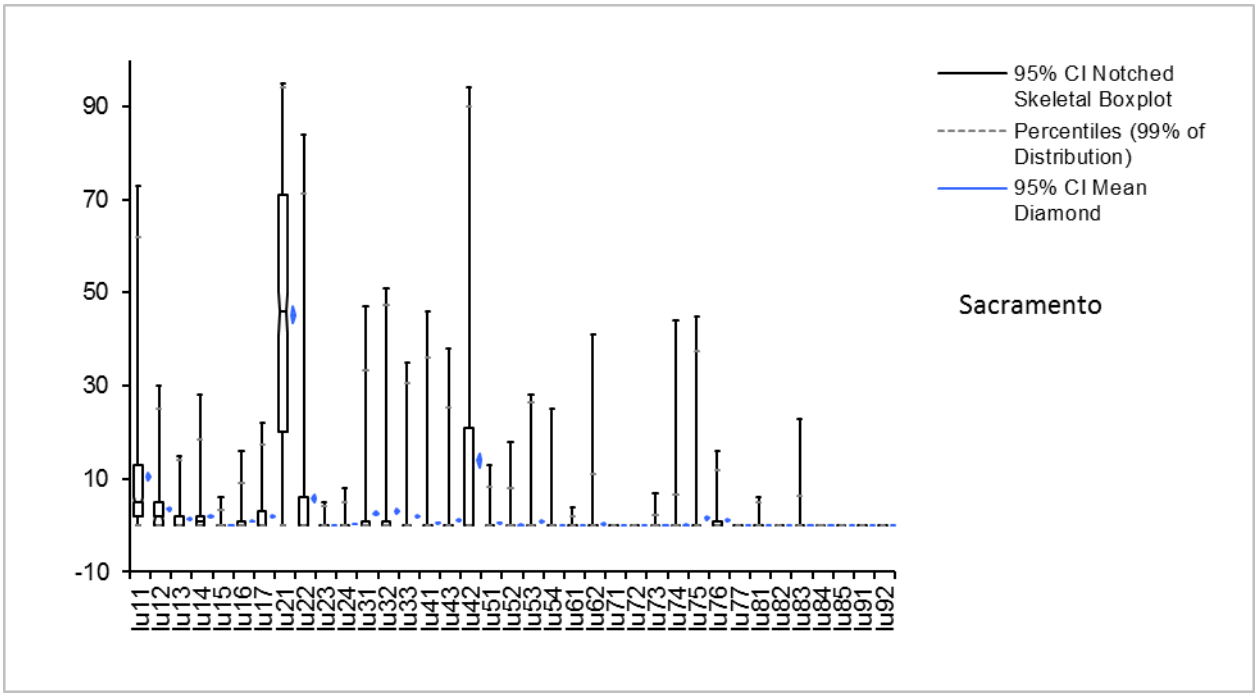


Figure 6.1(20) LULC Distribution in the Salto City Region

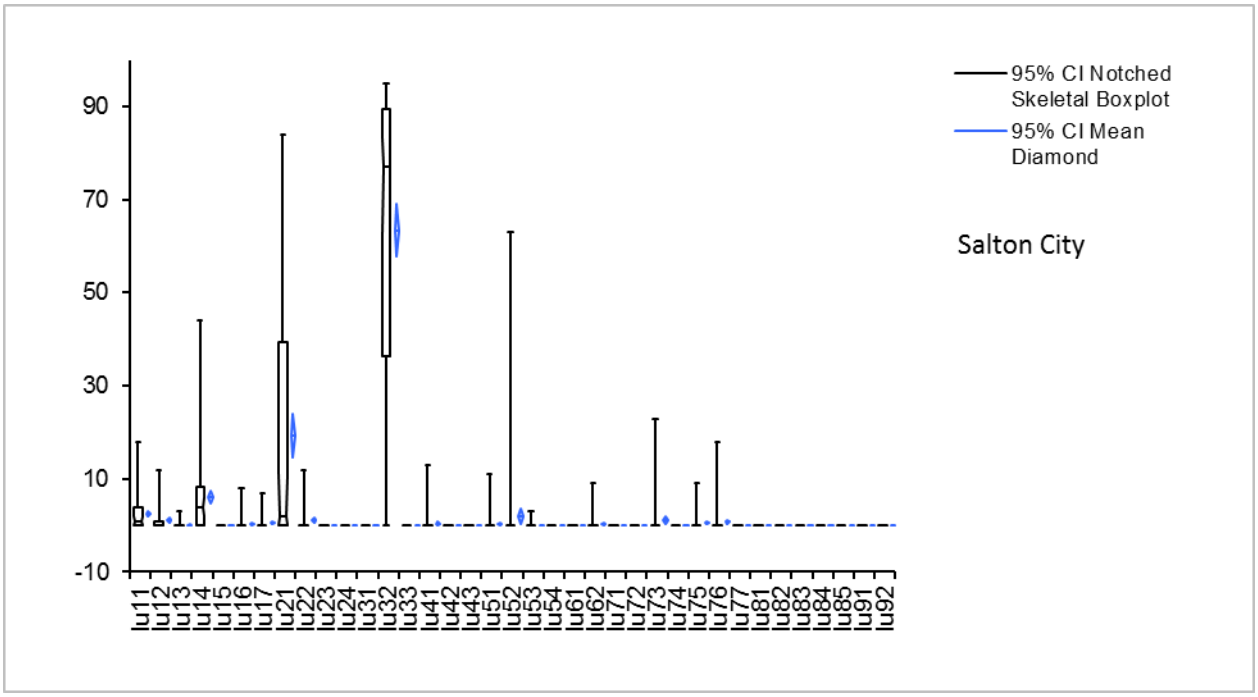


Figure 6.1(21) LULC Distribution in the San Bernardino Region

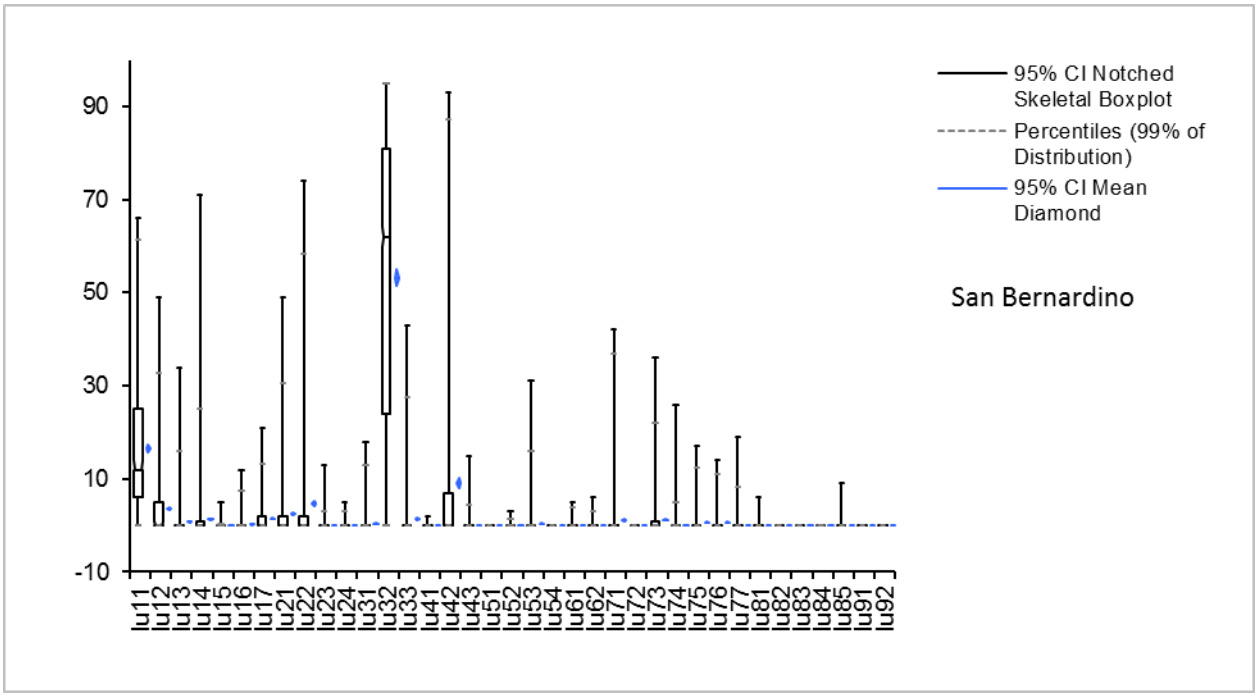


Figure 6.1(22) LULC Distribution in the San Diego Region

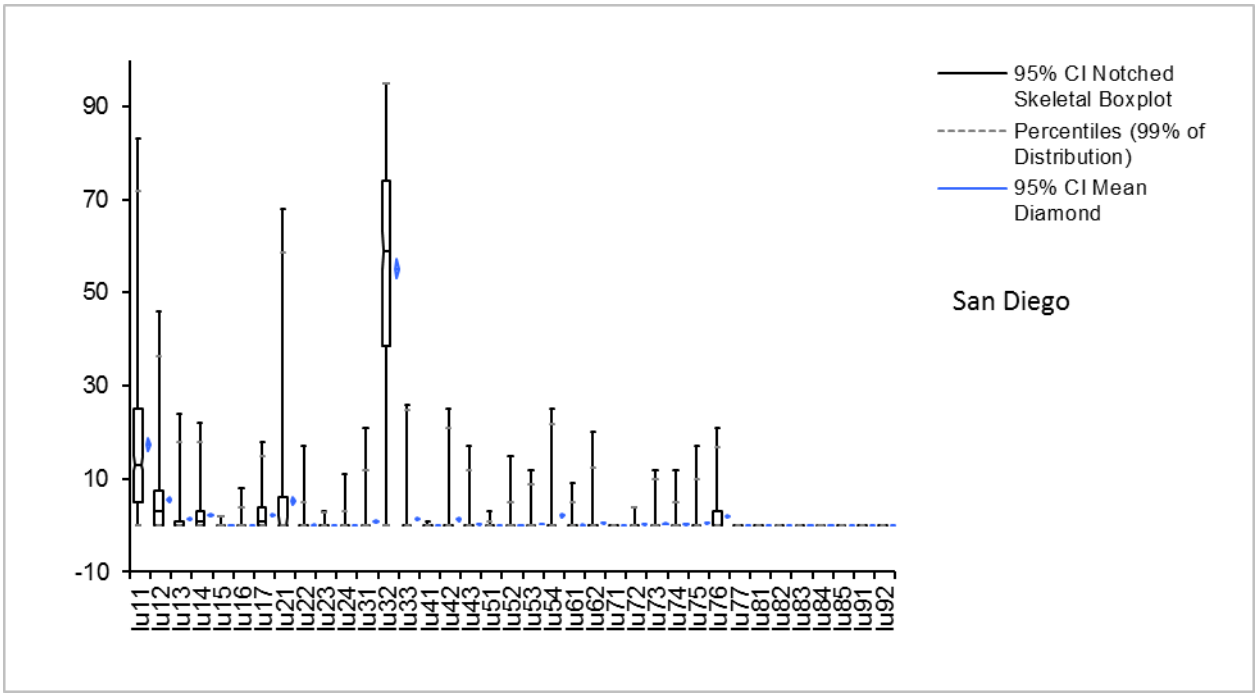


Figure 6.1(23) LULC Distribution in the San Francisco Region

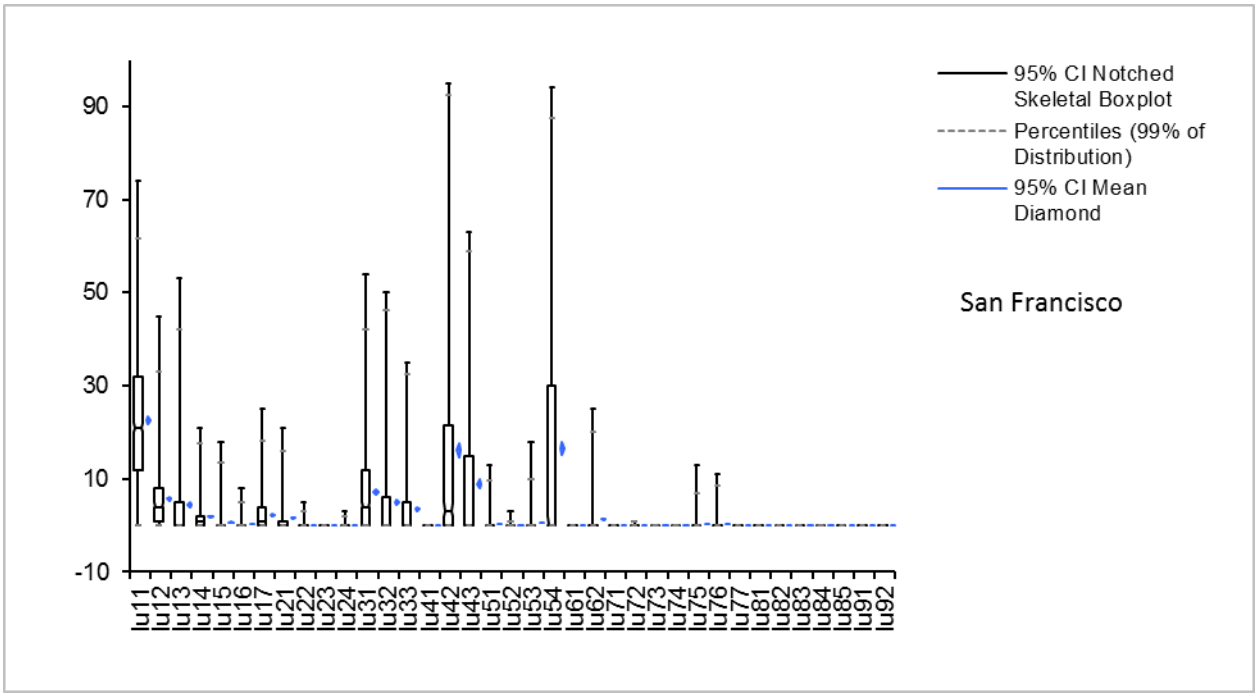


Figure 6.1(24) LULC Distribution in the San Jose Region

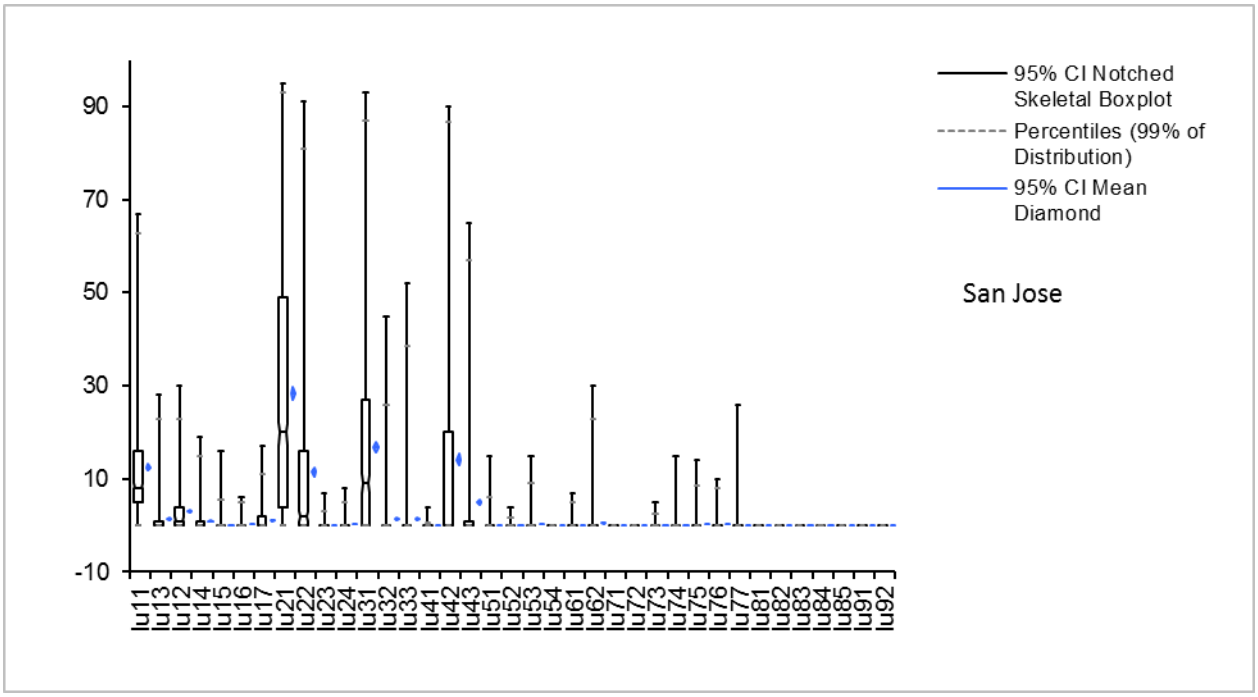


Figure 6.1(25) LULC Distribution in the San Luis Obispo Region

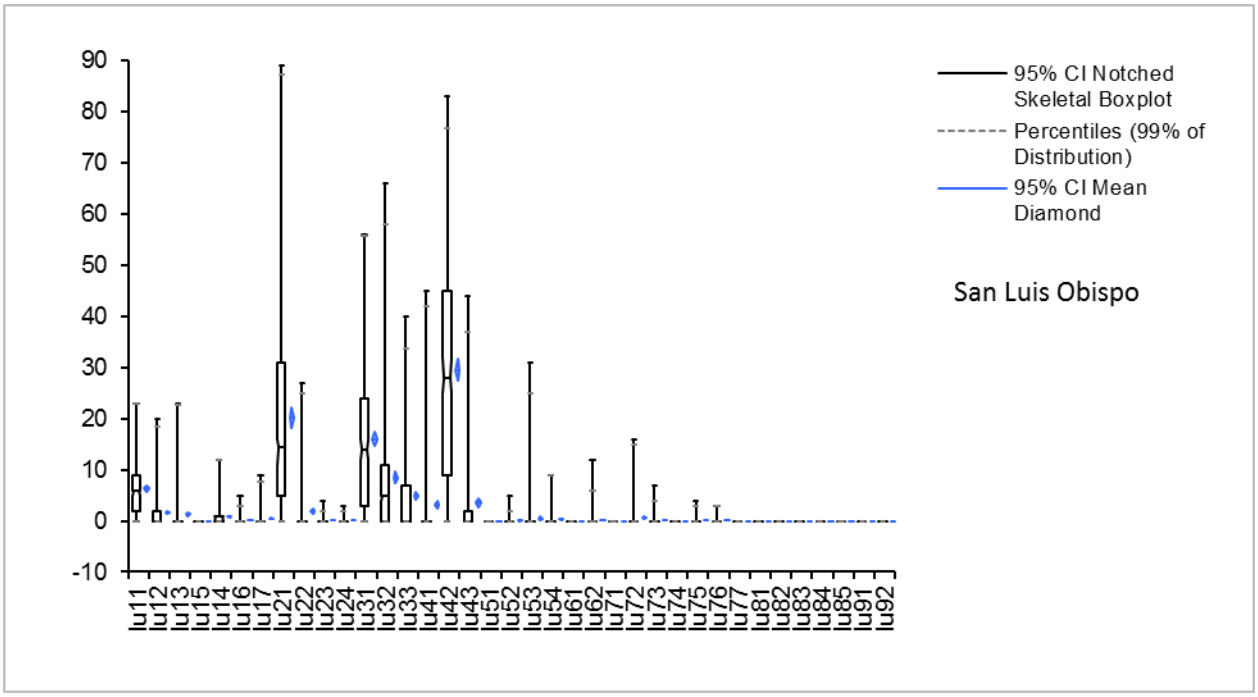


Figure 6.1(26) LULC Distribution in the Santa Ana Region

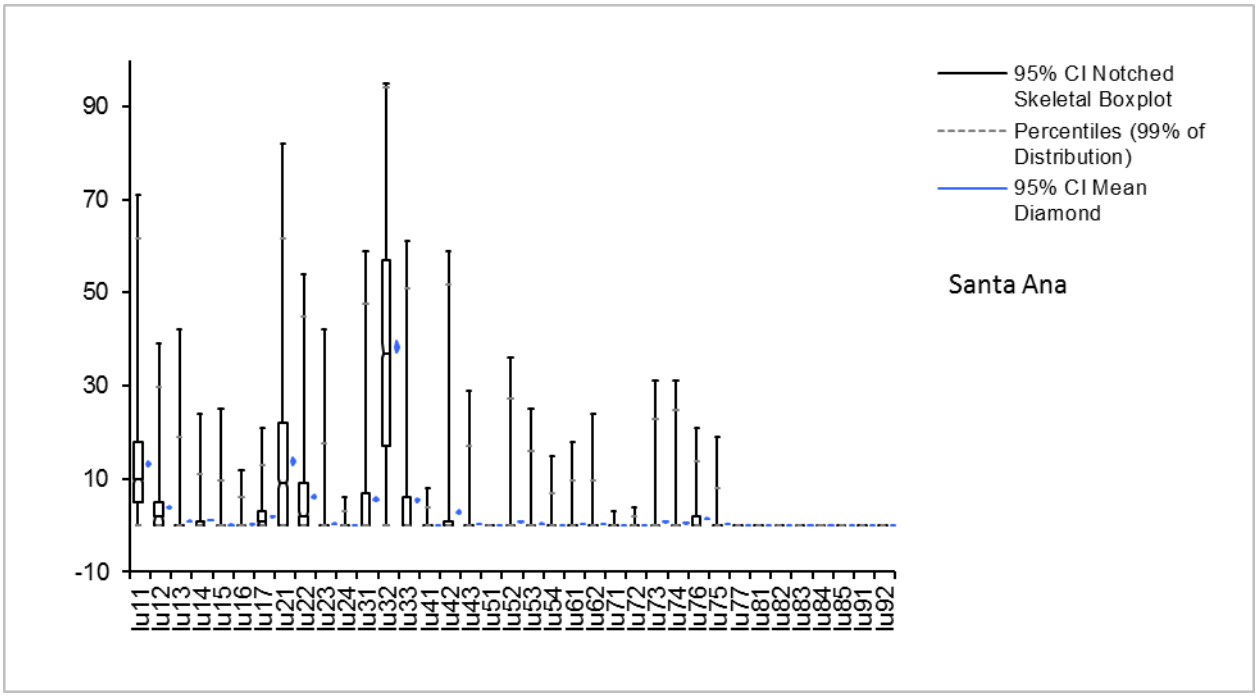


Figure 6.1(27) LULC Distribution in the Santa Maria Region

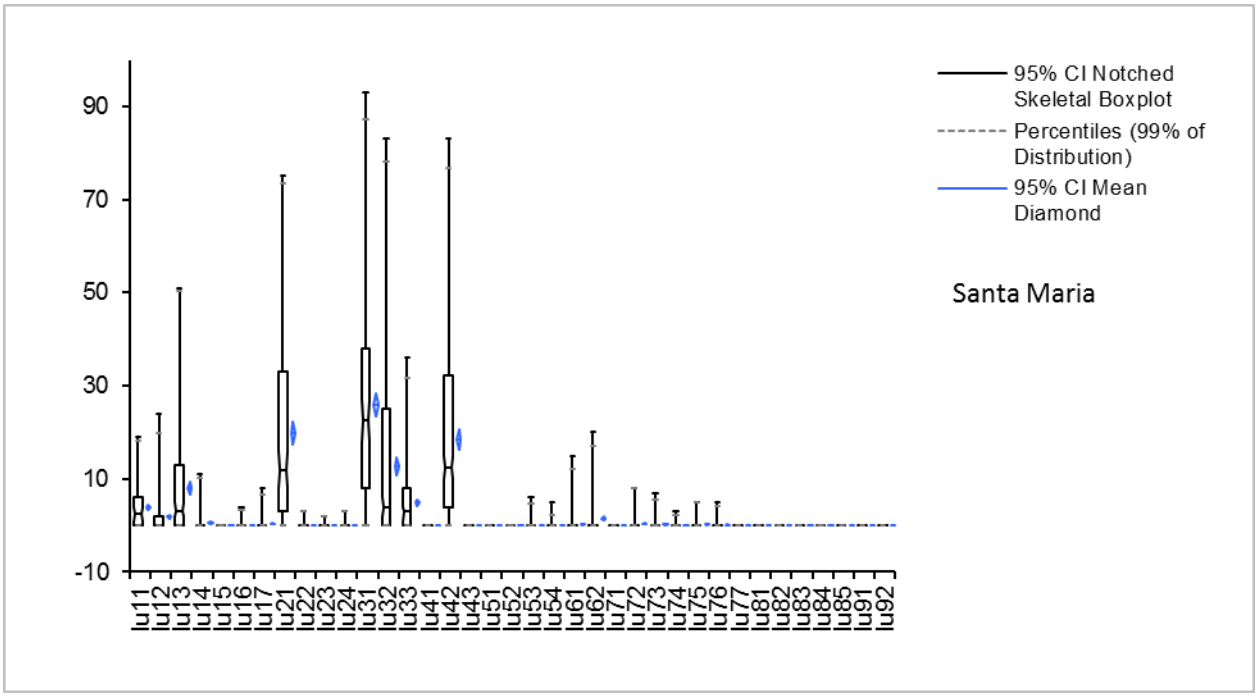


Figure 6.1(28) LULC Distribution in the Santa Rosa Region

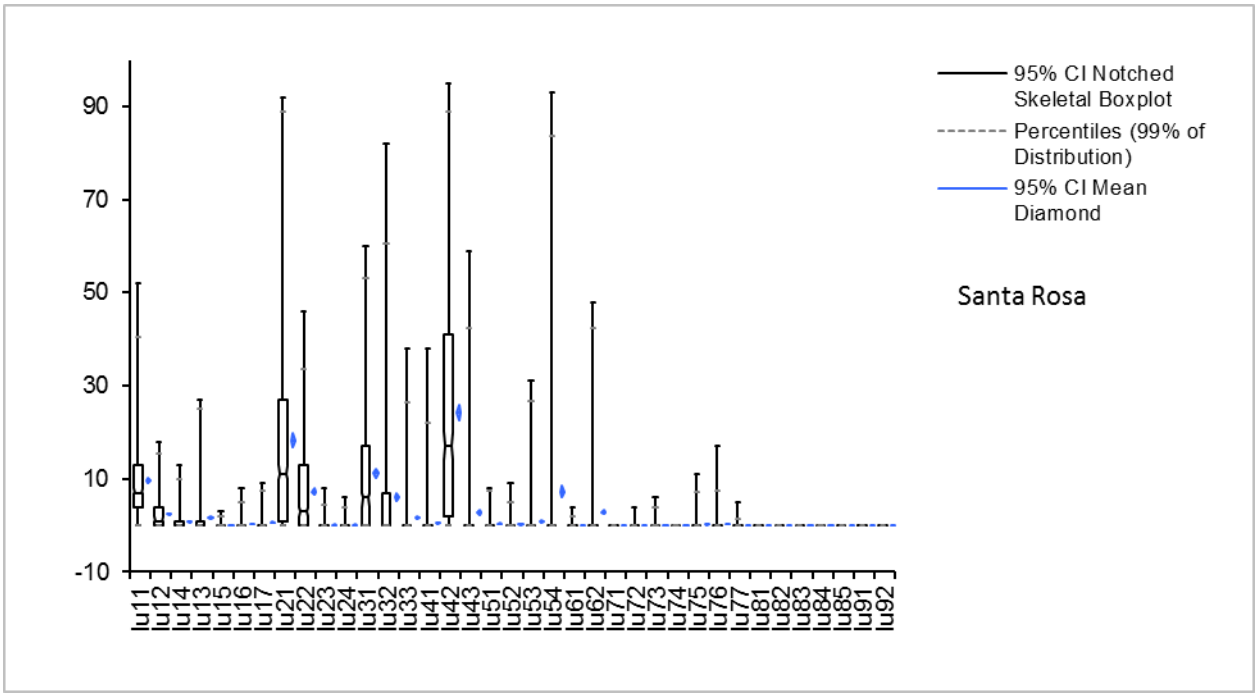


Figure 6.1(29) LULC Distribution in the Susanville Region

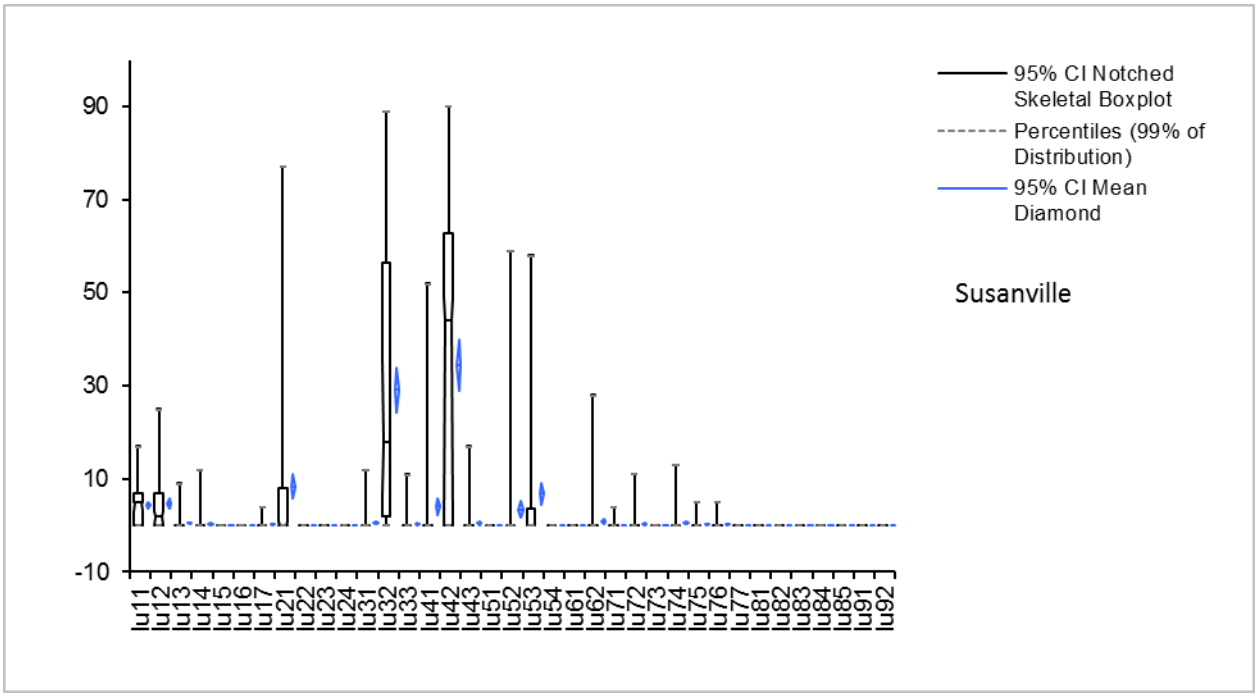


Figure 6.1(30) LULC Distribution in the Trona Region

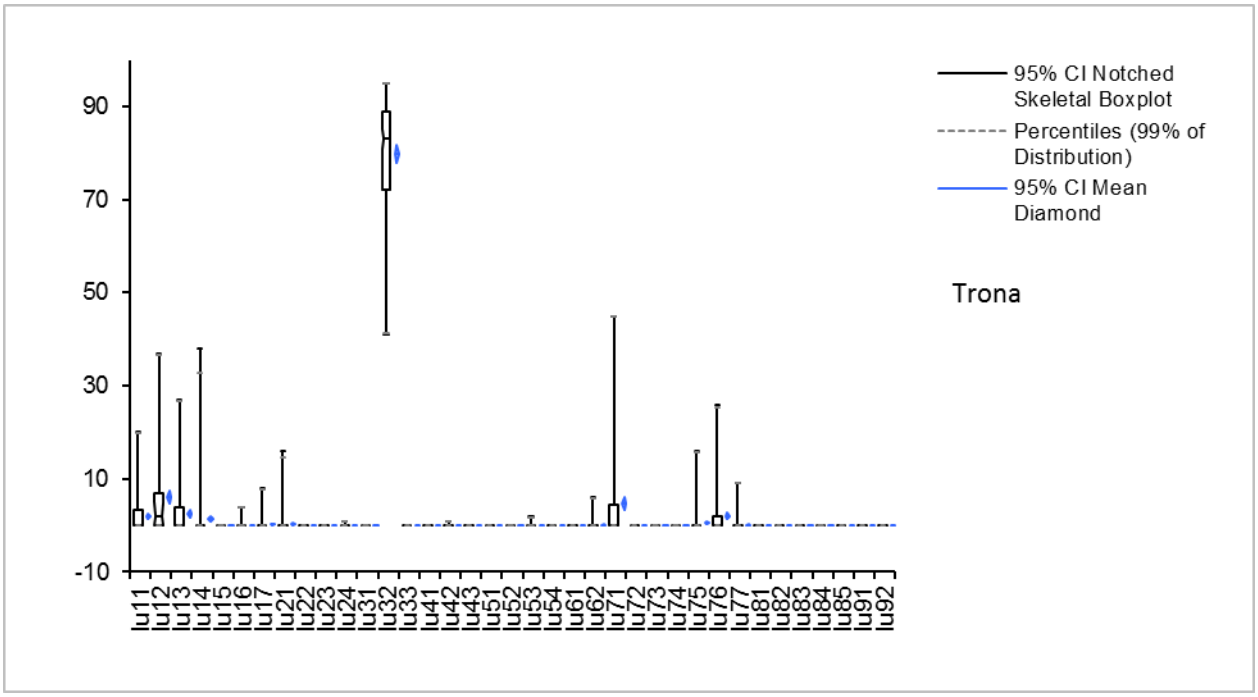


Figure 6.1(31) LULC Distribution in the Ukiah Region

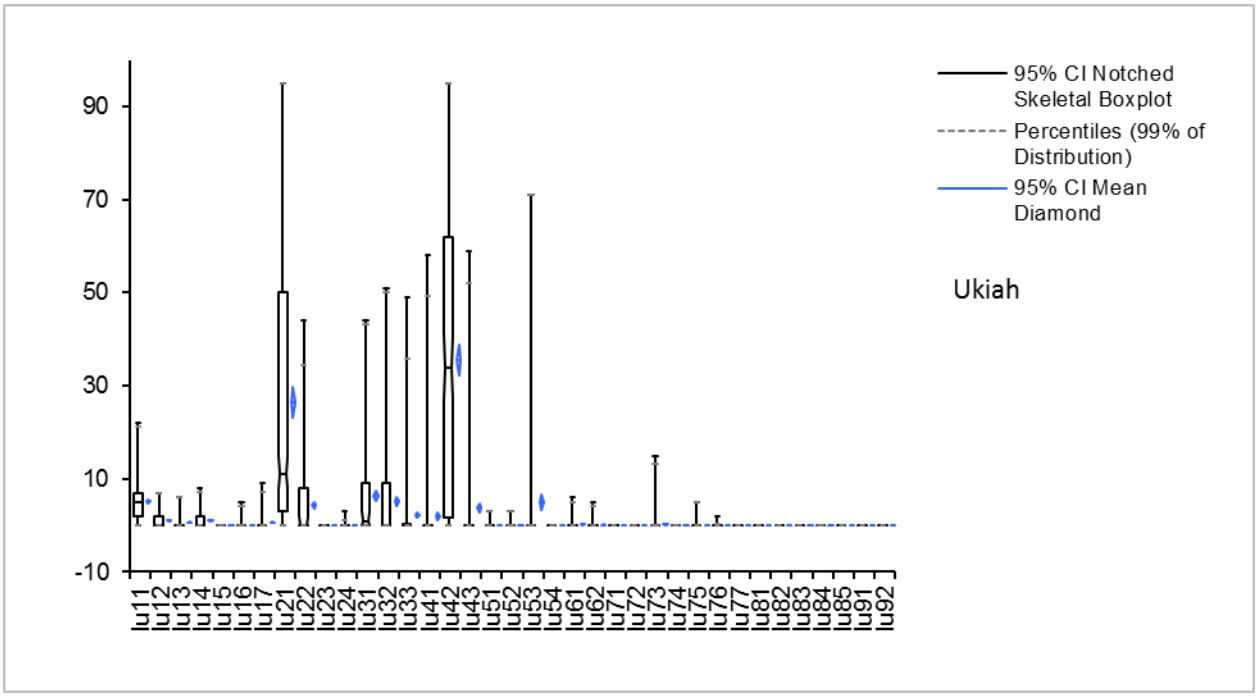


Figure 6.1(32) LULC Distribution in the Walker Lake Region

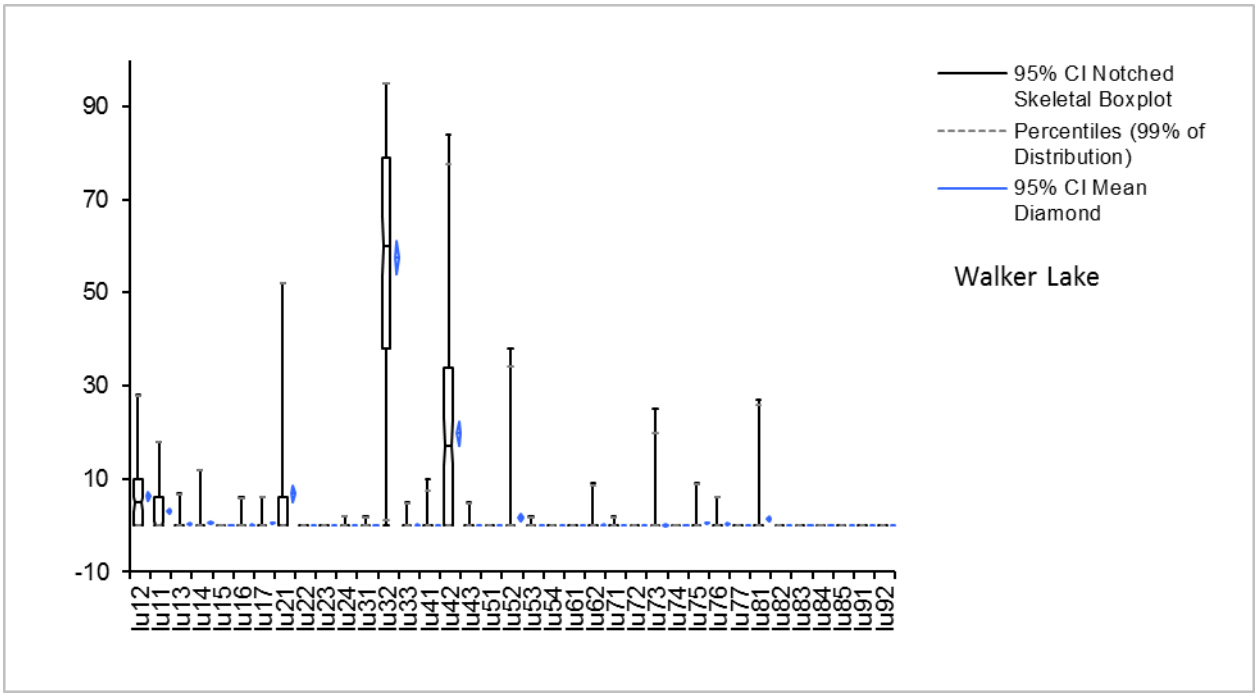


Figure 6.1(33) LULC Distribution in the Weed Region

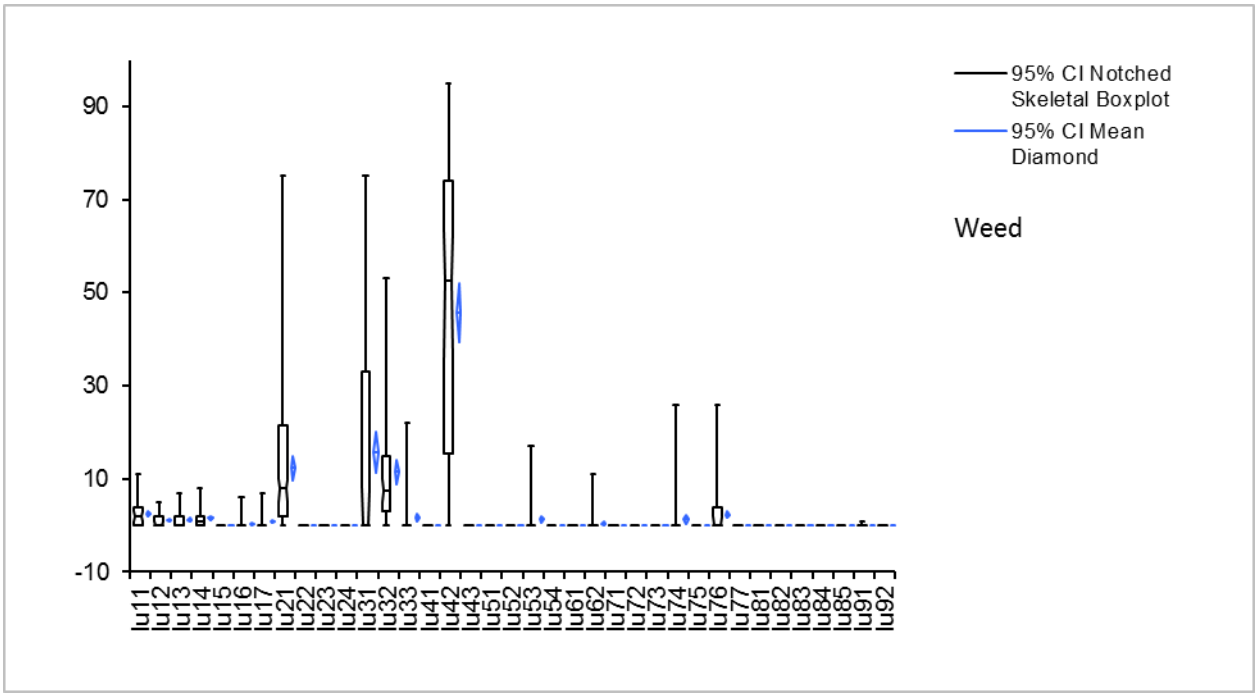


Table 6.1 (a) Mean Cover (%) of LULC for Selected Urban Regions

LULC	Alturas	Bakersfiel	Chico	Death Val	El Centro	Eureka	Fresno	Goldfield	Huntingto	Kingman	Klamath F	Log Beach	Los Angel	Lovelock	Mariposa	Monterey	Needles
lu11	4.2	5.4	8.1	0.0	5.4	8.3	11.4	0.3	7.2	7.5	6.2	47.0	21.6	1.3	6	7.8	2.1
lu12	2.0	1.2	1.8	2.3	4.3	1.4	4.3	0.4	2.2	1.1	3.1	15.7	5.6	0	1.2	2.2	5.5
lu13	0.5	4.2	0.4	4.2	0.3	1.6	0.9	13.3	1.2	0.0	1.0	12.9	3.3	1	0.2	3.9	0.9
lu14	0.2	1.3	1.1	0.1	2.5	1.1	0.0	0.0	1.3	1.1	0.8	3.8	1.5	4.6	0.7	0.6	1.8
lu15	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.3	0.1	0	0	0	0
lu16	0.1	1.0	0.1	0.7	0.0	0.3	0.5	0.0	0.3	0.3	0.2	1.0	0.3	0.3	0	0.2	0.1
lu17	0.1	32.2	0.9	0.0	1.3	1.4	0.7	0.0	1.1	0.2	0.6	4.6	2.3	0	0	0.9	0.5
lu21	39.7	0.3	15.0	0.0	51.2	12.1	41.3	0.0	26.4	0.0	33.0	1.8	10.3	19.3	1.6	33.9	1
lu22	0.0	7.1	5.2	0.0	4.7	0.0	27.7	0.0	0.0	0.0	0.0	0.0	4.3	0	0.1	6.2	0
lu23	0.0	0.1	0.0	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0	0	0	0.1	0
lu24	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0	0.2	0
lu31	1.5	13.8	7.5	58.3	0.0	2.7	2.8	0.0	0.0	0.0	0.4	2.5	2.8	14.3	2.9	7.8	0
lu32	23.5	25.0	0.7	0.0	27.4	0.8	2.4	70.1	0.0	84.7	11.9	4.8	34.1	23.3	10.8	5.7	78.9
lu33	7.6	3.5	4.6	0.0	0.0	0.9	0.2	0.0	0.0	0.0	6.3	1.6	4.7	29.5	10.2	11.6	0
lu41	0.0	3.0	39.4	0.0	0.0	0.1	0.2	0.0	44.8	0.0	0.0	0.0	0	0	0.7	0.4	0
lu42	14.2	0.0	8.7	7.6	0.0	50.6	4.8	7.9	0.1	1.3	32.0	0.0	5.9	1	38.1	10	0.3
lu43	0.0	0.1	0.1	0.0	0.1	10.1	0.0	0.0	11.4	0.0	0.0	0.0	0.1	0	24.9	6.4	0
lu51	0.1	0.1	3.5	0.0	0.2	0.5	0.0	0.0	0.1	0.4	0.9	0.0	0	0	0	0.1	0.3
lu52	3.1	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0	0	0.1	0.1	0.1
lu53	2.8	0.3	0.6	0.0	0.1	0.0	0.6	0.1	2.2	0.1	2.3	0.0	0.3	2.6	0.8	0.1	2
lu54	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	1.2	0	0	0	0	0
lu61	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0	0	0.1	2.5
lu62	0.6	0.0	0.5	0.0	0.1	2.7	0.1	0.0	0.0	0.0	0.9	0.5	0.4	0	0.6	1.2	0.1
lu71	0.0	0.0	0.0	26.6	0.0	0.0	0.2	7.4	0.0	0.0	0.1	0.0	0.1	0.3	0	0	0.1
lu72	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0	0	0.1	0.1
lu73	0.0	0.0	0.0	0.0	1.2	0.6	0.1	0.0	0.0	0.0	0.0	0.5	0.5	0	0	0	0
lu74	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0
lu75	0.0	0.3	0.5	0.0	0.1	0.0	0.1	0.5	0.9	0.5	0.1	0.3	0.2	1.5	0	0.2	0
lu76	0.0	1.1	0.6	0.1	0.0	0.2	0.2	0.0	0.5	2.7	0.1	0.8	0.9	0.3	0.1	0.2	3.7
lu77	0.0	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.3	0	0	0
lu81	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0	0	1.1	0	0
lu82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0
lu83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0
lu84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0
lu85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0
lu91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0
lu92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0

Table 6.1 (b) Mean Cover (%) of LULC for Selected Urban Regions

LULC	Redding	Sacramen	Salton Sea	San Berna	San Diego	San Franci	San Jose	San Luis O	Santa Ana	Santa Mar	Santa Ros	Susanville	Trona	Ukiah	Walker La	Weed
lu11	5.9	10.5	2.4	16.5	17.4	22.6	12.5	6.3	13.3	3.9	9.7	4.3	2	5.1	6.3	2.6
lu12	1.7	3.5	1.1	3.6	5.5	5.7	1.5	1.6	4	1.9	2.4	4.6	6.1	1	3.1	1.1
lu13	0.9	1.4	0.1	0.8	1.3	4.4	3	1.3	1	8.1	0.8	0.5	2.5	0.6	0.3	1.2
lu14	1.8	1.9	6	1.3	2.3	1.9	0.9	0	1.2	0.6	1.8	0.3	1.4	1.1	0.7	1.6
lu15	0	0.1	0	0	0	0.7	0.1	0.8	0.2	0	0	0	0	0	0	0
lu16	0	0.9	0.4	0.2	0.1	0.3	0.3	0.1	0.2	0.1	0.3	0	0.1	0	0.1	0.3
lu17	1.1	2	0.6	1.5	2.4	2.3	1.1	0.5	1.9	0.4	0.7	0.2	0.3	0.6	0.5	0.8
lu21	13.7	45.3	19.3	2.4	5.3	1.6	28.4	20.1	13.8	19.9	18.3	8.4	0.3	26.4	6.8	12.3
lu22	1.4	5.7	1.1	4.7	0.1	0.1	11.5	1.9	6.2	0.1	7.3	0	0	4.4	0	0
lu23	0	0.1	0	0.1	0	0	0.1	0	0.4	0	0.1	0	0	0	0	0
lu24	0	0.3	0	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.2	0	0	0	0	0
lu31	4.8	2.6	0	0.4	0.8	7.2	16.8	15.9	5.6	25.8	11.2	0.7	0	6.3	0	15.7
lu32	6.8	3.2	63.4	53.2	55.2	5.1	1.4	8.5	38.4	12.7	6.2	29.1	79.7	5.2	57.6	11.5
lu33	1.6	1.9	0	1.4	1.4	3.6	1.4	4.8	5.4	4.9	1.7	0.4	0	2.2	0.2	1.7
lu41	25.5	0.5	0.4	0	0	0	0	3.1	0.1	0	0.5	4.1	0	2	0.1	0
lu42	29	1.2	0	9.2	1.3	16.2	14.1	29.5	2.9	18.4	24.2	34.4	0	35.4	19.8	45.7
lu43	2.3	14	0	0.1	0.3	9	4.9	3.6	0.3	0	2.7	0.5	0	3.8	0	0
lu51	0.8	0.5	0.3	0	0	0.3	0.1	0	0	0	0.4	0	0	0.1	0	0
lu52	0	0.1	2	0	0.1	0	0	0	0.8	0	0.2	3.4	0	0	1.8	0
lu53	1	0.9	0	0.4	0.3	0.6	0.4	0.5	0.4	0.1	0.8	6.8	0	5	0	1.3
lu54	0	0	0	0	2.2	16.6	0	0.3	0.1	0	7.2	0	0	0	0	0
lu61	0	0	0	0.1	0.1	0	0.1	0	0.3	0.3	0	0	0	0.2	0	0
lu62	0.1	0.3	0.3	0.1	0.5	1.3	0.5	0.1	0.3	1.5	2.9	0.8	0.1	0.1	0.2	0.4
lu71	0	0	0	1.1	0	0	0	0	0	0	0	0	4.8	0	0	0
lu72	0	0	0	0	0.2	0	0	0.7	0.1	0.4	0	0.4	0	0	0	0
lu73	0.1	0	1.2	1.2	0.4	0	0	0.1	0.8	0.3	0	0	0	0.2	0.2	0
lu74	0	0.1	0	0.1	0.2	0	0	0	0.5	0	0	0.6	0	0	0	1.3
lu75	0.8	1.6	0.5	0.6	0.6	0.3	0.2	0.1	1.5	0.3	0.2	0.2	0.5	0	0.5	0
lu76	0.7	1.1	0.7	0.7	1.8	0.3	0.3	0.1	0.4	0.2	0.3	0.2	2.1	0	0.3	2.4
lu77	0	0	0	0.1	0	0	0	0	0	0	0	0	0.2	0	0	0
lu81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.4	0
lu82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lu83	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lu84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lu85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lu91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lu92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Following the LULC characterization steps discussed above, the average covers for various surface types are computed based on results of analysis for several California cities (Taha 2005, 2007). The averages, listed in Table 6.2, are then used in conjunction with values of parameters, for example, those listed in Table 5.3 discussed earlier, to develop thermophysical characterizations of each LULC category, as shown in Table 6.3.

It is noted here that these calculations are only to establish a base-case characterization for each community (the perturbations are discussed later in the report) and that the calculations are performed at 200 m resolution.

Thus to compute the base-case values of parameters (base-case characterization of each 200-m community), the LULC distributions (in Figure 6.1 and Table 6.1) are used in conjunction with the physical characterizations shown above in Table 6.3. That is, the values of parameters in Table 6.3 are weighted by the LULC fractions for each urban area (idealized community) as given in Figure 6.1 and Table 6.1.

Table 6.2 Surface-Type Distribution in LULC Categories

LULC ID	roof	road	parking	sidewalk / driveway	grass	barren / soil	tree	water	Remainder
11	0.20	0.11	0.06	0.07	0.28	0.06	0.16	0.02	0.05
12	0.23	0.14	0.34	0.03	0.10	0.05	0.08	0.05	0.03
13	0.19	0.08	0.22	0.01	0.16	0.18	0.08	0.02	0.09
14	0.12	0.51	0.20	0.01	0.05	0.05	0.01	0.00	0.07
15	0.22	0.10	0.30	0.01	0.12	0.12	0.05	0.00	0.09
16	0.23	0.15	0.15	0.03	0.13	0.04	0.17	0.02	0.10
17	0.23	0.15	0.15	0.03	0.13	0.04	0.17	0.03	0.10
21	0.00	0.02	0.00	0.00	0.40	0.20	0.20	0.10	0.08
22	0.00	0.02	0.00	0.00	0.10	0.10	0.70	0.04	0.04
23	0.05	0.05	0.00	0.00	0.05	0.70	0.05	0.08	0.02
24	0.00	0.02	0.00	0.00	0.40	0.20	0.20	0.10	0.08
31	0.00	0.00	0.00	0.00	0.30	0.30	0.05	0.10	0.25
32	0.00	0.00	0.00	0.00	0.40	0.30	0.05	0.05	0.20
33	0.00	0.00	0.00	0.00	0.35	0.30	0.10	0.10	0.15

Table 6.3 Computed Physical Parameters for LULC Categories

LULC ID	α	η	Zo	THC	LULC ID	α	η	Zo	THC
11	0.18	0.12	0.52	3.22	51	0.06	0.95	0.01	6
12	0.16	0.10	0.41	3.33	52	0.06	0.95	0.01	6
13	0.17	0.08	0.38	3.02	53	0.06	0.95	0.01	6
14	0.15	0.03	0.17	2.96	54	0.06	0.95	0.01	6
15	0.16	0.05	0.35	2.94					
16	0.17	0.10	0.55	3.25	61	0.14	0.45	0.78	4.3
17	0.17	0.11	0.55	3.31	62	0.12	0.44	0.19	4.2
21	0.18	0.22	0.40	3.30	71	0.22	0.02	0.05	2.05
22	0.16	0.27	1.08	3.72	72	0.20	0.08	0.06	2.35
23	0.20	0.12	0.18	2.59	73	0.22	0.02	0.05	2.05
24	0.18	0.22	0.40	3.30	74	0.22	0.02	0.05	2.05
					75	0.22	0.02	0.05	2.05
31	0.18	0.17	0.16	3.05	76	0.19	0.03	0.05	2.3
32	0.19	0.14	0.18	2.90	77	0.18	0.09	0.12	2.6
33	0.18	0.19	0.24	3.10					
					81	0.16	0.15	0.08	3
41	0.17	0.26	1.01	3.60	82	0.17	0.17	0.11	3.1
42	0.16	0.28	1.08	3.75	83	0.20	0.04	0.05	2.26
43	0.16	0.26	1.01	3.65	84	0.18	0.29	0.09	3.35
					85	0.17	0.15	0.08	3
					91	0.65	0.95	0.05	5
					92	0.30	0.95	0.00	5

6.2 Metropolitan Areas and Deployment Potentials

For modeling the impacts of CSEM in metropolitan areas in this study, the cities of Sacramento, Fresno, and Los Angeles are characterized. Data in the following tables and discussions also form the basic entry points for calculations of CSEM deployment potentials in these urban areas. All entries, while currently hard-wired in codes developed in this study, can be made variable and user-specified as more up-to-date data become available. As with the idealized communities, discussed in Section 6.1, the characterizations of the metropolitan areas are done at 200 m resolution even though the simulations are ultimately done at 1km to 5 km resolutions.

The pathways of interest to deployment of CSEM in the metropolitan regions are summarized in Table 6.4.

Table 6.4 Definition of Pathways of Community-Scale Energy Measures (CSEM) as Well as the Basis for CSEM Deployment Potential Calculations (Functions of)

Control of ↓	**Is a function of ↓**	**Has direct effects ?**	**Has indirect effects?**
Surface albedo			
Roof	***f***(rA,rT)	■	■
Pavements	***f***(pA,pT)		■
Streets / Highways	***f***(sA,sT)		■
Walls	***f***(wA,wT)	■	■
Soil moisture / runoff	***f***(pA,oA)		■
Structural shade	***f***(rA,rT)	■	■
Vegetation canopy evapotranspiration			
Buildings	***f***(rA)		■
Parking lots	***f***(plA)		■
Streets	***f***(sA)		■
Parks/Open space	***f***(oA)		■
Vegetation canopy shading			
Buildings	***f***(rA)	■	■
Parking lots	***f***(plA)		■
Streets	***f***(sA)		■
Photovoltaics	***f***(rA)	■	■
Green roofs	***f***(rA)	■	■
Green walls	***f***(wA)	■	■

In Table 6.4, symbols are as follows: **r**: roofs, **p**: pavement, **s**: street, **w**: wall, **fl**: total floor area, **pl**: parking-lot area, and **o**: open-space area. These are combined with:
A: surface area (area of specific surface being modified or its properties controlled), or
T: surface type (type of the specific surface being controlled, for example, structural type, finish type, and so forth). Thus, for example, **rA** means roof area; **pT** means pavement type, and so on.

Thus in this analysis, the functions in Table 6.4 translate into the following characterization needs (summarized in Table 6.5):

Table 6.5 Characterization Needs for Deployment Potential Calculations

urban LULC ID	roof	paved	street	wall	open space	parking lot	total floor area
11 residential	A,T	A,T	A,T	A,T	A	A	A
12 commercial	A,T	A,T	A,T	A,T	A	A	A
13 industrial	A,T	A,T	A,T	A,T	A	A	A
14 transportation / utilities	A,T	A,T	A,T	A,T	A	A	A
15 industrial and commercial	A,T	A,T	A,T	A,T	A	A	A
16 mixed urban	A,T	A,T	A,T	A,T	A	A	A
17 other urban or built up	A,T	A,T	A,T	A,T	A	A	A

where **A** is area and **T** is type, and the various types are identified as follows:

rT $\in$ flat, pitched
pT $\in$ asphalt, concrete
sT $\in$ asphalt, concrete
wT $\in$ wood, masonry, concrete, glass/curtain walls

For estimating the area, A, identified in Table 6.5, the starting point for calculation is the LULC (200 m) makeup information discussed earlier and as summarized in Table 6.6. These values are used in calculating the deployment potential, later.

Table 6.6 Surface Area Makeup (Fractions) as a Function of LULC at the 200-m Level

	Fractional cover (relative to 200x200m cells)								Relative to 200x200m cells	Relative to 200x200m cells	Relative to 200x200m cells
LULC ID	roof	road	parking	sidewalk driveway	grass	barren / soil	tree	water	Open space	Wall to plan ratio (south wall only)	Floor to plan ratio
11	0.20	0.11	0.06	0.07	0.28	0.06	0.16	0.02	0.24	0.02	0.30
12	0.23	0.14	0.34	0.03	0.10	0.05	0.08	0.03	0.10	0.06	1.15
13	0.19	0.08	0.22	0.01	0.16	0.18	0.08	0.02	0.32	0.03	0.58
14	0.12	0.51	0.20	0.01	0.05	0.05	0.01	0.00	0.14	0.01	0.12
15	0.22	0.10	0.30	0.01	0.12	0.12	0.05	0.00	0.26	0.02	0.43
16	0.23	0.15	0.15	0.03	0.13	0.04	0.17	0.02	0.19	0.02	0.46
17	0.23	0.15	0.15	0.03	0.13	0.04	0.17	0.03	0.17	0.02	0.46

Notes for Table 6.6:

- A remainder is calculated as: 1 – sum of roof through water categories
- Open space = Remainder + Barren + ½ (grass) categories
- Wall to plan (w2p) ratio is computed only for south wall, and
- Floor to plan (f2p) ratio includes total floor area (all floors).

Table 6.7 provides fractional areas of surfaces of various sub-types, that is, the fractions in table 6.7 are relative to surface areas given in Table 6.6. The surface sub-types are used in conjunction with above data to determine area availability / potential for deployment.

Table 6.7 Surface Type (T) as Fractions of Surface Types in Table 6.7

LULC	roof		paved		street		wall			
	Flat	Pitched	Asphalt	cement / concrete	Asphalt	cement / concrete	Wood	Masonry	Cement / concrete	Glass / curtain wall
11	0.50	0.50	0.20	0.80	0.90	0.10	0.90	0.05	0.05	0.00
12	0.90	0.10	0.10	0.90	0.80	0.20	0.40	0.10	0.20	0.30
13	0.95	0.05	0.10	0.90	0.70	0.30	0.30	0.20	0.45	0.05
14	0.95	0.05	0.20	0.80	0.80	0.20	0.20	0.20	0.60	0.00
15	0.90	0.10	0.10	0.90	0.80	0.20	0.20	0.20	0.40	0.20
16	0.70	0.30	0.20	0.80	0.70	0.30	0.40	0.40	0.10	0.10
17	0.70	0.30	0.10	0.90	0.80	0.20	0.40	0.10	0.20	0.30

In the following discussion, the computation of deployment potential for characteristic parameters, such as albedo, shade, impervious surfaces, evapotranspiration, and so on, is discussed. Table 6.8 shows the albedo increase potential (amount of albedo increase per surface type and scenario (low/high values). Table 6.9 summarizes the fractional-area potential for converting impervious to pervious surfaces for run-off and soil moisture control.

Table 6.8 Albedo Increase Levels (Potential) Per Surface Sub-Type (Low/High)

LULC	roof		paved		street		wall			
	Flat	Pitched	Asphalt	cement / concrete	Asphalt	cement / concrete	Wood	Masonry	Cement / concrete	Glass / curtain wall
11	0.20/0.35	0.15/0.25	0.08/0.15	0.05/0.10	0.08/0.15	0.05/0.10	0.05/0.10	0	0.05/0.10	0
12	0.25/0.40	0.15/0.25	0.08/0.15	0.05/0.10	0.08/0.15	0.05/0.10	0.05/0.10	0	0.05/0.10	0
13	0.25/0.40	0.20/0.30	0.10/0.20	0.07/0.14	0.10/0.20	0.07/0.14	0.07/0.14	0	0.05/0.10	0
14	0.15/0.25	0.10/0.20	0.10/0.20	0.07/0.14	0.08/0.15	0.07/0.14	0.07/0.14	0	0.05/0.10	0
15	0.25/0.40	0.15/0.25	0.08/0.15	0.05/0.10	0.08/0.15	0.05/0.10	0.05/0.10	0	0.05/0.10	0
16	0.20/0.35	0.15/0.25	0.08/0.15	0.05/0.10	0.08/0.15	0.05/0.10	0.05/0.10	0	0.05/0.10	0
17	0.20/0.35	0.15/0.25	0.08/0.15	0.05/0.10	0.08/0.15	0.05/0.10	0.05/0.10	0	0.05/0.10	0

Table 6.9 Fractional-Area Potential for Conversion of Impervious Surfaces to Pervious (Convertible Area). Fractions are Relative to Surface Type Cover Relative to 200 m Cell

LULC	Pavement fraction convertible (low/high)	Open-space fraction convertible (low/high)
11	0.05/0.10	0.10/0.20
12	0.10/0.20	0.10/0.20
13	0.05/0.10	0.10/0.20
14	0.00/0.00	0.05/0.10
15	0.05/0.10	0.10/0.20
16	0.05/0.10	0.10/0.20
17	0.05/0.10	0.10/0.20

The basis for the calculations in Table 6.9 is that conversion of paved/impervious to soil/pervious will increase soil moisture by 0.1 for paved surfaces and 0.05 for open space (for the low scenario) and 0.20 for paved and 0.10 for open space (for the high scenario). These increases apply to the area fraction being modified. That is, the fractions in Table 6.9 are not relative to 200 m cell but relative to fraction of impervious surface being converted to pervious.

Table 6.10 provides similar information for deployment potential of structural shade. The potential is the fraction of roof area that can be shaded (at the 200 m level). The purpose is to shade the roof (building envelope), A/C cooling towers, compressor/condensers, and heat exchangers (but in this study, only the indirect effect is modeled).

Table 6.10 Fractional Potential for Structural Shade Deployment

	Flat roof fraction (low/high)	Pitched roof fraction (low/high)
11	0.10/0.20	0.00/0.00
12	0.05/0.10	0.00/0.00
13	0.05/0.10	0.00/0.00
14	0.05/0.10	0.00/0.00
15	0.05/0.10	0.00/0.00
16	0.05/0.10	0.00/0.00
17	0.05/0.10	0.00/0.00

Table 6.11 summarizes the potential for evapotranspiration cooling and for shading from vegetation-cover increase. While the mechanisms are different, the deployment potential calculations are similar to both evapotranspiration and shading effects except that open spaces are considered only in the evapotranspiration calculations and not in shading.

Table 6.11 Potential for Increase in Vegetative Cover for Evapotranspiration and Shading (Low/High)

LULC	As a fraction of roof area	As a fraction of parking-lot area	As a fraction of street area	As a fraction of open-space area
11	0.15/0.25	0.10/0.20	0.10/0.20	0.15/0.25
12	0.05/0.10	0.05/0.10	0.05/0.10	0.10/0.20
13	0.05/0.10	0.05/0.10	0.05/0.10	0.05/0.10
14	0.02/0.05	0.02/0.05	0.02/0.05	0.02/0.05
15	0.05/0.10	0.05/0.10	0.05/0.10	0.05/0.10
16	0.05/0.10	0.05/0.10	0.05/0.10	0.10/0.20

17	0.05/0.10	0.05/0.10	0.05/0.10	0.10/0.20

Table 6.12 summarizes the deployment potential for a number of other CSEM as explained in the table. Values for each parameter are given for low/high scenarios.

Table 6.12 Various Deployment Potentials

LULC	Photovoltaics	Passive solar		Green Roofs	Green walls
	As fraction of roof are	As fraction of roof area	As fraction of south wall area	As fraction of roof area	As fraction of south wall area
11	0.10/0.20	0.05/0.10	0.10/0.20	0.00/0.00	0.05/0.10
12	0.15/0.30	0.05/0.10	0.10/0.20	0.05/0.10	0.05/0.10
13	0.30/0.50	0.20/0.40	0.10/0.20	0.00/0.00	0.00/0.00
14	0.20/0.40	0.05/0.10	0.10/0.20	0.00/0.00	0.00/0.00
15	0.20/0.40	0.05/0.10	0.10/0.20	0.00/0.00	0.00/0.00
16	0.10/0.20	0.05/0.10	0.10/0.20	0.02/0.05	0.05/0.10
17	0.10/0.20	0.05/0.10	0.10/0.20	0.00/0.00	0.00/0.00

Thus with the LULC and surface-characterization data generated as discussed above, the deployment potentials can be computed, as discussed next. In the following equations, N is the number of 200-m cells with LULC data in each of the model-grid cells as seen in Figure 4.6 (for example, each 4km grid cell in the Sacramento and Fresno domains and each 5km grid cell in the Los Angeles domain). Each equation is thus repeated for each LULC category (urban categories 11 through 17) and for each 200-m grid cell in the entire modeling domains.

<u>1) Deployment potential for albedo control:</u>

$$\begin{aligned}\Delta\alpha_{200m} = \; & f_{roof}\times fr_{flat}\times\Delta\alpha_{rflat} + f_{roof}\times fr_{pitch}\times\Delta\alpha_{rpitch} + \\ & f_{street}\times fs_{asph}\times\Delta\alpha_{sasph} + f_{street}\times fs_{conc}\times\Delta\alpha_{sconc} + \\ & f_{paved}\times fp_{asph}\times\Delta\alpha_{pasph} + f_{paved}\times fp_{conc}\times\Delta\alpha_{pconc} + \\ & w2p\times fw_{wood}\times\Delta\alpha_{wwood} + \\ & w2p\times fw_{mason}\times\Delta\alpha_{wmason} + \\ & w2p\times fw_{conc}\times\Delta\alpha_{wconc} + \\ & w2p\times fw_{curt}\times\Delta\alpha_{wcurt}\end{aligned}$$

$$\Delta\alpha_{model_grid} = 1/N \; \Sigma \; \Delta\alpha_{200m}$$

2) Deployment potential for runoff and soil-moisture control:

$$\Delta\eta_{200m} = f_{paved} \times fp_{convert} \times \Delta\eta_{paved} + f_{open} \times fo_{convert} \times \Delta\eta_{open}$$

$$\Delta\eta_{model_grid} = 1/N \; \Sigma \; \Delta\eta_{200m}$$

3) Deployment potential for structural shading control:

$$\Delta\sigma_{200m} = f_{roof} \times fr_{flat} \times f\sigma_{rflat} + f_{roof} \times fr_{pitch} \times f\sigma_{rpitch}$$

$$\Delta\sigma_{model_grid} = 1/N \; \Sigma \; \Delta\sigma_{200m}$$

4) Deployment potential for evapotranspiration/vegetation control:

$$\Delta\varepsilon_{200m} = f_{roof} \times Vf_{roof} \times \Delta\eta_{paved} + f_{street} \times Vf_{street} \times \Delta\eta_{paved} + f_{prklot} \times Vf_{prklot} \times \Delta\eta_{paved} + f_{opspace} \times Vf_{opspace} \times \Delta\eta_{opspace}$$

$$\Delta\varepsilon_{model_grid} = 1/N \; \Sigma \; \Delta\varepsilon_{200m}$$

5) Deployment potential for shading/vegetation control:

$$\Delta\tau\sigma_{200m} = f_{roof} \times Vf_{roof} + f_{street} \times Vf_{street} + f_{prklot} \times Vf_{prklot}$$

$$\Delta\tau\sigma_{model_grid} = 1/N \; \Sigma \; \Delta\tau\sigma_{200m}$$

6) Deployment potential for solar photovoltaics:

$$\Delta\phi_{200m} = f_{roof} \times fph_{roof}$$

$$\Delta\phi_{model_grid} = 1/N \; \Sigma \; \Delta\phi_{200m}$$

7) Deployment potential for passive solar (roofs and walls):

$$\Delta\pi_{200m} = f_{roof} \times fp_{roof} + w2p \times fp_{wall}$$

$$\Delta\pi_{model_grid} = 1/N \; \Sigma \; \Delta\pi_{200m}$$

8) Deployment potential for green roofs

$$\Delta\gamma_{200m} = f_{roof} \times fg_{roof}$$

$$\Delta\gamma_{model_grid} = 1/N \; \Sigma \; \Delta\gamma_{200m}$$

9) Deployment potential for green walls:

$$\Delta\gamma\omega_{200m} = w2p \times fg_{wall}$$

$$\Delta\gamma\omega_{model_grid} = 1/N \, \Sigma \, \Delta\gamma\omega_{200m}$$

In the above equations, the variables are defined as follows, for each 200-m cell (in the order they appear in the equations):

$\Delta\alpha_{200m}$	Effective change in albedo at the 200-m grid scale
f_{roof}	Roof fraction
fr_{flat}	Fraction of flat roofs within roof fraction
$\Delta\alpha_{rflat}$	Change in albedo of flat roofs
fr_{pitch}	Fraction of pitched roof within roof fraction
$\Delta\alpha_{rpitch}$	Change in albedo of pitched roofs
f_{street}	Streets fraction
fs_{asph}	Fraction of asphalt streets within streets fraction
$\Delta\alpha_{sasph}$	Change in albedo of asphalt streets
fs_{conc}	Fraction of concrete / cement streets in streets fraction
$\Delta\alpha_{sconc}$	Change in albedo for concrete / cement streets
f_{paved}	Fraction of pavements
fp_{asph}	Fraction of asphalt pavements within pavements fraction
$\Delta\alpha_{pasph}$	Change in albedo for asphalt pavements
fp_{conc}	Fraction of concrete / cement pavements in pavements fraction
$\Delta\alpha_{pconc}$	Change in albedo of concrete / cement pavements
w2p	Wall-to-plan ratio
fw_{wood}	Fraction of wooden walls
$\Delta\alpha_{wwood}$	Change in albedo for wooden walls
fw_{mason}	Fraction of masonry walls
$\Delta\alpha_{wmason}$	Change in albedo for masonry walls
fw_{conc}	Fraction of concrete walls
$\Delta\alpha_{wconc}$	Change in albedo for concrete walls
fw_{curt}	Fraction of curtain walls
$\Delta\alpha_{wcurt}$	Change in albedo for curtain walls
$\Delta\alpha_{model_grid}$	Change in albedo at the model's grid resolution
$\Delta\eta_{200m}$	Change in soil moisture at the 200-m grid scale
$fp_{convert}$	Fraction of paved surfaces that can be converted to pervious
$\Delta\eta_{paved}$	Change in moisture content for paved surfaces
f_{open}	Fraction of open spaces
$fo_{convert}$	Fraction of open spaces that can be converted to pervious
$\Delta\eta_{open}$	Change in moisture content for open spaces
$\Delta\eta_{model_grid}$	Change in soil moisture at the model grid resolution
$\Delta\sigma_{200m}$	Change in structural shading at the 200-m grid scale
$f\sigma_{rflat}$	Fraction of flat roofs that can be shaded
$f\sigma_{rpitch}$	Fraction of pitched roofs that can be shaded

$\Delta\sigma_{model_grid}$	Change in structural shading at the model grid resolution
$\Delta\varepsilon_{200m}$	Change in moisture (due to evapotranspiration) at the 200-m grid scale
Vf_{roof}	Fraction of roofs that is covered by vegetation (under trees)
Vf_{street}	Fraction of streets that is covered by vegetation (under trees)
f_{prklot}	Parking-lots fraction
Vf_{prklot}	Fraction of parking lots covered by vegetation (under trees)
$f_{opspace}$	Fraction of open spaces
$Vf_{opspace}$	Fraction of open spaces covered by vegetation (under trees)
$\Delta\varepsilon_{model_grid}$	Change in moisture (due to evapotranspiration) at the model grid resolution
$\Delta\tau\sigma_{200m}$	Change in vegetation shading at the 200-m grid scale
$\Delta\tau\sigma_{model_grid}$	Change in vegetation shading at the model grid resolution
$\Delta\phi_{200m}$	Change in solar photovoltaic panel cover at the 200-m grid scale
fph_{roof}	Fraction of roof covered with solar photovoltaic panels
$\Delta\phi_{model_grid}$	Change in photovoltaic panel cover at the model grid resolution
$\Delta\pi_{200m}$	Change in fraction of passive solar at the 200 m grid scale
fp_{roof}	Fraction of roof that includes passive solar
fp_{wall}	Fraction of wall that includes passive solar
$\Delta\pi_{model_grid}$	Change in fraction of passive solar at the model grid resolution
$\Delta\gamma_{200m}$	Change in green roof cover at the 200 m grid scale
fg_{roof}	Fraction of roof area that can be converted to green roofs
$\Delta\gamma_{model_grid}$	Change in green roof cover at the model grid resolution
$\Delta\gamma\omega_{200m}$	Change in fraction of green walls at the 200 m grid scale
fg_{wall}	Fraction of walls that can be converted to green walls
$\Delta\gamma\omega_{model_grid}$	Change in fraction of green walls at the model grid resolution

Figure 6.2 shows examples of resulting base-case surface characterization for the three metropolitan areas computed using the information discussed in the foregoing sections. Figure 6.3 shows an example of computed deployment potential for the Los Angeles area, based on the calculations and equations discussed above. The figures (6.3a-d) are for the low deployment scenario; the high deployment scenario will look similar in form but with a different (larger) vertical scale.

Figure 6.2 (a) Base-Case Albedo for the 1-km Sacramento Modeling Domain

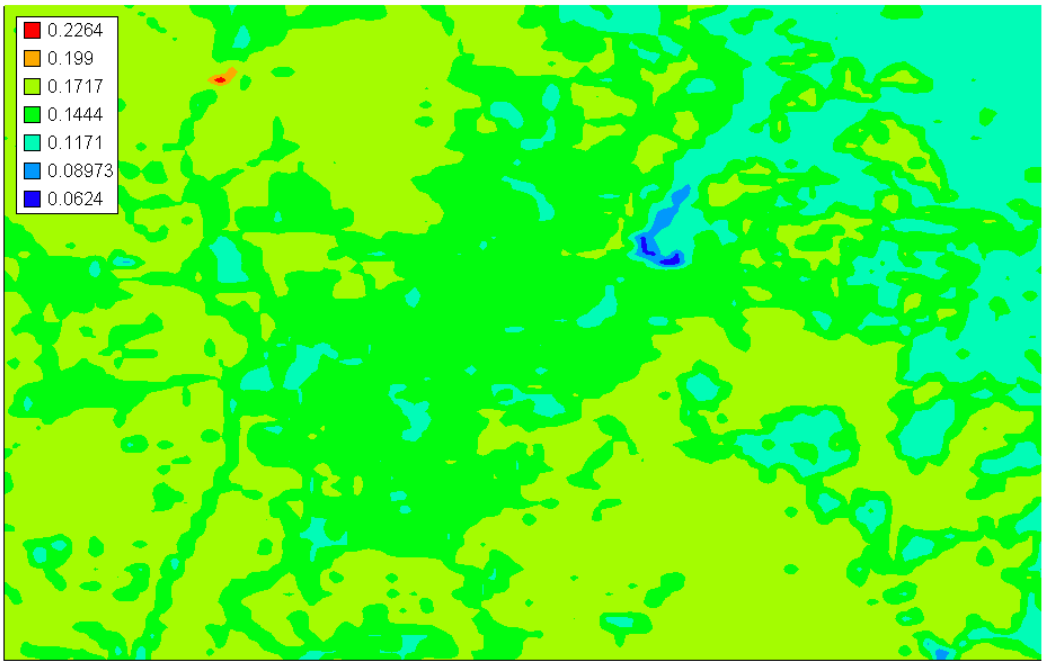


Figure 6.2 (b) Base-Case Soil Moisture for the 1-km Sacramento Modeling Domain

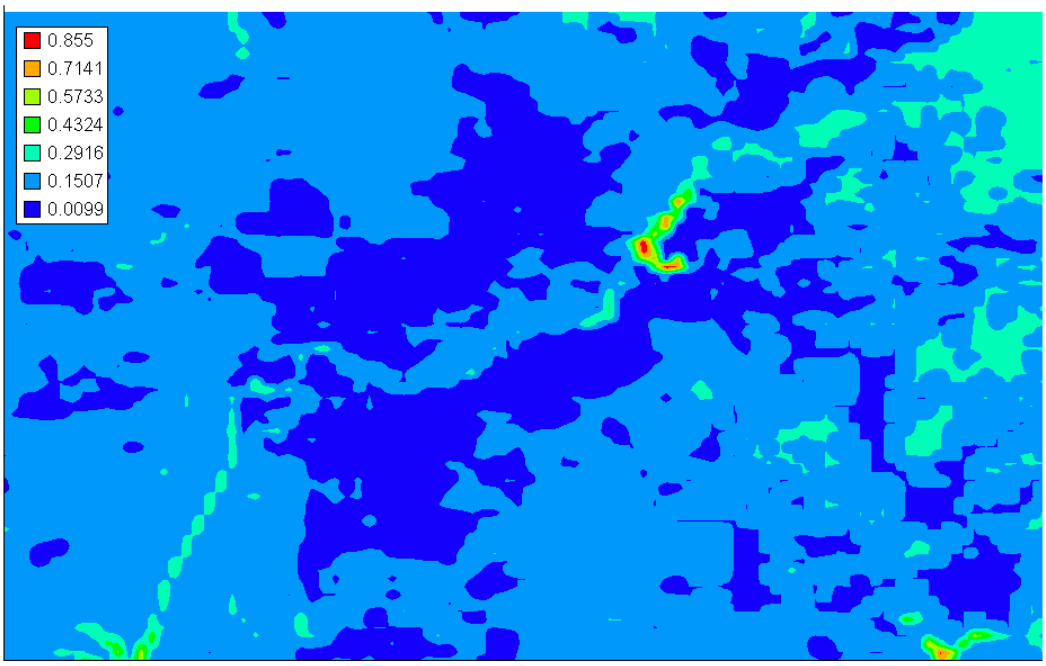


Figure 6.2 (c) Base-Case Thermal Inertia (J m^{-2} K^{-1} $s^{-0.5}$) for the 1-km Sacramento Modeling Domain

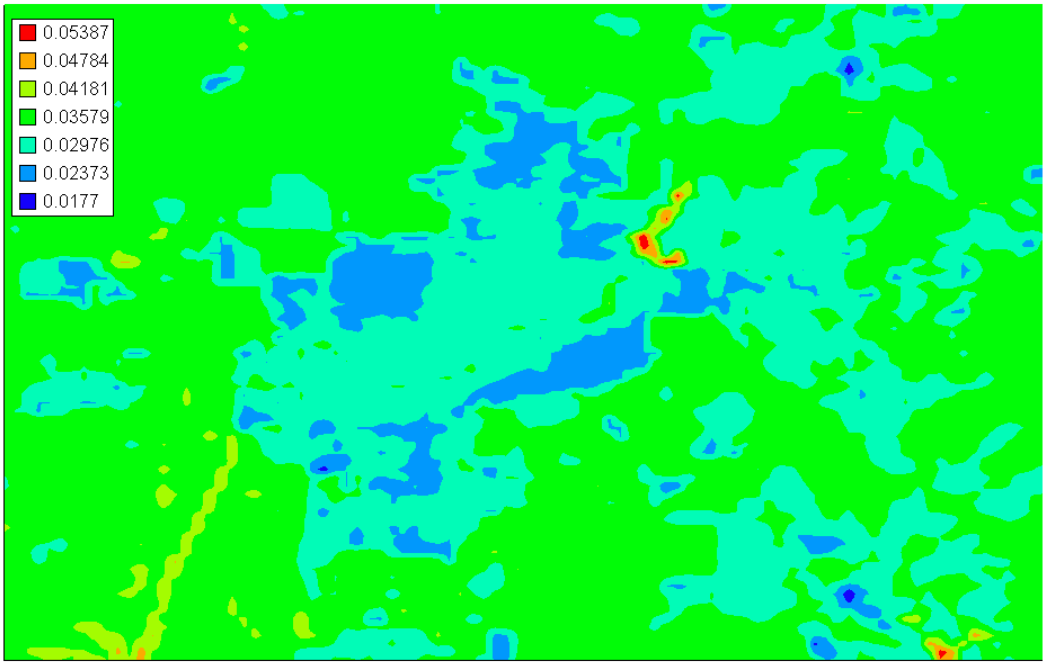


Figure 6.2 (d) Base-Case Roughness Length (m) for the 1-km Sacramento Modeling Domain

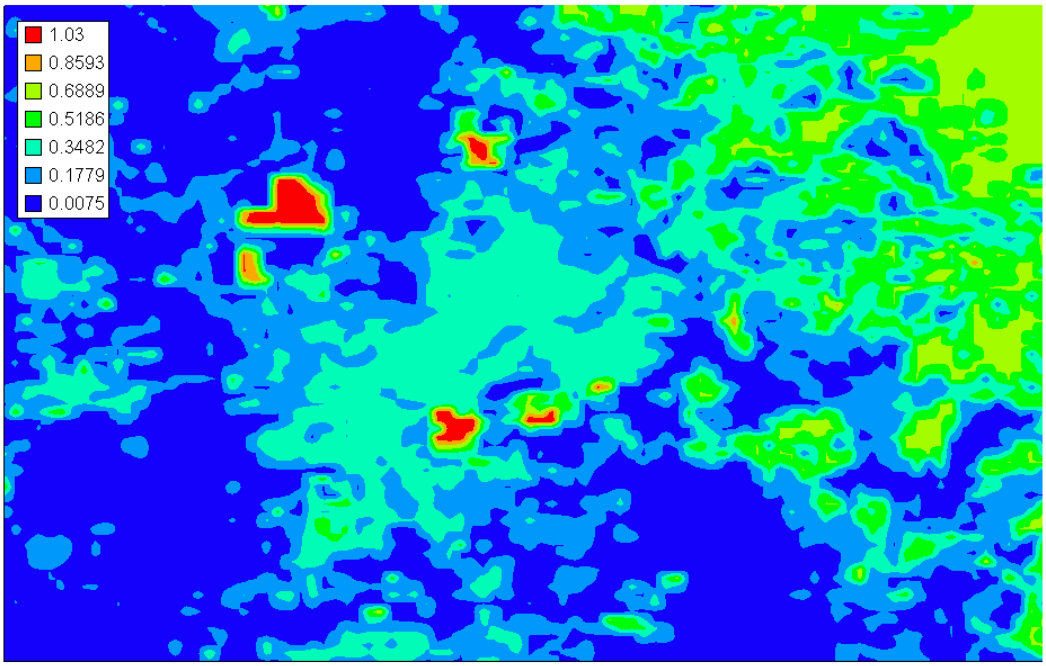


Figure 6.2 (e) Base-Case Albedo (left) and Soil Moisture (Right) for the 4-km Fresno Modeling Domain

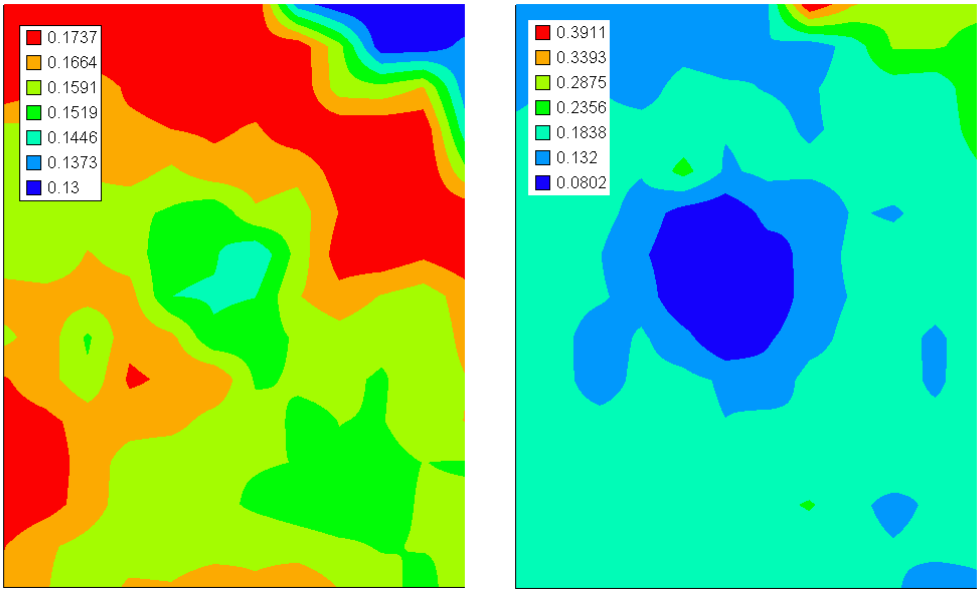


Figure 6.2 (f) Base-Case Thermal Inertia (Left) and Roughness Length (Right) for the 4-km Fresno Modeling Domain

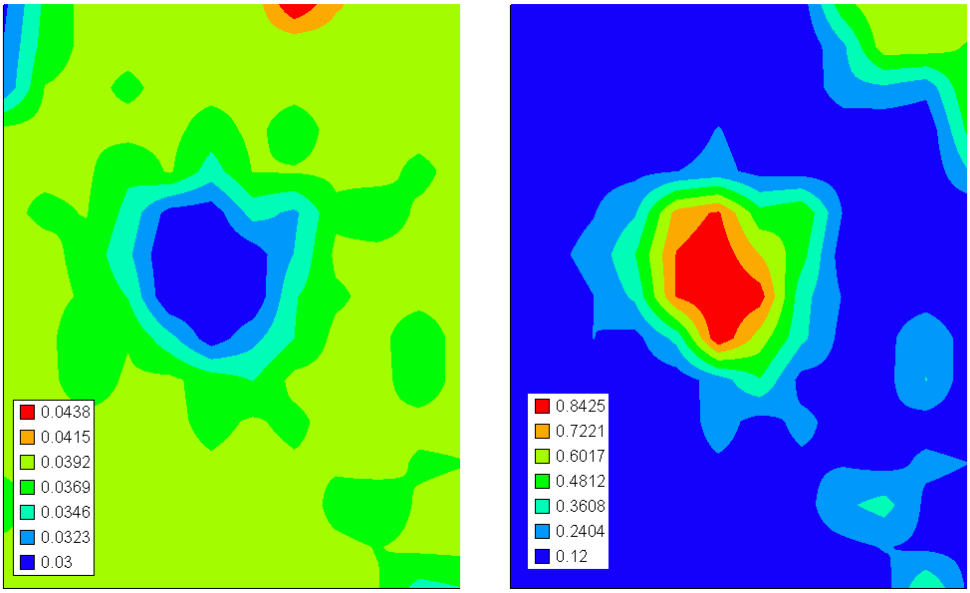


Figure 6.2 (g) Base-Case Albedo for the 5-km Los Angeles Modeling Domain

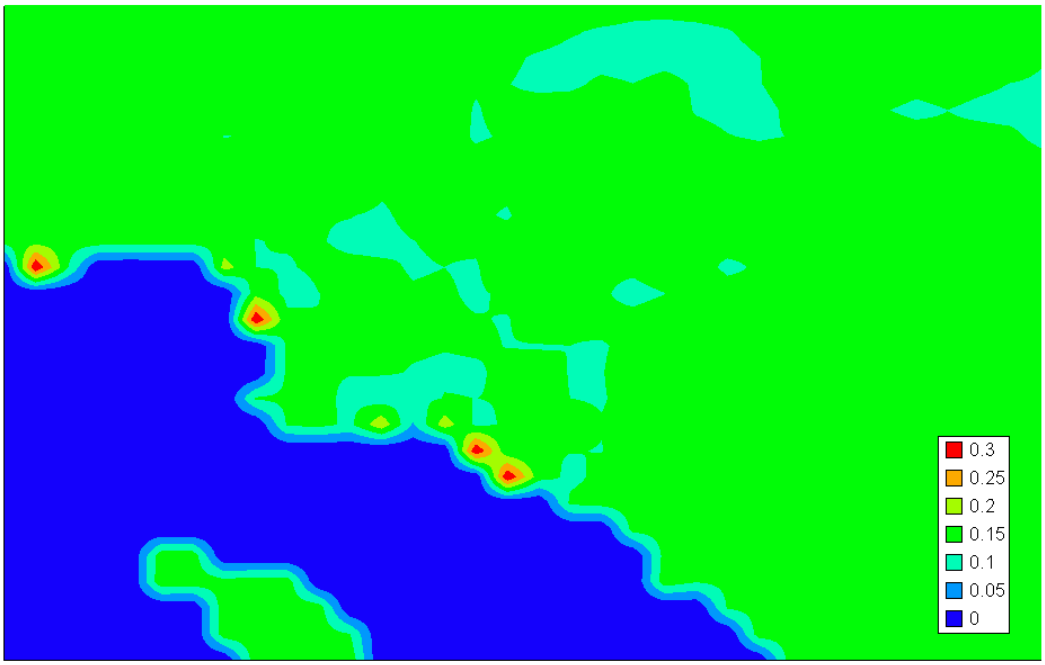


Figure 6.2 (h) Base-Case Soil Moisture for the 5-km Los Angeles Modeling Domain

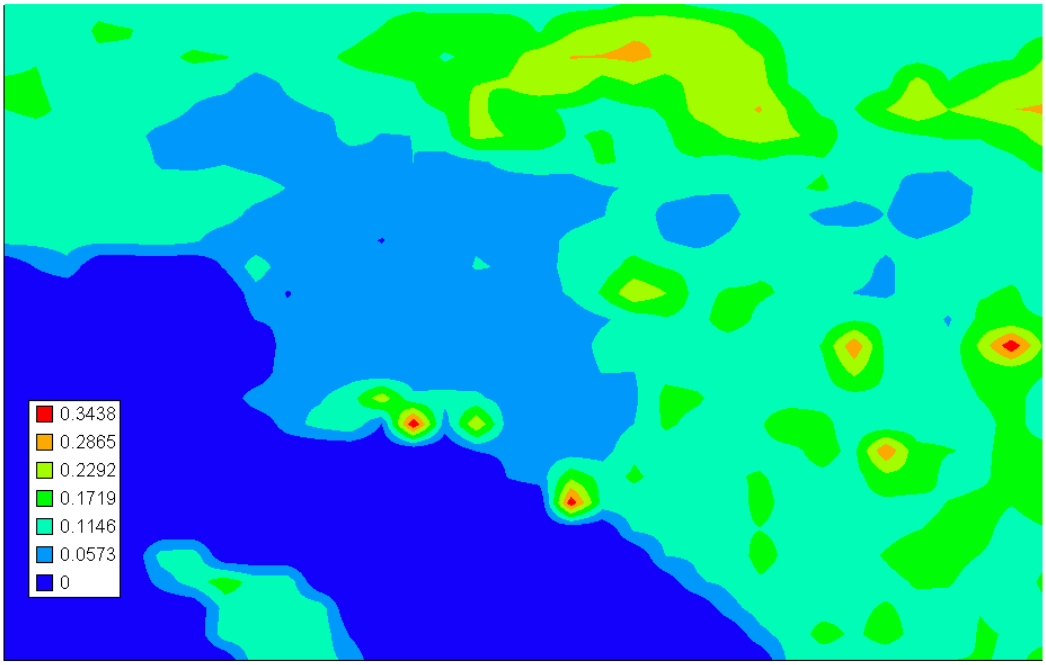


Figure 6.2 (i) Base-Case Thermal Inertia (J m^{-2} K^{-1} $s^{-0.5}$) for the 5-km Los Angeles Modeling Domain

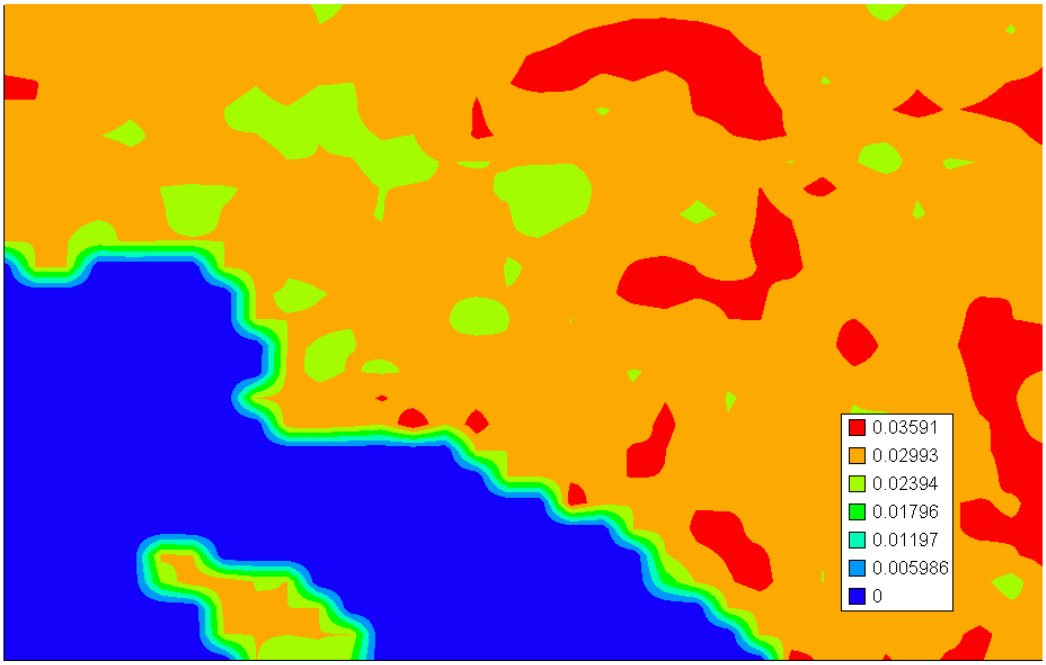


Figure 6.2 (j) Base-Case Roughness Length (m) for the 5-km Los Angeles Modeling Domain

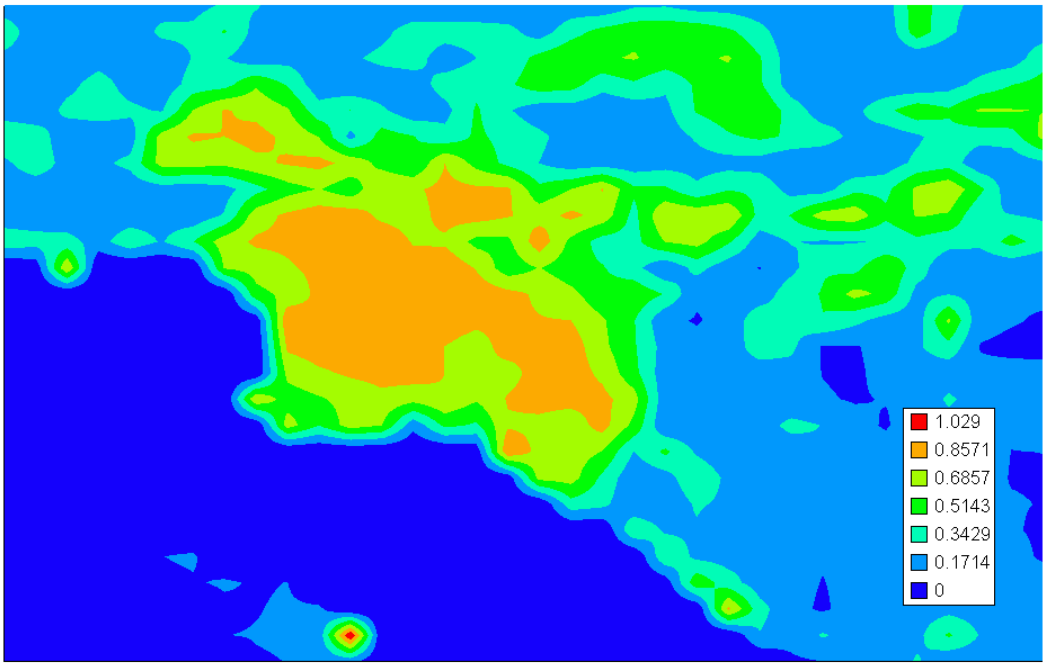


Figure 6.3 (a) Albedo Deployment Potential (Low Deployment Scenario) for the 5-km Los Angeles

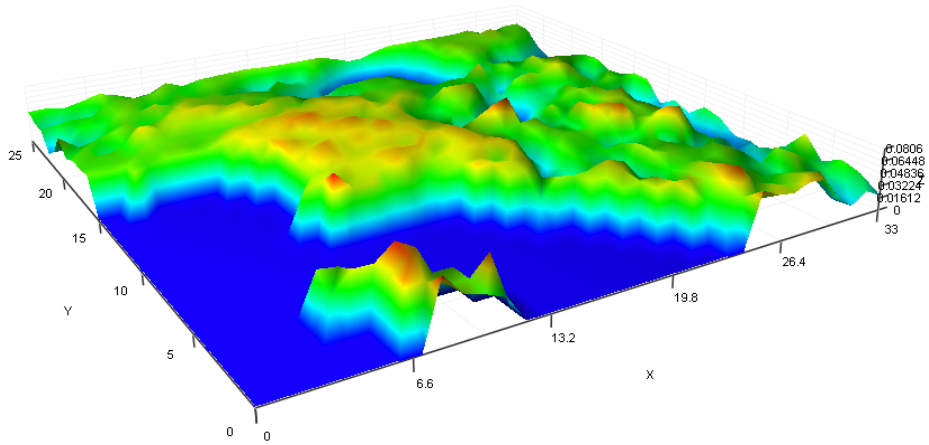


Figure 6.3 (b) Solar PV Deployment Potential (Low Deployment Scenario) for the 5-km Los Angeles

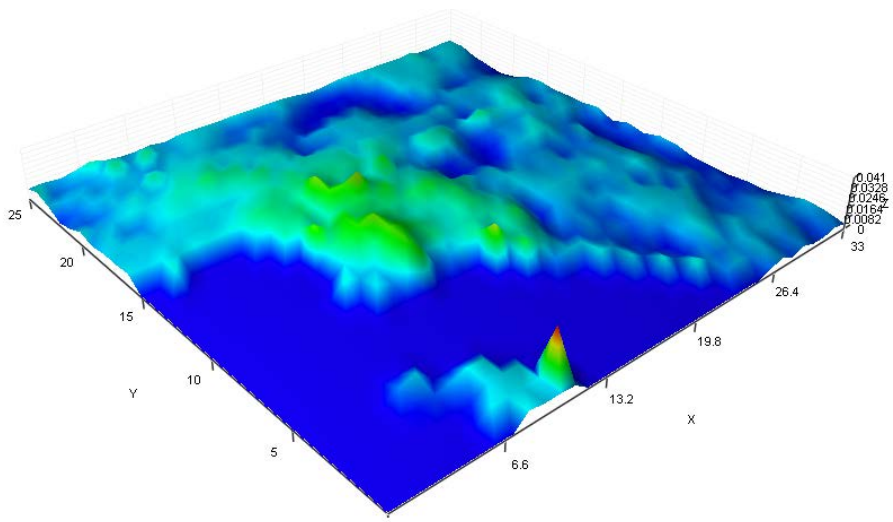


Figure 6.3 (c) Vegetation (Evapotranspiration) Deployment Potential (Low Deployment Scenario) for the 5-km Los Angeles

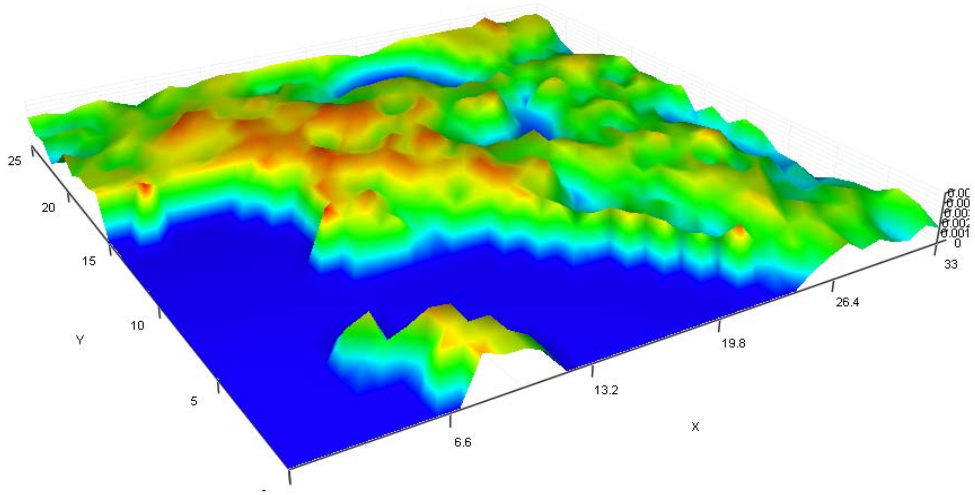


Figure 6.3 (d) Shading Deployment Potential (Low Deployment Scenario) for the 5-km Los Angeles

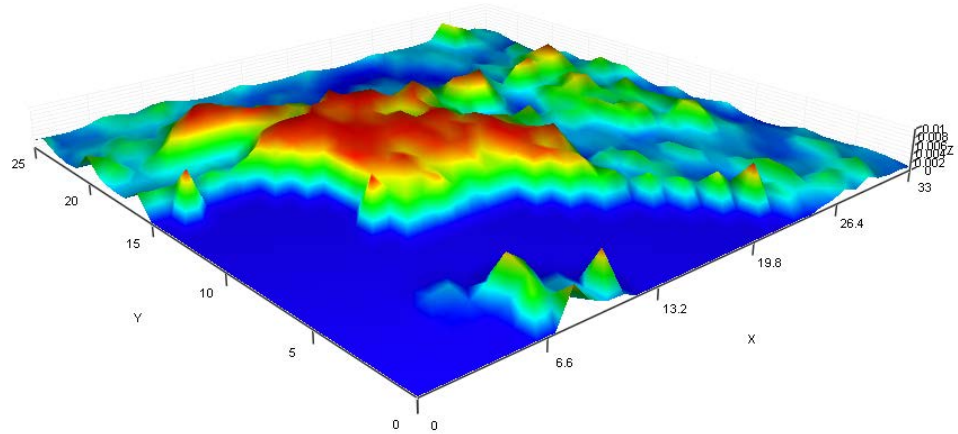
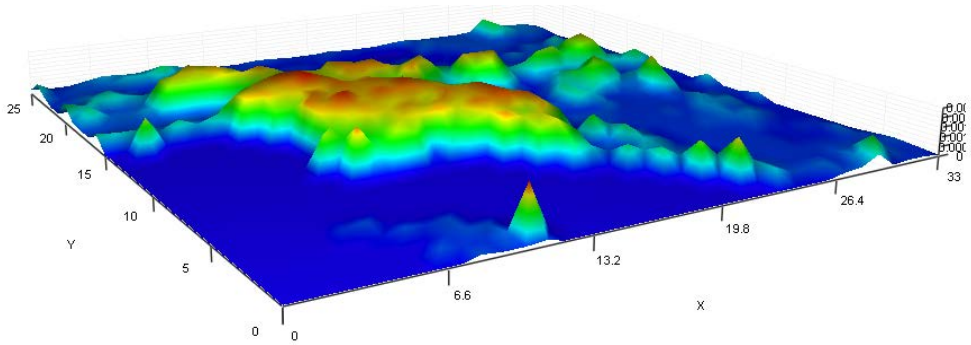


Figure 6.3 (e) Surface Perviousness Deployment Potential (Low Deployment Scenario) for the 5-km Los Angeles



CHAPTER 7:
Climate Characterization

Establishing the base conditions with the meteorological-model simulations provides a basis for a general climate characterization of the idealized communities. Of interest here, and as discussed in this section, the temperature-related characteristics are presented in terms of degree-hours per day (dh/day) both as totals (no threshold) and above 25C threshold for the modeled periods identified in Section 3.3. In this analysis, degree-hours above 25C are considered cooling degree-hours (cdh/day). Results are presented in Figure 7.1, which is arranged in pairs; the top figure represents the simulated cdh/day (relative to dh over 25C), and the bottom figure shows the ratio of cdh/day to total dh/day (in other words, the bottom figure shows the portion out of total dh/day that corresponds to temperatures above 25C). The top parts of Figure 7.1 are thus a continuation of each other and the bottom parts in the pairs are also a continuation to each other.

Figure 7.1 is broken down into four pairs of figures for clarity. For presentation purposes, the top figures in the pairs represent data that has been ranked (sorted) from largest to smallest, whereas the bottom figures of the pairs are not ranked but show the information corresponding to the top figures. However, the trend is relatively similar in both – a general decrease.

Thus Figure 7.1 shows that for the 180 idealized community locations, the cdh/day values above threshold of 25C range from a high of 166.8 in the Baker area down to near zero in the Mendocino area. The corresponding ratios of cdh/day (above 25C) to total dh/day range from 21.7 percent to 0 percent. These cdh/day values and ratios will be used in analyzing the results (Chapter 9) to relay the importance and effectiveness of deploying CSEM in various climates – changes in dh/day will produce relatively more significant impacts on cooling loads in locations such as Baker than in areas such as Mendocino.

Figure 7.1 Degree-Hours/Day Over 25C and Ratio to Total Degree-Hours/Day

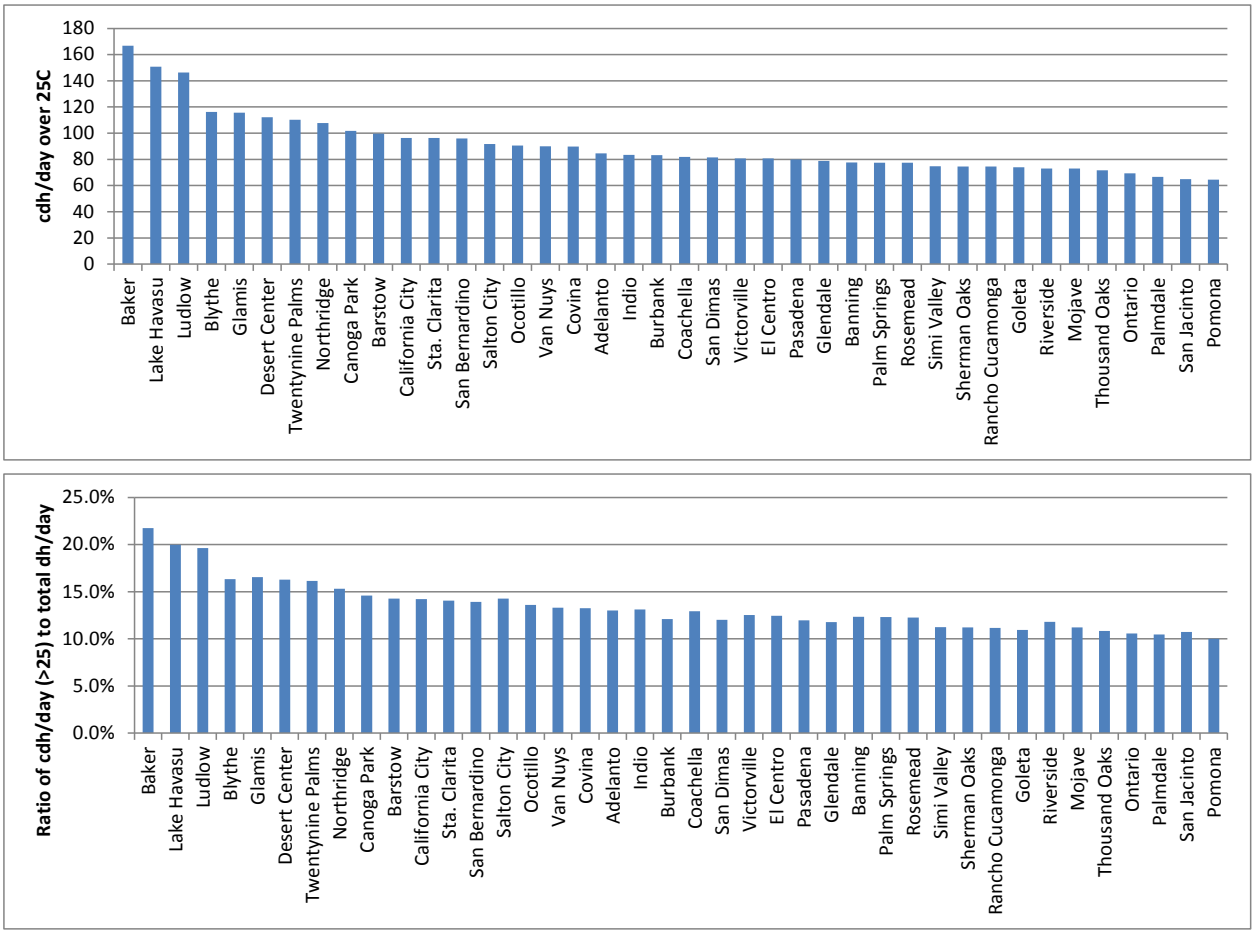


Figure 7.1 Continued Degree-Hours/Day Over 25C and Ratio to Total Degree-Hours/Day

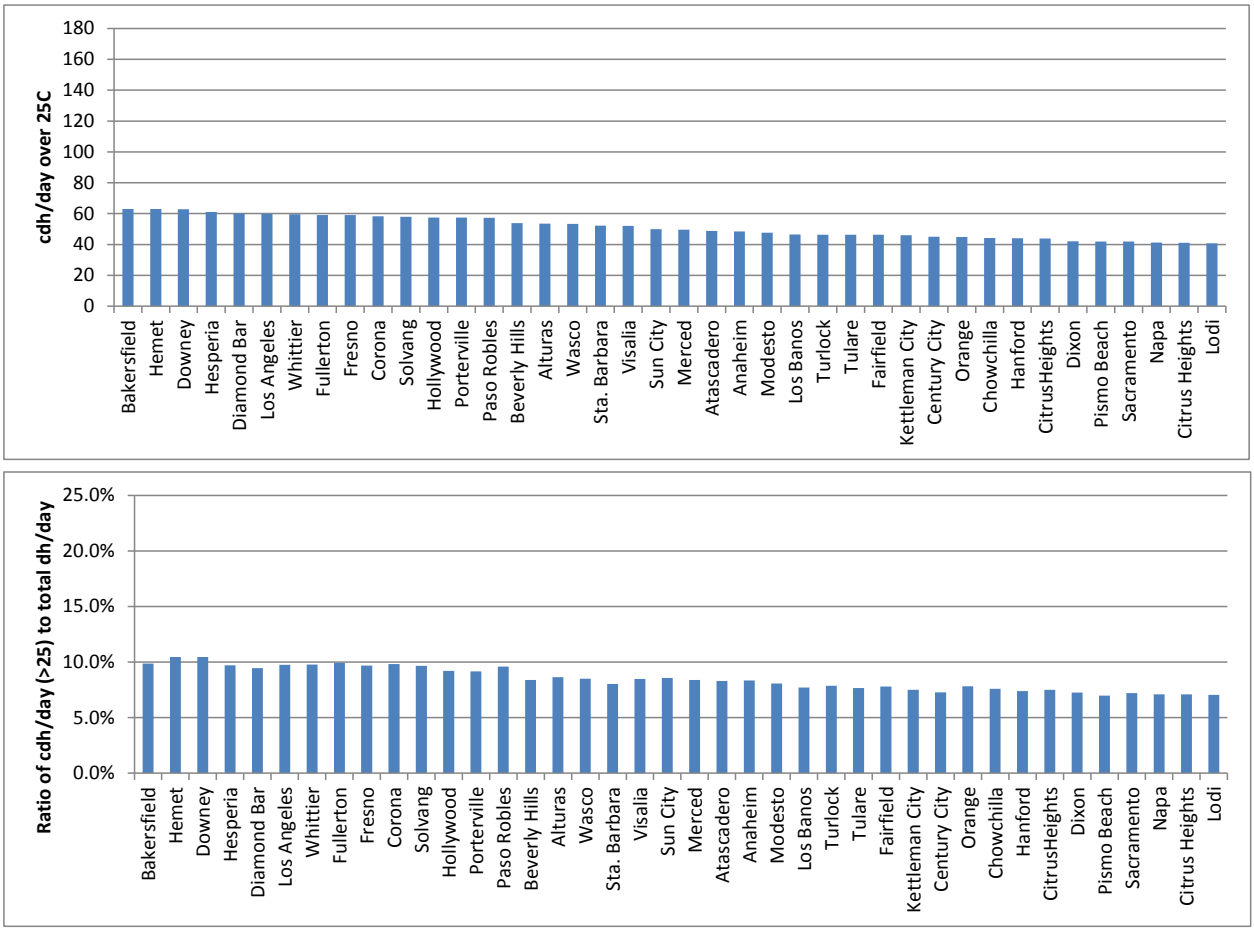


Figure 7.1 Continued Degree-Hours/Day Over 25C and Ratio to Total Degree-Hours/Day

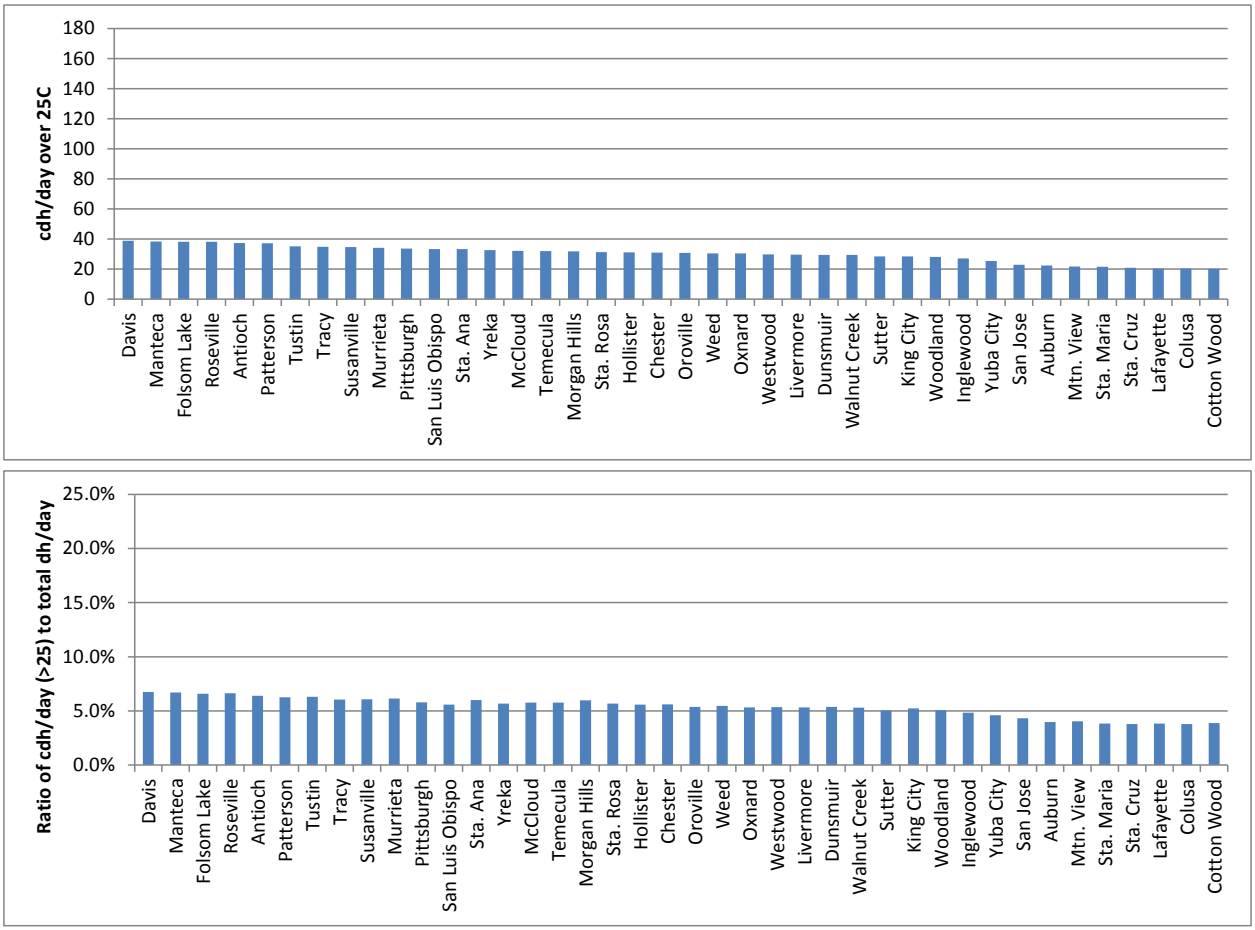
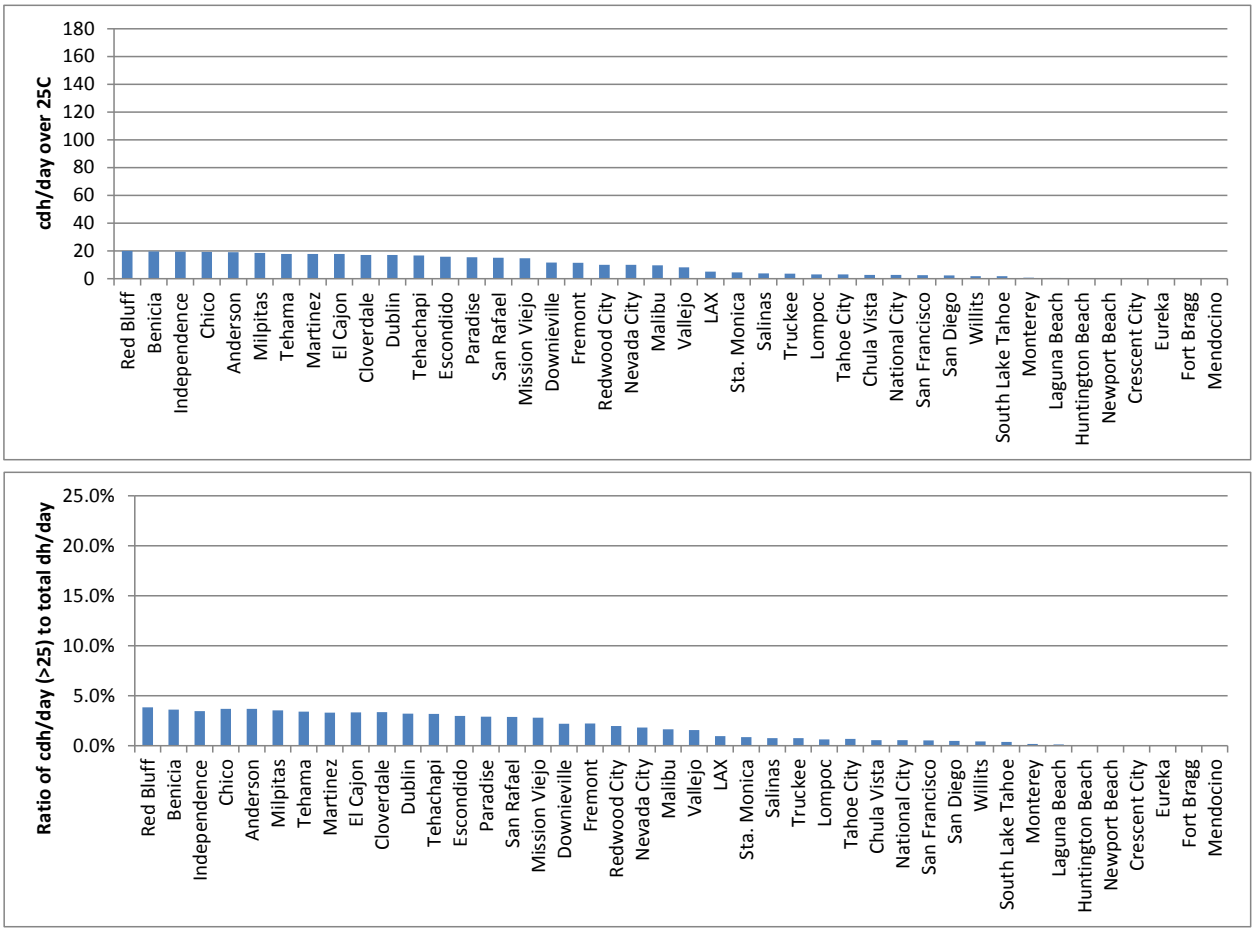


Figure 7.1 Continued Degree-Hours/Day Over 25C and Ratio to Total Degree-Hours/Day



In addition to the period-specific cdh/dh characterization discussed above, long-term characterization of a sample (sub-set) of cities was also performed using historical climatological data. Examples of such data, focusing on heating and cooling degree days per year (cdd/yr and hdd/yr), are shown in Table 7.1 (Source of data is the Western Regional Climate Center of the Desert Research Institute - Reno, Nevada: www.wrcc.dri.edu/htmlfiles/ca/ca.hdd.html).

Table 7.1 Annual Heating and Cooling Degree Days for Selected Regions

Degrees C	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
ALTURAS													
HDD	620	488	470	367	243	113	41	53	143	303	468	603	3913
CDD	0	0	0	0	0	13	48	41	5	0	0	0	107
BAKERSFIELD													
HDD	289	180	131	66	17	2	0	0	1	31	163	298	1178
CDD	0	1	4	31	114	218	321	300	204	77	1	0	1270
CHICO													
HDD	362	244	212	136	39	3	0	0	7	67	220	351	1641
CDD	0	0	0	18	54	134	213	191	112	32	0	0	756
DEATH VALLEY													
HDD	442	349	313	203	97	7	0	0	14	128	296	432	2281
CDD	0	0	6	18	53	153	249	217	106	26	1	0	830
EL CENTRO													
HDD	163	92	67	26	4	0	0	0	0	6	71	173	600
CDD	3	9	49	106	216	348	454	450	347	179	32	2	2196
EUREKA													
HDD	294	251	264	239	197	146	120	110	129	181	235	296	2461
CDD	0	0	0	0	0	0	0	1	3	0	0	0	4
FRESNO													
HDD	321	209	157	78	21	2	0	0	2	41	197	332	1359
CDD	0	0	2	22	94	195	291	266	171	49	1	0	1091
LONG BEACH													
HDD	115	83	80	46	20	3	0	0	1	6	51	112	516
CDD	8	13	14	32	47	99	164	181	156	91	24	7	837
LOVELOCK													
HDD	387	317	309	223	123	37	5	5	31	121	295	391	2244
CDD	0	0	0	5	22	68	137	127	71	19	0	0	448
MARIPOSA													
HDD	515	449	460	378	270	138	62	54	131	269	417	505	3648
CDD	0	0	0	0	3	7	32	17	11	3	0	0	73
MONTEREY													
HDD	231	186	185	161	148	107	87	68	63	87	161	233	1718
CDD	0	0	0	0	2	3	4	6	17	8	1	0	41
NEEDLES													
HDD	192	107	77	23	3	0	0	0	0	8	81	192	682
CDD	3	9	61	131	268	422	535	506	374	184	31	3	2525
REDDING													
HDD	322	247	221	138	63	8	0	0	9	67	215	318	1608
CDD	0	0	4	20	81	163	279	259	168	67	5	0	1047
SACRAMENTO													
HDD	322	215	186	116	54	6	0	0	6	47	199	331	1481
CDD	0	0	3	13	61	113	178	168	117	37	3	0	693

SALTON CITY													
HDD	179	103	68	26	3	0	0	0	0	6	76	182	642
CDD	3	6	36	94	196	327	437	439	339	169	27	2	2074
SAN BERNARDINO													
HDD	184	141	131	72	40	6	0	0	3	21	106	185	888
CDD	2	3	11	33	81	152	251	260	191	78	12	3	1076
SAN DIEGO													
HDD	126	98	89	50	26	6	0	0	1	7	61	128	591
CDD	1	2	3	9	18	45	102	128	111	54	8	1	481
SAN FRANCISCO													
HDD	220	157	151	129	119	83	74	59	53	56	129	213	1443
CDD	0	1	2	4	5	8	11	14	31	12	3	0	91
SAN JOSE													
HDD	250	171	148	94	53	13	2	1	7	46	161	259	1206
CDD	0	0	5	14	40	73	104	102	81	30	2	0	451
SAN LUIS OBISPO													
HDD	202	160	155	122	97	47	19	12	29	36	114	193	1188
CDD	0	1	3	8	17	32	44	55	67	24	10	3	264
SANTA ANA													
HDD	123	98	97	61	39	11	1	1	4	12	67	127	641
CDD	3	4	13	28	49	83	137	160	141	78	22	4	722
SANTA MARIA													
HDD	194	151	144	91	58	16	1	0	6	31	123	199	1012
CDD	0	2	9	27	62	116	189	203	146	61	10	1	825
SANTA ROSA													
HDD	282	198	182	126	80	36	16	20	29	61	182	285	1497
CDD	0	0	1	3	19	52	61	67	64	23	1	0	292
SUSANVILLE													
HDD	589	452	408	301	188	71	21	22	96	263	437	581	3427
CDD	0	0	0	1	6	32	91	73	14	0	0	0	217
TRONA													
HDD	329	197	153	79	28	1	0	0	4	52	193	349	1384
CDD	0	3	22	69	160	282	381	362	243	95	6	0	1623
UKIAH													
HDD	317	239	221	157	87	23	4	1	13	88	233	329	1713
CDD	0	0	1	6	25	67	141	129	78	23	1	0	468
WALKER LAKE													
HDD	372	294	293	241	167	77	31	24	61	158	292	380	2390
CDD	0	0	0	0	3	11	47	30	14	2	0	0	107
WEED													
HDD	537	416	401	307	208	94	29	32	109	257	422	534	3346
CDD	0	0	0	0	2	17	60	56	15	2	0	0	151

Thus based on this information and solar availability data (discussed below), researchers attempt to develop initial priorities per climate zone. Table 7.2 lists the CSEM considered in this

study in column 1. The implementation potential for each strategy is a function of urban characteristics, as listed in column 2.

However, the climate potential, for example, where the deployment of a certain strategy will have the most impact, is represented by a determining meteorological variable, as listed in column 3.

Table 7.2 CSEM Dependency and Effectiveness

1 **Control of ↓**	2 **Is a function of ↓**	3 **Is effective when / determined by ↓**
Surface albedo		
Roof	***f***(rA,rT)	solar
Pavements	***f***(pA,pT)	solar
Streets / Highways	***f***(sA,sT)	solar
Walls	***f***(wA,wT)	solar
Soil moisture / runoff	***f***(pA,oA)	Tair
Structural shade	***f***(rA,rT)	solar
Vegetation canopy evapotranspiration		
Buildings	***f***(rA)	Tair
Parking lots	***f***(plA)	Tair
Streets	***f***(sA)	Tair
Parks/Open space	***f***(oA)	Tair
Vegetation canopy shading		
Buildings	***f***(rA)	solar
Parking lots	***f***(plA)	solar
Streets	***f***(sA)	solar
Photovoltaics	***f***(rA)	solar
Passive solar	***f***(rA,wA)	solar
Green roofs	***f***(rA)	Tair
Green walls	***f***(wA)	Tair

The symbols in column 2 were explained earlier in Section 6.2. In column 3, solar indicates that the strategy is most effective where there is high solar radiation availability (and is a function of solar irradiation), whereas Tair indicates that the strategy is more a function of (depends on) air temperature.

Table 7.3 summarizes the annual heating and cooling degree-days (from the last column in Table 7.1) as well as solar availability for various representative regions in California. Solar availability was derived from data by Simons and McCabe (2005). In addition, the last column in Table 7.3 ranks the various regions (on a scale from 1 to 4) for daily–averaged solar availability.

The ranges and ranks used in Table 7.3 are defined as follows:

Rank	Solar availability ($kWh\ m^{-2}\ day^{-1}$)	Annual CDD
1	6.0 – 6.5	1075 - 2525
2	5.5 – 6.0	690 - 1075
3	5.0 – 5.5	260 - 690
4	4.5 – 5.0	0 - 260

Note that the entries (solar availability and CDD) in the table above do not correspond to each other. This table simply provides the ranges of the ranks for each of CDD and solar availability used in the discussion.

In Table 7.4, regions are sorted by annual cooling-degree days and solar availability (both from highest to lowest values). Each region is assigned to one of the four ranges of values (as defined in the above table), labeled 1 through 4 for both CDD and solar availability, to estimate regional priorities. This serves as an initial and crude ranking (pre-modeling ranking) which will then be refined based on the modeling results.

Thus as an initial guess, the two rankings (solar versus CDD) are combined to characterize the regions by priority. Accordingly, in Table 7.5 each region is assigned a first priority and a second. When the first is solar, it suggests that priority in the region should be given to deployment of strategies that include control of albedo, structural shade, canopy shade, photovoltaics, and passive solar systems. When air temperature is first, the suggestion is that priority be given to strategies that include control of soil moisture, canopy evapotranspiration, green roofs, green walls, and anthropogenic heating. Recall that this prioritizing is for the indirect effect, not the direct energy impacts. It should also be reiterated that this simply is a qualitative assignment of priorities. In addition, in the final ranking, each strategy will be evaluated alone, not lumped as in this table.

Table 7.3 Ranking of Select Cities for Solar Availability

Annual HDD (C)	Annual CDD (C)	Solar available kWh/m2/day	rank for solar
3912.78	106.67	5.0 - 5.5	3
1177.78	1270.00	5.5 - 6.0	2
1640.56	755.56	5.0 - 5.5	3
2280.56	830.00	6.0 - 6.5	1
600.00	2195.56	5.5 - 6.0	2
2461.11	3.89	4.5 - 5.0	4
1359.44	1090.56	5.5 - 6.0	2
672.78	658.89	5.5 - 6.0	2
515.56	836.67	5.5 - 6.0	2
2244.44	447.78	5.0 - 5.5	3
3647.78	72.78	5.5 - 6.0	2
1717.78	41.11	5.5 - 6.0	2
681.67	2525.00	6.0 - 6.5	1
1607.78	1046.67	4.5 - 5.0	4
1481.11	693.33	5.5 - 6.0	2
641.67	2073.89	6.0 - 6.5	1
888.33	1076.11	5.5 - 6.0	2
590.56	481.11	5.5 - 6.0	2
1442.78	90.56	5.0 - 5.5	3
1206.11	450.56	5.0 - 5.5	3
1187.78	264.44	5.5 - 6.0	2
640.56	721.67	5.5 - 6.0	2
1012.22	825.00	5.5 - 6.0	2
1496.67	292.22	5.0 - 5.5	3
3426.67	216.67	5.5 - 6.0	2
1384.44	1623.33	6.0 - 6.5	1
1712.78	468.33	4.5 - 5.0	4
2390.00	107.22	5.5 - 6.0	2
3346.11	150.56	4.5 - 5.0	4

Table 7.4 Ranking of Select Cities by CDD and Solar Availability

Priorities by Tair			Priorities by solar	
Region	Annual CDD (C)	Rank for CDD	Region	rank for solar
Needles	2525.00	1	Death Valley	1
El Centro	2195.56	1	Needles	1
Salton City	2073.89	1	Salton Sea	1
Trona	1623.33	1	Trona	1
Bakersfield	1270.00	1	Bakersfield	2
Fresno	1090.56	1	El Centro	2
San Bernardino	1076.11	1	Fresno	2
Redding	1046.67	2	Long Beach	2
Los Angeles	836.67	2	Los Angeles	2
Death Valley	830.00	2	Mariposa	2
Santa Maria	825.00	2	Monterey	2
Chico	755.56	2	Sacramento	2
Santa Ana	721.67	2	San Bernardino	2
Sacramento	693.33	2	San Diego	2
Long Beach	658.89	3	San Luis Obispo	2
San Diego	481.11	3	Santa Ana	2
Ukiah	468.33	3	Santa Maria	2
san Jose	450.56	3	Susanville	2
Lovelock	447.78	3	Walker Lake	2
Santa Rosa	292.22	3	Alturas	3
San Luis Obispo	264.44	3	Chico	3
Susanville	216.67	4	Lovelock	3
Weed	150.56	4	San Francisco	3
Walker Lake	107.22	4	san Jose	3
Alturas	106.67	4	Santa Rosa	3
San Francisco	90.56	4	Eureka	4
Mariposa	72.78	4	Redding	4
Monterey	41.11	4	Ukiah	4
Eureka	3.89	4	Weed	4

Table 7.5 Qualitative Prioritizing for Selected Cities

Priorities for regions	priority 1	priority 2
Alturas	solar	Tair
Bakersfield	Tair	solar
Chico	Tair	solar
Death Valley	solar	Tair
El Centro	Tair	solar
Eureka	similar	similar
Fresno	Tair	solar
Long Beach	solar	Tair
Los Angeles	similar	similar
Lovelock	similar	similar
Mariposa	solar	Tair
Monterey	solar	Tair
Needles	similar	similar
Redding	Tair	solar
Sacramento	similar	similar
Salton City	similar	similar
San Bernardino	Tair	solar
San Diego	solar	Tair
San Francisco	solar	Tair
san Jose	similar	similar
San Luis Obispo	solar	Tair
Santa Ana	similar	similar
Santa Maria	similar	similar
Santa Rosa	similar	similar
Susanville	solar	Tair
Trona	similar	similar
Ukiah	Tair	solar
Walker Lake	solar	Tair
Weed	similar	similar

solar :	albedo
	structural shade
	canopy shade
	photovoltaics
	passive solar
Tair:	soil moisture
	canopy evapotranspiration
	green roofs
	green walls
	anthropogenic heating

CHAPTER 8:
Model Performance Evaluation

The performance of models used in this study has been evaluated in great detail and established in prior studies. For the types of applications in this study, model performance evaluations and validations have been discussed in Taha (2005), Taha (2007), Taha (2008 a-c), and Taha (2012). These discussions will not be repeated here.

CHAPTER 9:
Results and Ranking of Measures

Because of length, the actual results (output) from the modeling tool are included in a CD-ROM and some are listed in Appendix A. In this chapter, highlights and examples from the results are discussed to establish the basis for ranking the environmental measures (CSEM) in terms of indirect impacts. The discussion, focusing on changes in air temperature and derived degree-hour metrics, is divided into two parts. The first, in Section 9.1, summarizes the results for the idealized communities whereas the second, in Section 9.2, summarizes results for the three metropolitan areas (Sacramento, Fresno, and Los Angeles).

9.1 Idealized Communities

In this section, the modeling results and rankings of CSEM are discussed for the idealized communities. The discussion is further broken down into two parts. In the first part, Section 9.1.1, researchers present the results for all cities by scenario (run), whereas in the second part (Section 9.1.2) the results are presented for all scenarios (runs) by city. Thus the first describes the effectiveness of a certain measure across various microclimates and LULC characteristics, whereas the second identifies the effectiveness (rankings) of measures within a single location (community). Of note here is that the effects (changes in air temperature) are generally very small because the modifications (deployment of CSEM) affect only a single 200-m community being added to an urban area and the results averaged over 3-km grid resolution.

9.1.1 Cities Ranked by Measure

In this section, rankings by total changes in the degree-hour derivative are discussed. In addition, the role of land-use in the ranking is isolated somewhat by normalization of degree-hour changes with respect to a temperature threshold. Thus in this section, the following measures are discussed for the idealized communities simulations:

- Changes in total degree-hours / day (dh/day), which is the total for all temperatures (no threshold specified), and
- Cooling degree-hours (cdh/day) above a temperature threshold of 25C

Tables of comparative results are also listed in Appendix A. Here, only a graphical representation is provided for comparison and only the high (H) implementation scenario of CSEM is shown. However, all scenarios are included in the spreadsheets and in Appendix A.

In Section 9.1.1.1, the impacts of various measures are given in terms of total changes in dh/day that are independent of any temperature threshold. Thus these changes include the effects of both variations in climate and in land-use across the 180 communities. In Section 9.1.1.2, the changes in dh/day are normalized with respect to total dh/day at each location (for all temperatures, no threshold). This normalization is done in an attempt to reduce the effect of climate and somewhat isolate the effects of land-use across those 180 locations. Because this is a climate normalization, the entire range of temperatures, that is, the total dh/day (not just above a certain threshold) is used in normalizing. Finally in Section 9.1.13, the changes in dh/day are

weighted by the ratio of cdh/day (>25C) to total dh/day at each location, to develop a prioritization of CSEM deployment, for example, to identify geographic locations where deployment of measures will be relatively more effective.

9.1.1.1 Total Changes in dh/day (Threshold-Independent)

Figure 9.1 shows the changes from the base-case (at each respective idealized community) in total degree-hours per day (dh/day). This is for all temperatures, not above any certain threshold. Because this is not a normalized change, it represents the combined effects of both climate and land-use in the idealized communities. Note that because Figure 9.1 is compacted to fit within the page borders, not every city label is displayed (even though the corresponding data fully and correctly displayed).

Figure 9.1 (a) Change in dh/day for Scenarios 1H

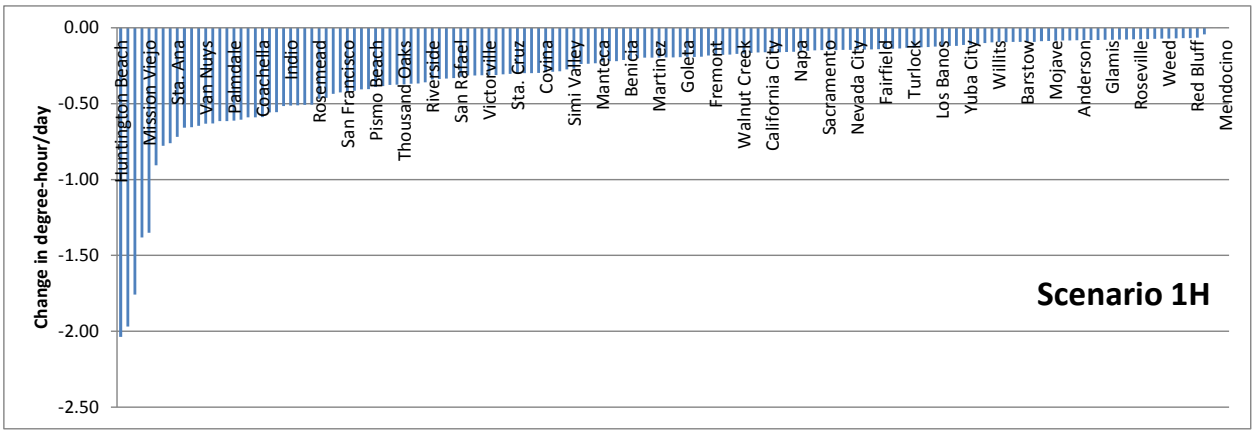


Figure 9.1 (b) Change in dh/day for Scenarios 2H

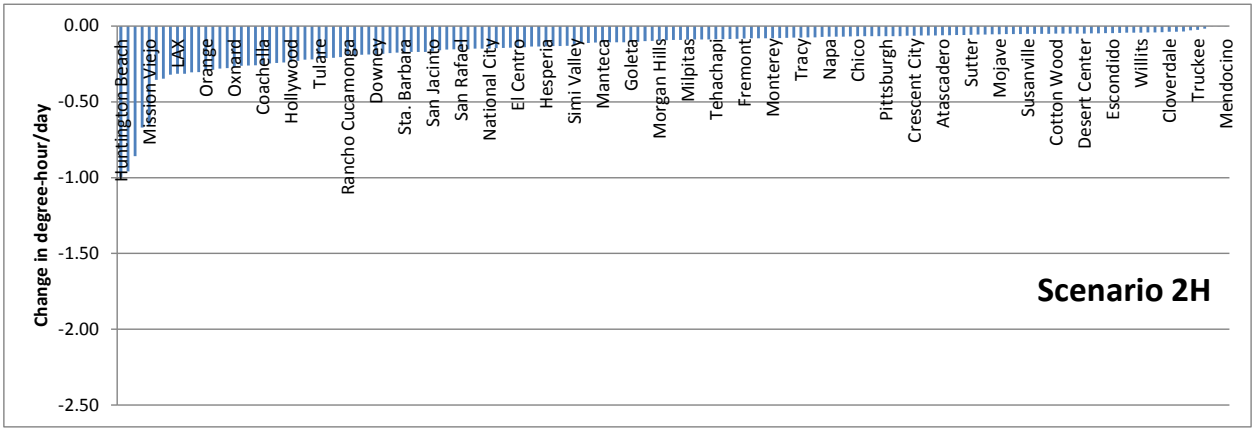


Figure 9.1 (c) Change in dh/day for Scenarios 3H

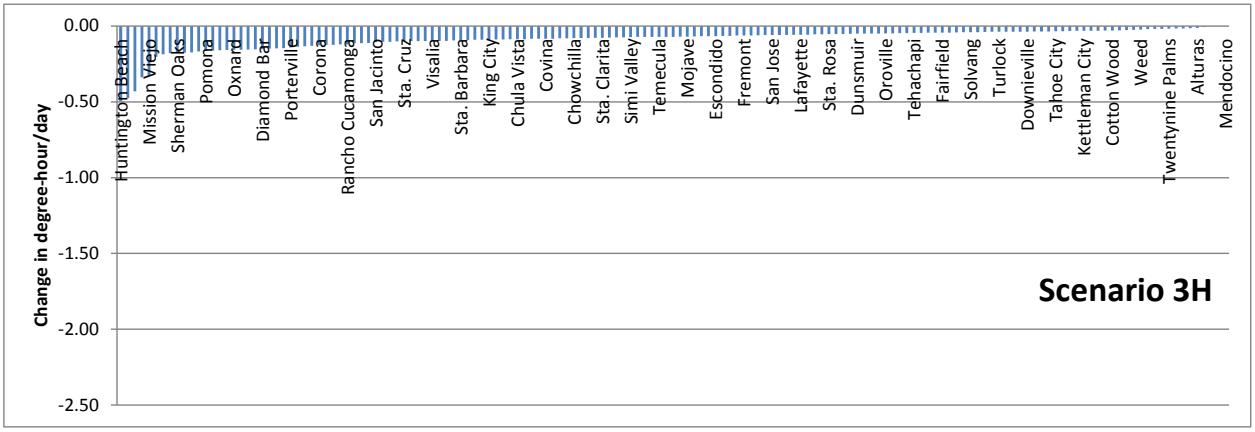


Figure 9.1 (d) Change in dh/day for Scenarios 4H

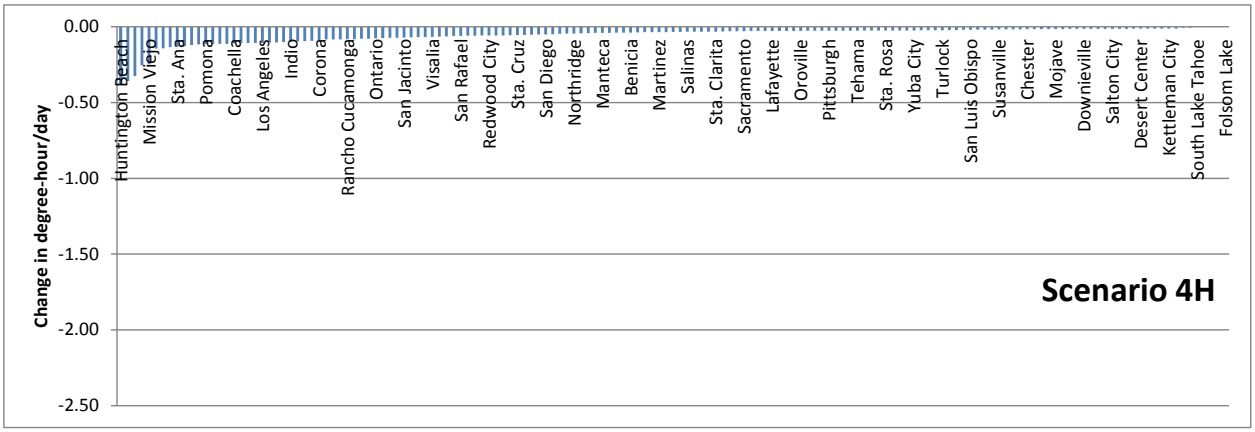


Figure 9.1 (e) Change in dh/day for Scenarios 5H

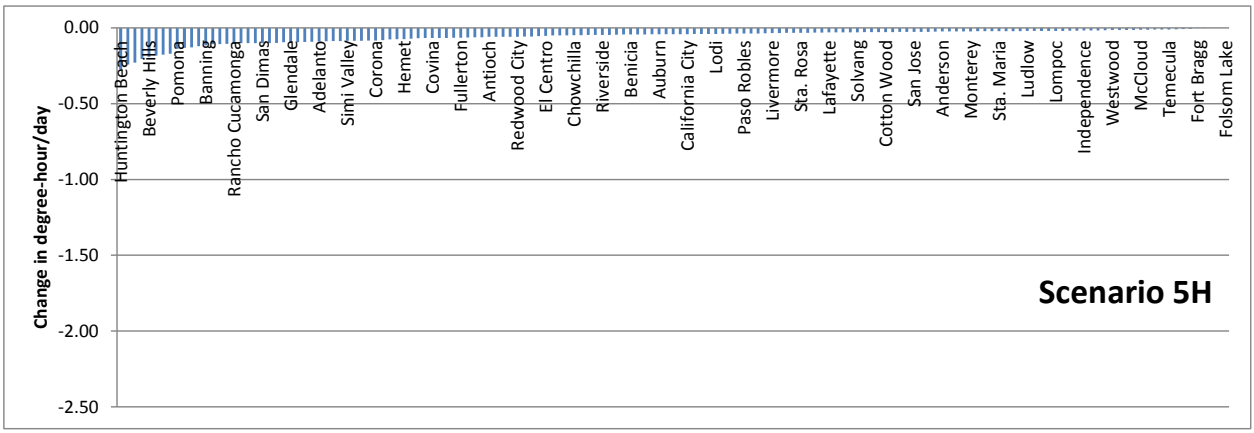


Figure 9.1 (f) Change in dh/day for Scenarios 6H

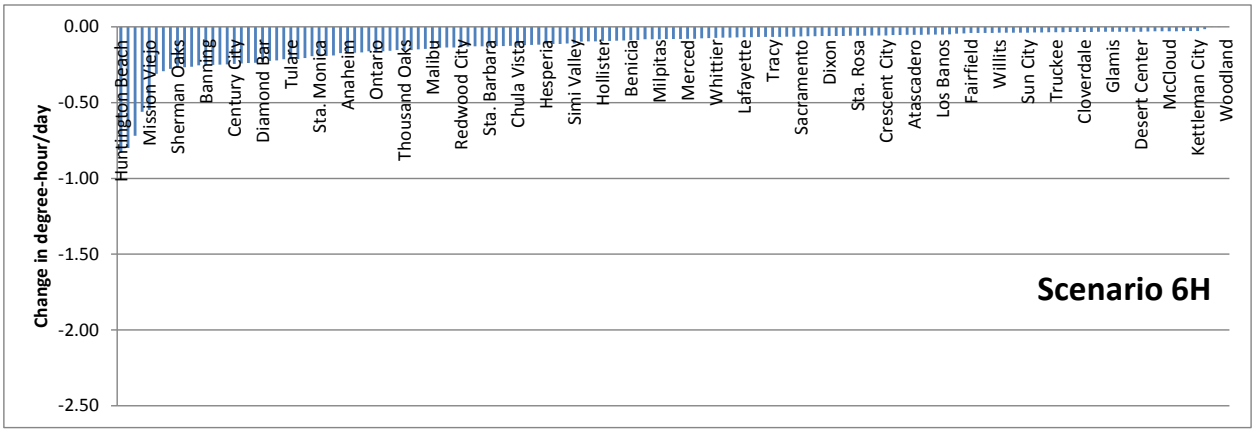


Figure 9.1 (g) Change in dh/day for Scenarios 7H

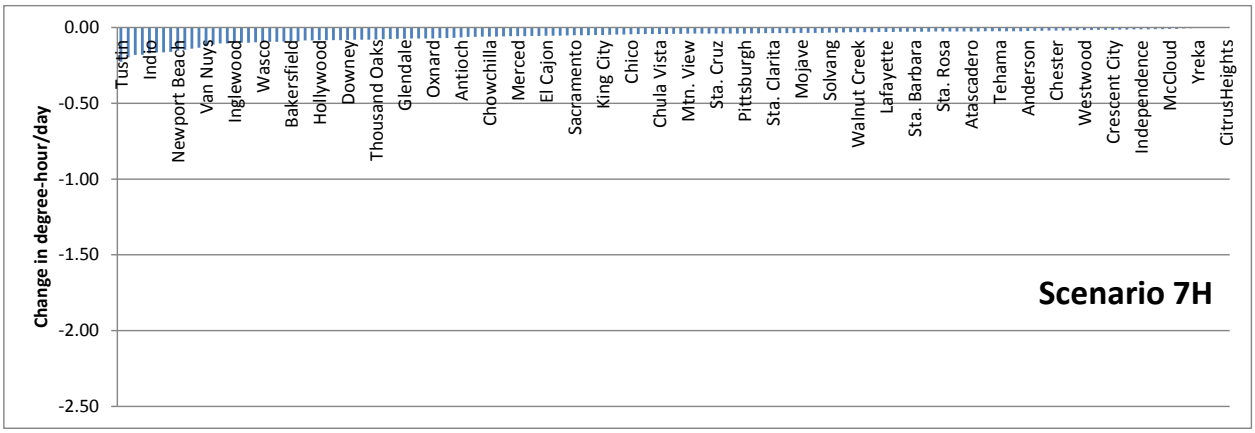


Figure 9.1 (h) Change in dh/day for Scenarios 8H

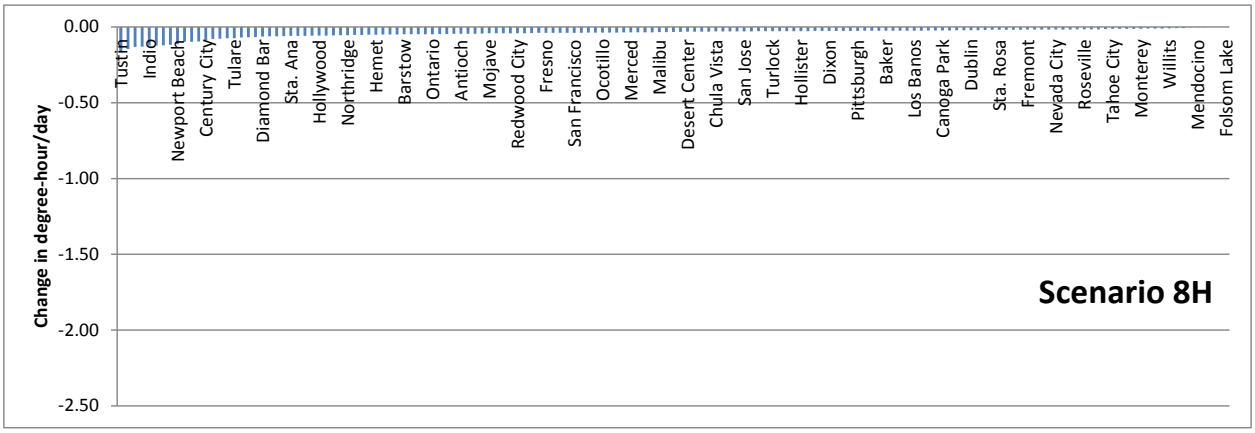


Figure 9.1 (i) Change in dh/day for Scenarios 9H

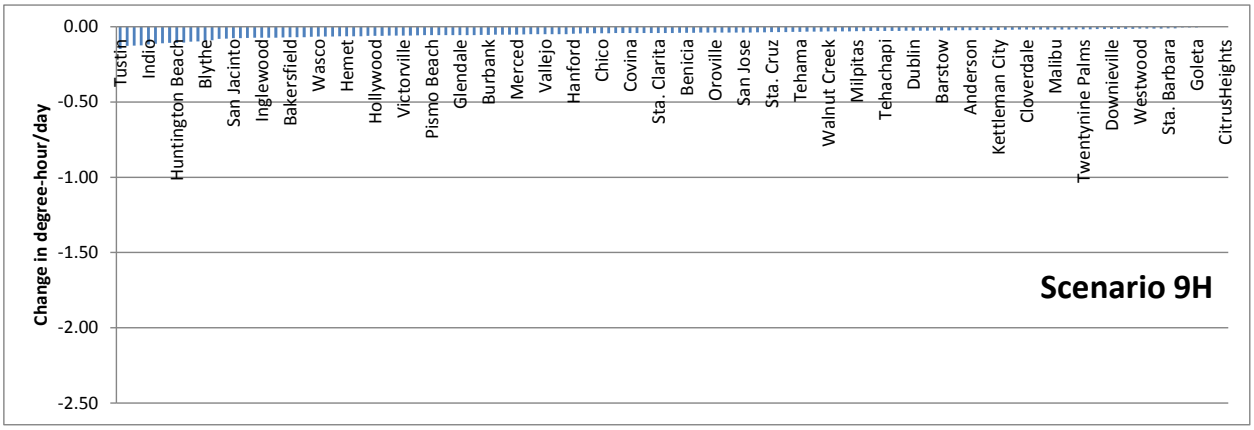


Figure 9.1 (j) Change in dh/day for Scenarios 10H

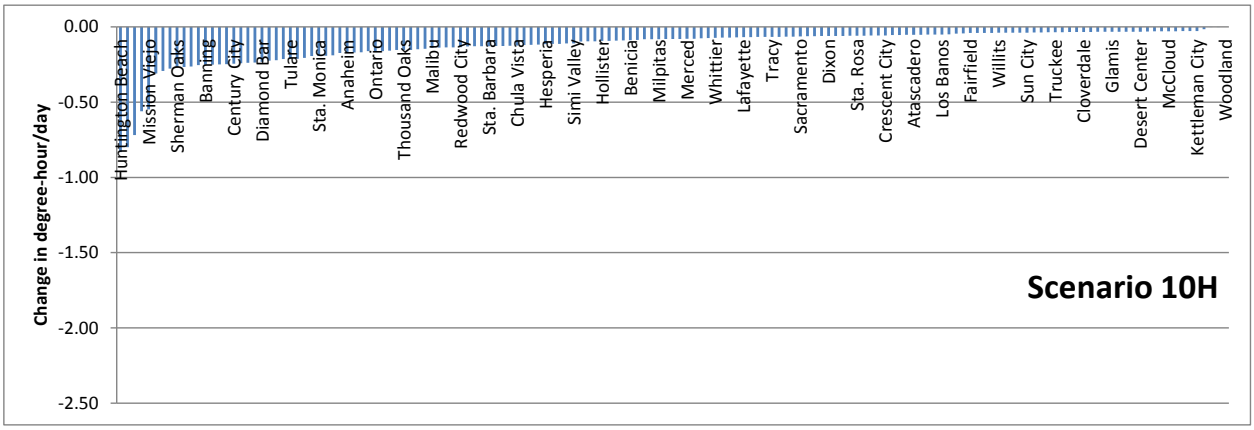


Figure 9.1 (k) Change in dh/day for Scenarios 11H

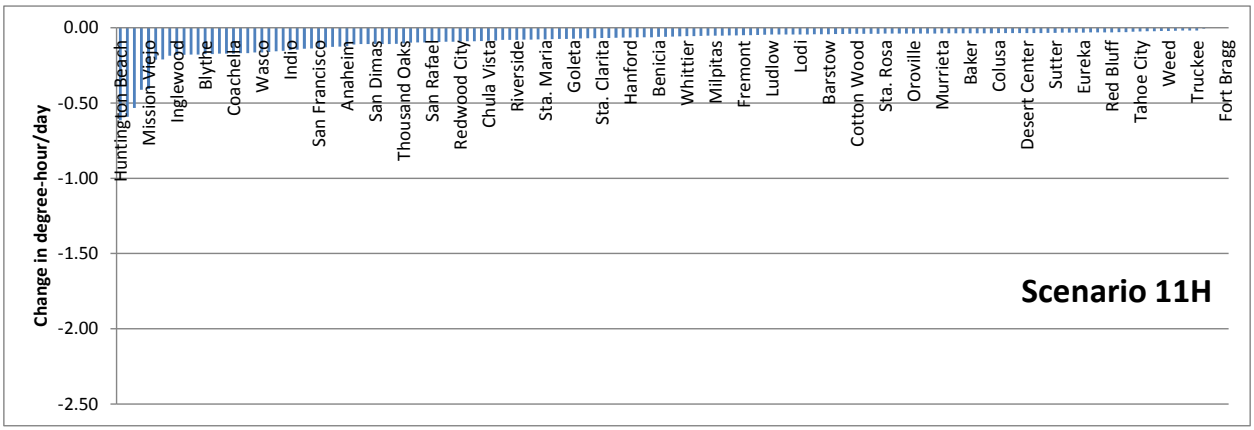
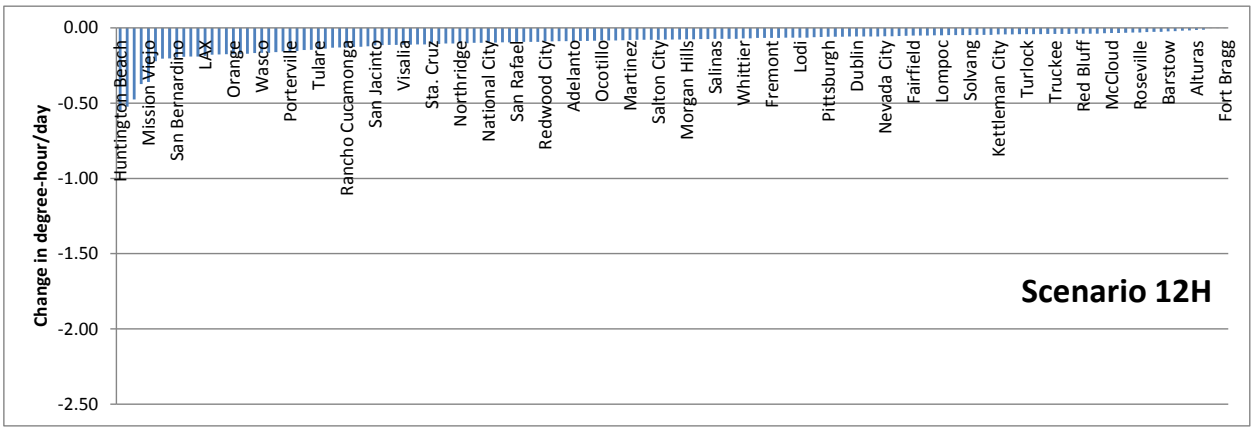


Figure 9.1 (l) Change in dh/day for Scenarios 12H



An examination of Figure 9.1 suggests, qualitatively, that the effectiveness of the measures in reducing air temperature is generally in the order shown in Table 9.1 (from most effective to least). Where two scenarios have the same rank, their effects are about similar. Note that only the H scenarios are listed; the relative rankings of the measures in the M scenarios are similar.

Table 9.1 Qualitative Overall Ranking of CSEM in Idealized Communities

Rank	ID	CSEM Description
1	1H	Increase in roof albedo
2	2H	Increase in pavement albedo
3	6H;10H	Structural shading (SVF) ; Natural shading of buildings
4	11H;12H	Natural shading of parking lots ; Natural shading of streets
5	3H	Increase in streets albedo
6	4H	Increase in wall albedo
7	5H;7H	Conversion of impervious into pervious surfaces ; Vegetation cover increase for evapotranspiration cooling of buildings
8	8H;9H	Vegetation cover increase for evapotranspiration cooling of parking lots ; Cover increase for evapotranspiration cooling of streets

Figure 9.1 also shows that the bulk of the cooling effect in almost all scenarios (1H through 12H) occurs within the first 5 idealized communities (after which, the impact on air temperature drops significantly). For example, in scenarios 1H, 2H, 3H, 6H, and 11H, for example, those with some of the largest impacts, the CSEM are most effective in areas of southern California. These areas are relatively in the same climate zone and have some of the highest levels of urban development in the study areas. Thus this suggests that this geographical area is one of the first to consider for deployment of CSEM.

In the rest of this section, researchers discuss the rankings displayed in Figure 9.1 and listed in Appendix A. The temperature and derivatives are in Celsius.

Scenarios 1M and 1H (Roof Albedo Increase / Cool Roofs)

The impacts of scenario 1M across all idealized communities range from -1 to 0 degree-hour per day (dh/day) and for scenario 1H, from about -2 to approximately 0 dh/day. Recall that the effects are relatively small because of the limited surface modifications (within 200-m idealized communities added to existing urban areas and analyzed at resolutions of 3 km). Appendix A shows that the order (ranking) of the first nine city locations of the idealized communities is similar between scenarios 1M and 1H, indicating a dominant effect as the deployment of reflective roofs is doubled. However, starting at the tenth city, the order is different between these two scenarios suggesting some non-linear impacts of increasing albedo. In general, and except for the first nine city locations, the rank of a certain idealized community is different by between 2 and 6 in scenario 1H relative to that in scenario 1M.

Examining the entire 1M and 1H set of scenarios overall, the ranking generally increases from south to north (geographically), for example, the largest impacts of cool roofs are found in southern parts of the state and the smallest are found in the northern parts of the state. This is expected since solar resources decrease in that direction (as was discussed in Table 7.4), and thus the impacts of increased albedo. However, this climatic ranking has exceptions at several locations because of the added effects of LULC. For example, an idealized community in the San

Francisco Bay Area would be expected closer to the bottom part of the table but is at a ranking of 31. This land-use effect arises because the San Francisco area is heavily built up. On the other hand, idealized communities in locations such as Mojave, Tehama, Twentynine Palms, Salton City, and Baker, would be expected near the top of the table. However, they are actually closer the bottom (rankings of 128, 134, 136, 137, 140, and 147, respectively), again due to the LULC effect. These areas are relatively sparsely built up and thus the impacts of increased roof albedo are smaller accordingly.

Scenarios 2M and 2H (Pavement Albedo Increase / Cool Pavements)
In general, the ranking order in scenarios 2M and 2H is relatively similar to that of 1M and 1H, but with smaller effects. The impacts of scenario 2M across all idealized communities range from -0.5 to approximately 0 dh/day and for scenario 2H, they range from about -1 to approximately 0 dh/day. Thus in general terms, the effects of scenario 2 (high-albedo pavements) is about half of that of scenario 1 (high-albedo roofs). Note that the category pavements includes curbs, sidewalks, and parking lots, but does not include category streets/highways. Appendix A shows that the order of the first five cities is similar between scenarios 1 and 2. In addition, the order of the first seven city locations of the idealized communities is similar between scenario 2M and 2H, after which, the order becomes different.

Overall, and as with scenarios 1M and 1H, the ranking of the idealized communities in scenarios 2M and 2H generally increases from south to north (geographically). The top third rankings correspond mostly to location in southern California, the middle third rankings to locations in central California, whereas the bottom third rankings correspond generally to locations in northern California. However, as discussed in scenarios 1M/1H, this ranking has exceptions at several locations because of the combined effects of LULC and climate.

Scenarios 3M and 3H (Streets/Highways Albedo Increase)
The rankings of scenarios 3M and 3H are also relatively similar to those of scenarios 1 and 2. The impacts of scenario 3M across all idealized communities range from -0.25 to 0 dh/day and for scenario 3H, they range from about -0.5 to 0 dh/day, thus about one fourth as effective as cool roofs. Note that the category streets/highways does not include the category pavements, which explains why the effects are smaller than expected. If categories pavements and streets/highways are combined, their effects would amount to about 75 percent of the effects of cool roofs. As can be seen in Appendix A, the order of the first five city locations of the idealized communities is similar between scenario 3M and 3H, after which the order is different. Overall, and as with scenarios 1 and 2, the ranking of cities in scenarios 3M and 3H generally increases from south to north (geographically), such that the largest impacts of increased albedo are found in southern parts of the state and the smallest are found in the northern parts of the state.

Scenarios 4M and 4H (Walls Albedo Increase)
Most of the observations discussed above also apply to this scenario. The general ranking of scenarios 4M and 4H is relatively similar to those of scenarios 1 through 3. The impacts of scenario 4M range from -0.2 to 0 dh/day and for scenario 4H, they range from about -0.4 to 0 dh/day. Thus the effect is slightly smaller than that of high-albedo streets/highways, excluding

pavements. As with the previous scenarios, the ranking of cities in scenarios 4M and 4H generally increases from south to north.

Scenarios 5M and 5H (Conversion Of Impervious Surfaces To Pervious)
The impacts of scenario 5M across all idealized communities range from -0.14 to 0 dh/day and for scenario 5H, they range from about -0.3 to approximately 0 dh/day. Thus in general, they are smaller than the effects of albedo modifications. While the effectiveness of this measure generally increases geographically from south to north, as with increased albedo, the rankings are different in terms of city locations. Using the same example discussed above, an idealized community in the San Francisco Bay Area is at a ranking of 41 for scenarios 5M/5H instead of 31 in the roof-albedo measure (scenarios 1M/1H) thus indicating a smaller effect from runoff control than albedo control (partly because of its relatively higher atmospheric moisture because of the coastal location).

Scenarios 6M and 6H (Structural Shading / View Factor Control)
The impacts of this measure are directionally similar to those of controlling albedo (scenarios 1 through 4). The impacts on air temperature in this case across all idealized communities range from -0.41 to approximately 0 dh/day for scenario 6M and from about -0.83 to approximately 0 dh/day for scenario 6H. Thus in general, they are smaller than the effects of roof albedo modifications but larger than modifying wall or street albedos or controlling runoff (conversion of impervious to pervious).

Scenarios 7M and 7H (Vegetation Evapotranspiration / Buildings)
The impacts of scenario 7M across the idealized communities range from -0.11 to 0 dh/day and for scenario 7H, they range from about -0.22 to approximately 0 dh/day. Thus they are about 8 times smaller than the corresponding effects of cool roofs. Appendix A shows that the order of the first ten city locations of the idealized communities is similar between scenario 7M and 7H, after which the ranking is different.

The ranking order is now significantly different from that for increased albedo and the top-most cities differ as well. The top rankings now shift to relatively more inland areas. For example, while the top 10 cities in albedo-control rankings for cool roofs are Huntington Beach, Newport Beach, Laguna Beach, Tustin, Mission Viejo, Santa Monica, LAX, Beverly Hills, Santa Ana, and Van Nuys, the top 10 rankings for scenario 7 are Tustin, Mission Viejo, Coachella, Banning, Indio, Huntington Beach, Laguna Beach, Palmdale, Newport Beach, and Beverly Hills. This is partly a result of atmospheric moisture availability, among other factors, that affects the rate of evapotranspiration. For example, an idealized community in the San Francisco Bay Area was ranked at 31 for albedo impacts of cool roofs but is ranked at 62 for evapotranspiration (moved down) thus twice further away from the top. On the other hand, the examples of drier and warmer climates, such as Barstow, Mojave, Tehama, Twentynine Palms, Salton City, and Baker, that were ranked at 128, 134, 136, 137, 140, and 147, respectively for cool roofs, are now ranked higher (moved up in rankings) at 103, 106, 102, 117, 126, and 138, respectively, suggesting that re-vegetation is more effective than albedo increase in those inland areas as opposed to coastal areas such as San Francisco. These observations are generally similar to those made in Table 7.5 (ranking by solar resources versus air temperature).

Scenarios 8M and 8H (Vegetation Evapotranspiration / Parking Lots)
The impacts of scenario 8M range from -0.08 to 0 dh/day and for scenario 8H, they range from about -0.17 to 0 dh/day. These are relatively small effects compared to those of measures 7M and 7H. As with scenario 7, the top ranking cities differ from those of the albedo control measures.

Scenarios 9M and 9H (Vegetation Evapotranspiration / Streets)
The impacts of scenario 9M range from -0.07 to 0 dh/day and for scenario 9H, they range from about -0.15 to 0 dh/day. These effects are similar in magnitude to those in scenarios 8M and 8H (evapotranspiration / parking lots). However, the rankings past the first 7 cities are different between scenarios 8 and 9, reflecting varying climate and land-use/land-cover characteristics.

Scenarios 10M and 10H (Cover Increase for Buildings Shade)
The general ranking of scenarios 10M and 10H are relatively similar to those of scenarios 1 and 2, but the impacts are smaller. The effects of scenario 10M across all idealized communities range from -0.41 to approximately 0 dh/day and for scenario 10H, from about -0.83 to 0 dh/day, roughly half of the effects of scenarios 1M and 1H. As the data in Appendix A show, the order of the first six city locations of the idealized communities is similar between scenario 10M and 10H, after which the order differs. Overall, and as with scenarios of albedo control, the ranking of communities in scenarios 10M and 10H generally increases from south to north.

Scenarios 11M and 11H (Cover Increase for Parking-Lots Shade)
The impacts of scenario 11M range from -0.30 to ~0 dh/day and for scenario 11H, from about -0.61 to 0 dh/day, slightly smaller than the effects of cover increase for buildings shade, and about one third of the effect of cool roofs.

Scenarios 12M and 12H (Cover Increase for Streets Shade)
The impacts of scenario 12M range from -0.27 to approximately 0 dh/day and for scenario 12H, from about -0.55 to 0 dh/day, slightly smaller than the effects of cover increase for parking-lots shade, and almost half of the effect of cover increase for buildings shade. Other attributes of this scenario are similar to those of measures 11 and 12.

9.1.1.2 Changes in dh/day Normalized by Total dh/day

In this section, the changes in dh/day are normalized with respect to the total dh/day at each location (but still with no temperature threshold specified). To simplify the notation, the change (Δdh/day) / (dh/day), will be expressed as Ndh/day meaning normalized change in dh/day. Since it follows the same format as in Section 9.1.1.1, the measures are lumped into similar categories in the following discussion.

Scenarios 1 Through 4 (Albedo)
The impacts of scenario 1M across all idealized communities range from -0.002 to 0 Ndh/day and for scenario 1H, they range from about -0.004 to approximately 0 Ndh/day. As noted before, the effects are small because of the limited surface modifications (within a 200 m idealized community). As can be seen in Appendix A, the order of the first 14 city locations of the idealized communities is similar between scenario 1M and 1H.

While the absolute changes (Section 10.1.1.1) generally ranked in an increasing order from south to north (geographically), the ranking order in Ndh/day in that direction is somewhat less obvious. This is because normalization removes some of the climate effects that cause the south-to-north order of rankings. This observation applies to the following scenarios as well.

The general ranking order of scenarios 2M and 2H are relatively similar to those for 1M and 1H. The impacts of scenario 2M range from -0.001 to approximately 0 Ndh/day and for scenario 2H, they range from about -0.002 to approximately 0 Ndh/day. Thus in general terms, the effects of scenario 2 (high-albedo pavements) is about half of that of scenario 1 (high-albedo roofs). As discussed earlier, the category pavements (curbs, sidewalks, parking lots, and so forth) does not include category streets/highways. The general ranking of scenarios 3M and 3H are also relatively similar to those of scenarios 1 and 2. The impacts of scenario 3M range from -0.0005 to 0 Ndh/day and for scenario 3H, range from about -0.001 to 0 Ndh/day. The general ranking of scenarios 4M and 4H are relatively similar to those of the preceding scenarios. The impacts of scenario 4M across all idealized communities range from -0.0004 to 0 Ndh/day and for scenario 4H, they range from about -0.0008 to 0 Ndh/day.

Scenarios 5M and 5H (Conversion of Impervious Surfaces to Pervious)
The impacts of scenario 5M for idealized communities range from -0.0003 to 0 Ndh/day and for scenario 5H, they range from about -0.0006 to approximately 0 Ndh/day. Thus in general, they are smaller than the effects of albedo modifications.

Scenarios 6M and 6H (Structural Shading / View Factor Control)
The impacts of this measure are directionally similar to those of controlling albedo (scenarios 1 through 4). The impacts on air temperature in this case across all idealized communities range from -0.0009 to approximately 0 Ndh/day for scenario 6M and from about -0.0017 to approximately 0 Ndh/day for scenario 6H. Thus in general, they are smaller than the effects of roof albedo modifications but larger than modifying wall albedos or controlling runoff (impervious to pervious).

Scenarios 7 Through 9 (Vegetation Evapotranspiration)
The impacts of scenario 7M range from -0.0002 to 0 Ndh/day and for scenario 7H, they range from about -0.0004 to approximately 0 Ndh/day. The impacts are about 8-9 times smaller than the corresponding effects of cool roofs. As discussed earlier, the top rankings in scenario 7 shift to relatively more inland areas. The impacts of scenario 8M and 8H range from -0.00014 to 0 Ndh/day and from about -0.0003 to 0 Ndh/day, respectively. These effects are slightly smaller than the effects of measures 7M and 7H and much smaller than the effects of the albedo control measures. The impacts of scenario 9M across all idealized communities range from -0.00013 to 0

Ndh/day and for scenario 9H, they range from about -0.00027 to 0 Ndh/day. These effects are similar in magnitude to those for scenarios 8M and 8H (evapotranspiration / parking lots).

Scenarios 10 Through 12 (Cover Increase for Shade)

The general rankings of scenarios 10M and 10H are relatively similar to those of scenarios 1 and 2, but the impacts are smaller. The effects of scenario 10M across all idealized communities range from -0.0009 to approximately 0 Ndh/day and for scenario 10H, they range from about -0.0017 to 0 Ndh/day, slightly less than half of the effect of scenarios 1M and 1H. The impacts of scenario 11M range from -0.00064 to approximately 0 Ndh/day and for scenario 11H, from about -0.0013 to 0 Ndh/day, slightly smaller than the effects of cover increase for buildings shade. Finally, the impacts of scenario 12M range from -0.0006 to approximately 0 Ndh/day and for scenario 12H, from about -0.0011 to 0 Ndh/day, slightly smaller than the effects of cover increase for parking-lots shade, and about two-thirds of the effect of cover increase for buildings shade.

The normalized changes for scenarios 1 through 12 discussed above are further examined to determine changes in rankings across various idealized communities. An arbitrarily-selected number of city locations are used to represent various California climates and geographies. A sample of 21 locations of idealized communities, where the changes in rankings are tracked, is listed in Table 9.1. The purpose is to assess the relative importance or effectiveness of land-use (deployment potential) versus climate in determining the total impacts on air temperature and, thus, on rankings. Clearly, this is only an approximate analysis because each location is also influenced by its surroundings whose properties do not change from one scenario to another.

The comparison is made between the rankings of a certain city location using absolute changes in dh/day versus its rankings using the normalized changes in dh/day (Ndh/day) discussed above. Thus if the ranking of a certain location does not change or decreases (location becomes higher in the rank list), then the role of land-use (and deployment potential) is relatively more important than that of climate in affecting air temperature. On the other hand, if the ranking increases (locations goes down in this list), then the role of climate is relatively more dominant than deployment potential. These relative effects are shown as L (meaning LULC more important) or C (meaning climate more important) in Table 9.1. Three example scenarios are discussed to capture the main characteristics of sets of relatively similar measures; these are scenarios 1H (albedo), 7H (evapotranspiration), and 10H (shading). Note that in Table 9.1, that Column A gives the total effects as they would happen in the real world (sum of effects of LULC and climate), whereas Column B is a hypothetical one to sort out the effects of LULC. Thus Column A is the one to use for inter-comparing the effectiveness of CSEM and the actual rankings of the measures.

Table 9.1(a) shows that for scenario 1H (increased roof albedo), with the exception of Tulare and Palmdale, that in all locations with mild climates (most of which happen to be coastal as well), the impacts on air temperature are due mostly to LULC effects (high deployment potential). In the hotter, drier, and mostly inland locations, the role of climate (solar availability) is more dominant. For the measures involving evapotranspiration (Table 9.1(b)), the results suggest a shift towards more LULC-dominated effect. Areas where climate is the dominant factor (for

example, air temperature and solar resources) are now in relatively more inland and hotter climates, for example, Fresno, San Bernardino, Palm Springs, Salto City, Barstow, and Mojave. Thus in these areas, deployment of vegetation for evapotranspiration should be considered over deployment of cool roofs or high albedo pavements and streets. For scenario 10H, as seen in Table 9.1(c), the effect of climate (solar) is dominant in many more regions than in scenarios 1H or 7H. Thus for albedo modifications, the milder and colder climates have a relatively more important land-use contribution whereas the warmer climates have a more important climate contribution.

Table 9.1 (a) Relative Rankings for Scenario 1H

Scenario 1H Idealized community	Rank with total change in dh/day (absolute)	Rank with dh/day change normalized by total dh/day	Relative importance	
	A	B		
Mendocino	157	157	L	
South Lake Tahoe	155	155	L	
San Francisco	33	24	L	
San Rafael	49	39	L	
Antioch	71	73		C
San Jose	86	83	L	
Sacramento	101	105		C
Chico	110	102	L	
Fresno	100	111		C
Tulare	26	25	L	
Newport Beach	2	2	L	
Santa Monica	6	6	L	
Los Angeles	27	26	L	
Van Nuys	13	19		C
San Bernardino	55	62		C
Palmdale	17	17	L	
Palm Springs	66	72		C
Salton City	139	148		C
Blythe	14	22		C
Barstow	129	141		C
Mojave	133	144		C

Table 9.1 (b) Relative Rankings for Scenario 7H

Scenario 7H Idealized community	Rank with total change in dh/day (absolute)	Rank with dh/day change normalized by total dh/day	Relative importance
	A	B	
Mendocino	-	-	-
Tahoe City	139	137	L
San Francisco	62	45	L
San Rafael	54	44	L
Antioch	49	46	L
San Jose	74	72	L
Sacramento	65	63	L
Chico	73	69	L
Fresno	63	65	C
Tulare	20	19	L
Newport Beach	9	5	L
Santa Monica	-	-	-
Los Angeles	26	24	L
Van Nuys	13	13	L
San Bernardino	40	50	C
Palmdale	8	9	L
Palm Springs	34	35	C
Salton City	120	127	C
Blythe	12	12	L
Barstow	86	100	C
Mojave	97	105	C

Table 9.1 (c) Relative Rankings for Scenario 10H

Scenario 10H Idealized community	Rank with total change in dh/day (absolute)	Rank with dh/day change normalized by total dh/day	Relative importance	
	A	B		
Mendocino	156	156	L	
South Lake Tahoe	155	155	L	
San Francisco	31	16	L	
San Rafael	46	35	L	
Antioch	70	73		C
San Jose	75	75	L	
Sacramento	97	101		C
Chico	106	97	L	
Fresno	108	112		C
Tulare	25	26		C
Newport Beach	2	2	L	
Santa Monica	29	22	L	
Los Angeles	24	27		C
Van Nuys	11	19		C
San Bernardino	151	152		C
Palmdale	15	17		C
Palm Springs	67	76		C
Salton City	139	147		C
Blythe	12	24		C
Barstow	132	146		C
Mojave	134	142		C

It is also useful to compare the change in rankings of each location between scenarios 1H and 7H. That is, we would like to evaluate the relative effectiveness of vegetation-cooling measures relative to those of albedo increase. Thus researchers compare Column A in Table 9.1(a) to Column A in Table 9.1(b). If a city (community) ranks higher in scenario 7H (lower ranking number) than in 1H, that area is relatively more of a candidate for forestation efforts. The opposite, if a location drops in the ranking (larger number), then it may be better suited for albedo-increase measures. It is important to note that this is a combined effect of (both) LULC and climate (thus a realistic guide to implementation).

Comparing columns A in Tables 9.1(a) and 9.1(b), the following ranges of changes in rankings can be observed and lumped into groups A through C:

A—Sample communities with small (positive or negative) or no changes in rankings:

	Change in ranking
San Rafael	+5
Tulare	-6
Newport Beach	+7
Los Angeles	-1
Van Nuys	0
Palmdale	-9
Blythe	-2

Thus in these regions, both scenarios 1 and 7 are equally effective and should be considered equally important for deployment.

B—Sample communities with moderate negative changes in rankings

	Change in ranking
Antioch	-22
San Jose	-12
San Bernardino	-15
Salton City	-19

Thus in these regions, scenario 7 is relatively more effective than scenario 1. As a result, these regions are good candidates for deployment of vegetation-related (forestation) strategies, for example, priority should be given to vegetation rather than albedo increase.

C—Sample communities with large negative changes in rankings

	Change in ranking
Sacramento	-36
Chico	-37
Fresno	-37
Palm Springs	-32
Barstow	-43
Mojave	-36

In these regions, scenario 7 is significantly more effective than scenario 1. As a result, these regions represent top priorities for deployment of vegetation-related (forestation) strategies.

In the sample of selected communities, there was only one location, San Francisco, with a significant increase in ranking (+29). This suggests that albedo control is relatively more important in this region than forestation.

9.1.1.3 Changes in dh/day Weighted by cdh/day (>25) Ratio

In this section, the changes are weighted relative to a temperature threshold of 25C. In other words, the changes in dh/day are scaled by the ratio of cdh/day (over 25C) to total dh/day at each location. This is generally an outdoor temperature threshold in the range above which mechanical building cooling is typically needed. This threshold, used as an example in this discussion, can be adjusted as desired. Thus in this discussion, degree-hours above 25C are considered representative of and proportional to cooling degree-hours. The scaled changes in dh/day (scaled by the ratio defined above) are expressed as Sdh/day, meaning scaled, in the following discussion.

Thus Sdh/day is also an indicator to potential cooling-energy savings from CSEM deployment and can be used as a guide for prioritizing the deployment of measures for cooling-energy reduction. In Appendix A, Sdh/day for all idealized communities and measures are listed; however, it is space-consuming to discuss them here and thus only some examples are presented in this section. It is to be noted that the ranking is based both on climate and land-use (deployment potential) factors and thus may not seem to follow a single particular order, say, from hottest to coolest regions.

Table 9.2 shows the same arbitrary example city locations discussed earlier ranked by the potential for cooling-energy savings from indirect effects. This translates into deployment-priority assessment for scenarios 1H, 7H, and 10H. Because this shows only a very small subset of the idealized communities, it is not the absolute ranking that is shown in Table 9.2 (as in Appendix A) but only a relative ranking (deployment priority) among those few selected example communities locations.

As can be expected, the results suggest the highest potentials for cooling energy savings in desert, inland/valleys, and central valley locations. The smallest savings are found in northern, coastal, and mountains regions. It should be recalled again that this ranking is only for the indirect effect.

Table 9.2 Relative Rankings for Cooling-Energy Reduction Potentials for Scenarios 1H, 7H, and 10H

	Scenario 1H Idealized community	Scenario 7H Idealized community	Scenario 10H Idealized community
Larger cooling savings	Blythe	Blythe	Blythe
	Van Nuys	Palmdale	Van Nuys
	Palmdale	Van Nuys	Palmdale
	Los Angeles	San Bernardino	Los Angeles
	San Bernardino	Palm Springs	Tulare
	Tulare	Los Angeles	Palm Springs
	Palm Springs	Tulare	Antioch
	Fresno	Barstow	Fresno
	Antioch	Fresno	Barstow
	Barstow	Antioch	Salton City
	Salton City	Mojave	Sacramento
	Sacramento	Salton City	San Bernardino
	Mojave	Sacramento	Mojave
	San Rafael	San Jose	San Rafael
	Santa Monica	San Rafael	San Jose
	San Jose	Chico	Chico
	Chico	San Francisco	Santa Monica
	San Francisco	Newport Beach	San Francisco
	Newport Beach	Santa Monica	Newport Beach
Smaller cooling savings	South Lake Tahoe	South Lake Tahoe	South Lake Tahoe

	Coastal
	Mountains
	Desert
	Interior and valleys
	Central Valley
	Northern
	Bay inland

9.1.2 Measures Ranked by City

The modeling results are also examined to evaluate the rankings of the measures within each idealized community (city location). Since there are a large number of such locations, only the sample cities presented earlier in Section 10.1.1 will be included in this discussion (the full dataset is included on a CD-ROM). The colors key used in Table 9.3 are as follows:

	Measures relating to increased albedo (roofs, walls, pavements, streets)
	Measures relating to runoff control (converting impervious to pervious surfaces)
	Measures relating to structural shading and control of sky view factor
	Measures relating to vegetation evapotranspiration (buildings, streets, pavements, parking lots)
	Measures relating to vegetation shading (buildings, streets, pavements, parking lots)

Table 9.3 (a) Ranking of Measures within Idealized Communities

San Rafael	dh/day	San Francisco	dh/day	San Jose	dh/day	Santa Monica	dh/day
1H	-0.32276	1H	-0.42256	1H	-0.17905	1H	-0.9063
1M	-0.16174	1M	-0.22205	1M	-0.09128	1M	-0.40393
2H	-0.15369	2H	-0.21108	6H	-0.08256	2H	-0.24442
6H	-0.13835	6H	-0.18955	10H	-0.08256	6H	-0.19359
10H	-0.13835	10H	-0.18955	2H	-0.0813	10H	-0.19359
11H	-0.09634	11H	-0.13036	12H	-0.0675	3H	-0.15495
12H	-0.09419	12H	-0.1284	3H	-0.05936	12H	-0.15404
3H	-0.08371	3H	-0.11198	2M	-0.04464	6M	-0.12303
2M	-0.07832	2M	-0.10579	7H	-0.04412	10M	-0.12303
6M	-0.06947	6M	-0.09445	11H	-0.04379	11H	-0.08151
10M	-0.06947	10M	-0.09445	9H	-0.0388	2M	-0.05603
5H	-0.06717	4H	-0.08398	6M	-0.03854	11M	-0.03532
4H	-0.06084	5H	-0.0712	10M	-0.03854	4M	-0.01768
7H	-0.06084	12M	-0.06485	12M	-0.03687	5H	0.015083
11M	-0.04831	11M	-0.0647	4H	-0.03493	7H	0.016403
12M	-0.04703	7H	-0.05486	11M	-0.03127	12M	0.02932
8H	-0.04221	3M	-0.05215	8H	-0.02953	8H	0.062531
9H	-0.04202	4M	-0.03988	3M	-0.02721	3M	0.072617
3M	-0.03851	8H	-0.03908	5H	-0.02692	4H	0.073143
5M	-0.03465	9H	-0.0388	4M	-0.02346	9H	0.07338
7M	-0.0316	5M	-0.0377	7M	-0.02131	5M	0.079483
4M	-0.02884	7M	-0.02862	9M	-0.01862	9M	0.109795
9M	-0.02135	9M	-0.01995	5M	-0.01612	8M	0.16053
8M	-0.02121	8M	-0.0189	8M	-0.01041	7M	0.163971
13M	0.032364	13M	0.04435	13M	0.014961	13M	0.221764
13H	0.065483	13H	0.090561	13H	0.030884	13H	0.336586

Table 9.3 (b) Ranking of Measures within Idealized Communities

Newport Beach	dh/day	Los Angeles	dh/day	Van Nuys	dh/day	San Bernardino	dh/day
1H	-1.96772	1H	-0.5078	1H	-0.63171	1H	-0.30789
1M	-0.97441	1M	-0.25375	1M	-0.33028	12H	-0.19711
2H	-0.95959	2H	-0.24011	2H	-0.30599	2H	-0.15543
6H	-0.79948	6H	-0.21449	6H	-0.26345	1M	-0.14254
10H	-0.79948	10H	-0.21449	10H	-0.26345	5H	-0.10141
11H	-0.59187	12H	-0.15758	12H	-0.19173	11H	-0.09766
12H	-0.52448	11H	-0.15349	11H	-0.1797	4H	-0.09397
3H	-0.47543	3H	-0.14566	3H	-0.17403	11M	-0.07667
2M	-0.47215	2M	-0.13131	5H	-0.17062	9H	-0.07604
6M	-0.39714	6M	-0.11269	2M	-0.15343	7H	-0.07439
10M	-0.39714	10M	-0.11269	6M	-0.13296	2M	-0.06927
4H	-0.35801	4H	-0.10727	10M	-0.13296	8H	-0.05753
11M	-0.28954	5H	-0.09497	7H	-0.12385	4M	-0.04937
12M	-0.25848	7H	-0.09208	4H	-0.12154	9M	-0.04199
5H	-0.24181	11M	-0.08572	5M	-0.09619	7M	-0.03886
3M	-0.21741	12M	-0.07923	12M	-0.0956	13H	-0.03834
4M	-0.16865	3M	-0.07745	11M	-0.09367	12M	-0.03298
7H	-0.15425	9H	-0.07452	3M	-0.08057	5M	-0.02962
5M	-0.12069	8H	-0.0591	9H	-0.07912	6H	-0.02936
8H	-0.11343	7M	-0.05328	8H	-0.07896	10H	-0.02936
9H	-0.10007	4M	-0.05295	7M	-0.05492	8M	-0.02511
7M	-0.0741	5M	-0.04972	4M	-0.05116	6M	-0.02217
8M	-0.05186	8M	-0.03885	9M	-0.04333	10M	-0.02217
9M	-0.04837	9M	-0.03732	8M	-0.03986	3H	-0.00723
13M	0.194381	13M	0.035744	13M	0.062439	13M	0.055466
13H	0.394714	13H	0.095902	13H	0.124786	3M	0.072304

Table 9.3 (c) Ranking of Measures within Idealized Communities

Chico		Sacramento		Antioch		Fresno	
	dh/day		dh/day		dh/day		dh/day
1H	-0.13807	1H	-0.14779	1H	-0.22023	1H	-0.14834
1M	-0.0737	1M	-0.07592	1M	-0.11166	1M	-0.07152
2H	-0.06787	2H	-0.07529	2H	-0.10732	2H	-0.07005
6H	-0.0591	12H	-0.06603	12H	-0.0939	6H	-0.05822
10H	-0.0591	6H	-0.06416	6H	-0.09351	10H	-0.05822
12H	-0.05695	10H	-0.06416	10H	-0.09351	7H	-0.0546
5H	-0.05013	3H	-0.05824	3H	-0.08442	12H	-0.05183
3H	-0.04683	9H	-0.05633	9H	-0.07021	9H	-0.04966
7H	-0.0451	7H	-0.05225	7H	-0.06572	3H	-0.04747
9H	-0.04429	11H	-0.04531	11H	-0.06394	5H	-0.04318
11H	-0.0397	8H	-0.03925	5H	-0.06032	11H	-0.04161
2M	-0.03754	5H	-0.03905	2M	-0.05418	8H	-0.03976
4H	-0.03154	2M	-0.03833	12M	-0.04865	2M	-0.03297
6M	-0.03133	12M	-0.03275	6M	-0.04664	6M	-0.0284
10M	-0.03133	6M	-0.03207	10M	-0.04664	10M	-0.0284
12M	-0.03122	10M	-0.03207	8H	-0.04595	9M	-0.02738
8H	-0.0312	4H	-0.03017	4H	-0.04147	12M	-0.02734
3M	-0.03004	3M	-0.02957	3M	-0.03981	7M	-0.02685
9M	-0.02939	7M	-0.02534	11M	-0.03391	4H	-0.02558
5M	-0.02693	9M	-0.02533	9M	-0.03333	3M	-0.02187
7M	-0.02586	11M	-0.02293	5M	-0.03333	11M	-0.02135
11M	-0.0218	5M	-0.02205	7M	-0.02988	5M	-0.02017
8M	-0.01888	8M	-0.02138	8M	-0.02679	8M	-0.01771
4M	-0.01588	4M	-0.01441	4M	-0.02071	4M	-0.01179
13M	0.006661	13M	0.015511	13M	0.022247	13M	0.017303
13H	0.017372	13H	0.028725	13H	0.04364	13H	0.032517

Table 9.3 (d) Ranking of Measures within Idealized Communities

Tulare		Palmdale		Mojave		Barstow	
	dh/day		dh/day		dh/day		dh/day
1H	-0.51185	1H	-0.61198	9H	-0.09026	1H	-0.09374
1M	-0.25521	1M	-0.30366	1H	-0.08546	2H	-0.05596
2H	-0.21783	2H	-0.26002	12H	-0.07998	8H	-0.04922
6H	-0.21375	6H	-0.24977	3H	-0.07037	1M	-0.04583
10H	-0.21375	10H	-0.24977	2H	-0.05486	11H	-0.04342
11H	-0.14561	11H	-0.17871	11H	-0.04497	7H	-0.04085
12H	-0.14381	12H	-0.176	1M	-0.04334	6H	-0.0367
3H	-0.13075	7H	-0.16213	8H	-0.04325	10H	-0.0367
6M	-0.103	3H	-0.1588	9M	-0.03953	2M	-0.02872
10M	-0.103	2M	-0.13041	12M	-0.0392	5H	-0.02642
7H	-0.09881	6M	-0.126	7H	-0.03615	9H	-0.02491
2M	-0.09741	10M	-0.126	6H	-0.03581	12H	-0.02389
4H	-0.09556	5H	-0.12151	10H	-0.03581	8M	-0.02354
12M	-0.07518	8H	-0.11812	3M	-0.03448	11M	-0.02037
8H	-0.07468	9H	-0.11377	2M	-0.02855	6M	-0.01714
11M	-0.07337	4H	-0.11362	5H	-0.0237	10M	-0.01714
9H	-0.07326	11M	-0.08646	11M	-0.01964	3H	-0.01619
5H	-0.05923	12M	-0.08643	8M	-0.01908	7M	-0.01582
3M	-0.05819	7M	-0.0795	6M	-0.01808	4H	-0.01546
7M	-0.05222	3M	-0.073	10M	-0.01808	12M	-0.00869
4M	-0.04335	5M	-0.06284	5M	-0.01618	3M	-0.00843
8M	-0.03696	8M	-0.05518	4H	-0.01595	5M	-0.00768
9M	-0.03661	4M	-0.05399	7M	-0.01471	9M	-0.00687
5M	-0.02984	9M	0.008835	4M	-0.00729	4M	-0.00624
13M	0.061119	13M	0.061088	13M	0.009468	13M	0.010437
13H	0.109123	13H	0.116218	13H	0.013939	13H	0.016998

Table 9.3 (e) Ranking of Measures Within Idealized Communities

Palm Springs		Salton City		Blythe		Yreka	
	dh/day		dh/day		dh/day		dh/day
1H	-0.23988	1H	-0.08075	1H	-0.63129	1H	-0.09297
1M	-0.11986	12H	-0.07935	1M	-0.30823	2H	-0.0813
2H	-0.10777	3H	-0.07137	2H	-0.26112	1M	-0.07154
6H	-0.09744	9H	-0.06497	6H	-0.25498	12H	-0.04036
10H	-0.09744	2H	-0.05171	10H	-0.25498	3H	-0.03937
7H	-0.08175	1M	-0.04074	11H	-0.17622	6H	-0.03281
12H	-0.07317	12M	-0.03992	12H	-0.17432	10H	-0.03281
5H	-0.06709	11H	-0.03678	3H	-0.15965	11M	-0.03053
3H	-0.06609	8H	-0.03339	7H	-0.13354	5H	-0.02505
9H	-0.06018	3M	-0.03329	2M	-0.1316	4M	-0.02415
11H	-0.06011	6H	-0.03324	6M	-0.12258	11H	-0.02161
2M	-0.05512	10H	-0.03324	10M	-0.12258	6M	-0.02146
8H	-0.04902	9M	-0.03257	4H	-0.11318	10M	-0.02146
6M	-0.04809	7H	-0.02701	8H	-0.09783	9H	-0.01926
10M	-0.04809	2M	-0.02653	9H	-0.09363	3M	-0.01548
4H	-0.04597	5H	-0.02027	11M	-0.08908	9M	-0.01467
7M	-0.04325	11M	-0.0183	12M	-0.08688	4H	-0.01421
12M	-0.03695	6M	-0.01667	5H	-0.08585	8M	-0.01305
9M	-0.03403	10M	-0.01667	3M	-0.07254	8H	-0.01232
3M	-0.03243	8M	-0.01626	7M	-0.06448	2M	-0.0098
5M	-0.03205	4H	-0.0144	4M	-0.05112	12M	-0.00861
11M	-0.02994	5M	-0.01242	8M	-0.04706	5M	-0.00539
8M	-0.0269	7M	-0.01064	9M	-0.04637	7H	-0.00385
4M	-0.0216	4M	-0.00742	5M	-0.04501	7M	0.002937
13M	0.024216	13M	0.008507	13M	0.062592	13M	0.026138
13H	0.04676	13H	0.017082	13H	0.13057	13H	0.028885

The first observation is that the dominant effects (largest reductions in air temperature) across all regions are caused by increased surface albedo (top three rows in Tables 9.3 (a)-(e)) with the exception of Mojave, Salton City, and San Bernardino where other measures can be as effective as albedo increase. The highest effectiveness of albedo strategies (in the top three rows) are those corresponding to increased roof albedo (1M and 1H) and pavement albedo (2H). Other albedo-control scenarios are relatively more spread out through the rankings depending on land-use characteristics (deployment potential) at each location. In general, the effectiveness of albedo measures is in the following order: roofs, pavements, streets/highways, and walls, but other strategies can be locally more effective than albedo increase. For example, in Los Angeles, shading with vegetation is relatively more effective than a high increase in streets albedo or a

moderate increase in pavements albedo. Because of its coastal location, the effects of evapotranspiration from vegetation in Los Angeles are ranked near the bottom of the table in general, but evapotranspiration from trees around buildings (7H) is still more effective than moderate increases in shade trees (11M or 12M) or moderate increases in streets/highways albedo (3M) or moderate increases in wall albedos (4M).

Another example, in San Bernardino, the top strategy is that of large increases in roof albedo immediately followed (in ranking) by a measure involving shading of streets. The effects from evapotranspiration from trees around buildings and streets are larger than effects from moderate increases in pavements or walls albedo.

Another observation relates to the ranking of measures involving evapotranspirative cooling from vegetation. It can be seen from the sample locations in Table 9.3(a)-(e) that the effectiveness of such measures is greater in drier and/or hotter microclimates. For example, in Mojave, Barstow, and Salton City, vegetation evapotranspiration ranks in the top four measures. In other warm locations, such as Fresno, Palmdale, and Palm Springs, evapotranspiration cooling ranks in the top 6-8 measures. In cooler and/or relatively more humid microclimates, for example, coastal areas, cooling from vegetation ranks considerably lower, for example, in San Francisco, San Rafael, Santa Monica, Newport Beach, and Yreka.

Generally speaking, within each measure, the spread (in rankings in the tables) is due to variations in land use; across measures, the spread is due to both land-use and climate.

9.2. Metropolitan Areas

In this section, results from modeling the three metropolitan regions are discussed. The results are from modeling the effects of community-scale measures when implemented throughout the three regions not just at the small scale of a community (200 m) as in Section 9.1. The focus of the discussion is on changes in air temperature, for example, the maximum daily cooling resulting from each measure. This indicator is selected as it embodies all effects resulting from deploying CSEM in a region.

Note that the results discussion in this section uses a different terminology than that used in Section 9.1. Here, scenarios identified with two digits indicate combinations. For example, scenario 12 in idealized communities modeling is shading of streets with vegetation, whereas in this section, scenario 12 represents a combination of scenarios 1 and 2 (roofs albedo and pavements albedo). Table 9.4 summarizes the results in a side-by-side comparison of the rankings of the 3 regions.

Table 9.4 Ranking Comparison of Average of Largest Daytime Changes in Air Temperature (C) Among the Three Regions

Rank	Fresno		Sacramento		Los Angeles	
1	12H	-0.70	12H	-1.03	12H	-1.19
2	13H	-0.55	13H	-0.80	13H	-0.96
3	14H_sce15	-0.43	14H_sce15	-0.67	14H_sce15	-0.77
4	1H	-0.42	1H	-0.60	1H	-0.73
5	12M	-0.38	24H_sce15	-0.60	12M	-0.64
6	24H_sce15	-0.35	2H	-0.58	13M	-0.54
7	13M	-0.32	12M	-0.58	24H_sce15	-0.53
8	2H	-0.30	13M	-0.43	2H	-0.50
9	1M	-0.22	14M_sce15	-0.40	14M_sce15	-0.43
10	14M_sce15	-0.22	1M	-0.38	1M	-0.43
11	34H_sce15	-0.18	2M	-0.30	3H	-0.31
12	3H	-0.17	24M_sce15	-0.28	34H_sce15	-0.31
13	24M_sce15	-0.17	34H_sce15	-0.27	37H	-0.30
14	37H	-0.17	3H	-0.25	2M	-0.26
15	2M	-0.13	37H	-0.22	24M_sce15	-0.26
16	37M	-0.10	3M	-0.13	34M_sce15	-0.19
17	34M_sce15	-0.10	34M_sce15	-0.12	3M	-0.17
18	3M	-0.08	37M	-0.10	37M	-0.16
19	4M_sce15	0.00	4M_sce20	-0.02	4M_sce15	0.00
20	4M_sce20	0.00	4M_sce15	0.00	4M_sce20	0.00
21	4H_sce15	0.00	4H_sce15	0.00	4H_sce15	0.00
22	4H_sce20	0.00	4H_sce20	0.00	4H_sce20	0.00
23	7M	0.00	7M	0.00	7M	0.00
24	7H	0.00	7H	0.00	7H	0.00

The table shows that relative to the impacts in the idealized communities, the changes in air temperature in the metropolitan areas are one to two orders of magnitude larger. This is because of the larger area impacted by the CSEM, for example, an entire region, instead of a single 200-m community. Thus, for example, while the changes at the community scale were in the magnitude of 0.01C, the impacts in the metropolitan areas are in the magnitudes of 0.1 to 1.2C. Another observation is that as the urban area becomes larger, for example, Fresno, Sacramento, and Los Angeles (in that order), the impacts also become larger, as seen in Table 9.4. For example, the impacts in Los Angeles are roughly about twice as large as those in Fresno.

The rankings also indicate that the first four most effective strategies (above the first horizontal line in the table) are identical across all three regions. Thus scenarios 12H (high level of combined increase in roof and pavement albedo), 13H (combined high increases in roof albedo and vegetation cover), 14H_sce15 (combined high increases in roof albedo and solar PV), and 1H (high increases in roof albedo), are the most effective strategies. The common denominator

in all of these four measures is a large level of increase in roof albedo, which seems to be effective across all regions. This was also observed in the idealized communities results (see Table 9.3). The metropolitan-areas simulations indicate that in combination with high increases in roof-albedo, the effective strategies are increased pavement albedo, increased vegetative cover, and deployment of solar PV, in that order. The solar PV deployment is assumed here to have a solar conversion efficiency of 15 percent, which is a prevailing current average. The results also show that a combination of cool roofs and solar PV has a slightly larger cooling effect than cool roofs alone.

That scenarios 12, 13, 14, and 1 are the top-most ranking measures means: 1) that the implementation of these strategies for the direct effects has no negative, inadvertent impacts on the atmosphere and on heat islands, thus are fully beneficial, and 2) beyond that, these strategies actually have additional positive impacts in reducing the heat island and cooling the air thus further contributing to energy efficiency via the indirect effect as well.

Near the bottom of Table 9.4 (below the second horizontal line), it can be seen that strategies of deploying solar PV (as a standalone measure), at varying conversion efficiencies (4M and 4H with sce15 and sce20), has no negative impacts on air temperature in the three metropolitan areas. There is however, a small cooling effect (smaller than two digits after the decimal point), except for Sacramento, at a conversion efficiency of 20 percent, causing a small cooling of 0.02C. Thus the large-scale deployment of solar PV has no negative impacts on the urban heat islands in these regions (indirect effect) and their implementation for achieving the direct effects (power generation and energy savings) are fully beneficial and realizable. Taha (2012) also shows that beyond a conversion efficiency of 20 percent, solar PV deployment actually cools the environment by up to 0.2C or more.

Similarly, the implementation of green roofs (7M and 7H at the bottom of Table 9.4) also has no impact on ambient temperature and heat islands. Thus the direct benefits of green roofs (reducing heat gain) are fully realizable without adverse impacts on the ambient air.

In the mid-range (between the two horizontal lines in Table 9.4), the rankings of measures vary from one area to another, as a function of LULC and climate characteristics. Figure 9.2 shows the relative effectiveness (relative impacts on air temperature) of the measures in Table 9.4 in the three metropolitan regions. Note that the absolute impacts become larger (temperature decreases) as the size of the geographical area increases from Fresno to Los Angeles. This is due to increased availability of modifiable surfaces and deployment potential as urban areas increase in size.

Figure 9.2 (a) Temperature Impacts of CSEM in Fresno

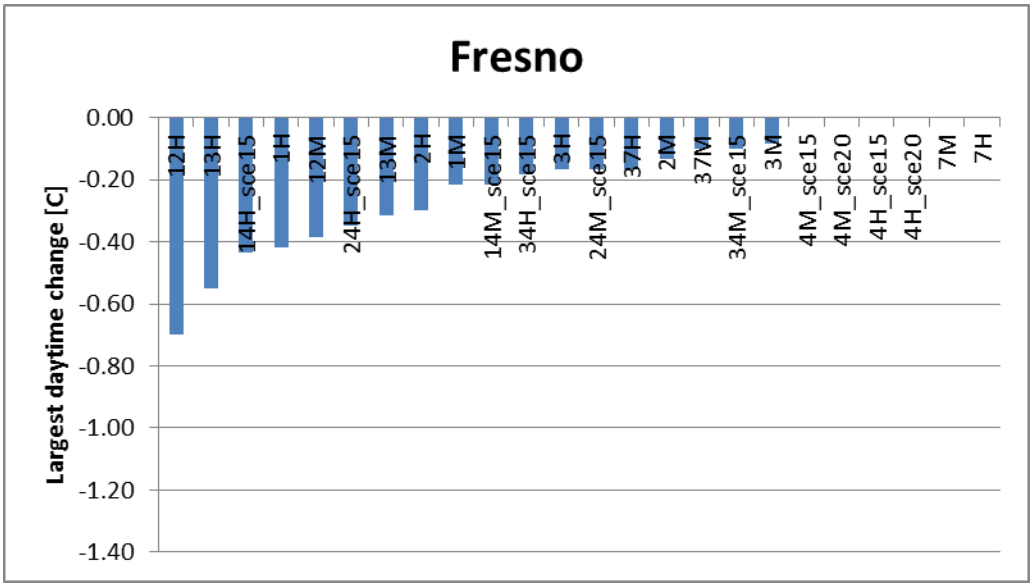


Figure 9.2 (b) Temperature Impacts of CSEM in Sacramento

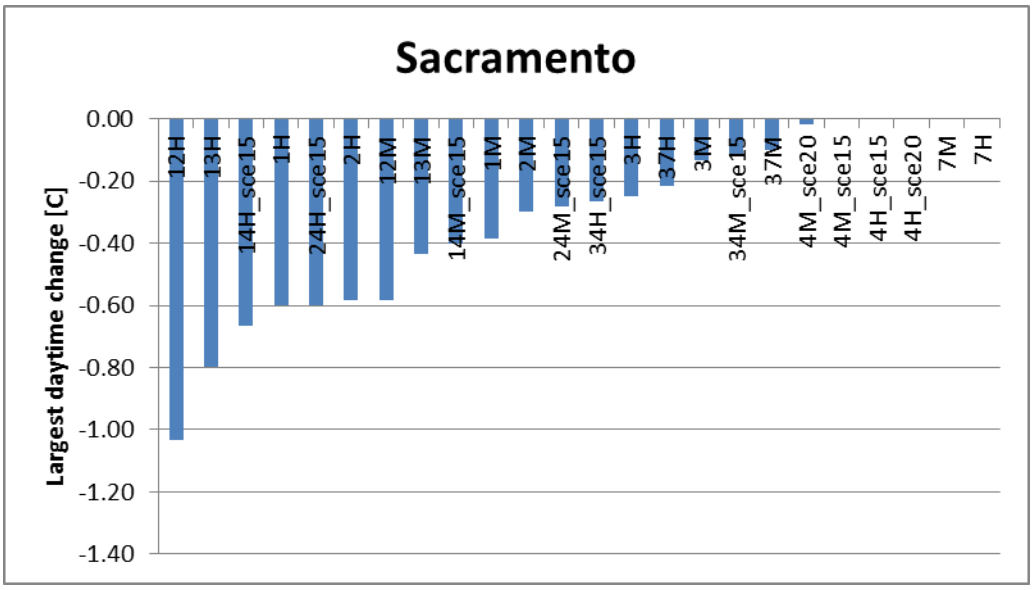
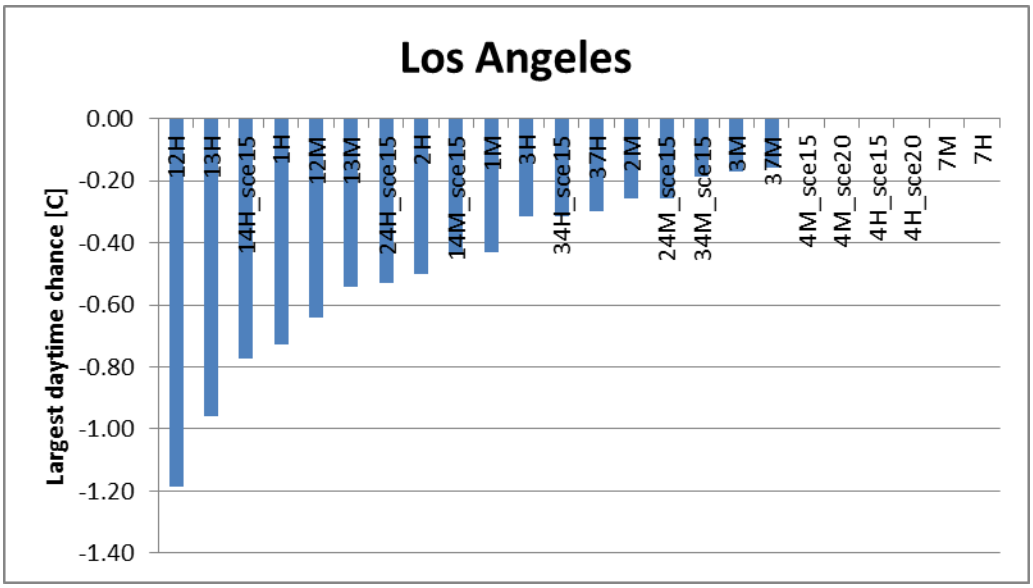


Figure 9.2 (c) Temperature Impacts of CSEM in Los Angeles



In-between the dominant measures (top 4 rows in the table) and the measures with no impacts on ambient temperatures (bottom 6 rows of table), the remaining measures (between the two horizontal lines) have different rankings in the three regions, depending on their climates and land-use/land-cover characteristics. It is difficult to identify a particular pattern in the ranking of these strategies but a general observation is that the bottom part of the ranking is relatively dominated by measures 3, 34, and 37 indicating that the impacts of vegetation-increase strategies on ambient air temperature are smaller than those of albedo increase (1's and 2's) but still larger than strategies with increased PV alone or deployment of green roofs alone, for example. Another observation can be made that for Fresno and Los Angeles, the effectiveness of vegetation-related strategies starts at rank 11, whereas for Sacramento, it starts at rank 13, meaning that vegetation is slightly more effective at cooling the air in the former two regions than in the Sacramento area.

The effects of some combinations of CSEM were also evaluated. Table 9.5 provides the incremental impacts on air temperature resulting from selected combinations of CSEM. For this exercise, only the H versions of the scenarios are used in the table.

Table 9.5 Incremental Impacts of CSEM Combinations on Peak Decrease in Air Temperature

	CSEM combination	ΔT (C) Fresno	ΔT (C) Sacto	ΔT (C) LA
1	12H compared to 1H: Incremental effect of adding cool pavements to a cool-roofs measure	-0.28	-0.43	-0.46
2	13H compared to 1H: Incremental effect of adding vegetation evapotranspiration to cool-roofs measure	-0.13	-0.20	-0.23
3	14H compared to 1H: Incremental effect of adding solar PV to cool-roofs measure	-0.01	-0.07	-0.04
4	24H compared to 2H: Incremental effect of adding solar PV to a cool-pavements measure	-0.05	-0.02	-0.03
5	34H compared to 3H: Incremental effect of adding solar PV to a vegetation-evapotranspiration measure	-0.01	-0.02	0
6	37H compared to 3H: Incremental effect of adding green roofs to a vegetation-evapotranspiration measure	0	+0.03	+0.01

In Table 9.5, the first three comparisons (rows 1, 2, and 3) relate to the effects of combining additional measures with cool roofs. The results suggest that adding a cool-pavements measure to cool roofs (line 1, measure 12H) can further decrease air temperature by an incremental amount of up to 0.46C, 0.43C, and 0.28C (in Los Angeles, Sacramento, and Fresno, respectively). Considering that the cooling from cool roofs alone is 0.73, 0.60, and 0.42C respectively in Los Angeles, Sacramento, and Fresno (Table 9.4), the effects of adding cool pavements are significant (63 percent, 71 percent, and 66 percent, respectively). The effects of adding vegetation evapotranspiration to cool roofs (measure 13H, row 2) has about half the effect of adding cool pavements (compare row 2 to row 1), but is still significant.

Adding solar PV panels while implementing cool roofs (measure 14H) has the effect shown in row 3. The incremental cooling effects are very small and negligible. However, the fact that no positive effects (increase in air temperature) result from this combination means that the full benefits of cool roofs are realizable (both direct and indirect) as well as the direct effects of solar PV (benefits of generating electricity) without any negative impacts on ambient air or heat islands. In row 4, the incremental effects of adding solar PV while deploying cool-pavements measures (measure 24H) are, again, negative, small, and negligible. As with measure 14H, the small cooling means no adverse impacts on heat islands and air temperature and thus the full potential benefits of both measures can be achieved. The same can be said regarding measure 34H (row 5) which is adding solar PV to a scenario of vegetation evapotranspiration cooling. Finally, for measure 37H (Row 6), which represents a scenario of adding green roofs to ground-level vegetation-evapotranspiration, the effects are very small, negligible, but positive. The reason for the latter is the reduced mixing caused by decreased albedo and increased roughness on roof tops. However, the effect is so small that it does not impact the benefits gained from implementing the strategies in any way (the indirect effects of ground level vegetation and the direct effects of both green roofs and ground-level vegetation).

Figures 9.3 through 9.5 depict the change in air temperature (from the base case) for selected scenarios (10 out of 24 scenarios) 1M/1H, 2M/2H, 3M/3H, 12M/12H, and 13M/13H, for each region. The goal is to also show the aerial extents impacted by temperature changes.

Figure 9.3 (a) Largest Impacts (C) on Air Temperature for Scenarios 1M (Left) and 1H (Right) in the Sacramento Region

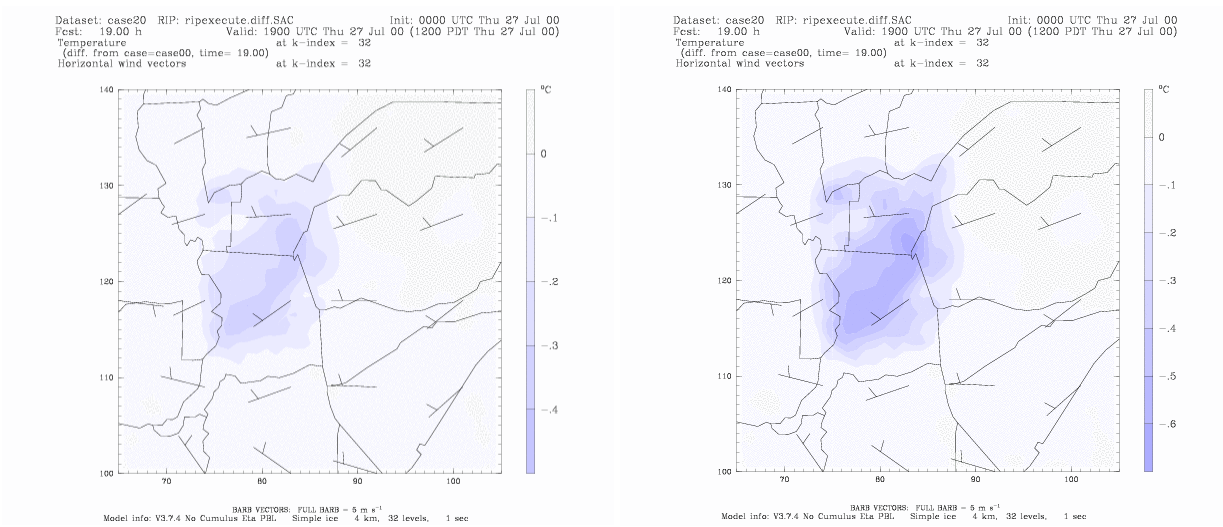


Figure 9.3 (b) Largest Impacts (C) on Air Temperature for Scenarios 2M (Left) and 2H (Right) in the Sacramento Region

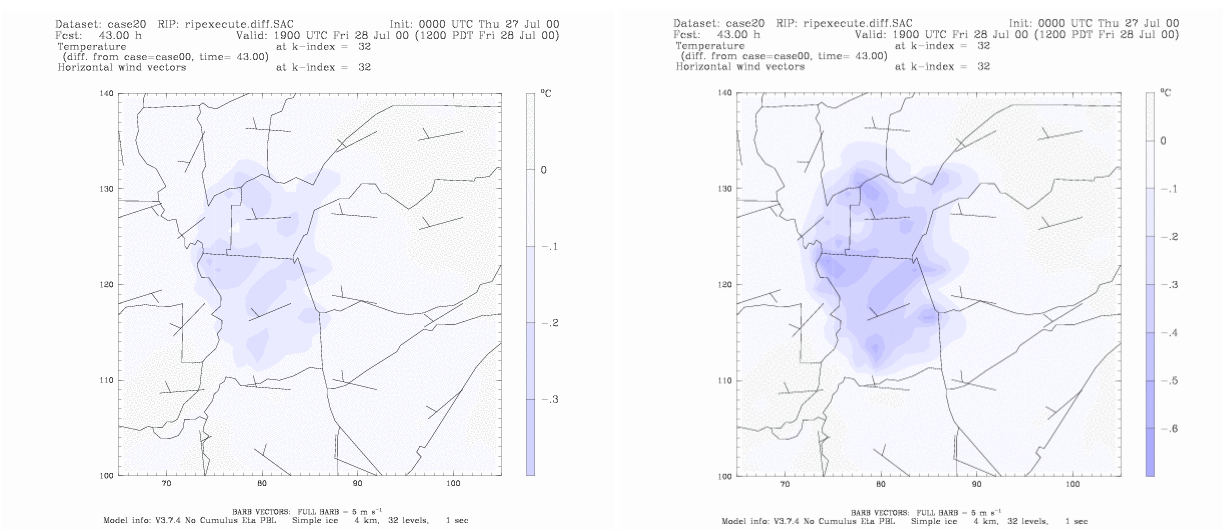


Figure 9.3 (c) Largest Impacts (C) on Air Temperature for Scenarios 3M (Left) and 3H (Right) in the Sacramento Region

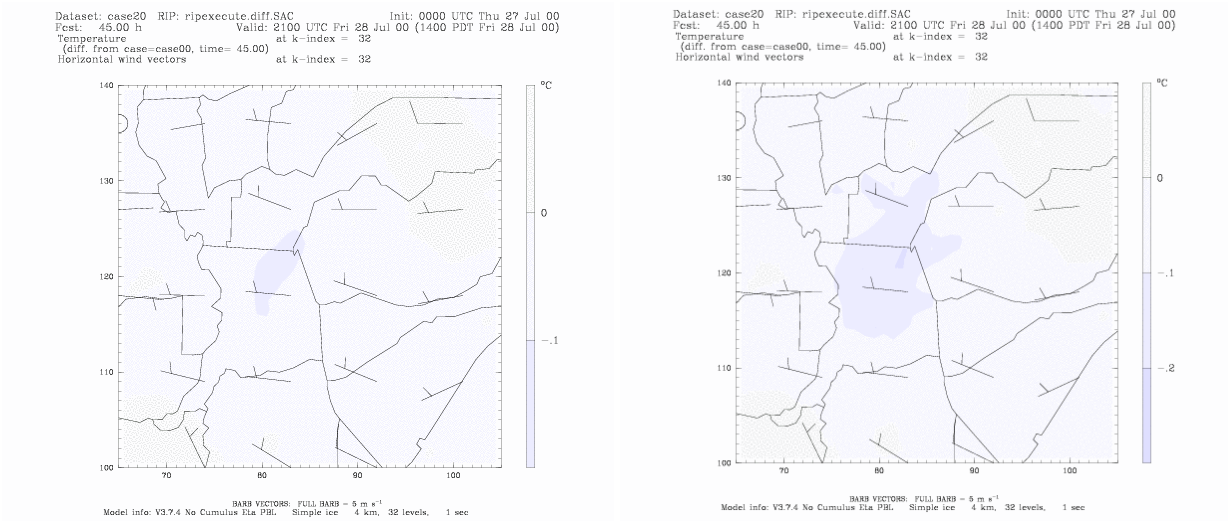


Figure 9.3 (d) Largest Impacts (C) on Air Temperature for Scenarios 12M (Left) and 12H (Right) in the Sacramento Region

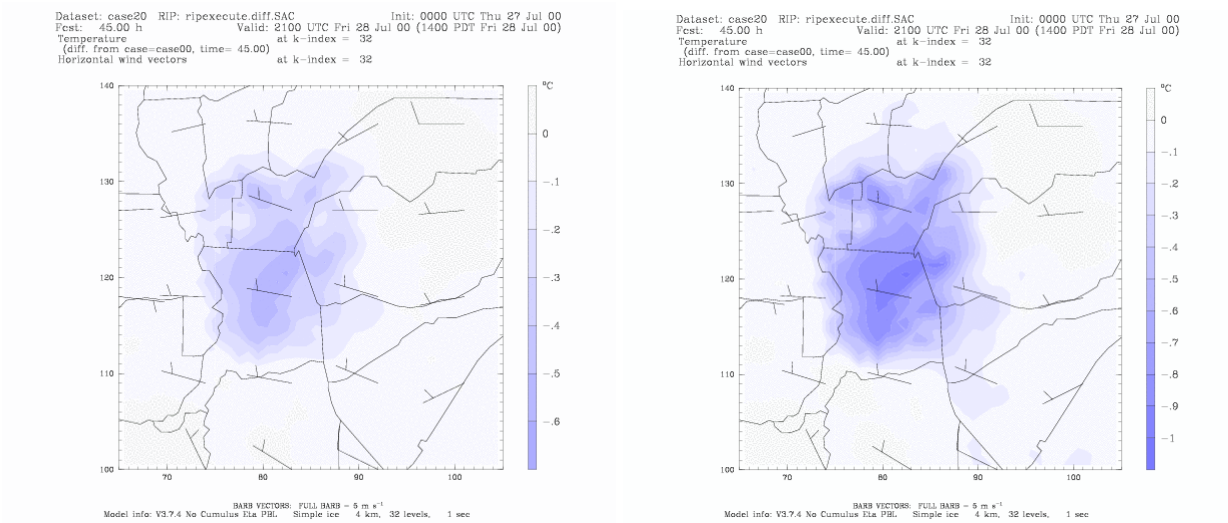


Figure 9.3 (e) Largest Impacts (C) on Air Temperature for Scenarios 13M (Left) and 13H (Right) in the Sacramento Region

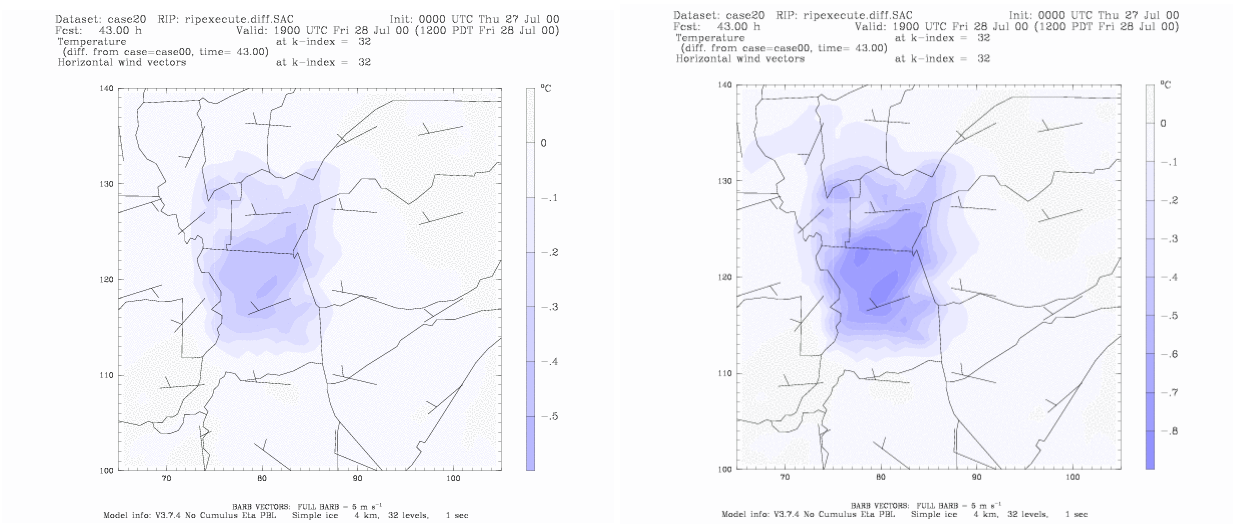


Figure 9.4 (a) Largest impacts (C) on air temperature for scenarios 1M (left) and 1H (right) in the Fresno region

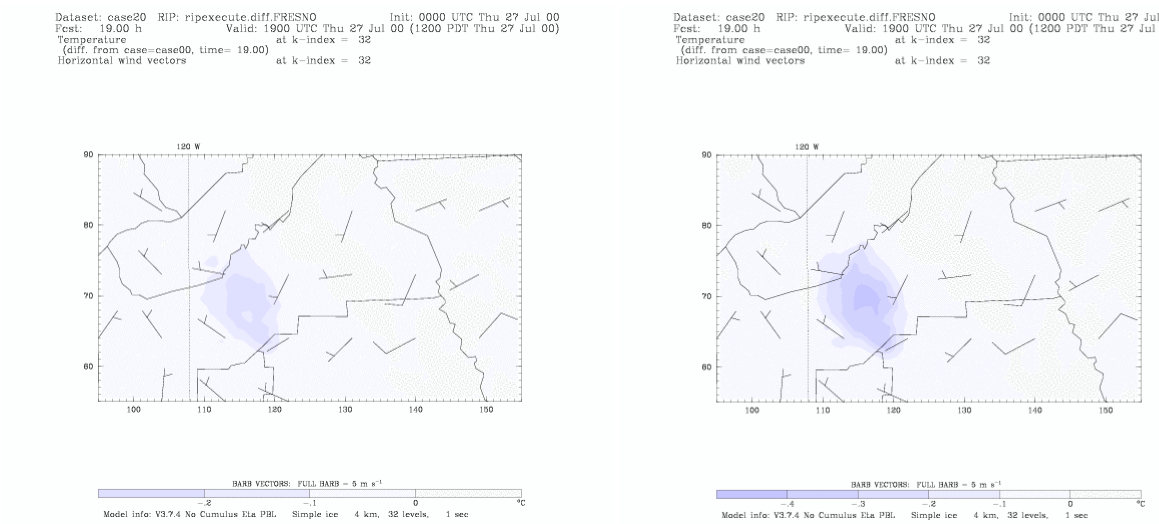
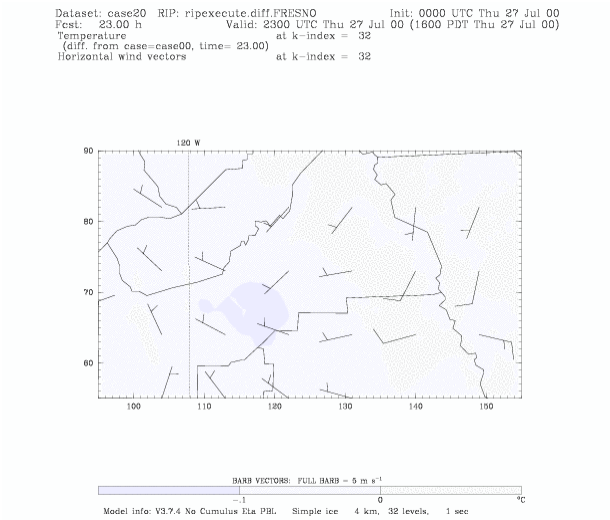


Figure 9.4 (b) Largest Impacts (C) on Air Temperature for Scenarios 2M (Left) and 2H (Right) in the Fresno Region



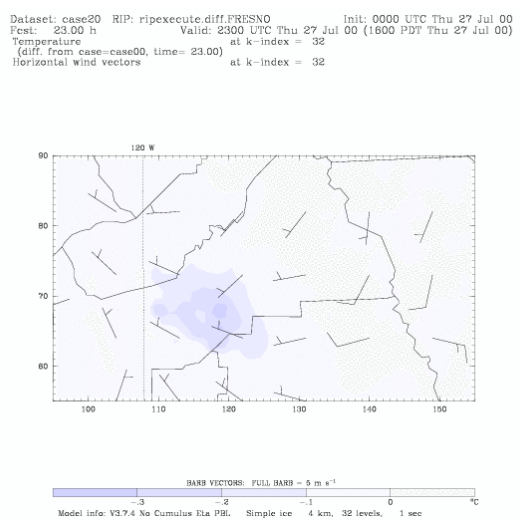
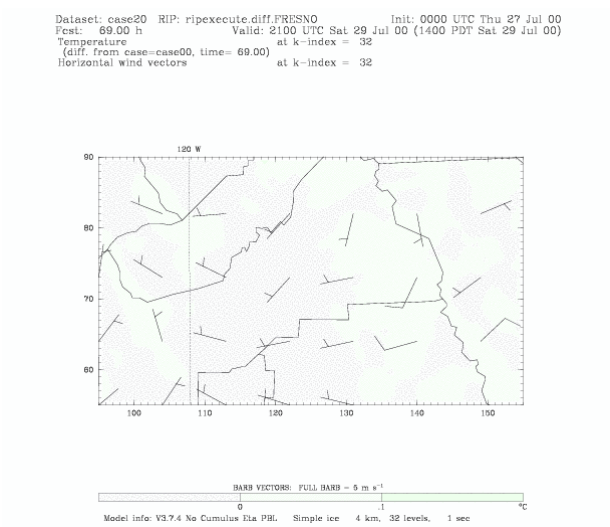


Figure 9.4 (c) Largest Impacts (C) on Air Temperature for Scenarios 3M (Left) and 3H (Right) in the Fresno Region



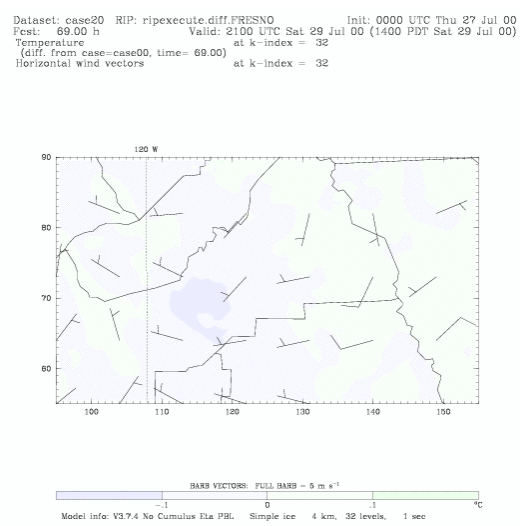
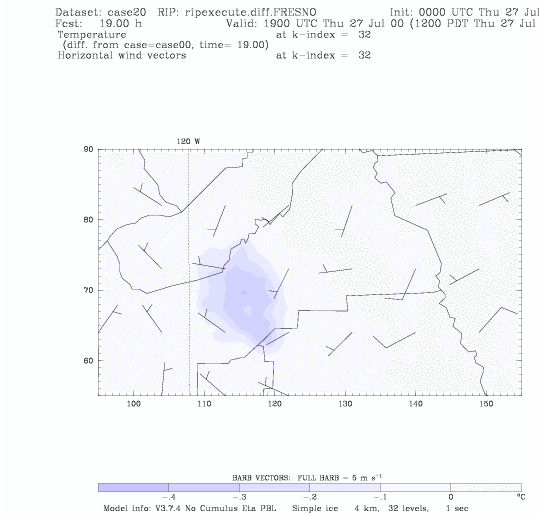


Figure 9.4 (d) Largest Impacts (C) on Air Temperature for Scenarios 12M (Left) and 12H (Right) in the Fresno Region



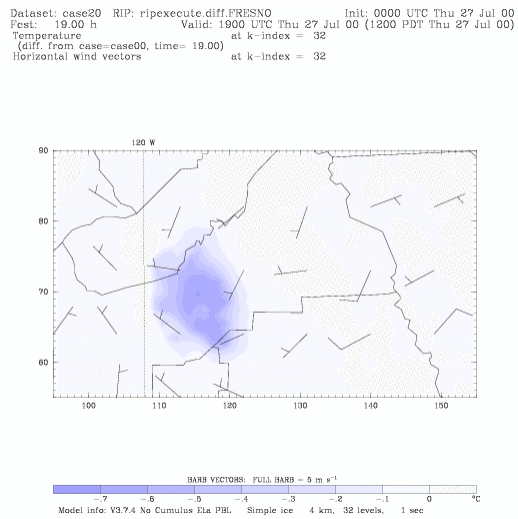
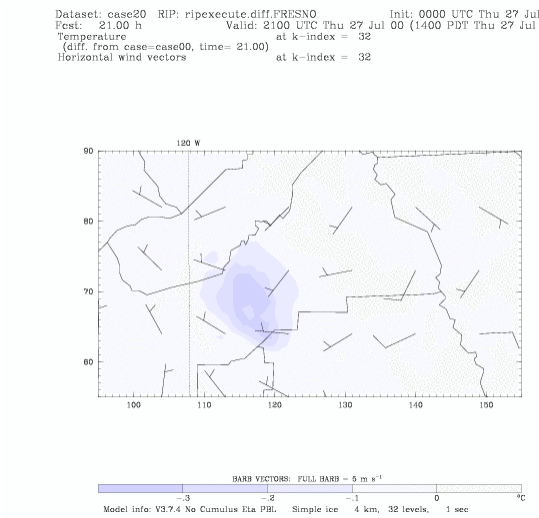


Figure 9.4 (e) Largest Impacts (C) on Air Temperature for Scenarios 13M (Left) and 13H (Right) in the Fresno Region



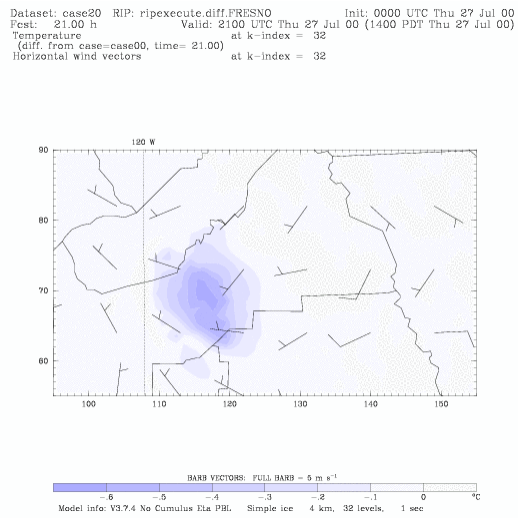


Figure 9.5 (a) Largest Impacts (C) On Air Temperature for Scenarios 1M (Left) and 1H (Right) in the Los Angeles Region

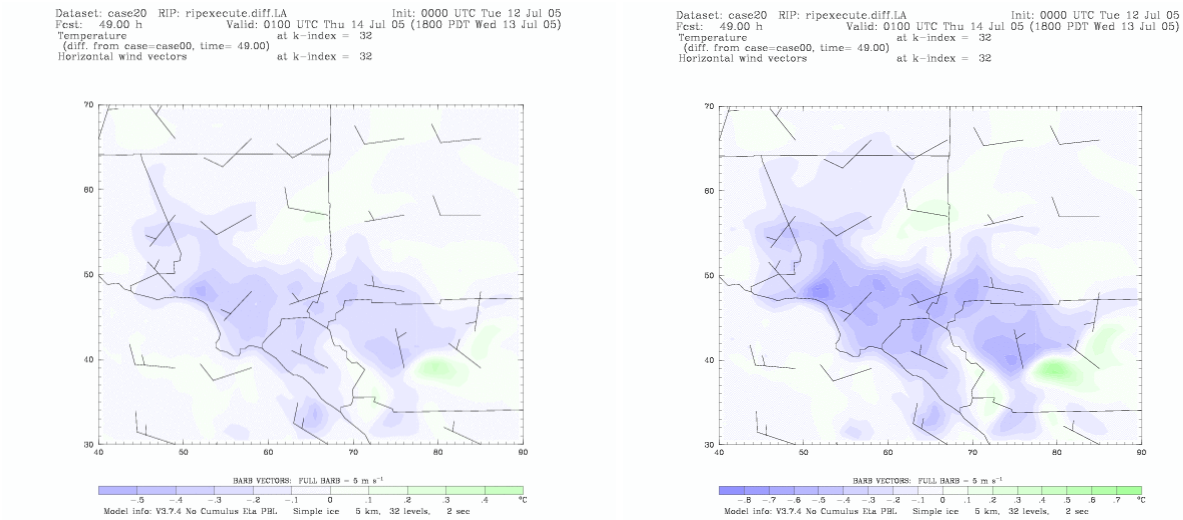


Figure 9.5 (b) Largest Impacts (C) on Air Temperature for Scenarios 2M (Left) and 2H (Right) in the Los Angeles Region

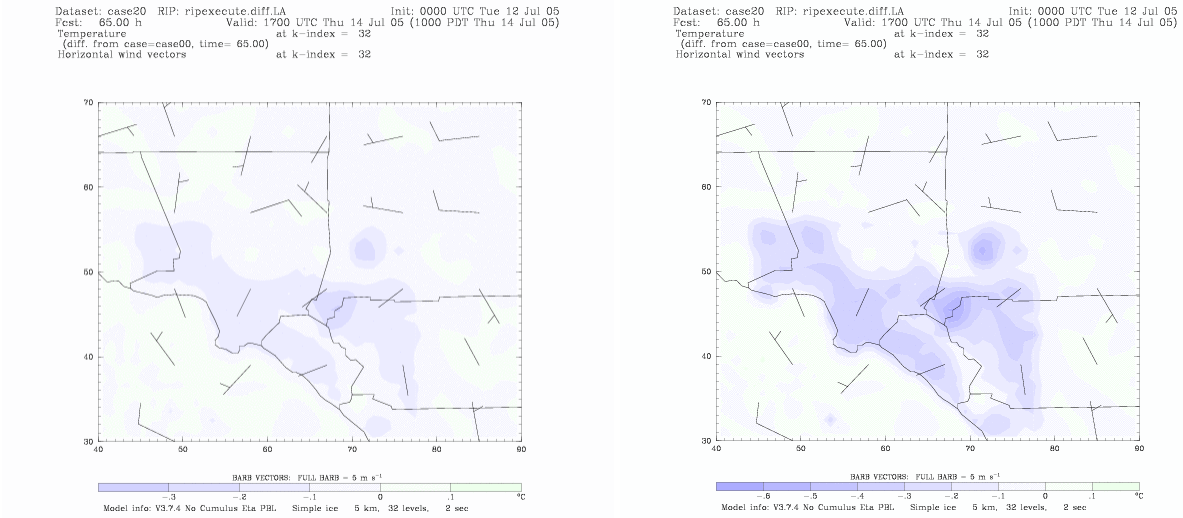


Figure 9.5 (c) Largest Impacts (C) on Air Temperature for Scenarios 3M (Left) and 3H (Right) in the Los Angeles Region

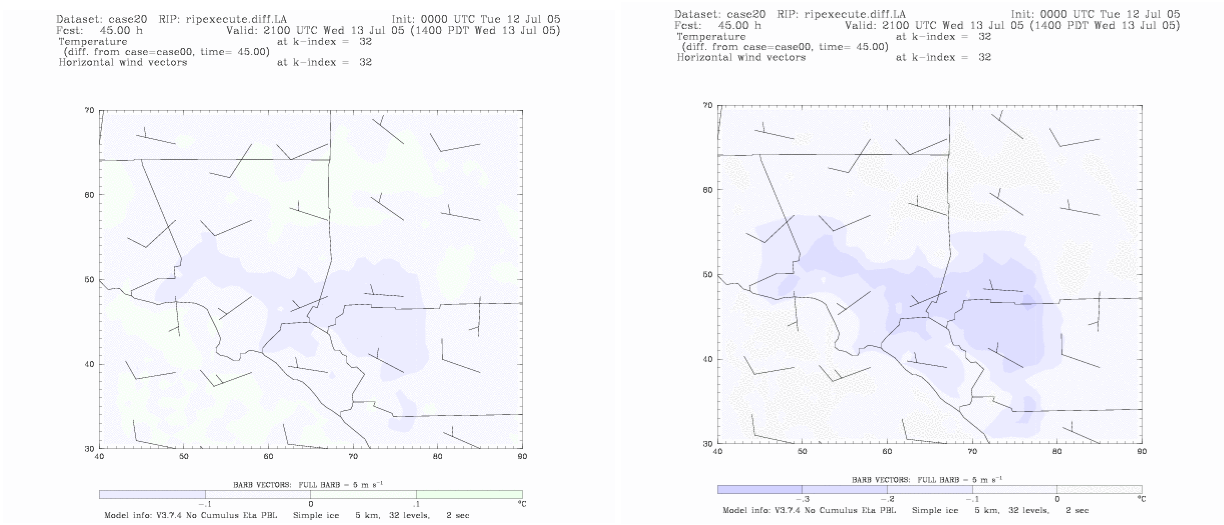


Figure 9.5 (d) Largest Impacts (C) on Air Temperature for Scenarios 12M (Left) and 12H (Right) in the Los Angeles Region

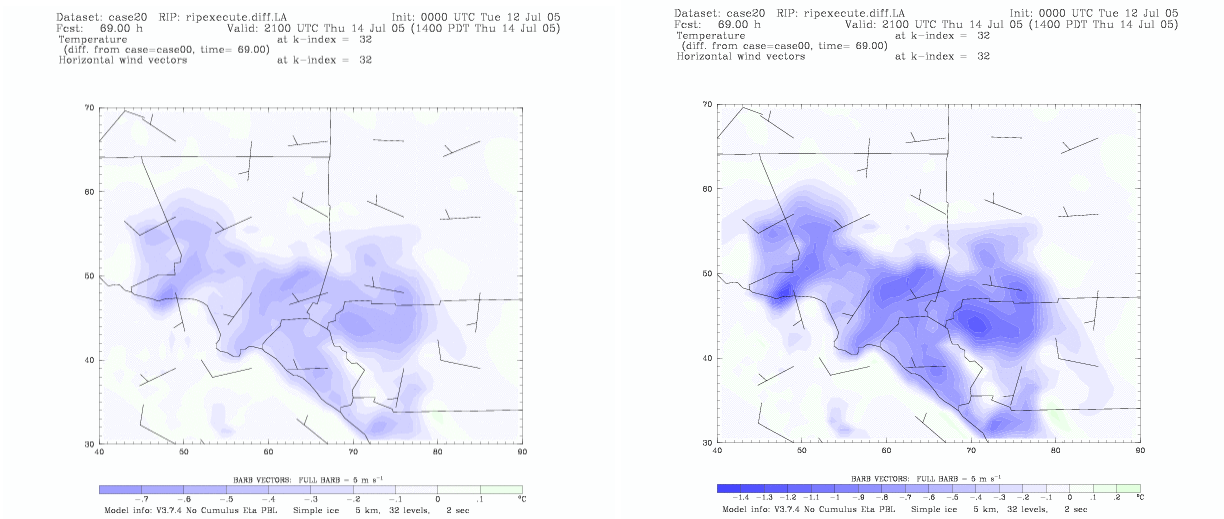
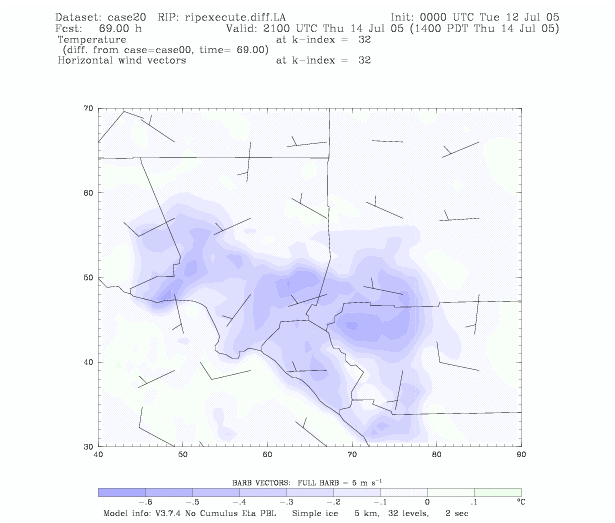
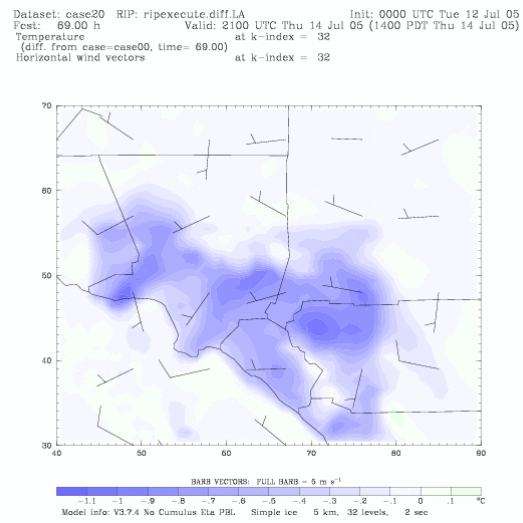


Figure 9.5 (e) Largest Impacts (C) on Air Temperature for Scenarios 13M (Left) and 13H (Right) in the Los Angeles Region





CHAPTER 10:
Summary and Conclusions

In this project, a modeling system was updated and applied to quantify and evaluate the indirect effects of community-scale energy measures (CSEM) in a number of climate zones (micro-climates) in California. The indirect effects were evaluated through detailed, advanced state-of-science, fine-resolution meteorological modeling and land-use/land-cover characterization. The analysis was carried out in two manners. In the first, hypothetical idealized communities in 180 microclimates were modeled to evaluate the impacts of the measures in standalone fashion. In the second, three actual California metropolitan areas (Sacramento, Fresno, and Los Angeles) were fully modeled for various CSEM in standalone fashion and in several combinations thereof. The focus of the analysis and discussion was the change in air temperature and derived quantities such as normalized and non-normalized degree-hours.

The effectiveness of CSEM in idealized communities was in turn ranked in two manners. In the first, results from all strategies at a particular location (location is unvarying) were evaluated, whereas in the second, the impacts of a strategy at all locations (strategy is unvarying) were quantified. The modeling results suggest that some measures, such as cool roofs, are relatively dominant across various micro-climates and locations. Other strategies, such as urban forestation, are relatively more dominant in the drier and warmer micro-climates of California. However, the actual rankings of measures vary from one location to another and should be evaluated on a case-by-case basis in terms of potential impacts on meteorology, for example, air temperature and heat islands.

The modeling shows that the effectiveness of the measures (at reducing air temperature) within each community is generally in the following order, from most to least effective: 1) increased roof albedo, 2) increase in pavement albedo, 3) structural and natural shading of buildings, 4) natural shading of parking lots and streets, 5) increased street albedo, 6) increased wall albedo, 7) conversion of impervious to pervious surfaces, 8) vegetation evaporative cooling for buildings, 9) vegetation evaporative cooling of parking lots, and 10) vegetation cooling of streets. However, it is important to note that this order is general and is reversed in many locations for certain scenarios where, for example, urban forestation becomes the most effective measure. In other situations, a strategy of converting impervious surfaces to pervious ones dominates the positive effects. The detailed rankings for each community are provided in Appendix A.

The results also indicate that certain strategies, for example cool roofs, cool pavements, cool streets and highways, and shading of buildings and parking lots, have some of the largest effects and are most effective in southern parts of the State. These areas, for example, in Southern California, also have some of the highest levels of urban development in the State. Thus the results suggest that this region be given priority for deployment of the CSEM mentioned above.

Results from the idealized-communities modeling in 180 microclimates also show that at community scale (200-m), the impacts of moderate increases in roof albedo range from -1 to 0 degree-hour per day (dh/day) and from about -2 to approximately 0 dh/day for the large increases in albedo. The ranking generally increases from south to north (geographically), for example, the largest impacts of cool roofs are found in southern parts of the state and the smallest are found in the northern parts. For the scenarios with pavement-albedo increase, the impacts range from -0.5 to approximately 0 dh/day for the moderate case and from -1 to approximately 0 dh/day for the larger increase in albedo. The impacts of moderate street albedo increase range from -0.25 to 0 dh/day and from about -0.5 to 0 dh/day for the large increase, thus about one fourth as effective as cool roofs. For wall albedo changes, the impacts of moderate increases range from -0.2 to 0 dh/day and for the high scenario, from about -0.4 to 0 dh/day.

For a strategy of converting impervious surfaces to pervious cover, the impacts of moderate conversion range from -0.14 to 0 dh/day and from -0.3 to approximately 0 dh/day for larger conversions. Thus in general, the effects are smaller than those of albedo modifications. While the effectiveness of this measure generally increases geographically from south to north, as with increased albedo, the rankings are different in terms of city locations.

The impacts of moderate vegetation cover increase for evapotranspiration around buildings range from -0.11 to 0 dh/day for the moderate scenario and from about -0.22 to approximately 0 dh/day for the high scenario. The ranking order is significantly different from that for increased albedo. The top rankings shift to relatively more inland regions partly because of changes in atmospheric moisture availability, among other factors, that affect the rate of evapotranspiration. For vegetation around parking lots, the evapotranspiration impacts range from -0.08 to 0 dh/day and from about -0.17 to 0 dh/day for the moderate and high scenarios, respectively. The impacts of evapotranspiration from vegetation along streets and highways range from -0.07 to 0 dh/day and from about -0.15 to 0 dh/day for the moderate and high scenarios, respectively.

In terms of strategies that involve vegetation shading of buildings, the effects are directionally similar to those of scenarios of albedo increase, but with smaller impacts. In this case, the effects range from -0.41 to approximately 0 dh/day for the moderate scenario and from -0.83 to 0 dh/day for the high scenario, roughly half of the effects of albedo increase. For parking-lot shading, the impacts range from -0.30 to approximately 0 dh/day and from -0.61 to 0 dh/day for the moderate and high scenarios, respectively, slightly smaller than the effects of cover increase for buildings shade, and about one third of the effects of cool roofs. Finally, for street shade, the effects range from -0.27 to approximately 0 dh/day for the moderate scenario and from -0.55 to 0 dh/day for the high scenario, slightly smaller than the effects of cover increase for parking-lots shade, and almost half of the effect of cover increase for buildings shade.

For the metropolitan areas (not idealized communities), the rankings indicate that the most effective strategies are similar across all three regions (Sacramento, Fresno, and Los Angeles). Scenarios of 1) combined increases in roof and pavement albedos, 2) combined increases in roof albedo and vegetation cover, 3) combined increases in roof albedo and solar PV, and 4)

increases in roof albedo, are the most effective strategies. The common denominator in these four measures is an increase in roof albedo (cool roofs) which seems to be equally effective across all regions. Thus in other words, the metropolitan-areas simulations indicate that in combination with increases in roof-albedo, the most effective strategies are increased pavement albedo, increased vegetative cover, and deployment of solar PV, in that order. The results also show that a combination of cool roofs and solar PV has a slightly larger cooling effect than cool roofs alone.

The metropolitan-areas modeling results indicate that strategies of deploying solar PV (as a standalone measure), at conversion efficiencies between 15 percent and 20 percent, has no negative impacts on air temperature and heat islands in the three metropolitan areas. There can be, however, a small cooling effect (positive impact), up to 0.02C when the conversion efficiency reaches 20 percent. Higher conversion efficiencies can cause larger cooling. Thus the benefits from large-scale deployment of solar PV for achieving the direct effects (power generation and energy savings) are fully realizable. The deployment of green roofs similarly has no impacts on ambient temperature and heat islands. Thus the direct benefits of green roofs (reducing heat gain in buildings) are fully realizable without adverse impacts on the ambient air.

The range in-between these two ends (most dominant measures and the measures with no impact on air temperature), consists of strategies that have different rankings in the three regions, depending on their climates and land-use/land-cover characteristics. It is difficult to identify a particular pattern in the ranking of these measures but a general observation can be made in that the impacts of vegetation-increase strategies on ambient air temperature are smaller than those of albedo increase but still larger than strategies with increased PV alone or deployment of green roofs alone, for example.

Combinations of measures were also modeled and evaluated at the scales of the three metropolitan areas. For example, the results suggest that adding a cool-pavements measure to cool roofs can further decrease air temperature by an incremental amount of up to 0.46, 0.43, and 0.28C (in Los Angeles, Sacramento, and Fresno, respectively). These represent 63 percent, 71 percent, and 66 percent, respectively of the effects of cool roofs alone and are thus significant. The effects of adding vegetation evapotranspiration to cool roofs has about half the effect of adding cool pavements.

The deployment of solar PV panels while implementing cool roofs has a very small incremental cooling effect. However, that no positive effects (increase in air temperature) result from this combination of measures implies that the full benefits of cool roofs are realizable (both direct and indirect) as well as the direct effects of solar PV (benefits of generating electricity) without any negative impacts on ambient air temperature and heat islands. The incremental effects of adding solar PV while deploying cool-pavements are, again, negative, small, and negligible. As with the measure above, the small cooling means no adverse impacts on heat islands and thus the full potential benefits from both measures can be fully realized. The same can be said for adding solar PV to a scenario of vegetation evapotranspiration cooling. Finally, implementing green roofs in addition to ground-level vegetation-cover increases (evapotranspiration) causes very small, negligible, but positive effects. The reason for the latter is the reduced mixing

resulting from increased roughness on roof tops. However, the effect is small and does not diminish the benefits gained from implementing the strategies in any way (the indirect effects of ground level vegetation and the direct effects of both green roofs and ground-level vegetation).

Thus overall, the modeling of the various measures and their combinations, whether at community or metropolitan scales, shows that no negative impacts occur as a result of deploying CSEM. This implies that 1) the implementation of these strategies for the direct effects has no negative, inadvertent impacts on heat islands, thus are fully beneficial, and 2) beyond that, these strategies can have further positive impacts in reducing heat islands and cooling the air thus contributing to energy efficiency via the indirect effect as well.

The results from this analysis and findings from the application of the modeling system depend heavily on assumptions made, surface characterization methodology, surface-type distributions, levels of modifications in surface properties or cover, and deployment potentials. Many of these aspects and assumptions can be modified and improved upon in the future if more site-specific and accurate data become available. The ranking of the measures can change accordingly as the input data improves.

GLOSSARY

CSEM	Community Scale Energy Measure
DA	a drag-force-based scheme
dh/day	degree-hours per day
DOE	United States Department of Energy
DRI	Desert Research Institute
ε	Conversion efficiency
LiDAR	Light Detection and Ranging
LSM	Land-surface models
LULC	Land-use / Land-cover
MM5	Fifth Generation PSU/NCAR Mesoscale Model
MOST	Monin-Obukhov Similarity Theory
NCAR	National Center for Atmospheric Research
NCEP	National Centers for Environmental Prediction
NNRP	NCEP-NCAR Reanalysis Project
PDT	Pacific Daylight Time
PV	Photovoltaic
RA	roughness-length-based scheme
SFBA	San Francisco Bay Area
UHI	Urban heat island
uMM5	Urbanized MM5
U.S. EPA	United States Environmental Protection Agency
USGS	United States Geological Survey

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APPENDIX A:

Following table: Absolute, total changes in degree-hours/day (dh/day) for all temperatures (no temperature threshold). This corresponds to section 10.1.A.1. Degrees are in Celsius.
The code designations (which represent different Community-Scale Energy Measure deployment scenarios) at the tops of the columns starting with 1M to 13H are described on pages 94-100 of the main report. Please note that M= medium [deployment] and H=High [deployment].

	1M		1H		2M		2H	
Ranking		DH/day		DH/day		DH/day		DH/day
1	Huntington Beach	-1.00833	Huntington Beach	-2.03715	Huntington Beach	-0.49521	Huntington Beach	-0.99608
2	Newport Beach	-0.97441	Newport Beach	-1.96772	Newport Beach	-0.47215	Newport Beach	-0.95959
3	Laguna Beach	-0.87146	Laguna Beach	-1.75777	Laguna Beach	-0.42944	Laguna Beach	-0.8582
4	Tustin	-0.68633	Tustin	-1.38099	Tustin	-0.33465	Tustin	-0.66917
5	Mission Viejo	-0.66872	Mission Viejo	-1.35057	Mission Viejo	-0.32758	Mission Viejo	-0.65845
6	Sta. Monica	-0.40393	Sta. Monica	-0.9063	Beverly Hills	-0.17931	Beverly Hills	-0.35469
7	LAX	-0.39491	LAX	-0.77834	Sta. Ana	-0.16899	Sta. Ana	-0.34711
8	Beverly Hills	-0.37668	Beverly Hills	-0.76074	Sherman Oaks	-0.15871	Century City	-0.32073
9	Sta. Ana	-0.35644	Sta. Ana	-0.71825	Van Nuys	-0.15343	LAX	-0.31535
10	Van Nuys	-0.33028	Inglewood	-0.65901	LAX	-0.14988	Inglewood	-0.31437
11	Inglewood	-0.32259	Century City	-0.65482	Inglewood	-0.14933	Van Nuys	-0.30599
12	Sherman Oaks	-0.32065	Sherman Oaks	-0.64572	Orange	-0.14303	Sherman Oaks	-0.30341
13	Century City	-0.31845	Van Nuys	-0.63171	Pomona	-0.14159	Orange	-0.28998
14	Blythe	-0.30823	Blythe	-0.63129	Century City	-0.14131	Pomona	-0.28878
15	Orange	-0.3055	Orange	-0.61526	Vallejo	-0.13956	Diamond Bar	-0.2811
16	Pomona	-0.30534	Pomona	-0.61496	Oxnard	-0.13264	Vallejo	-0.27856
17	Banning	-0.30447	Palmdale	-0.61198	Blythe	-0.1316	Oxnard	-0.27235
18	Palmdale	-0.30366	Banning	-0.60532	Banning	-0.13131	Banning	-0.26306
19	Diamond Bar	-0.29768	Diamond Bar	-0.59096	Los Angeles	-0.13131	Blythe	-0.26112
20	Coachella	-0.29427	Vallejo	-0.59019	Diamond Bar	-0.131	Palmdale	-0.26002
21	Vallejo	-0.29089	Coachella	-0.58853	Palmdale	-0.13041	Coachella	-0.25152
22	Oxnard	-0.28952	Oxnard	-0.55762	Coachella	-0.12503	Wasco	-0.2468
23	Wasco	-0.28675	Wasco	-0.55688	Wasco	-0.12384	Sta. Monica	-0.24442
24	Porterville	-0.27027	Porterville	-0.51651	Hollywood	-0.12068	Los Angeles	-0.24011
25	Indio	-0.25745	Indio	-0.51307	Porterville	-0.11377	Hollywood	-0.23675
26	Tulare	-0.25521	Tulare	-0.51185	Indio	-0.10942	Porterville	-0.2298
27	Los Angeles	-0.25375	Los Angeles	-0.5078	San Francisco	-0.10579	Rosemead	-0.22225
28	Hollywood	-0.25121	Hollywood	-0.50696	Rosemead	-0.10535	Indio	-0.2205
29	Rosemead	-0.23239	Rosemead	-0.46867	Corona	-0.10506	Tulare	-0.21783
30	Corona	-0.22978	Corona	-0.46171	San Dimas	-0.10071	San Francisco	-0.21108
31	San Francisco	-0.22205	Visalia	-0.43525	Anaheim	-0.10058	Corona	-0.21024
32	Anaheim	-0.21429	Anaheim	-0.4258	Rancho Cucamonga	-0.09873	Anaheim	-0.20501
33	Rancho Cucamonga	-0.21282	San Francisco	-0.42256	Tulare	-0.09741	Rancho Cucamonga	-0.19252
34	Visalia	-0.20857	Rancho Cucamonga	-0.41617	Glendale	-0.09709	Malibu	-0.19176
35	San Dimas	-0.20817	San Dimas	-0.40665	Malibu	-0.09576	San Dimas	-0.18995
36	Glendale	-0.20287	Glendale	-0.40414	Sta. Barbara	-0.09537	Glendale	-0.18736
37	Pismo Beach	-0.19646	Pismo Beach	-0.39055	Pismo Beach	-0.09203	Downey	-0.18433
38	Ontario	-0.19332	Downey	-0.38509	Downey	-0.09003	Pismo Beach	-0.18324
39	Downey	-0.18824	Bakersfield	-0.37656	Northridge	-0.0891	Northridge	-0.17909

40	Thousand Oaks	-0.18781	Ontario	-0.37589	Thousand Oaks	-0.08887	Thousand Oaks	-0.17509
41	Burbank	-0.18697	Thousand Oaks	-0.37325	Ontario	-0.08819	Sta. Barbara	-0.17321
42	San Jacinto	-0.18558	Burbank	-0.36954	Burbank	-0.08672	Ontario	-0.17175
43	Pasadena	-0.17566	San Jacinto	-0.36787	San Jacinto	-0.08625	Burbank	-0.17146
44	Bakersfield	-0.17563	Pasadena	-0.35974	Pasadena	-0.08325	Visalia	-0.17115
45	Malibu	-0.17348	Riverside	-0.34168	Visalia	-0.08253	San Jacinto	-0.16611
46	Northridge	-0.17043	Malibu	-0.33887	Bakersfield	-0.08189	Pasadena	-0.16031
47	Sta. Barbara	-0.1689	Fullerton	-0.33533	San Rafael	-0.07832	San Bernardino	-0.15543
48	Fullerton	-0.16791	Sta. Barbara	-0.33147	Redwood City	-0.07679	Fullerton	-0.15411
49	San Rafael	-0.16174	San Rafael	-0.32276	Hesperia	-0.07679	San Rafael	-0.15369
50	Victorville	-0.16141	Redwood City	-0.3148	El Cajon	-0.07576	Bakersfield	-0.15355
51	Riverside	-0.16129	Northridge	-0.3145	Victorville	-0.07489	El Cajon	-0.14996
52	Redwood City	-0.16024	National City	-0.31384	National City	-0.07457	Redwood City	-0.14988
53	Hesperia	-0.15831	Victorville	-0.31279	Chula Vista	-0.07314	National City	-0.14951
54	El Cajon	-0.15634	El Cajon	-0.31155	Fullerton	-0.07199	Chula Vista	-0.14577
55	National City	-0.15632	San Bernardino	-0.30789	Covina	-0.07076	Riverside	-0.14436
56	Sta. Clarita	-0.15563	Chula Vista	-0.30427	Riverside	-0.0706	Victorville	-0.14281
57	Chula Vista	-0.15215	Sta. Cruz	-0.30249	San Bernardino	-0.06927	El Centro	-0.14092
58	Sta. Cruz	-0.14956	Sta. Clarita	-0.29922	Sta. Cruz	-0.06787	California City	-0.13961
59	Covina	-0.1494	El Centro	-0.29874	Hemet	-0.06787	Sta. Cruz	-0.13579
60	Adelanto	-0.14787	Adelanto	-0.29823	Adelanto	-0.06728	Covina	-0.135
61	Hemet	-0.14671	Covina	-0.29256	San Diego	-0.06602	Hesperia	-0.13396
62	San Bernardino	-0.14254	Hemet	-0.28961	Simi Valley	-0.06218	Adelanto	-0.13293
63	San Diego	-0.13736	Hesperia	-0.28723	California City	-0.05903	San Diego	-0.13168
64	Simi Valley	-0.13605	San Diego	-0.27477	Sta. Clarita	-0.05852	Hemet	-0.1309
65	El Centro	-0.13377	Simi Valley	-0.26964	Ludlow	-0.05779	Simi Valley	-0.12263
66	Palm Springs	-0.11986	Palm Springs	-0.23988	King City	-0.05671	King City	-0.11315
67	Hollister	-0.11887	Chowchilla	-0.23734	Chowchilla	-0.0564	Chowchilla	-0.11279
68	Chowchilla	-0.11863	King City	-0.23441	Sta. Monica	-0.05603	Sta. Clarita	-0.10969
69	King City	-0.11675	Manteca	-0.22386	Palm Springs	-0.05512	Manteca	-0.10826
70	Antioch	-0.11166	Morgan Hills	-0.22053	Manteca	-0.05428	Palm Springs	-0.10777
71	Manteca	-0.11163	Antioch	-0.22023	Antioch	-0.05418	Sta. Maria	-0.10764
72	Morgan Hills	-0.11059	Hanford	-0.21326	El Centro	-0.05321	Antioch	-0.10732
73	Hanford	-0.10699	Benicia	-0.21075	Sta. Maria	-0.05301	Goleta	-0.10647
74	Benicia	-0.10571	Hollister	-0.20262	Benicia	-0.05086	Hanford	-0.10426
75	Mtn. View	-0.09962	Salinas	-0.19781	Hanford	-0.05063	Benicia	-0.09974
76	Milpitas	-0.09872	Milpitas	-0.19759	Morgan Hills	-0.04777	Hollister	-0.09897
77	Merced	-0.09766	Martinez	-0.1969	Milpitas	-0.04757	Morgan Hills	-0.09787
78	Martinez	-0.09751	Merced	-0.19637	Martinez	-0.04748	Lompoc	-0.09346
79	Salinas	-0.09539	Canoga Park	-0.19634	Salinas	-0.04739	Salinas	-0.09262
80	Sta. Maria	-0.09505	Mtn. View	-0.1938	Lompoc	-0.04594	Martinez	-0.09249
81	Goleta	-0.09446	Goleta	-0.19282	San Jose	-0.04464	Milpitas	-0.08997
82	Fremont	-0.09211	Sta. Maria	-0.19207	Merced	-0.04433	Whittier	-0.08953

83	San Jose	-0.09128	Livermore	-0.19135	Fremont	-0.0443	Mtn. View	-0.08884
84	Whittier	-0.09063	Whittier	-0.18269	Auburn	-0.04384	Solvang	-0.08857
85	Auburn	-0.08926	Fremont	-0.1815	Solvang	-0.04382	Tehachapi	-0.08794
86	Davis	-0.08687	San Jose	-0.17905	Mtn. View	-0.04364	Merced	-0.08728
87	Canoga Park	-0.08685	Auburn	-0.17777	Tehachapi	-0.04302	Davis	-0.08512
88	Walnut Creek	-0.08381	Davis	-0.17303	Davis	-0.04253	Auburn	-0.08508
89	Lompoc	-0.0815	Walnut Creek	-0.17042	Whittier	-0.04253	Fremont	-0.08292
90	Lafayette	-0.08137	Lompoc	-0.16624	Canoga Park	-0.04205	Livermore	-0.08188
91	Tracy	-0.08079	Lafayette	-0.16371	Goleta	-0.04081	Yreka	-0.0813
92	Lodi	-0.07983	Tracy	-0.16196	Monterey	-0.04042	San Jose	-0.0813
93	Solvang	-0.07892	California City	-0.16182	Walnut Creek	-0.04008	Monterey	-0.08077
94	Monterey	-0.07832	Monterey	-0.16101	Fairfield	-0.03977	Walnut Creek	-0.07961
95	Dublin	-0.07664	Lodi	-0.16086	Lafayette	-0.03867	Canoga Park	-0.07854
96	Napa	-0.07652	Solvang	-0.15833	Sacramento	-0.03833	Lafayette	-0.07717
97	Sacramento	-0.07592	Napa	-0.15226	Lodi	-0.03825	Tracy	-0.07669
98	Dixon	-0.07458	Dublin	-0.15208	Tracy	-0.03797	Lodi	-0.0753
99	Patterson	-0.07397	Patterson	-0.14896	Chico	-0.03754	Sacramento	-0.07529
100	Chico	-0.0737	Fresno	-0.14834	Livermore	-0.03746	Dixon	-0.0715
101	Paradise	-0.07352	Sacramento	-0.14779	Hollister	-0.03713	Napa	-0.07039
102	Pittsburgh	-0.07333	Dixon	-0.14722	Dixon	-0.03693	Dublin	-0.07015
103	Nevada City	-0.0726	Pittsburgh	-0.14702	Napa	-0.03612	Fresno	-0.07005
104	Oroville	-0.0725	Paradise	-0.14661	Dublin	-0.03551	Patterson	-0.06811
105	Yreka	-0.07154	Nevada City	-0.14539	Pittsburgh	-0.03461	Chico	-0.06787
106	Fresno	-0.07152	Sta. Rosa	-0.14507	Paradise	-0.03412	Dunsmuir	-0.06773
107	Sta. Rosa	-0.07024	Oroville	-0.14299	Sta. Rosa	-0.03411	Paradise	-0.06754
108	Crescent City	-0.0702	Dunsmuir	-0.14231	Patterson	-0.03328	Oroville	-0.0672
109	Dunsmuir	-0.06976	Fairfield	-0.13843	Fresno	-0.03297	Pittsburgh	-0.06703
110	Colusa	-0.06661	Chico	-0.13807	Crescent City	-0.03278	Nevada City	-0.06685
111	Tehachapi	-0.0662	Crescent City	-0.1373	Oroville	-0.03274	Sta. Rosa	-0.06673
112	Turlock	-0.06561	Tehachapi	-0.13223	Nevada City	-0.03267	Ludlow	-0.06408
113	Paso Robles	-0.06531	Turlock	-0.13105	Atascadero	-0.03146	Crescent City	-0.06361
114	Atascadero	-0.0639	Colusa	-0.12883	Paso Robles	-0.03135	Turlock	-0.06266
115	Livermore	-0.06242	Atascadero	-0.12806	Turlock	-0.03112	Paso Robles	-0.06255
116	Fairfield	-0.06236	Paso Robles	-0.12525	Colusa	-0.03091	Sun City	-0.06252
117	Los Banos	-0.06224	Los Banos	-0.12395	Dunsmuir	-0.03037	Atascadero	-0.06168
118	Sutter	-0.06184	Sutter	-0.12051	Anderson	-0.02991	Colusa	-0.06121
119	Eureka	-0.06099	Eureka	-0.12038	Sun City	-0.0297	Los Banos	-0.05931
120	Yuba City	-0.06094	Modesto	-0.1136	Ocotillo	-0.02943	Ocotillo	-0.05927
121	Modesto	-0.05581	Yuba City	-0.11219	Cotton Wood	-0.0292	Sutter	-0.05766
122	San Luis Obispo	-0.0538	San Luis Obispo	-0.10886	Barstow	-0.02872	Barstow	-0.05596
123	Ludlow	-0.0523	Ludlow	-0.10206	Los Banos	-0.0287	Yuba City	-0.05593
124	Ocotillo	-0.04803	Sun City	-0.09604	Sutter	-0.02858	Eureka	-0.05569
125	Willits	-0.04643	Willits	-0.09507	Mojave	-0.02855	Mojave	-0.05486

126	Sun City	-0.04587	Susanville	-0.09441	Eureka	-0.02826	Modesto	-0.05373
127	Cotton Wood	-0.04585	Ocotillo	-0.09427	Susanville	-0.02779	Anderson	-0.05352
128	Barstow	-0.04583	Chester	-0.09409	Yuba City	-0.02776	Twentynine Palms	-0.05273
129	Anderson	-0.04537	Barstow	-0.09374	Murrieta	-0.02742	Susanville	-0.05202
130	Truckee	-0.04472	Yreka	-0.09297	Twentynine Palms	-0.02686	Salton City	-0.05171
131	Westwood	-0.04465	Westwood	-0.08821	Salton City	-0.02653	San Luis Obispo	-0.05144
132	Susanville	-0.04462	Twentynine Palms	-0.08752	San Luis Obispo	-0.02641	Westwood	-0.05138
133	Kettleman City	-0.04373	Mojave	-0.08546	Modesto	-0.02586	Cotton Wood	-0.051
134	Mojave	-0.04334	Independence	-0.08479	Westwood	-0.02572	Fairfield	-0.05077
135	Independence	-0.04315	Cloverdale	-0.08359	Tehama	-0.0256	Glamis	-0.05074
136	Tehama	-0.04241	Baker	-0.0821	Desert Center	-0.02558	Murrieta	-0.05052
137	Twentynine Palms	-0.04205	Anderson	-0.08167	Temecula	-0.02495	Desert Center	-0.05051
138	Glamis	-0.04176	Downieville	-0.08094	Independence	-0.02402	Baker	-0.04928
139	Downieville	-0.04082	Salton City	-0.08075	Escondido	-0.02361	Temecula	-0.04876
140	Salton City	-0.04074	Tahoe City	-0.08044	Baker	-0.02266	Independence	-0.04765
141	Tahoe City	-0.04053	Glamis	-0.08042	Red Bluff	-0.02234	Escondido	-0.04659
142	Chester	-0.04049	Desert Center	-0.07835	Glamis	-0.02206	Tehama	-0.0463
143	Murrieta	-0.04037	Tehama	-0.07761	Downieville	-0.0218	Downieville	-0.04421
144	Cloverdale	-0.04009	Murrieta	-0.07642	Willits	-0.02153	Chester	-0.04399
145	Desert Center	-0.04	Roseville	-0.07597	McCloud	-0.02053	Willits	-0.04334
146	Red Bluff	-0.03996	McCloud	-0.07473	Tahoe City	-0.02049	Weed	-0.04201
147	Baker	-0.03914	Cotton Wood	-0.07308	Kettleman City	-0.02016	Red Bluff	-0.04192
148	Temecula	-0.0381	Temecula	-0.07258	Weed	-0.01949	Tahoe City	-0.04061
149	Roseville	-0.0377	Weed	-0.07166	Cloverdale	-0.01881	Cloverdale	-0.03852
150	McCloud	-0.03666	Escondido	-0.07056	Chester	-0.01855	McCloud	-0.03844
151	Escondido	-0.03623	Kettleman City	-0.06927	Roseville	-0.01813	Roseville	-0.03687
152	California City	-0.03562	Truckee	-0.06908	Alturas	-0.01141	Kettleman City	-0.02935
153	Weed	-0.03516	Red Bluff	-0.06512	Yreka	-0.0098	Truckee	-0.02569
154	Alturas	-0.02386	Alturas	-0.04429	Truckee	-0.00495	Alturas	-0.01833
155	South Lake Tahoe	-0.00063	South Lake Tahoe	-0.00142	Fort Bragg	-0.00037	South Lake Tahoe	-0.0008
156	Fort Bragg	-0.00052	Fort Bragg	-0.00071	Mendocino	-0.00029	Fort Bragg	-0.00033
157	Mendocino	-0.00017	Mendocino	-0.00019	South Lake Tahoe	-0.00024	Mendocino	-0.00019

	3M		3H		4M		4H	
Ranking		DH/day		DH/day		DH/day		DH/day
1	Huntington Beach	-0.23325	Huntington Beach	-0.49684	Huntington Beach	-0.17239	Huntington Beach	-0.37786
2	Newport Beach	-0.21741	Newport Beach	-0.47543	Newport Beach	-0.16865	Newport Beach	-0.35801
3	Laguna Beach	-0.20124	Laguna Beach	-0.43097	Laguna Beach	-0.15585	Laguna Beach	-0.32648
4	Tustin	-0.15814	Tustin	-0.33822	Tustin	-0.12039	Tustin	-0.255
5	Mission Viejo	-0.15196	Mission Viejo	-0.32851	Mission Viejo	-0.11507	Mission Viejo	-0.24799
6	Beverly Hills	-0.09642	Beverly Hills	-0.20283	LAX	-0.07419	Inglewood	-0.14408
7	Inglewood	-0.08904	Sta. Ana	-0.18696	Beverly Hills	-0.06813	Beverly Hills	-0.14283
8	Sherman Oaks	-0.08852	LAX	-0.17879	Sta. Ana	-0.06567	LAX	-0.13578
9	Sta. Ana	-0.0863	Sherman Oaks	-0.17741	Inglewood	-0.06475	Sta. Ana	-0.13291
10	Van Nuys	-0.08057	Inglewood	-0.17604	Oxnard	-0.06412	Sherman Oaks	-0.12884
11	Los Angeles	-0.07745	Van Nuys	-0.17403	Diamond Bar	-0.05891	Van Nuys	-0.12154
12	Oxnard	-0.07669	Orange	-0.16741	Sherman Oaks	-0.05844	Diamond Bar	-0.11639
13	Pomona	-0.07578	Pomona	-0.16392	Orange	-0.05553	Pomona	-0.11552
14	Banning	-0.07332	Banning	-0.16238	Pomona	-0.05538	Banning	-0.11419
15	Palmdale	-0.073	Blythe	-0.15965	Century City	-0.05487	Palmdale	-0.11362
16	Orange	-0.07283	Palmdale	-0.1588	Palmdale	-0.05399	Blythe	-0.11318
17	Blythe	-0.07254	Oxnard	-0.1575	Los Angeles	-0.05295	Coachella	-0.11074
18	Vallejo	-0.07133	Century City	-0.15749	Banning	-0.05294	Vallejo	-0.10924
19	Century City	-0.07133	Sta. Monica	-0.15495	Coachella	-0.05137	Orange	-0.10806
20	Porterville	-0.07128	Coachella	-0.15384	Van Nuys	-0.05116	Oxnard	-0.10738
21	Coachella	-0.07105	Diamond Bar	-0.1517	Blythe	-0.05112	Los Angeles	-0.10727
22	Hollywood	-0.06976	Wasco	-0.14885	Vallejo	-0.05105	Century City	-0.1048
23	Diamond Bar	-0.06843	Vallejo	-0.14787	Wasco	-0.04966	Wasco	-0.10387
24	Indio	-0.06167	Los Angeles	-0.14566	San Bernardino	-0.04937	Porterville	-0.1019
25	California City	-0.06142	Porterville	-0.14108	Porterville	-0.04712	Indio	-0.09692
26	Wasco	-0.05917	Hollywood	-0.13728	Indio	-0.04572	Hollywood	-0.09632
27	Corona	-0.0591	Indio	-0.13399	Corona	-0.04409	Tulare	-0.09556
28	LAX	-0.0582	Tulare	-0.13075	Tulare	-0.04335	San Bernardino	-0.09397
29	Tulare	-0.05819	Corona	-0.12558	Hesperia	-0.0433	Corona	-0.08881
30	San Dimas	-0.05695	Rosemead	-0.12505	Hollywood	-0.04308	Rosemead	-0.085
31	Rosemead	-0.05622	Anaheim	-0.12502	San Dimas	-0.0425	San Dimas	-0.08469
32	Anaheim	-0.05595	San Dimas	-0.12225	Rosemead	-0.04101	San Francisco	-0.08398
33	Rancho Cucamonga	-0.05553	Rancho Cucamonga	-0.12165	San Francisco	-0.03988	Rancho Cucamonga	-0.08301
34	Sta. Barbara	-0.05413	Ontario	-0.1136	Bakersfield	-0.03957	California City	-0.08247
35	Glendale	-0.05404	Glendale	-0.1132	Downey	-0.03913	Anaheim	-0.08042
36	San Jacinto	-0.05309	San Francisco	-0.11198	Rancho Cucamonga	-0.03835	Glendale	-0.08042
37	Downey	-0.05267	San Jacinto	-0.10615	Pismo Beach	-0.03745	Ontario	-0.07716
38	San Francisco	-0.05215	Downey	-0.10503	Glendale	-0.03741	Downey	-0.07497
39	Northridge	-0.04954	Pismo Beach	-0.10394	Livermore	-0.03736	Burbank	-0.07372

40	Pismo Beach	-0.0488	Burbank	-0.10181	Anaheim	-0.03582	Pismo Beach	-0.07366
41	Burbank	-0.04877	Sta. Cruz	-0.10175	Ontario	-0.03548	San Jacinto	-0.0723
42	Visalia	-0.04852	Thousand Oaks	-0.10024	San Jacinto	-0.0349	Thousand Oaks	-0.0705
43	Sta. Cruz	-0.04841	Malibu	-0.10009	Malibu	-0.03418	Bakersfield	-0.06947
44	Pasadena	-0.04759	Bakersfield	-0.09995	Visalia	-0.0339	Pasadena	-0.06945
45	Ontario	-0.04708	Visalia	-0.09962	Thousand Oaks	-0.03304	Visalia	-0.06794
46	Thousand Oaks	-0.04707	Pasadena	-0.09835	Victorville	-0.03204	Victorville	-0.06532
47	Fullerton	-0.04578	Northridge	-0.09763	Burbank	-0.03124	Malibu	-0.06384
48	Victorville	-0.04549	Livermore	-0.09515	Northridge	-0.0312	Covina	-0.06118
49	Bakersfield	-0.04343	Sta. Barbara	-0.09397	Pasadena	-0.03001	San Rafael	-0.06084
50	Malibu	-0.0419	Fullerton	-0.09132	San Rafael	-0.02884	Fullerton	-0.05998
51	King City	-0.04173	Hesperia	-0.09079	Redwood City	-0.02792	El Cajon	-0.05936
52	El Cajon	-0.04163	El Cajon	-0.09012	El Cajon	-0.02769	National City	-0.05824
53	National City	-0.04108	King City	-0.09011	Covina	-0.0272	Redwood City	-0.05774
54	Hemet	-0.04053	National City	-0.08896	Fullerton	-0.02708	Hesperia	-0.05753
55	Chula Vista	-0.04006	Victorville	-0.08846	National City	-0.02614	Chula Vista	-0.05744
56	Hesperia	-0.03983	El Centro	-0.08813	Chula Vista	-0.02598	Adelanto	-0.05592
57	Antioch	-0.03981	Chula Vista	-0.08749	Hemet	-0.02557	Sta. Cruz	-0.0555
58	Manteca	-0.03971	Manteca	-0.08682	Adelanto	-0.02537	Hemet	-0.05434
59	San Rafael	-0.03851	Antioch	-0.08442	Yreka	-0.02415	Canoga Park	-0.05293
60	Adelanto	-0.03766	Hemet	-0.08399	San Diego	-0.02358	Sta. Barbara	-0.05258
61	Murrieta	-0.03748	Covina	-0.08375	San Jose	-0.02346	San Diego	-0.05207
62	Chowchilla	-0.03693	San Rafael	-0.08371	Simi Valley	-0.02329	Simi Valley	-0.05091
63	San Diego	-0.0369	Redwood City	-0.08186	Sta. Cruz	-0.02319	Riverside	-0.04645
64	Covina	-0.03676	Sun City	-0.08123	Sta. Barbara	-0.0229	Palm Springs	-0.04597
65	Ocotillo	-0.03633	Chowchilla	-0.08031	Goleta	-0.02177	Northridge	-0.04553
66	Redwood City	-0.03606	Riverside	-0.08023	Riverside	-0.02162	King City	-0.04404
67	Sun City	-0.03587	Adelanto	-0.07954	Palm Springs	-0.0216	Chowchilla	-0.04302
68	Hollister	-0.03566	San Diego	-0.07883	Antioch	-0.02071	Antioch	-0.04147
69	Benicia	-0.03563	Sta. Clarita	-0.07791	Manteca	-0.02045	Manteca	-0.04073
70	Fairfield	-0.03512	Ocotillo	-0.07701	Morgan Hills	-0.02031	Morgan Hills	-0.04054
71	El Centro	-0.03508	Benicia	-0.07507	King City	-0.02025	Hanford	-0.03954
72	Mojave	-0.03448	Murrieta	-0.07436	Milpitas	-0.01999	El Centro	-0.03933
73	Simi Valley	-0.03431	Simi Valley	-0.07349	Fremont	-0.01871	Benicia	-0.03899
74	Martinez	-0.03424	Hanford	-0.0722	Merced	-0.01857	Merced	-0.03737
75	Temecula	-0.03419	Martinez	-0.07191	Chowchilla	-0.01852	Fremont	-0.03678
76	Hanford	-0.03395	Morgan Hills	-0.07175	Benicia	-0.01848	Mtn. View	-0.03642
77	Salton City	-0.03329	Temecula	-0.07162	Sta. Clarita	-0.01819	Martinez	-0.03623
78	Milpitas	-0.03315	Desert Center	-0.07162	Hanford	-0.01768	Milpitas	-0.036
79	Desert Center	-0.033	Salton City	-0.07137	Sta. Monica	-0.01768	San Jose	-0.03493
80	Morgan Hills	-0.03285	Hollister	-0.07053	Mtn. View	-0.01703	Whittier	-0.03443
81	Auburn	-0.03251	Mojave	-0.07037	Martinez	-0.01667	Salinas	-0.03368
82	Fremont	-0.03246	Davis	-0.06839	Dunsmuir	-0.01656	Sta. Maria	-0.03328

83	Palm Springs	-0.03243	Milpitas	-0.06708	Auburn	-0.01592	Auburn	-0.03289
84	Davis	-0.03177	Salinas	-0.06673	Chico	-0.01588	Davis	-0.0328
85	Weed	-0.03153	Escondido	-0.06665	Davis	-0.01554	Sta. Clarita	-0.03248
86	Merced	-0.03114	Auburn	-0.06628	Monterey	-0.01536	Chico	-0.03154
87	Escondido	-0.03107	Palm Springs	-0.06609	Crescent City	-0.01461	Lompoc	-0.03078
88	Sta. Clarita	-0.03091	Merced	-0.06333	Cotton Wood	-0.01455	Monterey	-0.03053
89	Salinas	-0.03035	Fremont	-0.06282	Lafayette	-0.01445	Sacramento	-0.03017
90	Riverside	-0.0303	Mtn. View	-0.0619	Sacramento	-0.01441	Lodi	-0.02922
91	Chico	-0.03004	Whittier	-0.06154	Tracy	-0.01408	Cotton Wood	-0.02919
92	Whittier	-0.02995	Walnut Creek	-0.05938	Lodi	-0.01388	Napa	-0.02914
93	Sacramento	-0.02957	San Jose	-0.05936	Salinas	-0.01374	Lafayette	-0.02877
94	Mtn. View	-0.02877	Dublin	-0.05932	Whittier	-0.01362	Tracy	-0.02865
95	Dunsmuir	-0.02819	Tracy	-0.05898	Lompoc	-0.01324	Crescent City	-0.02843
96	Lafayette	-0.02811	Lodi	-0.05848	Napa	-0.01319	Dixon	-0.02795
97	Tracy	-0.02792	Lafayette	-0.05843	Tehama	-0.01315	Oroville	-0.02789
98	Napa	-0.0276	Sacramento	-0.05824	Atascadero	-0.0126	Dunsmuir	-0.0277
99	Lodi	-0.02752	Napa	-0.05545	Pittsburgh	-0.0125	Solvang	-0.02716
100	San Jose	-0.02721	Dixon	-0.05417	Sta. Maria	-0.01249	Paradise	-0.02712
101	Dixon	-0.02589	Sta. Rosa	-0.05334	Walnut Creek	-0.01237	Pittsburgh	-0.02679
102	Canoga Park	-0.02561	Canoga Park	-0.05331	Ludlow	-0.01231	Fairfield	-0.02664
103	Cotton Wood	-0.02534	Pittsburgh	-0.05315	Paso Robles	-0.01228	Nevada City	-0.02645
104	Paradise	-0.02518	Patterson	-0.05112	Anderson	-0.01225	Colusa	-0.02643
105	Oroville	-0.02503	Dunsmuir	-0.05092	Dublin	-0.01207	Tehama	-0.02637
106	Walnut Creek	-0.02467	Paradise	-0.05038	Paradise	-0.01194	Walnut Creek	-0.02612
107	Monterey	-0.02464	Sta. Maria	-0.0502	Sta. Rosa	-0.01191	Patterson	-0.02606
108	Tehama	-0.02459	Nevada City	-0.04983	Patterson	-0.01182	Fresno	-0.02558
109	Nevada City	-0.02413	Oroville	-0.04934	Fresno	-0.01179	Sta. Rosa	-0.02555
110	Sta. Rosa	-0.0238	Monterey	-0.04903	Turlock	-0.01175	Anderson	-0.02526
111	Patterson	-0.0237	Fresno	-0.04747	Colusa	-0.01169	Goleta	-0.02499
112	Colusa	-0.0233	Chico	-0.04683	Dixon	-0.01164	Paso Robles	-0.02489
113	Livermore	-0.0232	Tehachapi	-0.0463	Oroville	-0.01164	Yuba City	-0.02483
114	Pittsburgh	-0.02254	Crescent City	-0.0459	Nevada City	-0.01162	Sutter	-0.02446
115	Fresno	-0.02187	Colusa	-0.04456	Westwood	-0.01131	Atascadero	-0.02438
116	Dublin	-0.02166	Lompoc	-0.04411	Eureka	-0.01103	Tehachapi	-0.02405
117	Yuba City	-0.02163	Fairfield	-0.0437	Solvang	-0.01083	Turlock	-0.02373
118	Sta. Maria	-0.02148	Willits	-0.04365	Canoga Park	-0.0107	Red Bluff	-0.02258
119	Sutter	-0.02128	California City	-0.04323	Sutter	-0.01061	Eureka	-0.02209
120	Red Bluff	-0.02121	Sutter	-0.04172	Susanville	-0.01059	Los Banos	-0.02132
121	Tehachapi	-0.0208	Solvang	-0.04134	Glamis	-0.01043	San Luis Obispo	-0.02052
122	Lompoc	-0.02077	Yuba City	-0.04132	Tehachapi	-0.01035	Dublin	-0.01998
123	Crescent City	-0.02034	Yreka	-0.03937	Yuba City	-0.01031	Westwood	-0.01993
124	Willits	-0.01996	Independence	-0.03866	San Luis Obispo	-0.01021	Modesto	-0.01955

125	Atascadero	-0.01869	Turlock	-0.03856	Chester	-0.01005	Susanville	-0.01826
126	Independence	-0.01865	Eureka	-0.03832	Los Banos	-0.01001	Hollister	-0.01791
127	Turlock	-0.01859	Cloverdale	-0.03828	Modesto	-0.01001	Ludlow	-0.01716
128	McCloud	-0.01824	Chester	-0.03822	Murrieta	-0.00924	Ocotillo	-0.01708
129	Paso Robles	-0.01804	Downieville	-0.03753	Ocotillo	-0.00919	Chester	-0.01694
130	Tahoe City	-0.01795	Paso Robles	-0.03664	El Centro	-0.00885	Willits	-0.01686
131	Solvang	-0.01792	Atascadero	-0.03629	Sun City	-0.00853	Sun City	-0.01638
132	Eureka	-0.01765	Los Banos	-0.03591	Tahoe City	-0.00835	Independence	-0.01627
133	Anderson	-0.01763	Tahoe City	-0.03554	Independence	-0.0081	Mojave	-0.01595
134	Downieville	-0.01742	Tehama	-0.03551	Temecula	-0.00804	Barstow	-0.01546
135	Los Banos	-0.01727	Modesto	-0.03326	Red Bluff	-0.00789	Tahoe City	-0.01537
136	Kettleman City	-0.0169	McCloud	-0.03157	Salton City	-0.00742	Truckee	-0.01515
137	Chester	-0.01665	Kettleman City	-0.03149	Mojave	-0.00729	Downieville	-0.01509
138	Cloverdale	-0.01657	Red Bluff	-0.03141	Downieville	-0.007	Cloverdale	-0.01502
139	Modesto	-0.01559	San Luis Obispo	-0.03103	Desert Center	-0.00695	Twentynine Palms	-0.01492
140	Yreka	-0.01548	Goleta	-0.0302	Twentynine Palms	-0.00689	McCloud	-0.01443
141	San Luis Obispo	-0.01488	Cotton Wood	-0.02983	Willits	-0.00685	Salton City	-0.0144
142	Roseville	-0.01363	Roseville	-0.02925	Roseville	-0.00665	Yreka	-0.01421
143	Goleta	-0.01352	Susanville	-0.02629	Barstow	-0.00624	Roseville	-0.01393
144	Ludlow	-0.0117	Westwood	-0.02587	Escondido	-0.00618	Glamis	-0.01388
145	Susanville	-0.01099	Weed	-0.02397	Cloverdale	-0.00603	Desert Center	-0.01359
146	Westwood	-0.01082	Ludlow	-0.02155	McCloud	-0.00576	Murrieta	-0.01308
147	Twentynine Palms	-0.00878	Anderson	-0.01984	Baker	-0.00558	Temecula	-0.01308
148	Barstow	-0.00843	Truckee	-0.01921	Hollister	-0.0044	Baker	-0.01295
149	Baker	-0.00789	Twentynine Palms	-0.01764	Kettleman City	-0.00266	Kettleman City	-0.01241
150	Glamis	-0.0062	Barstow	-0.01619	South Lake Tahoe	-0.00035	Escondido	-0.01237
151	Alturas	-0.00034	Baker	-0.01563	Fort Bragg	-0.00011	Weed	-0.00748
152	South Lake Tahoe	-9.9E-05	Glamis	-0.01525	Woodland	0	Alturas	-0.00694
153	Woodland	0	Alturas	-0.01338	CitrusHeights	0	South Lake Tahoe	-0.00031
154	CitrusHeights	0	San Bernardino	-0.00723	Folsom Lake	0	Fort Bragg	-3.8E-05
155	Folsom Lake	0	Fort Bragg	-0.00072	Lake Havasu	0	Woodland	0
156	Lake Havasu	0	South Lake Tahoe	-0.0007	Citrus Heights	0	CitrusHeights	0
157	Citrus Heights	0	Mendocino	-0.00067	Mendocino	1.53E-05	Folsom Lake	0

	5M		5H		6M		6H	
Ranking		DH/day		DH/day		DH/day		DH/day
1	Huntington Beach	-0.13606	Huntington Beach	-0.27546	Huntington Beach	-0.41241	Huntington Beach	-0.83208
2	Newport Beach	-0.12069	Newport Beach	-0.24181	Newport Beach	-0.39714	Newport Beach	-0.79948
3	Laguna Beach	-0.11134	Laguna Beach	-0.23002	Laguna Beach	-0.3567	Laguna Beach	-0.71907
4	Tustin	-0.10108	Tustin	-0.2052	Tustin	-0.28384	Tustin	-0.5611
5	Beverly Hills	-0.10019	Beverly Hills	-0.1917	Mission Viejo	-0.27475	Mission Viejo	-0.54916
6	Sherman Oaks	-0.09872	Sherman Oaks	-0.18295	Beverly Hills	-0.15846	Beverly Hills	-0.31103
7	Van Nuys	-0.09619	Mission Viejo	-0.17694	LAX	-0.15615	Sta. Ana	-0.29369
8	Mission Viejo	-0.08598	Van Nuys	-0.17062	Sta. Ana	-0.14832	LAX	-0.27763
9	Century City	-0.0845	Pomona	-0.13828	Sherman Oaks	-0.13549	Sherman Oaks	-0.26932
10	Pomona	-0.07086	Diamond Bar	-0.13157	Van Nuys	-0.13296	Inglewood	-0.26681
11	Diamond Bar	-0.06773	Century City	-0.12846	Century City	-0.132	Van Nuys	-0.26345
12	Palmdale	-0.06284	Palmdale	-0.12151	Oxnard	-0.12844	Blythe	-0.25498
13	Inglewood	-0.05898	Banning	-0.11546	Orange	-0.12833	Banning	-0.25207
14	Banning	-0.05889	Burbank	-0.10735	Inglewood	-0.12783	Pomona	-0.2513
15	Oxnard	-0.0559	Coachella	-0.10687	Vallejo	-0.12635	Palmdale	-0.24977
16	Vallejo	-0.05583	Vallejo	-0.10654	Palmdale	-0.126	Vallejo	-0.24851
17	Burbank	-0.05544	Rancho Cucamonga	-0.10613	Banning	-0.12577	Century City	-0.24591
18	Coachella	-0.05474	Inglewood	-0.10213	Pomona	-0.12577	Coachella	-0.24299
19	San Dimas	-0.05349	Thousand Oaks	-0.10143	Sta. Monica	-0.12303	Orange	-0.23972
20	Thousand Oaks	-0.05335	San Bernardino	-0.10141	Blythe	-0.12258	Oxnard	-0.23732
21	Hollywood	-0.0529	San Dimas	-0.10139	Coachella	-0.1214	Diamond Bar	-0.23344
22	Indio	-0.05231	Indio	-0.10083	Wasco	-0.11537	Wasco	-0.22583
23	Hesperia	-0.05214	Hollywood	-0.09948	Diamond Bar	-0.11522	Porterville	-0.2223
24	Rancho Cucamonga	-0.05164	Ontario	-0.09568	Porterville	-0.11398	Los Angeles	-0.21449
25	Glendale	-0.04985	Glendale	-0.09523	Los Angeles	-0.11269	Tulare	-0.21375
26	Los Angeles	-0.04972	Los Angeles	-0.09497	Indio	-0.10587	Indio	-0.21277
27	San Jacinto	-0.04682	Oxnard	-0.09295	Hollywood	-0.10473	Hollywood	-0.20734
28	Ontario	-0.04616	Northridge	-0.09207	Tulare	-0.103	Rosemead	-0.19429
29	Pismo Beach	-0.04591	Adelanto	-0.09059	Corona	-0.09786	Sta. Monica	-0.19359
30	Rosemead	-0.04546	San Jacinto	-0.08939	Rosemead	-0.09504	Corona	-0.19238
31	Blythe	-0.04501	Rosemead	-0.08759	San Francisco	-0.09445	San Francisco	-0.18955
32	Adelanto	-0.04474	Pismo Beach	-0.08667	San Dimas	-0.09084	Rancho Cucamonga	-0.17431
33	Victorville	-0.04408	Simi Valley	-0.08592	Rancho Cucamonga	-0.08986	Anaheim	-0.17319
34	Pasadena	-0.04301	Blythe	-0.08585	Anaheim	-0.08839	San Dimas	-0.1711
35	Simi Valley	-0.04182	Hesperia	-0.08584	Glendale	-0.08483	Glendale	-0.16897
36	Corona	-0.04136	Pasadena	-0.08493	Downey	-0.08413	Visalia	-0.16194
37	Porterville	-0.0401	Corona	-0.08463	Visalia	-0.08364	Ontario	-0.16172
38	LAX	-0.0397	Sta. Ana	-0.08107	Ontario	-0.07791	Pismo Beach	-0.16098

39	Northridge	-0.03923	Victorville	-0.07655	Thousand Oaks	-0.07771	Downey	-0.15883
40	Sta. Ana	-0.0383	LAX	-0.07549	San Jacinto	-0.077	Burbank	-0.15427
41	San Francisco	-0.0377	Hemet	-0.07525	Bakersfield	-0.07646	Thousand Oaks	-0.15415
42	Orange	-0.03577	San Francisco	-0.0712	Burbank	-0.07619	Bakersfield	-0.1536
43	Downey	-0.03571	Canoga Park	-0.06886	Sta. Barbara	-0.07351	San Jacinto	-0.14994
44	Covina	-0.03502	Downey	-0.06778	Livermore	-0.07253	Pasadena	-0.14635
45	San Rafael	-0.03465	Covina	-0.06775	Pasadena	-0.07229	Malibu	-0.13998
46	Hemet	-0.03413	San Rafael	-0.06717	Northridge	-0.07195	San Rafael	-0.13835
47	Sta. Cruz	-0.03409	Palm Springs	-0.06709	San Rafael	-0.06947	Northridge	-0.13731
48	Canoga Park	-0.03365	Orange	-0.06618	Pismo Beach	-0.06931	Fullerton	-0.13676
49	Anaheim	-0.03357	Fullerton	-0.06574	Redwood City	-0.06861	Redwood City	-0.13607
50	Antioch	-0.03333	Wasco	-0.06485	Victorville	-0.06726	Victorville	-0.13007
51	Fullerton	-0.03317	Sta. Cruz	-0.06307	Fullerton	-0.06664	Riverside	-0.12955
52	Visalia	-0.03239	Porterville	-0.06197	Malibu	-0.06654	El Cajon	-0.12917
53	Palm Springs	-0.03205	Antioch	-0.06032	El Cajon	-0.06502	Sta. Barbara	-0.12907
54	Redwood City	-0.03203	Bakersfield	-0.0593	National City	-0.06361	National City	-0.12806
55	Wasco	-0.03061	Tulare	-0.05923	Covina	-0.06327	Sta. Cruz	-0.12693
56	Bakersfield	-0.0305	Visalia	-0.05891	Chula Vista	-0.06257	El Centro	-0.12589
57	Tulare	-0.02984	Redwood City	-0.05891	Sta. Cruz	-0.06233	Chula Vista	-0.12505
58	San Bernardino	-0.02962	Anaheim	-0.05837	Sta. Clarita	-0.06219	Covina	-0.1212
59	Hollister	-0.02919	Sta. Clarita	-0.05782	El Centro	-0.06182	Adelanto	-0.12029
60	California City	-0.02718	Sta. Barbara	-0.05491	Adelanto	-0.06001	Hemet	-0.11894
61	Chico	-0.02693	El Centro	-0.05331	Hesperia	-0.05912	Hesperia	-0.116
62	Morgan Hills	-0.02578	Patterson	-0.05075	Hemet	-0.05811	Livermore	-0.11404
63	Manteca	-0.02571	Chico	-0.05013	San Diego	-0.05642	San Diego	-0.11315
64	Oroville	-0.02563	Oroville	-0.04972	Riverside	-0.05565	Sta. Clarita	-0.11131
65	Merced	-0.02563	Chowchilla	-0.04912	Simi Valley	-0.05476	Simi Valley	-0.11086
66	Sta. Barbara	-0.02556	Merced	-0.04882	Hollister	-0.05112	Chowchilla	-0.09769
67	Patterson	-0.02541	Malibu	-0.04777	Chowchilla	-0.04826	Palm Springs	-0.09744
68	Tehama	-0.02515	Morgan Hills	-0.0477	Palm Springs	-0.04809	King City	-0.09618
69	King City	-0.02447	Riverside	-0.047	Canoga Park	-0.04721	Hollister	-0.09366
70	Sutter	-0.02441	Pittsburgh	-0.04652	Antioch	-0.04664	Antioch	-0.09351
71	Mtn. View	-0.02333	Sutter	-0.04527	King City	-0.04649	Manteca	-0.0927
72	Pittsburgh	-0.02286	Manteca	-0.04461	Morgan Hills	-0.04563	Morgan Hills	-0.09029
73	Davis	-0.02239	Benicia	-0.04401	Manteca	-0.04533	Benicia	-0.08876
74	Sacramento	-0.02205	King City	-0.04378	Hanford	-0.0443	Hanford	-0.08801
75	Auburn	-0.02202	Hanford	-0.0437	Benicia	-0.04398	San Jose	-0.08256
76	Paso Robles	-0.02161	Fresno	-0.04318	Milpitas	-0.04356	Martinez	-0.0822
77	Whittier	-0.02154	Auburn	-0.04317	Fremont	-0.0433	Milpitas	-0.0821
78	Benicia	-0.02151	Martinez	-0.04317	Goleta	-0.04327	California City	-0.08166
79	Chowchilla	-0.02142	Hollister	-0.043	Merced	-0.04125	Sta. Maria	-0.08078
80	Hanford	-0.0211	Goleta	-0.04298	Martinez	-0.041	Mtn. View	-0.08051
81	Turlock	-0.02091	California City	-0.04235	Mtn. View	-0.04086	Merced	-0.08035

82	Los Banos	-0.02078	Whittier	-0.04168	Whittier	-0.03978	Salinas	-0.07986
83	Martinez	-0.02074	Tracy	-0.04106	San Jose	-0.03854	Fremont	-0.07674
84	Yuba City	-0.02069	Mtn. View	-0.04073	Salinas	-0.03847	Auburn	-0.07455
85	Paradise	-0.02023	Lodi	-0.04057	Sta. Maria	-0.03738	Whittier	-0.07392
86	Riverside	-0.02022	Sacramento	-0.03905	Auburn	-0.03671	Davis	-0.07238
87	Fresno	-0.02017	Dixon	-0.0389	Davis	-0.03576	Walnut Creek	-0.07133
88	Lodi	-0.01998	Davis	-0.03863	Walnut Creek	-0.03503	Canoga Park	-0.07061
89	Dunsmuir	-0.01995	Paso Robles	-0.03831	Lafayette	-0.03452	Lafayette	-0.0686
90	Malibu	-0.01987	Paradise	-0.03761	Monterey	-0.03367	Goleta	-0.06816
91	Milpitas	-0.01961	Yuba City	-0.03727	Lodi	-0.03349	Monterey	-0.06762
92	Cotton Wood	-0.01931	Fremont	-0.03596	Crescent City	-0.03337	Lompoc	-0.0676
93	San Luis Obispo	-0.01854	Livermore	-0.03557	Tracy	-0.03309	Tracy	-0.06731
94	Modesto	-0.01829	Turlock	-0.03535	Lompoc	-0.03262	Solvang	-0.06685
95	Sta. Clarita	-0.0182	Los Banos	-0.03358	California City	-0.03243	Lodi	-0.06652
96	Fremont	-0.01813	Milpitas	-0.03293	Sacramento	-0.03207	Napa	-0.06517
97	Tracy	-0.01801	Sta. Rosa	-0.03282	Dixon	-0.03205	Sacramento	-0.06416
98	Colusa	-0.01747	Napa	-0.03257	Pittsburgh	-0.03177	Pittsburgh	-0.0624
99	Red Bluff	-0.01685	San Luis Obispo	-0.03189	Napa	-0.03135	Paradise	-0.06194
100	Dixon	-0.01647	Modesto	-0.03146	Chico	-0.03133	Patterson	-0.06184
101	Atascadero	-0.01626	Lafayette	-0.03089	Paradise	-0.03127	Dixon	-0.06172
102	Mojave	-0.01618	El Cajon	-0.03077	Patterson	-0.03075	Nevada City	-0.06094
103	Sta. Rosa	-0.01618	Colusa	-0.0307	Dunsmuir	-0.03036	Oroville	-0.06059
104	San Jose	-0.01612	San Diego	-0.02988	Oroville	-0.02999	Dublin	-0.06019
105	Lafayette	-0.01556	Solvang	-0.0294	Solvang	-0.02991	Sta. Rosa	-0.05936
106	Nevada City	-0.01541	Nevada City	-0.02901	Nevada City	-0.02982	Chico	-0.0591
107	Solvang	-0.01496	National City	-0.02888	Dublin	-0.0298	Dunsmuir	-0.05861
108	Anderson	-0.01442	Dunsmuir	-0.02837	Fresno	-0.0284	Fresno	-0.05822
109	Ocotillo	-0.01402	Cotton Wood	-0.02814	Sta. Rosa	-0.02837	Crescent City	-0.05741
110	El Centro	-0.01346	Atascadero	-0.02784	Colusa	-0.02773	Colusa	-0.05534
111	Ludlow	-0.0131	Fairfield	-0.02782	Paso Robles	-0.0277	Tehachapi	-0.05455
112	San Diego	-0.01279	Chula Vista	-0.02765	Tehachapi	-0.02729	Turlock	-0.05405
113	Napa	-0.01266	San Jose	-0.02692	Turlock	-0.02726	Atascadero	-0.05312
114	Salton City	-0.01242	Barstow	-0.02642	Eureka	-0.02562	Paso Robles	-0.05267
115	Tehachapi	-0.01206	Walnut Creek	-0.02635	Sutter	-0.02557	Eureka	-0.05192
116	Tahoe City	-0.01192	Yreka	-0.02505	Yuba City	-0.02538	Sutter	-0.05186
117	Monterey	-0.01186	Anderson	-0.02449	Los Banos	-0.02524	Los Banos	-0.05119
118	El Cajon	-0.01183	Dublin	-0.02425	San Luis Obispo	-0.02429	Yuba City	-0.05056
119	Desert Center	-0.01164	Chester	-0.02406	Atascadero	-0.02417	Modesto	-0.04575
120	Crescent City	-0.01112	Mojave	-0.0237	Tehama	-0.02277	San Luis Obispo	-0.04481
121	Sta. Maria	-0.01106	Monterey	-0.02354	San Bernardino	-0.02217	Fairfield	-0.04176
122	Roseville	-0.01102	Crescent City	-0.02318	Modesto	-0.022	Ludlow	-0.04133
123	National City	-0.01093	Red Bluff	-0.02309	Cotton Wood	-0.02175	Tehama	-0.04052

124	Salinas	-0.01077	Tehachapi	-0.02294	Yreka	-0.02146	Chester	-0.04044
125	Chula Vista	-0.0107	Sta. Maria	-0.02277	Ludlow	-0.02129	Willits	-0.04
126	Walnut Creek	-0.01059	Ocotillo	-0.02251	Susanville	-0.02087	Westwood	-0.03944
127	Glamis	-0.01057	Tehama	-0.02207	Ocotillo	-0.02028	Cotton Wood	-0.03938
128	Lompoc	-0.01035	Salinas	-0.02207	Westwood	-0.01982	Susanville	-0.03894
129	Eureka	-0.00964	Ludlow	-0.02144	Willits	-0.01975	Sun City	-0.03885
130	Murrieta	-0.00859	Twentynine Palms	-0.02103	Chester	-0.0196	Ocotillo	-0.03851
131	Independence	-0.00816	Kettleman City	-0.02046	Anderson	-0.01826	Anderson	-0.03774
132	Cloverdale	-0.0079	Roseville	-0.02032	Independence	-0.01816	Barstow	-0.0367
133	Twentynine Palms	-0.00777	Lompoc	-0.02031	Mojave	-0.01808	Truckee	-0.03637
134	Barstow	-0.00768	Salton City	-0.02027	Sun City	-0.01781	Mojave	-0.03581
135	Truckee	-0.0076	Desert Center	-0.02003	Twentynine Palms	-0.01757	Independence	-0.03523
136	McCloud	-0.00755	Eureka	-0.02002	Red Bluff	-0.01716	Twentynine Palms	-0.03495
137	Dublin	-0.00726	Independence	-0.01808	Barstow	-0.01714	Cloverdale	-0.03446
138	Chester	-0.00679	Glamis	-0.01774	Tahoe City	-0.01702	Temecula	-0.0343
139	Weed	-0.00652	Tahoe City	-0.01731	Glamis	-0.017	Salton City	-0.03324
140	Sun City	-0.00646	Baker	-0.01666	Salton City	-0.01667	Murrieta	-0.0331
141	Westwood	-0.00631	Westwood	-0.01521	Downieville	-0.01665	Glamis	-0.03307
142	Susanville	-0.00629	Susanville	-0.01517	Cloverdale	-0.0166	Tahoe City	-0.03297
143	Willits	-0.00628	Downieville	-0.01432	Desert Center	-0.01629	Yreka	-0.03281
144	Temecula	-0.00623	Cloverdale	-0.01392	Murrieta	-0.01614	Downieville	-0.03272
145	Kettleman City	-0.006	McCloud	-0.01355	Baker	-0.01589	Desert Center	-0.03255
146	Downieville	-0.00595	Sun City	-0.01277	McCloud	-0.01585	Roseville	-0.0312
147	Goleta	-0.00577	Murrieta	-0.0122	Roseville	-0.01524	Baker	-0.03046
148	Yreka	-0.00539	Willits	-0.01105	Temecula	-0.01513	Red Bluff	-0.03027
149	Escondido	-0.00487	Temecula	-0.01099	Kettleman City	-0.01504	McCloud	-0.03011
150	Baker	-0.00442	Weed	-0.01008	Escondido	-0.01458	Weed	-0.02963
151	Fort Bragg	-1.5E-05	Escondido	-0.00834	Weed	-0.0129	San Bernardino	-0.02936
152	Woodland	0	Alturas	-0.00758	Alturas	-0.00638	Escondido	-0.02925
153	CitrusHeights	0	Fort Bragg	-0.00045	Fairfield	-0.00287	Kettleman City	-0.02869
154	Folsom Lake	0	Mendocino	-0.00021	Truckee	-0.00204	Alturas	-0.01694
155	Lake Havasu	0	Woodland	0	Mendocino	-0.00044	South Lake Tahoe	-0.0006
156	Citrus Heights	0	CitrusHeights	0	South Lake Tahoe	-0.00031	Mendocino	-0.00012
157	Mendocino	0.000168	Folsom Lake	0	Fort Bragg	-0.00021	Woodland	0

	7M		7H		8M		8H	
Ranking		DH/day		DH/day		DH/day		DH/day
1	Tustin	-0.11198	Tustin	-0.22646	Tustin	-0.07982	Tustin	-0.16605
2	Mission Viejo	-0.09731	Mission Viejo	-0.19758	Mission Viejo	-0.07147	Mission Viejo	-0.14606
3	Coachella	-0.08824	Coachella	-0.18176	Coachella	-0.06267	Coachella	-0.13168
4	Banning	-0.08682	Banning	-0.18071	Banning	-0.06261	Banning	-0.13038
5	Indio	-0.08252	Indio	-0.17046	Laguna Beach	-0.06094	Indio	-0.12331
6	Huntington Beach	-0.08099	Huntington Beach	-0.16499	Indio	-0.05939	Laguna Beach	-0.12295
7	Laguna Beach	-0.08009	Laguna Beach	-0.16409	Huntington Beach	-0.05681	Huntington Beach	-0.12189
8	Palmdale	-0.0795	Palmdale	-0.16213	Palmdale	-0.05518	Palmdale	-0.11812
9	Newport Beach	-0.0741	Newport Beach	-0.15425	Newport Beach	-0.05186	Newport Beach	-0.11343
10	Beverly Hills	-0.07323	Beverly Hills	-0.14788	California City	-0.05086	Beverly Hills	-0.09827
11	Century City	-0.07285	Sherman Oaks	-0.13979	Sherman Oaks	-0.05073	Blythe	-0.09783
12	California City	-0.069	Blythe	-0.13354	Beverly Hills	-0.04726	Sherman Oaks	-0.09709
13	Sherman Oaks	-0.0683	Van Nuys	-0.12385	Blythe	-0.04706	Century City	-0.09032
14	Blythe	-0.06448	Pomona	-0.11376	Van Nuys	-0.03986	Van Nuys	-0.07896
15	Hesperia	-0.05576	Visalia	-0.10622	Los Angeles	-0.03885	Visalia	-0.07742
16	Pomona	-0.05534	Century City	-0.10622	Pomona	-0.03814	Pomona	-0.0751
17	Van Nuys	-0.05492	Inglewood	-0.10213	Visalia	-0.03799	Tulare	-0.07468
18	San Jacinto	-0.05465	San Jacinto	-0.10168	Porterville	-0.03729	Inglewood	-0.07053
19	Los Angeles	-0.05328	Diamond Bar	-0.10078	Bakersfield	-0.03721	Wasco	-0.06885
20	Visalia	-0.05311	Tulare	-0.09881	Tulare	-0.03696	Porterville	-0.06799
21	Tulare	-0.05222	Wasco	-0.09765	Inglewood	-0.03397	Diamond Bar	-0.06498
22	Inglewood	-0.05052	California City	-0.09542	Hesperia	-0.03346	Rosemead	-0.06324
23	Rancho Cucamonga	-0.04715	Porterville	-0.09533	Wasco	-0.03343	San Jacinto	-0.06195
24	Diamond Bar	-0.047	Rosemead	-0.09373	San Jacinto	-0.03333	Oxnard	-0.06042
25	Porterville	-0.04671	Bakersfield	-0.09311	Diamond Bar	-0.03312	Sta. Ana	-0.05924
26	Victorville	-0.0462	Los Angeles	-0.09208	Rosemead	-0.03172	Los Angeles	-0.0591
27	Oxnard	-0.04564	Sta. Ana	-0.08572	Northridge	-0.03111	Bakersfield	-0.0591
28	Hemet	-0.04556	Hemet	-0.08532	Sta. Ana	-0.03057	Downey	-0.05872
29	Rosemead	-0.04503	Hollywood	-0.08411	Hollywood	-0.02931	Hollywood	-0.05779
30	Wasco	-0.04411	Northridge	-0.08385	Victorville	-0.02869	San Bernardino	-0.05753
31	Hollywood	-0.04326	Rancho Cucamonga	-0.08375	Downey	-0.02861	California City	-0.05653
32	Palm Springs	-0.04325	Hesperia	-0.08359	Thousand Oaks	-0.02824	Pismo Beach	-0.05548
33	Downey	-0.0429	Downey	-0.08209	Hemet	-0.02817	Northridge	-0.05504
34	Ontario	-0.04274	Palm Springs	-0.08175	Rancho Cucamonga	-0.02768	Thousand Oaks	-0.05316
35	Adelanto	-0.04222	Adelanto	-0.0811	Burbank	-0.02757	Rancho Cucamonga	-0.05275
36	Glendale	-0.04192	Pismo Beach	-0.0809	Corona	-0.02753	Victorville	-0.05159
37	Corona	-0.0419	Thousand Oaks	-0.07932	Glendale	-0.02738	Hemet	-0.05157
38	Sta. Ana	-0.04175	Victorville	-0.07867	Pismo Beach	-0.02736	Orange	-0.05036

39	Pasadena	-0.04102	Corona	-0.0772	Palm Springs	-0.0269	Vallejo	-0.05015
40	Bakersfield	-0.04005	San Bernardino	-0.07439	Orange	-0.02689	Corona	-0.0496
41	Pismo Beach	-0.03907	Glendale	-0.07433	Antioch	-0.02679	Barstow	-0.04922
42	San Bernardino	-0.03886	Orange	-0.07426	Vallejo	-0.02655	Palm Springs	-0.04902
43	Thousand Oaks	-0.0386	Pasadena	-0.07373	Pasadena	-0.0262	Sta. Barbara	-0.04861
44	Burbank	-0.03831	Burbank	-0.07296	Adelanto	-0.02541	Glendale	-0.04816
45	San Dimas	-0.03792	Oxnard	-0.07273	San Bernardino	-0.02511	Ontario	-0.04801
46	Vallejo	-0.03746	San Dimas	-0.07003	Manteca	-0.02377	Adelanto	-0.04778
47	Northridge	-0.03716	Vallejo	-0.0697	Ontario	-0.02375	Livermore	-0.04659
48	Orange	-0.03677	Ontario	-0.06901	Barstow	-0.02354	Pasadena	-0.04631
49	Covina	-0.03328	Antioch	-0.06572	Covina	-0.02351	Antioch	-0.04595
50	Sta. Clarita	-0.0331	Anaheim	-0.06322	Century City	-0.02335	Hesperia	-0.04554
51	Simi Valley	-0.03225	Fullerton	-0.06261	Fullerton	-0.023	Chowchilla	-0.04544
52	Anaheim	-0.0321	Simi Valley	-0.06133	Oxnard	-0.02273	Burbank	-0.0443
53	Fullerton	-0.03188	Chowchilla	-0.06113	San Dimas	-0.02162	Mojave	-0.04325
54	Canoga Park	-0.03162	San Rafael	-0.06084	Davis	-0.02139	El Centro	-0.04294
55	San Rafael	-0.0316	Redwood City	-0.05986	Sacramento	-0.02138	Goleta	-0.04231
56	Riverside	-0.03016	Ludlow	-0.05798	San Rafael	-0.02121	San Rafael	-0.04221
57	El Centro	-0.02999	Merced	-0.05771	Anaheim	-0.021	Redwood City	-0.04218
58	Antioch	-0.02988	Riverside	-0.05756	King City	-0.02091	San Dimas	-0.04203
59	Chowchilla	-0.02898	Covina	-0.05647	Cotton Wood	-0.02051	Manteca	-0.04159
60	Redwood City	-0.02893	Manteca	-0.05635	Redwood City	-0.02034	Ludlow	-0.03984
61	Manteca	-0.02883	El Cajon	-0.05539	Chowchilla	-0.02033	Fresno	-0.03976
62	San Francisco	-0.02862	San Francisco	-0.05486	Simi Valley	-0.02026	El Cajon	-0.0393
63	Fresno	-0.02685	Fresno	-0.0546	Hollister	-0.01992	Anaheim	-0.03928
64	Merced	-0.02661	El Centro	-0.05386	El Cajon	-0.01991	Sacramento	-0.03925
65	Livermore	-0.02645	Sacramento	-0.05225	Glamis	-0.01975	San Francisco	-0.03908
66	Hanford	-0.02632	Canoga Park	-0.05184	Ludlow	-0.0196	Davis	-0.03902
67	El Cajon	-0.02612	Davis	-0.05164	Malibu	-0.01937	Solvang	-0.03824
68	Chico	-0.02586	Hanford	-0.05051	Ocotillo	-0.01921	Covina	-0.03796
69	King City	-0.0258	King City	-0.04981	Riverside	-0.01911	Ocotillo	-0.03748
70	Davis	-0.02558	Patterson	-0.04815	Mojave	-0.01908	Twentynine Palms	-0.03746
71	Sacramento	-0.02534	Morgan Hills	-0.04773	Anderson	-0.01906	King City	-0.03734
72	Patterson	-0.02475	LAX	-0.04642	San Francisco	-0.0189	Fullerton	-0.03709
73	Turlock	-0.02312	Chico	-0.0451	Chico	-0.01888	Merced	-0.03709
74	Tracy	-0.02286	San Jose	-0.04412	Solvang	-0.0184	Hanford	-0.03693
75	Morgan Hills	-0.02245	Hollister	-0.04398	Patterson	-0.01818	Glamis	-0.03635
76	Cotton Wood	-0.02178	Oroville	-0.04395	Twentynine Palms	-0.01798	Simi Valley	-0.03614
77	Oroville	-0.02174	Chula Vista	-0.04363	Fresno	-0.01771	Malibu	-0.03548
78	Modesto	-0.02159	Tracy	-0.04341	Sta. Barbara	-0.01771	Riverside	-0.0346
79	Dunsmuir	-0.02152	National City	-0.04288	Sutter	-0.01746	Salton City	-0.03339

80	San Jose	-0.02131	Lodi	-0.04242	Turlock	-0.01722	Tehachapi	-0.03306
81	Sutter	-0.0213	Mtn. View	-0.04163	El Centro	-0.01708	Desert Center	-0.03197
82	Whittier	-0.02099	Sutter	-0.04131	Tracy	-0.01685	Morgan Hills	-0.03142
83	Lodi	-0.02083	Whittier	-0.04124	Oroville	-0.01684	Chico	-0.0312
84	Mtn. View	-0.02078	Benicia	-0.04117	Dunsmuir	-0.01676	Tracy	-0.03093
85	Benicia	-0.02067	Sta. Cruz	-0.04109	Hanford	-0.01673	Chula Vista	-0.03055
86	Chula Vista	-0.02039	Barstow	-0.04085	Lodi	-0.01672	Sta. Maria	-0.03039
87	National City	-0.01997	Turlock	-0.04048	Whittier	-0.01672	Patterson	-0.03036
88	Yuba City	-0.01996	Dixon	-0.0404	Dixon	-0.01646	National City	-0.02983
89	Dixon	-0.01976	Pittsburgh	-0.04024	Tehachapi	-0.01646	San Jose	-0.02953
90	Auburn	-0.01974	Martinez	-0.03963	Yuba City	-0.01635	Lodi	-0.0295
91	Martinez	-0.01967	Auburn	-0.03907	Salton City	-0.01626	Anderson	-0.02888
92	Los Banos	-0.01938	Yuba City	-0.03806	Merced	-0.01598	Cotton Wood	-0.02886
93	Colusa	-0.01894	Sta. Clarita	-0.03797	Auburn	-0.0159	Turlock	-0.02859
94	Sta. Cruz	-0.01857	Fairfield	-0.03745	Desert Center	-0.0158	Whittier	-0.02849
95	Paso Robles	-0.01853	San Diego	-0.03738	Paso Robles	-0.01577	Benicia	-0.02843
96	Atascadero	-0.01824	Modesto	-0.03726	Canoga Park	-0.01566	Tehama	-0.02811
97	Anderson	-0.01791	Mojave	-0.03615	Benicia	-0.01559	Hollister	-0.02802
98	San Diego	-0.01788	Paradise	-0.03602	Modesto	-0.0155	Oroville	-0.02784
99	Paradise	-0.01745	Los Banos	-0.03596	Chula Vista	-0.01533	Auburn	-0.02768
100	Tehachapi	-0.01679	Livermore	-0.03593	Los Banos	-0.01532	Martinez	-0.0276
101	Pittsburgh	-0.01663	Solvang	-0.03551	Martinez	-0.01511	Dixon	-0.0271
102	Tehama	-0.01599	Colusa	-0.03457	National City	-0.0146	Modesto	-0.02673
103	Barstow	-0.01582	Malibu	-0.0331	Colusa	-0.01459	Sta. Cruz	-0.0266
104	San Luis Obispo	-0.01546	Paso Robles	-0.03204	Livermore	-0.01452	Sutter	-0.02652
105	Napa	-0.01476	Walnut Creek	-0.0318	Pittsburgh	-0.01431	Pittsburgh	-0.0264
106	Mojave	-0.01471	Twentynine Palms	-0.03135	Chester	-0.01385	San Diego	-0.02625
107	Solvang	-0.0147	Ocotillo	-0.03111	Sta. Clarita	-0.01358	Mtn. View	-0.02603
108	Walnut Creek	-0.01468	Milpitas	-0.03035	San Diego	-0.01356	Dunsmuir	-0.02577
109	Lafayette	-0.01442	Lafayette	-0.03002	Morgan Hills	-0.01353	Baker	-0.0255
110	Nevada City	-0.01423	Dunsmuir	-0.0295	Tehama	-0.01352	Red Bluff	-0.02543
111	Ludlow	-0.0141	Tehachapi	-0.02935	Walnut Creek	-0.01344	Yuba City	-0.02523
112	Red Bluff	-0.01401	Sta. Maria	-0.02893	Paradise	-0.01338	Lompoc	-0.02502
113	Salinas	-0.01384	Sta. Barbara	-0.02892	Baker	-0.01334	Los Banos	-0.02486
114	Sta. Rosa	-0.01367	Fremont	-0.0285	Yreka	-0.01305	Sun City	-0.02483
115	Dublin	-0.01296	Nevada City	-0.02826	Mtn. View	-0.01299	LAX	-0.0247
116	Ocotillo	-0.01276	Napa	-0.02776	Sta. Maria	-0.01293	Paso Robles	-0.02442
117	Twentynine Palms	-0.01203	Sta. Rosa	-0.0275	Lafayette	-0.01238	Canoga Park	-0.02359
118	Milpitas	-0.01202	Salinas	-0.0271	Red Bluff	-0.0119	Colusa	-0.02333
119	Fremont	-0.0118	Dublin	-0.0271	Murrieta	-0.01183	Walnut Creek	-0.0229
120	Sta. Barbara	-0.01163	Salton City	-0.02701	Sun City	-0.0116	Paradise	-0.02186
121	Lompoc	-0.01137	Atascadero	-0.02697	Atascadero	-0.01157	Dublin	-0.02185

122	Alturas	-0.01134	San Luis Obispo	-0.0263	San Luis Obispo	-0.01129	Lafayette	-0.02175
123	Hollister	-0.01133	Glamis	-0.02628	Nevada City	-0.01117	Murrieta	-0.02095
124	Desert Center	-0.01115	Desert Center	-0.02622	Sta. Rosa	-0.0111	Susanville	-0.01964
125	Roseville	-0.01102	Tehama	-0.02615	Goleta	-0.01092	Sta. Rosa	-0.01931
126	Salton City	-0.01064	Lompoc	-0.0258	Lompoc	-0.01083	Milpitas	-0.0192
127	Tahoe City	-0.01028	Goleta	-0.02477	San Jose	-0.01041	San Luis Obispo	-0.019
128	Crescent City	-0.01026	Cotton Wood	-0.02474	Milpitas	-0.01034	Atascadero	-0.01866
129	Malibu	-0.01008	Anderson	-0.02467	Sta. Cruz	-0.01029	Fremont	-0.01854
130	Sta. Maria	-0.01006	Red Bluff	-0.02271	Temecula	-0.01011	Salinas	-0.01852
131	Susanville	-0.00983	Baker	-0.02223	Monterey	-0.00977	Kettleman City	-0.01842
132	Cloverdale	-0.00968	Roseville	-0.0215	Susanville	-0.00925	Temecula	-0.01826
133	Chester	-0.00962	Chester	-0.02142	Napa	-0.00924	Nevada City	-0.01785
134	Monterey	-0.00906	Susanville	-0.02106	Westwood	-0.0091	Chester	-0.01756
135	Westwood	-0.00832	Sun City	-0.0207	Roseville	-0.00906	Napa	-0.01744
136	Sun City	-0.008	Monterey	-0.01833	Dublin	-0.00861	Truckee	-0.01624
137	Fairfield	-0.00797	Westwood	-0.01805	Salinas	-0.00819	Roseville	-0.01608
138	Baker	-0.00768	Murrieta	-0.01729	Escondido	-0.00813	Escondido	-0.01605
139	Kettleman City	-0.00693	Tahoe City	-0.01662	Independence	-0.00709	Sta. Clarita	-0.01563
140	Eureka	-0.00691	Cloverdale	-0.01637	Fremont	-0.00684	Westwood	-0.01491
141	Willits	-0.00685	Crescent City	-0.01602	Cloverdale	-0.00683	Tahoe City	-0.01344
142	Murrieta	-0.00682	Eureka	-0.01527	Tahoe City	-0.00647	Independence	-0.01335
143	Independence	-0.00674	Temecula	-0.01494	Kettleman City	-0.00631	Cloverdale	-0.01299
144	Glamis	-0.00657	Escondido	-0.01338	Crescent City	-0.00618	Crescent City	-0.01276
145	LAX	-0.00615	Independence	-0.01304	Downieville	-0.00575	Monterey	-0.01254
146	Downieville	-0.00598	Willits	-0.01238	Willits	-0.00555	Yreka	-0.01232
147	Temecula	-0.00597	Downieville	-0.0118	Eureka	-0.00505	Downieville	-0.01163
148	Goleta	-0.00501	Kettleman City	-0.01108	McCloud	-0.00404	Weed	-0.01162
149	Escondido	-0.00493	McCloud	-0.01077	Truckee	-0.0039	Willits	-0.00948
150	McCloud	-0.00488	Weed	-0.00988	Weed	-0.00284	Eureka	-0.00922
151	Weed	-0.00355	Truckee	-0.00763	Mendocino	-0.0004	McCloud	-0.0088
152	Mendocino	-0.00026	Alturas	-0.00556	Fort Bragg	-0.00036	Alturas	-0.00407
153	Woodland	0	Yreka	-0.00385	Woodland	0	Mendocino	-0.00022
154	CitrusHeights	0	Mendocino	-0.00024	CitrusHeights	0	Fort Bragg	-0.00011
155	Folsom Lake	0	Fort Bragg	-0.00011	Folsom Lake	0	Woodland	0
156	Lake Havasu	0	Woodland	0	Lake Havasu	0	CitrusHeights	0
157	Citrus Heights	0	CitrusHeights	0	Citrus Heights	0	Folsom Lake	0

	9M		9H		10M		10H	
Ranking		DH/day		DH/day		DH/day		DH/day
1	Tustin	-0.06994	Tustin	-0.1484	Huntington Beach	-0.41241	Huntington Beach	-0.83208
2	Mission Viejo	-0.06501	Mission Viejo	-0.12792	Newport Beach	-0.39714	Newport Beach	-0.79948
3	Coachella	-0.06322	Coachella	-0.12568	Laguna Beach	-0.3567	Laguna Beach	-0.71907
4	Banning	-0.06268	Banning	-0.12501	Tustin	-0.28384	Tustin	-0.5611
5	Indio	-0.05943	Indio	-0.11772	Mission Viejo	-0.27475	Mission Viejo	-0.54916
6	Laguna Beach	-0.05534	Palmdale	-0.11377	Beverly Hills	-0.15846	Beverly Hills	-0.31103
7	Huntington Beach	-0.05348	California City	-0.11127	LAX	-0.15615	Sta. Ana	-0.29369
8	Beverly Hills	-0.05061	Beverly Hills	-0.10754	Sta. Ana	-0.14832	LAX	-0.27763
9	Newport Beach	-0.04837	Huntington Beach	-0.10734	Sherman Oaks	-0.13549	Sherman Oaks	-0.26932
10	Hesperia	-0.04813	Laguna Beach	-0.10561	Van Nuys	-0.13296	Inglewood	-0.26681
11	Sherman Oaks	-0.04808	Newport Beach	-0.10007	Century City	-0.132	Van Nuys	-0.26345
12	Inglewood	-0.04645	Sherman Oaks	-0.09782	Oxnard	-0.12844	Blythe	-0.25498
13	Blythe	-0.04637	Blythe	-0.09363	Orange	-0.12833	Banning	-0.25207
14	Van Nuys	-0.04333	Mojave	-0.09026	Inglewood	-0.12783	Pomona	-0.2513
15	San Jacinto	-0.04231	Pomona	-0.08103	Vallejo	-0.12635	Palmdale	-0.24977
16	San Bernardino	-0.04199	Van Nuys	-0.07912	Palmdale	-0.126	Vallejo	-0.24851
17	Visalia	-0.04024	San Jacinto	-0.07647	Banning	-0.12577	Century City	-0.24591
18	Mojave	-0.03953	San Bernardino	-0.07604	Pomona	-0.12577	Coachella	-0.24299
19	Canoga Park	-0.03782	Los Angeles	-0.07452	Sta. Monica	-0.12303	Orange	-0.23972
20	Pomona	-0.0377	Visalia	-0.07391	Blythe	-0.12258	Oxnard	-0.23732
21	Diamond Bar	-0.03762	Inglewood	-0.0737	Coachella	-0.1214	Diamond Bar	-0.23344
22	Los Angeles	-0.03732	Ocotillo	-0.07361	Wasco	-0.11537	Wasco	-0.22583
23	Wasco	-0.03728	Tulare	-0.07326	Diamond Bar	-0.11522	Porterville	-0.2223
24	Rancho Cucamonga	-0.03719	Diamond Bar	-0.07151	Porterville	-0.11398	Los Angeles	-0.21449
25	Tulare	-0.03661	Bakersfield	-0.07072	Los Angeles	-0.11269	Tulare	-0.21375
26	Ocotillo	-0.03627	Rosemead	-0.0705	Indio	-0.10587	Indio	-0.21277
27	Hemet	-0.03616	Antioch	-0.07021	Hollywood	-0.10473	Hollywood	-0.20734
28	Porterville	-0.03503	Porterville	-0.06691	Tulare	-0.103	Rosemead	-0.19429
29	Victorville	-0.03483	Wasco	-0.06632	Corona	-0.09786	Sta. Monica	-0.19359
30	Palm Springs	-0.03403	Rancho Cucamonga	-0.06557	Rosemead	-0.09504	Corona	-0.19238
31	El Centro	-0.03335	Hesperia	-0.06511	San Francisco	-0.09445	San Francisco	-0.18955
32	Antioch	-0.03333	Salton City	-0.06497	San Dimas	-0.09084	Rancho Cucamonga	-0.17431
33	Ontario	-0.03324	Hemet	-0.06413	Rancho Cucamonga	-0.08986	Anaheim	-0.17319
34	Bakersfield	-0.03308	Desert Center	-0.06379	Anaheim	-0.08839	San Dimas	-0.1711
35	Desert Center	-0.03274	Century City	-0.06367	Glendale	-0.08483	Glendale	-0.16897
36	Salton City	-0.03257	Manteca	-0.06103	Downey	-0.08413	Visalia	-0.16194
37	Century City	-0.03254	Hollywood	-0.06101	Visalia	-0.08364	Ontario	-0.16172

38	San Dimas	-0.03192	Sta. Ana	-0.06072	Ontario	-0.07791	Pismo Beach	-0.16098
39	Adelanto	-0.03152	Palm Springs	-0.06018	Thousand Oaks	-0.07771	Downey	-0.15883
40	Chico	-0.02939	Adelanto	-0.06013	San Jacinto	-0.077	Burbank	-0.15427
41	Hollister	-0.02894	Victorville	-0.05982	Bakersfield	-0.07646	Thousand Oaks	-0.15415
42	Glendale	-0.02865	Downey	-0.05933	Burbank	-0.07619	Bakersfield	-0.1536
43	Chowchilla	-0.02865	Orange	-0.05783	Sta. Barbara	-0.07351	San Jacinto	-0.14994
44	Covina	-0.02821	Thousand Oaks	-0.05724	Livermore	-0.07253	Pasadena	-0.14635
45	Hollywood	-0.02818	Pismo Beach	-0.05703	Pasadena	-0.07229	Malibu	-0.13998
46	Manteca	-0.02792	Sacramento	-0.05633	Northridge	-0.07195	San Rafael	-0.13835
47	Thousand Oaks	-0.02771	Pasadena	-0.05621	San Rafael	-0.06947	Northridge	-0.13731
48	Downey	-0.02763	Davis	-0.05618	Pismo Beach	-0.06931	Fullerton	-0.13676
49	Corona	-0.02752	Glendale	-0.05585	Redwood City	-0.06861	Redwood City	-0.13607
50	Fresno	-0.02738	El Centro	-0.05585	Victorville	-0.06726	Victorville	-0.13007
51	Vallejo	-0.02721	Chowchilla	-0.05583	Fullerton	-0.06664	Riverside	-0.12955
52	Pismo Beach	-0.02696	Corona	-0.05465	Malibu	-0.06654	El Cajon	-0.12917
53	Burbank	-0.02695	Burbank	-0.05428	El Cajon	-0.06502	Sta. Barbara	-0.12907
54	Merced	-0.02649	Ontario	-0.0536	National City	-0.06361	National City	-0.12806
55	Sta. Ana	-0.02647	Northridge	-0.05347	Covina	-0.06327	Sta. Cruz	-0.12693
56	Northridge	-0.02646	King City	-0.05331	Chula Vista	-0.06257	El Centro	-0.12589
57	Rosemead	-0.0261	Merced	-0.05262	Sta. Cruz	-0.06233	Chula Vista	-0.12505
58	Hanford	-0.02601	San Dimas	-0.05122	Sta. Clarita	-0.06219	Covina	-0.1212
59	Simi Valley	-0.02574	Oxnard	-0.05035	El Centro	-0.06182	Adelanto	-0.12029
60	Orange	-0.0255	Livermore	-0.05023	Adelanto	-0.06001	Hemet	-0.11894
61	Sacramento	-0.02533	Vallejo	-0.05023	Hesperia	-0.05912	Hesperia	-0.116
62	Davis	-0.02524	Sun City	-0.0497	Hemet	-0.05811	Livermore	-0.11404
63	King City	-0.02518	Fresno	-0.04966	San Diego	-0.05642	San Diego	-0.11315
64	Tehama	-0.02517	Anaheim	-0.04961	Riverside	-0.05565	Sta. Clarita	-0.11131
65	Sun City	-0.02503	Hanford	-0.04662	Simi Valley	-0.05476	Simi Valley	-0.11086
66	Cotton Wood	-0.02502	Fullerton	-0.04555	Hollister	-0.05112	Chowchilla	-0.09769
67	Pasadena	-0.02398	Canoga Park	-0.04449	Chowchilla	-0.04826	Palm Springs	-0.09744
68	Patterson	-0.02363	Simi Valley	-0.04434	Palm Springs	-0.04809	King City	-0.09618
69	Oroville	-0.0236	Chico	-0.04429	Canoga Park	-0.04721	Hollister	-0.09366
70	California City	-0.02359	Tracy	-0.04407	Antioch	-0.04664	Antioch	-0.09351
71	Murrieta	-0.02313	Morgan Hills	-0.0433	King City	-0.04649	Manteca	-0.0927
72	Sutter	-0.02272	Murrieta	-0.04317	Morgan Hills	-0.04563	Morgan Hills	-0.09029
73	Tracy	-0.02233	Covina	-0.04265	Manteca	-0.04533	Benicia	-0.08876
74	Red Bluff	-0.02231	El Cajon	-0.04257	Hanford	-0.0443	Hanford	-0.08801
75	Temecula	-0.02174	Patterson	-0.04254	Benicia	-0.04398	San Jose	-0.08256
76	Anaheim	-0.02174	Lodi	-0.04253	Milpitas	-0.04356	Martinez	-0.0822
77	Yuba City	-0.02145	Sta. Clarita	-0.04227	Fremont	-0.0433	Milpitas	-0.0821
78	San Rafael	-0.02135	San Rafael	-0.04202	Goleta	-0.04327	California City	-0.08166
79	Pittsburgh	-0.02126	Riverside	-0.0419	Merced	-0.04125	Sta. Maria	-0.08078
80	Morgan Hills	-0.021	Redwood City	-0.04166	Martinez	-0.041	Mtn. View	-0.08051

81	Riverside	-0.02097	Benicia	-0.04062	Mtn. View	-0.04086	Merced	-0.08035
82	Lodi	-0.02089	Pittsburgh	-0.04037	Whittier	-0.03978	Salinas	-0.07986
83	Kettleman City	-0.02068	Auburn	-0.03983	San Jose	-0.03854	Fremont	-0.07674
84	Redwood City	-0.02049	Martinez	-0.03983	Salinas	-0.03847	Auburn	-0.07455
85	Fullerton	-0.02047	Oroville	-0.03925	Sta. Maria	-0.03738	Whittier	-0.07392
86	Dixon	-0.02036	Dixon	-0.03909	Auburn	-0.03671	Davis	-0.07238
87	Colusa	-0.02009	Whittier	-0.03893	Davis	-0.03576	Walnut Creek	-0.07133
88	Auburn	-0.02006	Temecula	-0.03889	Walnut Creek	-0.03503	Canoga Park	-0.07061
89	San Francisco	-0.01995	San Jose	-0.0388	Lafayette	-0.03452	Lafayette	-0.0686
90	Benicia	-0.01994	San Francisco	-0.0388	Monterey	-0.03367	Goleta	-0.06816
91	Martinez	-0.01978	Sutter	-0.03832	Lodi	-0.03349	Monterey	-0.06762
92	Mtn. View	-0.01977	Mtn. View	-0.03731	Crescent City	-0.03337	Lompoc	-0.0676
93	El Cajon	-0.01896	Sta. Cruz	-0.03701	Tracy	-0.03309	Tracy	-0.06731
94	Sta. Clarita	-0.01894	Cotton Wood	-0.03615	Lompoc	-0.03262	Solvang	-0.06685
95	Paradise	-0.01888	Dunsmuir	-0.03593	California City	-0.03243	Lodi	-0.06652
96	Sta. Barbara	-0.0187	Yuba City	-0.03555	Sacramento	-0.03207	Napa	-0.06517
97	Sta. Cruz	-0.01868	Tehama	-0.03547	Dixon	-0.03205	Sacramento	-0.06416
98	San Jose	-0.01862	Chula Vista	-0.03308	Pittsburgh	-0.03177	Pittsburgh	-0.0624
99	Dunsmuir	-0.01846	Escondido	-0.03302	Napa	-0.03135	Paradise	-0.06194
100	Turlock	-0.01736	Colusa	-0.03284	Chico	-0.03133	Patterson	-0.06184
101	Escondido	-0.01698	Walnut Creek	-0.03217	Paradise	-0.03127	Dixon	-0.06172
102	Milpitas	-0.0166	Paradise	-0.03214	Patterson	-0.03075	Nevada City	-0.06094
103	Modesto	-0.01658	National City	-0.03211	Dunsmuir	-0.03036	Oroville	-0.06059
104	Walnut Creek	-0.01634	Hollister	-0.03119	Oroville	-0.02999	Dublin	-0.06019
105	Los Banos	-0.01592	Milpitas	-0.03092	Solvang	-0.02991	Sta. Rosa	-0.05936
106	Paso Robles	-0.01587	Red Bluff	-0.03	Nevada City	-0.02982	Chico	-0.0591
107	Chula Vista	-0.01508	Lafayette	-0.02927	Dublin	-0.0298	Dunsmuir	-0.05861
108	Whittier	-0.01492	Turlock	-0.02891	Fresno	-0.0284	Fresno	-0.05822
109	National City	-0.01482	Tehachapi	-0.02877	Sta. Rosa	-0.02837	Crescent City	-0.05741
110	Yreka	-0.01467	San Diego	-0.02852	Colusa	-0.02773	Colusa	-0.05534
111	Nevada City	-0.01455	Napa	-0.02811	Paso Robles	-0.0277	Tehachapi	-0.05455
112	Chester	-0.01396	Sta. Rosa	-0.02775	Tehachapi	-0.02729	Turlock	-0.05405
113	Sta. Rosa	-0.01379	Dublin	-0.02749	Turlock	-0.02726	Atascadero	-0.05312
114	Lafayette	-0.0137	Modesto	-0.02723	Eureka	-0.02562	Paso Robles	-0.05267
115	Oxnard	-0.01367	Fremont	-0.02671	Sutter	-0.02557	Eureka	-0.05192
116	San Diego	-0.01328	Salinas	-0.02528	Yuba City	-0.02538	Sutter	-0.05186
117	Anderson	-0.01316	Barstow	-0.02491	Los Banos	-0.02524	Los Banos	-0.05119
118	Napa	-0.01276	Nevada City	-0.02481	San Luis Obispo	-0.02429	Yuba City	-0.05056
119	Tehachapi	-0.01256	Los Banos	-0.0246	Atascadero	-0.02417	Modesto	-0.04575
120	Malibu	-0.01253	Solvang	-0.02441	Tehama	-0.02277	San Luis Obispo	-0.04481
121	Salinas	-0.01225	Anderson	-0.02417	San Bernardino	-0.02217	Fairfield	-0.04176
122	Atascadero	-0.01208	Roseville	-0.02318	Modesto	-0.022	Ludlow	-0.04133

123	Fremont	-0.01202	LAX	-0.02307	Cotton Wood	-0.02175	Tehama	-0.04052
124	San Luis Obispo	-0.01139	Paso Robles	-0.02303	Yreka	-0.02146	Chester	-0.04044
125	Roseville	-0.01106	Kettleman City	-0.02285	Ludlow	-0.02129	Willits	-0.04
126	Dublin	-0.01076	Chester	-0.02161	Susanville	-0.02087	Westwood	-0.03944
127	Ludlow	-0.01047	Ludlow	-0.02065	Ocotillo	-0.02028	Cotton Wood	-0.03938
128	Solvang	-0.0102	Atascadero	-0.01987	Westwood	-0.01982	Susanville	-0.03894
129	Tahoe City	-0.01001	Cloverdale	-0.01976	Willits	-0.01975	Sun City	-0.03885
130	Independence	-0.00998	Tahoe City	-0.01965	Chester	-0.0196	Ocotillo	-0.03851
131	Monterey	-0.00982	Yreka	-0.01926	Anderson	-0.01826	Anderson	-0.03774
132	Cloverdale	-0.00979	Glamis	-0.0189	Independence	-0.01816	Barstow	-0.0367
133	Downieville	-0.00891	Malibu	-0.01867	Mojave	-0.01808	Truckee	-0.03637
134	LAX	-0.00825	San Luis Obispo	-0.01857	Sun City	-0.01781	Mojave	-0.03581
135	Lompoc	-0.00817	Sta. Maria	-0.01856	Twentynine Palms	-0.01757	Independence	-0.03523
136	Susanville	-0.00798	Truckee	-0.01849	Red Bluff	-0.01716	Twentynine Palms	-0.03495
137	Crescent City	-0.00777	Twentynine Palms	-0.0183	Barstow	-0.01714	Cloverdale	-0.03446
138	Westwood	-0.00746	Lompoc	-0.01724	Tahoe City	-0.01702	Temecula	-0.0343
139	Willits	-0.00723	Independence	-0.01661	Glamis	-0.017	Salton City	-0.03324
140	Sta. Maria	-0.00694	Monterey	-0.01618	Salton City	-0.01667	Murrieta	-0.0331
141	Truckee	-0.00687	Downieville	-0.01484	Downieville	-0.01665	Glamis	-0.03307
142	Barstow	-0.00687	Susanville	-0.01481	Cloverdale	-0.0166	Tahoe City	-0.03297
143	Twentynine Palms	-0.00678	Willits	-0.01412	Desert Center	-0.01629	Yreka	-0.03281
144	Livermore	-0.00662	Weed	-0.01412	Murrieta	-0.01614	Downieville	-0.03272
145	McCloud	-0.00553	Westwood	-0.01385	Baker	-0.01589	Desert Center	-0.03255
146	Eureka	-0.00533	Crescent City	-0.01378	McCloud	-0.01585	Roseville	-0.0312
147	Fairfield	-0.00507	Eureka	-0.01315	Roseville	-0.01524	Baker	-0.03046
148	Glamis	-0.005	Baker	-0.01276	Temecula	-0.01513	Red Bluff	-0.03027
149	Weed	-0.00466	Sta. Barbara	-0.01229	Kettleman City	-0.01504	McCloud	-0.03011
150	Baker	-0.00391	McCloud	-0.01218	Escondido	-0.01458	Weed	-0.02963
151	Alturas	-0.0016	Alturas	-0.00596	Weed	-0.0129	San Bernardino	-0.02936
152	Fort Bragg	-0.00043	Fairfield	-0.00585	Alturas	-0.00638	Escondido	-0.02925
153	Mendocino	-0.00021	Goleta	-0.00506	Fairfield	-0.00287	Kettleman City	-0.02869
154	Goleta	-6.9E-05	Mendocino	-0.00076	Truckee	-0.00204	Alturas	-0.01694
155	Woodland	0	Fort Bragg	-0.00074	Mendocino	-0.00044	South Lake Tahoe	-0.0006
156	CitrusHeights	0	Woodland	0	South Lake Tahoe	-0.00031	Mendocino	-0.00012
157	Folsom Lake	0	CitrusHeights	0	Fort Bragg	-0.00021	Woodland	0

	11M		11H		12M		12H	
Ranking		DH/day		DH/day		DH/day		DH/day
1	Huntington Beach	-0.30774	Huntington Beach	-0.61471	Huntington Beach	-0.27303	Huntington Beach	-0.54801
2	Newport Beach	-0.28954	Newport Beach	-0.59187	Newport Beach	-0.25848	Newport Beach	-0.52448
3	Laguna Beach	-0.26647	Laguna Beach	-0.53345	Laguna Beach	-0.23795	Laguna Beach	-0.4758
4	Tustin	-0.209	Tustin	-0.41243	Tustin	-0.18644	Tustin	-0.37405
5	Mission Viejo	-0.20165	Mission Viejo	-0.40744	Mission Viejo	-0.17947	Mission Viejo	-0.35913
6	Inglewood	-0.1086	Sta. Ana	-0.21249	Livermore	-0.11739	Beverly Hills	-0.22203
7	Beverly Hills	-0.10822	Beverly Hills	-0.21087	Beverly Hills	-0.10999	Sta. Ana	-0.20582
8	Sta. Ana	-0.10559	Sherman Oaks	-0.18575	Sta. Ana	-0.10063	Century City	-0.20401
9	Sherman Oaks	-0.09663	Inglewood	-0.18193	Sherman Oaks	-0.09876	San Bernardino	-0.19711
10	Van Nuys	-0.09367	Van Nuys	-0.1797	LAX	-0.09591	Inglewood	-0.19212
11	Banning	-0.08968	Banning	-0.17905	Van Nuys	-0.0956	Van Nuys	-0.19173
12	Blythe	-0.08908	Palmdale	-0.17871	Inglewood	-0.09528	Sherman Oaks	-0.19057
13	Oxnard	-0.08654	Blythe	-0.17622	Oxnard	-0.09128	LAX	-0.18607
14	Palmdale	-0.08646	Orange	-0.17591	Banning	-0.08855	Banning	-0.17866
15	Vallejo	-0.08598	LAX	-0.17313	Blythe	-0.08688	Pomona	-0.17668
16	Wasco	-0.0858	Vallejo	-0.17226	Palmdale	-0.08643	Palmdale	-0.176
17	Los Angeles	-0.08572	Coachella	-0.17195	Pomona	-0.08641	Orange	-0.17588
18	Coachella	-0.08553	Oxnard	-0.16953	Wasco	-0.08479	Blythe	-0.17432
19	Pomona	-0.08541	Pomona	-0.16903	Vallejo	-0.0843	Oxnard	-0.17195
20	Orange	-0.08489	Century City	-0.1655	Coachella	-0.08389	Coachella	-0.16835
21	Century City	-0.081	Wasco	-0.16422	Orange	-0.08015	Wasco	-0.16689
22	Porterville	-0.08068	Porterville	-0.1616	Los Angeles	-0.07923	Vallejo	-0.16688
23	San Bernardino	-0.07667	Diamond Bar	-0.1564	Diamond Bar	-0.07854	Diamond Bar	-0.1619
24	Diamond Bar	-0.07634	Los Angeles	-0.15349	Century City	-0.07655	Los Angeles	-0.15758
25	Indio	-0.0748	Indio	-0.14995	Tulare	-0.07518	Porterville	-0.15622
26	Northridge	-0.07427	Tulare	-0.14561	Indio	-0.07357	Sta. Monica	-0.15404
27	Tulare	-0.07337	Hollywood	-0.1397	Porterville	-0.07338	Indio	-0.1477
28	LAX	-0.07287	Malibu	-0.13863	Corona	-0.07296	Hollywood	-0.146
29	Hollywood	-0.07285	San Francisco	-0.13036	Hollywood	-0.07241	Tulare	-0.14381
30	Malibu	-0.06853	Rosemead	-0.13035	San Dimas	-0.06702	Corona	-0.13783
31	Corona	-0.06686	Sta. Barbara	-0.12699	Rosemead	-0.06528	Anaheim	-0.13271
32	Sta. Barbara	-0.06589	Corona	-0.12597	San Francisco	-0.06485	Rosemead	-0.1314
33	San Francisco	-0.0647	Anaheim	-0.12285	Rancho Cucamonga	-0.06347	Rancho Cucamonga	-0.13078
34	Goleta	-0.06339	Downey	-0.11207	Glendale	-0.06313	San Francisco	-0.1284
35	San Dimas	-0.06126	Visalia	-0.10963	Downey	-0.06129	San Dimas	-0.12541
36	Rosemead	-0.06028	Bakersfield	-0.10887	Anaheim	-0.05937	Glendale	-0.12239
37	Livermore	-0.0592	San Dimas	-0.10852	San Jacinto	-0.05857	San Jacinto	-0.11713
38	Rancho Cucamonga	-0.05872	Glendale	-0.10836	Burbank	-0.05807	Ontario	-0.11462
39	Anaheim	-0.05798	Rancho	-0.10834	Pismo Beach	-0.0573	El Centro	-0.1137

			Cucamonga					
40	Bakersfield	-0.05797	Pismo Beach	-0.10825	Bakersfield	-0.05727	Pismo Beach	-0.11335
41	Visalia	-0.05782	Thousand Oaks	-0.10402	Ontario	-0.05707	Visalia	-0.11248
42	Downey	-0.05715	California City	-0.10059	Malibu	-0.0561	Downey	-0.11234
43	Glendale	-0.05598	Burbank	-0.0985	Sta. Cruz	-0.05557	Burbank	-0.11133
44	Ontario	-0.05456	San Bernardino	-0.09766	Thousand Oaks	-0.05534	Thousand Oaks	-0.1099
45	Pismo Beach	-0.05431	San Rafael	-0.09634	Northridge	-0.05432	Sta. Cruz	-0.10981
46	Thousand Oaks	-0.05002	Northridge	-0.09525	Sta. Barbara	-0.05423	Bakersfield	-0.10779
47	San Jacinto	-0.04963	San Jacinto	-0.09352	Visalia	-0.05337	Pasadena	-0.10492
48	Burbank	-0.04913	Ontario	-0.09336	Pasadena	-0.05235	Sta. Barbara	-0.10439
49	San Rafael	-0.04831	Redwood City	-0.09132	Victorville	-0.05152	Northridge	-0.10253
50	Redwood City	-0.04772	Pasadena	-0.0909	El Cajon	-0.05006	Malibu	-0.10242
51	Hesperia	-0.04635	El Cajon	-0.0899	El Centro	-0.04964	El Cajon	-0.09956
52	Pasadena	-0.04571	National City	-0.08901	Hesperia	-0.04952	King City	-0.09921
53	El Cajon	-0.04522	Chula Vista	-0.0872	National City	-0.04927	National City	-0.09883
54	National City	-0.04398	El Centro	-0.08612	King City	-0.04907	Manteca	-0.09821
55	Chula Vista	-0.04354	Fullerton	-0.08151	Antioch	-0.04865	Fullerton	-0.09734
56	Victorville	-0.04265	Sta. Monica	-0.08151	Chula Vista	-0.04826	Chula Vista	-0.0967
57	Fullerton	-0.04008	Riverside	-0.08109	Redwood City	-0.04735	San Rafael	-0.09419
58	Covina	-0.03988	Victorville	-0.0797	San Rafael	-0.04703	Antioch	-0.0939
59	San Diego	-0.03929	Sta. Cruz	-0.07923	Hemet	-0.04694	Hemet	-0.09366
60	Sta. Cruz	-0.03924	San Diego	-0.07885	Manteca	-0.04688	Victorville	-0.0935
61	Sta. Maria	-0.03835	Sta. Maria	-0.07827	Fullerton	-0.04623	Redwood City	-0.09069
62	Hemet	-0.03818	Hesperia	-0.07631	Canoga Park	-0.0461	Chowchilla	-0.09048
63	Fairfield	-0.0381	Hemet	-0.0754	Covina	-0.04381	Riverside	-0.08872
64	Adelanto	-0.03584	Adelanto	-0.07481	San Diego	-0.04375	Sun City	-0.08862
65	Sta. Monica	-0.03532	Goleta	-0.07295	Chowchilla	-0.04343	Adelanto	-0.08822
66	Chowchilla	-0.03492	Covina	-0.07228	Ocotillo	-0.0431	Covina	-0.0879
67	King City	-0.03442	Chowchilla	-0.07034	Murrieta	-0.04289	San Diego	-0.08736
68	Antioch	-0.03391	King City	-0.0703	Adelanto	-0.04192	Hesperia	-0.0857
69	Simi Valley	-0.03389	Sta. Clarita	-0.06911	Sun City	-0.04187	Ocotillo	-0.08509
70	Lompoc	-0.0331	Simi Valley	-0.06895	Benicia	-0.04173	Benicia	-0.08495
71	Riverside	-0.033	Manteca	-0.06775	Temecula	-0.04108	Murrieta	-0.08426
72	Manteca	-0.03267	Lompoc	-0.06594	Martinez	-0.04036	Hanford	-0.0824
73	El Centro	-0.03204	Hanford	-0.06523	California City	-0.04021	Martinez	-0.0815
74	Tehachapi	-0.03171	Antioch	-0.06394	Sta. Clarita	-0.04018	Simi Valley	-0.08045
75	San Jose	-0.03127	Solvang	-0.0639	Hanford	-0.04004	Mojave	-0.07998
76	Canoga Park	-0.03114	Tehachapi	-0.06348	Salton City	-0.03992	Sta. Clarita	-0.07972
77	Hanford	-0.031	Benicia	-0.06081	Simi Valley	-0.03991	Salton City	-0.07935
78	Solvang	-0.03082	Hollister	-0.06078	Morgan Hills	-0.0395	California City	-0.07883
79	Yreka	-0.03053	Palm Springs	-0.06011	Mojave	-0.0392	Desert Center	-0.07839
80	Benicia	-0.03042	Salinas	-0.0573	Desert Center	-0.03916	Temecula	-0.07836
81	Palm Springs	-0.02994	Whittier	-0.05663	Milpitas	-0.03831	Morgan Hills	-0.07714

82	California City	-0.02957	Morgan Hills	-0.05604	Fairfield	-0.03796	Hollister	-0.07613
83	Morgan Hills	-0.02788	Martinez	-0.0551	Salinas	-0.03767	Auburn	-0.07507
84	Salinas	-0.02754	Davis	-0.05328	Davis	-0.03748	Davis	-0.07476
85	Martinez	-0.02738	Milpitas	-0.05309	Fremont	-0.03727	Salinas	-0.07414
86	Mtn. View	-0.02699	Monterey	-0.053	Auburn	-0.03722	Milpitas	-0.07356
87	Monterey	-0.0269	Mtn. View	-0.0515	Palm Springs	-0.03695	Escondido	-0.07343
88	Davis	-0.02618	Auburn	-0.05135	San Jose	-0.03687	Palm Springs	-0.07317
89	Sta. Clarita	-0.026	Fremont	-0.05041	Escondido	-0.03648	Whittier	-0.07026
90	Auburn	-0.02561	Merced	-0.0504	Mtn. View	-0.03618	Merced	-0.06984
91	Whittier	-0.02553	Canoga Park	-0.04836	Riverside	-0.0349	Mtn. View	-0.06795
92	Merced	-0.02511	Walnut Creek	-0.04691	Merced	-0.03486	San Jose	-0.0675
93	Ludlow	-0.02499	Ludlow	-0.04638	Walnut Creek	-0.03476	Fremont	-0.06732
94	Milpitas	-0.02468	Tracy	-0.04619	Whittier	-0.03345	Tracy	-0.06721
95	Fremont	-0.0246	Lafayette	-0.04609	Tracy	-0.03324	Walnut Creek	-0.06624
96	Napa	-0.02445	Sacramento	-0.04531	San Bernardino	-0.03298	Sacramento	-0.06603
97	Lafayette	-0.02296	Lodi	-0.04517	Lodi	-0.03294	Lodi	-0.06564
98	Sacramento	-0.02293	Mojave	-0.04497	Sacramento	-0.03275	Lafayette	-0.06528
99	Dixon	-0.02265	Dublin	-0.04385	Napa	-0.03262	Napa	-0.0626
100	Lodi	-0.02261	San Jose	-0.04379	Hollister	-0.03217	Dixon	-0.06051
101	Sun City	-0.02255	Barstow	-0.04342	Lafayette	-0.032	Pittsburgh	-0.05978
102	Anderson	-0.02232	Dixon	-0.04269	Dixon	-0.03194	Dunsmuir	-0.05965
103	Crescent City	-0.02218	Napa	-0.04224	Chico	-0.03122	Sta. Rosa	-0.05959
104	Tracy	-0.02185	Fresno	-0.04161	Dunsmuir	-0.0304	Monterey	-0.05872
105	Chico	-0.0218	Cotton Wood	-0.04117	Pittsburgh	-0.03022	Dublin	-0.05842
106	Paso Robles	-0.02164	Ocotillo	-0.04108	Patterson	-0.02898	Paradise	-0.05822
107	Cotton Wood	-0.02161	Sun City	-0.0409	Oroville	-0.02878	Patterson	-0.05813
108	Dunsmuir	-0.02154	Livermore	-0.04034	Dublin	-0.02876	Oroville	-0.05752
109	Fresno	-0.02135	Sta. Rosa	-0.04018	Paradise	-0.02872	Nevada City	-0.05711
110	Pittsburgh	-0.021	Twentynine Palms	-0.03999	Sta. Rosa	-0.02853	Chico	-0.05695
111	Ocotillo	-0.02088	Chico	-0.0397	Nevada City	-0.02849	Sta. Maria	-0.05488
112	Barstow	-0.02037	Patterson	-0.03943	Fresno	-0.02734	Colusa	-0.05333
113	Paradise	-0.01986	Oroville	-0.03912	Crescent City	-0.02702	Fairfield	-0.05202
114	Mojave	-0.01964	Anderson	-0.03904	Colusa	-0.02686	Fresno	-0.05183
115	Hollister	-0.0195	Turlock	-0.03902	Monterey	-0.02618	Tehachapi	-0.05168
116	Patterson	-0.01937	Paradise	-0.03873	Tehachapi	-0.02582	Crescent City	-0.05038
117	Walnut Creek	-0.01933	Murrieta	-0.03856	Sta. Maria	-0.02572	Lompoc	-0.05028
118	Oroville	-0.01929	Nevada City	-0.03854	Cotton Wood	-0.02546	Willits	-0.04939
119	Turlock	-0.01925	Paso Robles	-0.03807	Yuba City	-0.0251	Sutter	-0.04927
120	Sta. Rosa	-0.01922	Crescent City	-0.0379	Sutter	-0.02449	Yuba City	-0.04902
121	Nevada City	-0.01915	Baker	-0.03783	Lompoc	-0.02429	Solvang	-0.04798
122	Colusa	-0.0191	Pittsburgh	-0.0378	Willits	-0.02422	Goleta	-0.0473
123	Twentynine Palms	-0.01898	Glamis	-0.03774	Paso Robles	-0.02274	Canoga Park	-0.04728

124	Murrieta	-0.01897	Atascadero	-0.03715	Tehama	-0.02219	Cotton Wood	-0.04699
125	Atascadero	-0.01839	Colusa	-0.03695	Turlock	-0.02213	Kettleman City	-0.04383
126	Salton City	-0.0183	Los Banos	-0.03694	Independence	-0.02209	Cloverdale	-0.04357
127	Temecula	-0.01825	Salton City	-0.03678	Eureka	-0.02136	Chester	-0.04337
128	Desert Center	-0.01802	Susanville	-0.0367	Red Bluff	-0.02107	Eureka	-0.04321
129	Susanville	-0.01797	Desert Center	-0.03666	Cloverdale	-0.02093	Turlock	-0.04297
130	Sutter	-0.01762	Dunsmuir	-0.03664	Kettleman City	-0.02081	Independence	-0.04227
131	Westwood	-0.01752	Temecula	-0.03637	Solvang	-0.02078	Tehama	-0.04179
132	Dublin	-0.01705	Westwood	-0.03483	Chester	-0.02019	Paso Robles	-0.04147
133	Eureka	-0.01704	Sutter	-0.03416	Downieville	-0.01984	Truckee	-0.04067
134	Yuba City	-0.01701	Chester	-0.03367	Tahoe City	-0.01981	Atascadero	-0.04041
135	Escondido	-0.01651	Escondido	-0.03339	Atascadero	-0.01965	Yreka	-0.04036
136	Los Banos	-0.01645	Yuba City	-0.03331	Anderson	-0.01903	Downieville	-0.0397
137	Baker	-0.01644	Eureka	-0.03302	Los Banos	-0.01868	Red Bluff	-0.03934
138	Tehama	-0.01643	Tehama	-0.03243	Modesto	-0.01807	Tahoe City	-0.03918
139	Modesto	-0.01633	Modesto	-0.03242	Weed	-0.01772	Los Banos	-0.03887
140	San Luis Obispo	-0.01625	San Luis Obispo	-0.0321	San Luis Obispo	-0.0174	Modesto	-0.03679
141	Red Bluff	-0.01614	Red Bluff	-0.03201	McCloud	-0.0166	McCloud	-0.03514
142	Glamis	-0.01603	Independence	-0.02999	Roseville	-0.01585	San Luis Obispo	-0.03422
143	Chester	-0.01573	Downieville	-0.02969	Westwood	-0.0153	Anderson	-0.03273
144	Downieville	-0.01417	Willits	-0.02664	Susanville	-0.0145	Weed	-0.03247
145	Independence	-0.01405	Tahoe City	-0.02522	Ludlow	-0.01333	Roseville	-0.0323
146	Kettleman City	-0.01371	Fairfield	-0.02473	Goleta	-0.01327	Westwood	-0.02883
147	Weed	-0.01336	Cloverdale	-0.02338	Twentynine Palms	-0.01054	Susanville	-0.02758
148	Willits	-0.01329	Roseville	-0.02262	Alturas	-0.00903	Ludlow	-0.02718
149	Tahoe City	-0.0127	Weed	-0.02228	Glamis	-0.009	Barstow	-0.02389
150	Cloverdale	-0.01196	Yreka	-0.02161	Barstow	-0.00869	Twentynine Palms	-0.02206
151	Roseville	-0.01108	McCloud	-0.02003	Yreka	-0.00861	Baker	-0.01865
152	McCloud	-0.0107	Kettleman City	-0.01981	Baker	-0.00696	Glamis	-0.01769
153	Fort Bragg	-0.00031	Truckee	-0.01938	Truckee	-0.00121	Alturas	-0.01463
154	South Lake Tahoe	-0.00024	Alturas	-0.00729	South Lake Tahoe	-0.00031	Livermore	-0.01282
155	Alturas	-0.00024	South Lake Tahoe	-0.00047	Fort Bragg	-0.00029	South Lake Tahoe	-0.0005
156	Woodland	0	Mendocino	-0.00037	Woodland	0	Mendocino	-0.00024
157	CitrusHeights	0	Fort Bragg	-7.6E-05	CitrusHeights	0	Fort Bragg	-2.3E-05

	13M		13H	
Ranking		DH/day		DH/day
1	Livermore	-0.03378	San Bernardino	-0.03834
2	Cotton Wood	-0.00616	Cotton Wood	-0.0049
3	Tehama	-0.00569	California City	-0.00359
4	California City	-0.00536	Tehama	-0.0011
5	Red Bluff	-0.00169	Mendocino	-0.00045
6	Anderson	-0.00135	Fort Bragg	-0.00024
7	Fort Bragg	-0.00015	Woodland	0
8	Mendocino	-2.3E-05	CitrusHeights	0
9	Woodland	0	Folsom Lake	0
10	CitrusHeights	0	Lake Havasu	0
11	Folsom Lake	0	Citrus Heights	0
12	Lake Havasu	0	South Lake Tahoe	0.000168
13	Citrus Heights	0	Anderson	0.000916
14	South Lake Tahoe	0.000297	Red Bluff	0.003304
15	Glamis	0.004089	Murrieta	0.011825
16	Truckee	0.005035	Truckee	0.013397
17	Kettleman City	0.005104	Temecula	0.013443
18	Roseville	0.005966	Roseville	0.013512
19	Murrieta	0.006119	Mojave	0.013939
20	Tahoe City	0.006485	Kettleman City	0.014397
21	Chico	0.006661	Tahoe City	0.014404
22	Chester	0.006851	Escondido	0.014923
23	Temecula	0.006912	Downieville	0.015236
24	Downieville	0.007591	Independence	0.015503
25	McCloud	0.007744	Chester	0.015602
26	Escondido	0.007805	Susanville	0.015724
27	Westwood	0.007996	Westwood	0.015846
28	Independence	0.008186	Desert Center	0.016006
29	Desert Center	0.008324	Dunsmuir	0.016609
30	Susanville	0.008331	Barstow	0.016998
31	Salton City	0.008507	Salton City	0.017082
32	Ocotillo	0.00872	Chico	0.017372
33	Ludlow	0.008743	Alturas	0.01751
34	Weed	0.009048	Weed	0.017517
35	Twentynine Palms	0.009163	Baker	0.017609
36	Mojave	0.009468	Twentynine Palms	0.017975
37	Baker	0.009796	Sun City	0.018578
38	Willits	0.010322	Glamis	0.018593

39	Cloverdale	0.01033	Cloverdale	0.019012
40	Yuba City	0.010368	Ludlow	0.019173
41	Barstow	0.010437	Ocotillo	0.019356
42	Crescent City	0.010536	McCloud	0.019676
43	Paso Robles	0.010643	Willits	0.021156
44	Sutter	0.010643	Yuba City	0.021935
45	Sun City	0.010971	Modesto	0.022614
46	Modesto	0.011192	Colusa	0.02285
47	Colusa	0.011238	Sutter	0.023025
48	San Luis Obispo	0.011315	San Luis Obispo	0.023232
49	Napa	0.01207	Paso Robles	0.024116
50	Dunsmuir	0.012474	Eureka	0.025253
51	Eureka	0.012558	Crescent City	0.025528
52	Dixon	0.01284	Los Banos	0.026878
53	Oroville	0.013222	Turlock	0.027069
54	Tehachapi	0.013641	Tehachapi	0.02742
55	Turlock	0.013679	Oroville	0.027878
56	Atascadero	0.014	Atascadero	0.028191
57	Paradise	0.014145	Sacramento	0.028725
58	Alturas	0.014183	Yreka	0.028885
59	Patterson	0.014694	Dixon	0.029053
60	Nevada City	0.014877	Patterson	0.029495
61	San Jose	0.014961	Paradise	0.029678
62	Los Banos	0.015068	Nevada City	0.029717
63	Fremont	0.015076	Napa	0.029762
64	Lafayette	0.015495	Sta. Rosa	0.030388
65	Sacramento	0.015511	Monterey	0.030571
66	Monterey	0.015717	Pittsburgh	0.030777
67	Lodi	0.01577	San Jose	0.030884
68	Mtn. View	0.015778	Fresno	0.032517
69	Sta. Rosa	0.0159	Lodi	0.032684
70	Tracy	0.0159	Solvang	0.032753
71	Dublin	0.016327	Lafayette	0.033135
72	Pittsburgh	0.016769	Tracy	0.033302
73	Davis	0.017044	Walnut Creek	0.034027
74	Fresno	0.017303	Davis	0.034073
75	Fairfield	0.017334	Fremont	0.034248
76	Lompoc	0.017479	Dublin	0.034935
77	Auburn	0.01754	Auburn	0.035133
78	Milpitas	0.017761	Lompoc	0.035141
79	Merced	0.018059	Merced	0.036492
80	Martinez	0.018364	Mtn. View	0.036796

81	Whittier	0.018867	Livermore	0.037704
82	King City	0.019508	Whittier	0.037933
83	Solvang	0.020378	Canoga Park	0.038231
84	Benicia	0.020531	Milpitas	0.038711
85	Canoga Park	0.020699	Fairfield	0.039139
86	Walnut Creek	0.020851	Martinez	0.040413
87	Hanford	0.021423	Salinas	0.041016
88	Morgan Hills	0.022049	King City	0.041084
89	Antioch	0.022247	Sta. Maria	0.041687
90	Manteca	0.022263	Hanford	0.043121
91	Salinas	0.022339	Benicia	0.043327
92	Sta. Maria	0.022659	Manteca	0.043633
93	Hollister	0.022812	Antioch	0.04364
94	Fullerton	0.023987	Morgan Hills	0.04406
95	Palm Springs	0.024216	Goleta	0.044235
96	Chowchilla	0.024323	Hollister	0.045563
97	Victorville	0.025329	Palm Springs	0.04676
98	Hesperia	0.02591	Chowchilla	0.050118
99	Yreka	0.026138	San Diego	0.054947
100	Simi Valley	0.026794	Simi Valley	0.055062
101	San Diego	0.028198	Hesperia	0.055161
102	Covina	0.028275	Fullerton	0.056015
103	Hemet	0.028404	Hemet	0.057259
104	El Centro	0.028923	Adelanto	0.058029
105	Redwood City	0.029304	Victorville	0.058189
106	Riverside	0.02977	Sta. Cruz	0.058846
107	Adelanto	0.030289	Riverside	0.060471
108	Goleta	0.031036	Sta. Barbara	0.060615
109	Sta. Clarita	0.031387	Chula Vista	0.06131
110	Chula Vista	0.031685	Covina	0.062203
111	El Cajon	0.032044	Redwood City	0.062897
112	Sta. Cruz	0.032364	El Cajon	0.063507
113	San Rafael	0.032364	National City	0.064178
114	Ontario	0.032486	San Rafael	0.065483
115	National City	0.032951	Ontario	0.067207
116	Sta. Barbara	0.03363	San Jacinto	0.069122
117	San Jacinto	0.034668	Pasadena	0.069519
118	Malibu	0.035118	Northridge	0.070305
119	San Dimas	0.035446	El Centro	0.073166
120	Thousand Oaks	0.035561	Burbank	0.073463
121	Burbank	0.035591	Malibu	0.073486
122	Bakersfield	0.035736	Thousand Oaks	0.074478

123	Los Angeles	0.035744	Visalia	0.075073
124	Pasadena	0.036194	Glendale	0.075668
125	Pismo Beach	0.036522	Bakersfield	0.076042
126	Glendale	0.036552	San Dimas	0.076782
127	Corona	0.037628	Pismo Beach	0.077148
128	Visalia	0.039322	Rancho Cucamonga	0.07917
129	Wasco	0.039902	Sta. Clarita	0.080246
130	Rancho Cucamonga	0.040108	Downey	0.080917
131	Downey	0.040932	Anaheim	0.081627
132	Anaheim	0.042564	Corona	0.086655
133	San Francisco	0.04435	San Francisco	0.090561
134	Hollywood	0.045792	Hollywood	0.094887
135	Rosemead	0.046059	Los Angeles	0.095902
136	Porterville	0.046165	Rosemead	0.096245
137	Indio	0.053398	Wasco	0.097222
138	Oxnard	0.054077	Porterville	0.101479
139	San Bernardino	0.055466	Indio	0.106041
140	Vallejo	0.057487	Oxnard	0.1082
141	Diamond Bar	0.059097	Tulare	0.109123
142	Pomona	0.059265	Vallejo	0.113365
143	Coachella	0.059456	Palmdale	0.116218
144	Sherman Oaks	0.060341	Inglewood	0.116371
145	Palmdale	0.061088	Diamond Bar	0.116562
146	Tulare	0.061119	Coachella	0.117836
147	Banning	0.061478	Pomona	0.119751
148	Van Nuys	0.062439	Banning	0.123276
149	Blythe	0.062592	Sherman Oaks	0.123993
150	Orange	0.065109	Van Nuys	0.124786
151	Beverly Hills	0.066315	Orange	0.126167
152	Inglewood	0.066368	Blythe	0.13057
153	Sta. Ana	0.071884	Sta. Ana	0.141838
154	Northridge	0.083832	Beverly Hills	0.142387
155	Century City	0.096252	Century City	0.145454
156	LAX	0.096527	LAX	0.182632
157	Mission Viejo	0.137237	Tustin	0.272858

For following table: Changes in dh/day normalized to total dh/day (no temperature thresholds). This corresponds to Section 10.1.A.2.

Ranking	1M		1H		2M		2H	
1	Huntington Beach	-0.00209	Huntington Beach	-0.00422	Huntington Beach	-0.00103	Huntington Beach	-0.00206
2	Newport Beach	-0.00204	Newport Beach	-0.00413	Newport Beach	-0.00099	Newport Beach	-0.00201
3	Laguna Beach	-0.00181	Laguna Beach	-0.00365	Laguna Beach	-0.00089	Laguna Beach	-0.00178
4	Mission Viejo	-0.00127	Mission Viejo	-0.00256	Mission Viejo	-0.00062	Mission Viejo	-0.00125
5	Tustin	-0.00123	Tustin	-0.00248	Tustin	-0.0006	Tustin	-0.0012
6	Sta. Monica	-0.00075	Sta. Monica	-0.00169	Sta. Ana	-0.0003	Sta. Ana	-0.00063
7	LAX	-0.00075	LAX	-0.00148	LAX	-0.00028	LAX	-0.0006
8	Sta. Ana	-0.00064	Sta. Ana	-0.00129	Beverly Hills	-0.00028	Inglewood	-0.00056
9	Beverly Hills	-0.00059	Beverly Hills	-0.00118	Inglewood	-0.00027	Beverly Hills	-0.00055
10	Inglewood	-0.00058	Inglewood	-0.00118	Vallejo	-0.00026	Vallejo	-0.00053
11	Vallejo	-0.00055	Vallejo	-0.00111	Orange	-0.00025	Century City	-0.00052
12	Orange	-0.00053	Orange	-0.00107	Sherman Oaks	-0.00024	Orange	-0.00051
13	Century City	-0.00052	Century City	-0.00106	Oxnard	-0.00023	Oxnard	-0.00048
14	Oxnard	-0.00051	Oxnard	-0.00098	Century City	-0.00023	Sherman Oaks	-0.00046
15	Van Nuys	-0.00049	Sherman Oaks	-0.00097	Van Nuys	-0.00023	Sta. Monica	-0.00046
16	Banning	-0.00048	Banning	-0.00096	San Francisco	-0.00022	Van Nuys	-0.00045
17	Sherman Oaks	-0.00048	Palmdale	-0.00096	Pomona	-0.00022	Pomona	-0.00045
18	Palmdale	-0.00048	Pomona	-0.00096	Los Angeles	-0.00021	Diamond Bar	-0.00044
19	Pomona	-0.00047	Van Nuys	-0.00093	Banning	-0.00021	San Francisco	-0.00044
20	Diamond Bar	-0.00047	Diamond Bar	-0.00093	Diamond Bar	-0.00021	Banning	-0.00042
21	Coachella	-0.00046	Coachella	-0.00093	Palmdale	-0.0002	Palmdale	-0.00041
22	San Francisco	-0.00046	Blythe	-0.00089	Wasco	-0.0002	Coachella	-0.0004
23	Wasco	-0.00046	Wasco	-0.00089	Coachella	-0.0002	Wasco	-0.00039
24	Blythe	-0.00043	San Francisco	-0.00088	Hollywood	-0.00019	Los Angeles	-0.00039
25	Porterville	-0.00043	Tulare	-0.00085	Blythe	-0.00018	Hollywood	-0.00038
26	Tulare	-0.00042	Los Angeles	-0.00083	Porterville	-0.00018	Blythe	-0.00037
27	Los Angeles	-0.00041	Porterville	-0.00082	Corona	-0.00018	Porterville	-0.00037
28	Indio	-0.0004	Hollywood	-0.00081	Anaheim	-0.00017	Tulare	-0.00036
29	Hollywood	-0.0004	Indio	-0.00081	Indio	-0.00017	Corona	-0.00035
30	Corona	-0.00039	Corona	-0.00078	Rosemead	-0.00017	Anaheim	-0.00035
31	Anaheim	-0.00037	Rosemead	-0.00074	Malibu	-0.00016	Rosemead	-0.00035
32	Rosemead	-0.00037	Anaheim	-0.00073	Tulare	-0.00016	Indio	-0.00035
33	Visalia	-0.00034	Visalia	-0.00071	Pismo Beach	-0.00015	Malibu	-0.00033
34	Pismo Beach	-0.00033	Pismo Beach	-0.00065	Redwood City	-0.00015	Downey	-0.00031
35	Rancho Cucamonga	-0.00032	Downey	-0.00064	National City	-0.00015	Pismo Beach	-0.0003
36	National City	-0.00032	National City	-0.00064	San Rafael	-0.00015	National City	-0.0003
37	Redwood City	-0.00032	Rancho Cucamonga	-0.00062	Downey	-0.00015	Redwood City	-0.0003
38	Downey	-0.00031	Redwood City	-0.00062	San Dimas	-0.00015	San Rafael	-0.0003
39	San Rafael	-0.00031	San Rafael	-0.00062	Chula Vista	-0.00015	Chula Vista	-0.0003

40	Chula Vista	-0.00031	Chula Vista	-0.00062	Rancho Cucamonga	-0.00015	Rancho Cucamonga	-0.00029
41	San Dimas	-0.00031	San Jacinto	-0.00061	Sta. Barbara	-0.00015	El Cajon	-0.00028
42	San Jacinto	-0.00031	Glendale	-0.0006	Glendale	-0.00015	San Dimas	-0.00028
43	Glendale	-0.0003	San Dimas	-0.0006	San Jacinto	-0.00014	Glendale	-0.00028
44	Malibu	-0.0003	Bakersfield	-0.00059	El Cajon	-0.00014	Visalia	-0.00028
45	Ontario	-0.00029	El Cajon	-0.00058	Visalia	-0.00013	San Jacinto	-0.00027
46	El Cajon	-0.00029	Malibu	-0.00058	Ontario	-0.00013	San Diego	-0.00027
47	Thousand Oaks	-0.00028	Ontario	-0.00057	Thousand Oaks	-0.00013	Sta. Barbara	-0.00027
48	Fullerton	-0.00028	Thousand Oaks	-0.00056	San Diego	-0.00013	Thousand Oaks	-0.00026
49	San Diego	-0.00028	Fullerton	-0.00056	Bakersfield	-0.00013	Ontario	-0.00026
50	Bakersfield	-0.00027	San Diego	-0.00056	Northridge	-0.00013	Fullerton	-0.00026
51	Sta. Cruz	-0.00027	Riverside	-0.00055	Burbank	-0.00013	Northridge	-0.00025
52	Burbank	-0.00027	Sta. Cruz	-0.00055	Pasadena	-0.00012	Burbank	-0.00025
53	Pasadena	-0.00026	Pasadena	-0.00054	Sta. Cruz	-0.00012	Sta. Cruz	-0.00025
54	Riverside	-0.00026	Burbank	-0.00054	Hesperia	-0.00012	Bakersfield	-0.00024
55	Sta. Barbara	-0.00026	Sta. Barbara	-0.00051	Fullerton	-0.00012	Pasadena	-0.00024
56	Hesperia	-0.00025	Victorville	-0.00048	Victorville	-0.00012	Riverside	-0.00023
57	Victorville	-0.00025	Hemet	-0.00048	Riverside	-0.00011	San Bernardino	-0.00023
58	Hemet	-0.00024	El Centro	-0.00046	Hemet	-0.00011	Victorville	-0.00022
59	Northridge	-0.00024	Adelanto	-0.00046	Sta. Monica	-0.0001	El Centro	-0.00022
60	Adelanto	-0.00023	Hesperia	-0.00046	Covina	-0.0001	Hemet	-0.00022
61	Sta. Clarita	-0.00023	Northridge	-0.00045	King City	-0.0001	Hesperia	-0.00021
62	Covina	-0.00022	San Bernardino	-0.00045	Adelanto	-0.0001	King City	-0.00021
63	King City	-0.00022	Sta. Clarita	-0.00044	San Bernardino	-0.0001	California City	-0.00021
64	Hollister	-0.00021	Covina	-0.00043	Chowchilla	-9.68E-05	Adelanto	-0.0002
65	Morgan Hills	-0.00021	King City	-0.00043	Salinas	-9.58E-05	Covina	-0.0002
66	San Bernardino	-0.00021	Morgan Hills	-0.00041	Manteca	-9.47E-05	Chowchilla	-0.00019
67	El Centro	-0.00021	Chowchilla	-0.00041	Sta. Maria	-9.46E-05	Sta. Maria	-0.00019
68	Simi Valley	-0.0002	Simi Valley	-0.00041	Benicia	-9.39E-05	Manteca	-0.00019
69	Chowchilla	-0.0002	Salinas	-0.0004	Simi Valley	-9.36E-05	Salinas	-0.00019
70	Benicia	-0.0002	Manteca	-0.00039	Antioch	-9.27E-05	Simi Valley	-0.00018
71	Manteca	-0.00019	Benicia	-0.00039	Lompoc	-9.07E-05	Lompoc	-0.00018
72	Salinas	-0.00019	Palm Springs	-0.00038	Milpitas	-9.04E-05	Benicia	-0.00018
73	Antioch	-0.00019	Antioch	-0.00038	Morgan Hills	-8.99E-05	Morgan Hills	-0.00018
74	Palm Springs	-0.00019	Milpitas	-0.00038	Martinez	-8.85E-05	Antioch	-0.00018
75	Milpitas	-0.00019	Martinez	-0.00037	Palm Springs	-8.77E-05	Hollister	-0.00018
76	Mtn. View	-0.00019	Hollister	-0.00036	California City	-8.71E-05	Hanford	-0.00018
77	Martinez	-0.00018	Mtn. View	-0.00036	Fremont	-8.55E-05	Martinez	-0.00017
78	Hanford	-0.00018	Hanford	-0.00036	Sta. Clarita	-8.54E-05	Palm Springs	-0.00017
79	Fremont	-0.00018	Fremont	-0.00035	Hanford	-8.50E-05	Milpitas	-0.00017
80	San Jose	-0.00017	Livermore	-0.00034	Monterey	-8.48E-05	Monterey	-0.00017

81	Sta. Maria	-0.00017	Sta. Maria	-0.00034	San Jose	-8.41E-05	Tehachapi	-0.00017
82	Merced	-0.00017	Monterey	-0.00034	El Centro	-8.20E-05	Mtn. View	-0.00017
83	Monterey	-0.00016	San Jose	-0.00034	Mtn. View	-8.15E-05	Sta. Clarita	-0.00016
84	Crescent City	-0.00016	Merced	-0.00033	Tehachapi	-8.13E-05	Fremont	-0.00016
85	Lompoc	-0.00016	Lompoc	-0.00033	Auburn	-7.77E-05	Goleta	-0.00016
86	Auburn	-0.00016	Crescent City	-0.00032	Ludlow	-7.75E-05	San Jose	-0.00015
87	Lafayette	-0.00015	Auburn	-0.00032	Crescent City	-7.55E-05	Auburn	-0.00015
88	Davis	-0.00015	Walnut Creek	-0.00031	Merced	-7.50E-05	Davis	-0.00015
89	Walnut Creek	-0.00015	Lafayette	-0.00031	Davis	-7.41E-05	Merced	-0.00015
90	Whittier	-0.00015	Davis	-0.0003	Solvang	-7.29E-05	Solvang	-0.00015
91	Eureka	-0.00015	Whittier	-0.0003	Lafayette	-7.24E-05	Livermore	-0.00015
92	Dublin	-0.00014	Eureka	-0.00029	Walnut Creek	-7.22E-05	Whittier	-0.00015
93	Tracy	-0.00014	Dublin	-0.00029	Chico	-7.13E-05	Crescent City	-0.00015
94	Chico	-0.00014	Goleta	-0.00029	Whittier	-6.98E-05	Lafayette	-0.00014
95	Goleta	-0.00014	Canoga Park	-0.00028	Livermore	-6.74E-05	Walnut Creek	-0.00014
96	Lodi	-0.00014	Tracy	-0.00028	Eureka	-6.74E-05	Yreka	-0.00014
97	Paradise	-0.00014	Lodi	-0.00028	Fairfield	-6.70E-05	Tracy	-0.00013
98	Nevada City	-0.00013	Paradise	-0.00027	Dublin	-6.67E-05	Eureka	-0.00013
99	Napa	-0.00013	Nevada City	-0.00027	Hollister	-6.67E-05	Dublin	-0.00013
100	Solvang	-0.00013	Solvang	-0.00026	Lodi	-6.63E-05	Lodi	-0.00013
101	Sacramento	-0.00013	Sta. Rosa	-0.00026	Tracy	-6.60E-05	Sacramento	-0.00013
102	Dixon	-0.00013	Chico	-0.00026	Sacramento	-6.59E-05	Chico	-0.00013
103	Sta. Rosa	-0.00013	Napa	-0.00026	Paradise	-6.38E-05	Paradise	-0.00013
104	Dunsmuir	-0.00013	Dunsmuir	-0.00026	Dixon	-6.37E-05	Dunsmuir	-0.00012
105	Oroville	-0.00013	Sacramento	-0.00025	Napa	-6.21E-05	Dixon	-0.00012
106	Pittsburgh	-0.00013	Dixon	-0.00025	Sta. Rosa	-6.19E-05	Nevada City	-0.00012
107	Tehachapi	-0.00013	Pittsburgh	-0.00025	Goleta	-6.04E-05	Sta. Rosa	-0.00012
108	Patterson	-0.00012	Patterson	-0.00025	Canoga Park	-6.03E-05	Napa	-0.00012
109	Yreka	-0.00012	Oroville	-0.00025	Nevada City	-6.01E-05	Oroville	-0.00012
110	Canoga Park	-0.00012	Tehachapi	-0.00025	Pittsburgh	-5.95E-05	Pittsburgh	-0.00012
111	Colusa	-0.00012	Fresno	-0.00024	Anderson	-5.77E-05	Patterson	-0.00011
112	Fresno	-0.00012	Colusa	-0.00024	Colusa	-5.75E-05	Fresno	-0.00011
113	Livermore	-0.00011	California City	-0.00024	Oroville	-5.73E-05	Colusa	-0.00011
114	Turlock	-0.00011	Fairfield	-0.00023	Cotton Wood	-5.62E-05	Canoga Park	-0.00011
115	Yuba City	-0.00011	Turlock	-0.00022	Patterson	-5.62E-05	Sun City	-0.00011
116	Sutter	-0.00011	Atascadero	-0.00022	Dunsmuir	-5.54E-05	Turlock	-0.00011
117	Paso Robles	-0.00011	Sutter	-0.00021	Fresno	-5.40E-05	Atascadero	-0.0001
118	Atascadero	-0.00011	Willits	-0.00021	Atascadero	-5.34E-05	Paso Robles	-0.0001
119	Fairfield	-0.00011	Paso Robles	-0.00021	Turlock	-5.28E-05	Anderson	-0.0001
120	Los Banos	-0.0001	Los Banos	-0.00021	Paso Robles	-5.25E-05	Sutter	-0.0001
121	Willits	-0.0001	Yuba City	-0.0002	Sun City	-5.10E-05	Yuba City	-0.0001
122	Truckee	-9.58E-05	Modesto	-0.00019	Sutter	-5.07E-05	Los Banos	-9.85E-05
123	Modesto	-9.45E-05	San Luis	-0.00018	Yuba City	-5.05E-05	Cotton Wood	-9.81E-05

			Obispo					
124	San Luis Obispo	-9.01E-05	Tahoe City	-0.00017	Murrieta	-4.91E-05	Willits	-9.62E-05
125	Cotton Wood	-8.82E-05	Chester	-0.00017	Tehama	-4.91E-05	Westwood	-9.24E-05
126	Anderson	-8.75E-05	Susanville	-0.00017	Susanville	-4.86E-05	Modesto	-9.09E-05
127	Tahoe City	-8.74E-05	Sun City	-0.00016	Willits	-4.78E-05	Susanville	-9.09E-05
128	Tehama	-8.14E-05	Cloverdale	-0.00016	Los Banos	-4.77E-05	Murrieta	-9.06E-05
129	Westwood	-8.03E-05	Yreka	-0.00016	Westwood	-4.63E-05	Ocotillo	-8.90E-05
130	Sun City	-7.88E-05	Westwood	-0.00016	Temecula	-4.50E-05	Tehama	-8.89E-05
131	Cloverdale	-7.81E-05	Anderson	-0.00016	Escondido	-4.47E-05	Escondido	-8.83E-05
132	Susanville	-7.80E-05	Downieville	-0.00015	San Luis Obispo	-4.42E-05	Temecula	-8.80E-05
133	Downieville	-7.73E-05	Independence	-0.00015	Tahoe City	-4.42E-05	Tahoe City	-8.76E-05
134	Independence	-7.68E-05	Tehama	-0.00015	Ocotillo	-4.42E-05	San Luis Obispo	-8.61E-05
135	Red Bluff	-7.66E-05	Truckee	-0.00015	Mojave	-4.39E-05	Ludlow	-8.60E-05
136	Chester	-7.32E-05	Ocotillo	-0.00014	Modesto	-4.38E-05	Fairfield	-8.55E-05
137	Murrieta	-7.24E-05	Cotton Wood	-0.00014	Red Bluff	-4.28E-05	Independence	-8.49E-05
138	Ocotillo	-7.21E-05	Murrieta	-0.00014	Independence	-4.28E-05	Mojave	-8.45E-05
139	Kettleman City	-7.11E-05	Ludlow	-0.00014	Downieville	-4.13E-05	Downieville	-8.37E-05
140	Ludlow	-7.02E-05	McCloud	-0.00013	Salton City	-4.13E-05	Salton City	-8.04E-05
141	Temecula	-6.87E-05	Barstow	-0.00013	Barstow	-4.11E-05	Red Bluff	-8.04E-05
142	Escondido	-6.87E-05	Escondido	-0.00013	Twentynine Palms	-3.93E-05	Barstow	-8.01E-05
143	Mojave	-6.67E-05	Roseville	-0.00013	Desert Center	-3.71E-05	Chester	-7.95E-05
144	McCloud	-6.60E-05	Mojave	-0.00013	McCloud	-3.69E-05	Twentynine Palms	-7.72E-05
145	Barstow	-6.56E-05	Temecula	-0.00013	Cloverdale	-3.67E-05	Weed	-7.55E-05
146	Roseville	-6.55E-05	Weed	-0.00013	Weed	-3.50E-05	Cloverdale	-7.51E-05
147	Salton City	-6.34E-05	Twentynine Palms	-0.00013	Chester	-3.35E-05	Desert Center	-7.32E-05
148	Weed	-6.32E-05	Salton City	-0.00013	Kettleman City	-3.28E-05	Glamis	-7.25E-05
149	Twentynine Palms	-6.16E-05	Red Bluff	-0.00012	Glamis	-3.15E-05	McCloud	-6.92E-05
150	Glamis	-5.97E-05	Glamis	-0.00011	Roseville	-3.15E-05	Baker	-6.42E-05
151	Desert Center	-5.80E-05	Desert Center	-0.00011	Baker	-2.95E-05	Roseville	-6.41E-05
152	California City	-5.26E-05	Kettleman City	-0.00011	Alturas	-1.85E-05	Truckee	-5.51E-05
153	Baker	-5.10E-05	Baker	-0.00011	Yreka	-1.71E-05	Kettleman City	-4.77E-05
154	Alturas	-3.86E-05	Alturas	-7.17E-05	Truckee	-1.06E-05	Alturas	-2.97E-05
155	Fort Bragg	-1.48E-06	South Lake Tahoe	-3.00E-06	Fort Bragg	-1.07E-06	South Lake Tahoe	-1.69E-06
156	South Lake Tahoe	-1.34E-06	Fort Bragg	-2.02E-06	Mendocino	-8.17E-07	Fort Bragg	-9.36E-07
157	Mendocino	-4.73E-07	Mendocino	-5.37E-07	South Lake Tahoe	-5.16E-07	Mendocino	-5.37E-07

Ranking	3M		3H		4M		4H	
1	Huntington Beach	-0.00048	Huntington Beach	-0.00103	Huntington Beach	-0.00036	Huntington Beach	-0.00078
2	Newport Beach	-0.00046	Newport Beach	-0.001	Newport Beach	-0.00035	Newport Beach	-0.00075
3	Laguna Beach	-0.00042	Laguna Beach	-0.0009	Laguna Beach	-0.00032	Laguna Beach	-0.00068
4	Mission Viejo	-0.00029	Mission Viejo	-0.00062	Mission Viejo	-0.00022	Mission Viejo	-0.00047
5	Tustin	-0.00028	Tustin	-0.00061	Tustin	-0.00022	Tustin	-0.00046
6	Inglewood	-0.00016	LAX	-0.00034	LAX	-0.00014	LAX	-0.00026
7	Sta. Ana	-0.00016	Sta. Ana	-0.00034	Sta. Ana	-0.00012	Inglewood	-0.00026
8	Beverly Hills	-0.00015	Beverly Hills	-0.00032	Inglewood	-0.00012	Sta. Ana	-0.00024
9	Vallejo	-0.00013	Inglewood	-0.00031	Oxnard	-0.00011	Beverly Hills	-0.00022
10	Oxnard	-0.00013	Orange	-0.00029	Beverly Hills	-0.00011	Vallejo	-0.00021
11	Sherman Oaks	-0.00013	Sta. Monica	-0.00029	Orange	-9.69E-05	Sherman Oaks	-0.00019
12	Orange	-0.00013	Vallejo	-0.00028	Vallejo	-9.64E-05	Orange	-0.00019
13	Los Angeles	-0.00013	Oxnard	-0.00028	Diamond Bar	-9.29E-05	Oxnard	-0.00019
14	Van Nuys	-0.00012	Sherman Oaks	-0.00027	Century City	-8.88E-05	Diamond Bar	-0.00018
15	Pomona	-0.00012	Banning	-0.00026	Sherman Oaks	-8.79E-05	Banning	-0.00018
16	Banning	-0.00012	Van Nuys	-0.00026	Los Angeles	-8.64E-05	Van Nuys	-0.00018
17	Century City	-0.00012	Century City	-0.00025	Pomona	-8.61E-05	Pomona	-0.00018
18	Palmdale	-0.00011	Pomona	-0.00025	Palmdale	-8.46E-05	Palmdale	-0.00018
19	Porterville	-0.00011	Palmdale	-0.00025	Banning	-8.41E-05	Los Angeles	-0.00017
20	Coachella	-0.00011	Coachella	-0.00024	San Francisco	-8.30E-05	San Francisco	-0.00017
21	Hollywood	-0.00011	Diamond Bar	-0.00024	Coachella	-8.10E-05	Coachella	-0.00017
22	LAX	-0.00011	Los Angeles	-0.00024	Wasco	-7.90E-05	Century City	-0.00017
23	San Francisco	-0.00011	Wasco	-0.00024	Van Nuys	-7.56E-05	Wasco	-0.00017
24	Diamond Bar	-0.00011	San Francisco	-0.00023	Porterville	-7.50E-05	Porterville	-0.00016
25	Blythe	-0.0001	Porterville	-0.00022	Corona	-7.43E-05	Blythe	-0.00016
26	Corona	-9.97E-05	Blythe	-0.00022	Blythe	-7.18E-05	Tulare	-0.00016
27	Indio	-9.68E-05	Hollywood	-0.00022	Indio	-7.18E-05	Hollywood	-0.00015
28	Anaheim	-9.64E-05	Tulare	-0.00022	San Bernardino	-7.16E-05	Indio	-0.00015
29	Tulare	-9.61E-05	Anaheim	-0.00022	Tulare	-7.16E-05	Corona	-0.00015
30	Wasco	-9.42E-05	Corona	-0.00021	Hollywood	-6.90E-05	Anaheim	-0.00014
31	California City	-9.06E-05	Indio	-0.00021	Hesperia	-6.89E-05	San Bernardino	-0.00014
32	Rosemead	-8.90E-05	Rosemead	-0.0002	Livermore	-6.72E-05	Rosemead	-0.00013
33	Sta. Cruz	-8.83E-05	Sta. Cruz	-0.00019	Downey	-6.51E-05	San Dimas	-0.00012
34	San Jacinto	-8.76E-05	Rancho Cucamonga	-0.00018	Rosemead	-6.49E-05	Downey	-0.00012
35	Downey	-8.76E-05	National City	-0.00018	San Dimas	-6.27E-05	Rancho Cucamonga	-0.00012
36	San Dimas	-8.40E-05	San Dimas	-0.00018	Pismo Beach	-6.22E-05	Pismo Beach	-0.00012
37	National City	-8.35E-05	Chula Vista	-0.00018	Bakersfield	-6.19E-05	California City	-0.00012
38	Rancho Cucamonga	-8.32E-05	San Jacinto	-0.00018	Anaheim	-6.17E-05	Glendale	-0.00012

39	Sta. Barbara	-8.31E-05	Downey	-0.00017	Malibu	-5.86E-05	San Jacinto	-0.00012
40	Chula Vista	-8.11E-05	Ontario	-0.00017	San Jacinto	-5.76E-05	National City	-0.00012
41	Pismo Beach	-8.10E-05	Pismo Beach	-0.00017	Rancho Cucamonga	-5.75E-05	Ontario	-0.00012
42	Glendale	-8.07E-05	Malibu	-0.00017	Glendale	-5.59E-05	San Rafael	-0.00012
43	Visalia	-7.91E-05	Livermore	-0.00017	San Rafael	-5.54E-05	Chula Vista	-0.00012
44	El Cajon	-7.81E-05	El Cajon	-0.00017	Visalia	-5.53E-05	Redwood City	-0.00011
45	King City	-7.69E-05	Glendale	-0.00017	Redwood City	-5.52E-05	El Cajon	-0.00011
46	Fullerton	-7.68E-05	King City	-0.00017	Ontario	-5.41E-05	Visalia	-0.00011
47	San Diego	-7.49E-05	Visalia	-0.00016	National City	-5.31E-05	Malibu	-0.00011
48	San Rafael	-7.40E-05	Redwood City	-0.00016	Chula Vista	-5.26E-05	Bakersfield	-0.00011
49	Malibu	-7.18E-05	San Rafael	-0.00016	El Cajon	-5.20E-05	Burbank	-0.00011
50	Ontario	-7.18E-05	San Diego	-0.00016	Thousand Oaks	-5.00E-05	Thousand Oaks	-0.00011
51	Pasadena	-7.13E-05	Bakersfield	-0.00016	Victorville	-4.97E-05	San Diego	-0.00011
52	Redwood City	-7.12E-05	Fullerton	-0.00015	San Diego	-4.79E-05	Pasadena	-0.0001
53	Thousand Oaks	-7.12E-05	Thousand Oaks	-0.00015	Burbank	-4.55E-05	Victorville	-0.0001
54	Burbank	-7.10E-05	Manteca	-0.00015	Fullerton	-4.54E-05	Sta. Cruz	-0.0001
55	Victorville	-7.05E-05	Burbank	-0.00015	Pasadena	-4.50E-05	Fullerton	-0.0001
56	Northridge	-7.04E-05	Pasadena	-0.00015	Northridge	-4.43E-05	Hesperia	-9.15E-05
57	Manteca	-6.93E-05	Antioch	-0.00014	San Jose	-4.42E-05	Covina	-9.03E-05
58	Antioch	-6.81E-05	Hesperia	-0.00014	Hemet	-4.24E-05	Hemet	-9.01E-05
59	Bakersfield	-6.80E-05	Sta. Barbara	-0.00014	Sta. Cruz	-4.23E-05	Adelanto	-8.61E-05
60	Hemet	-6.72E-05	Sun City	-0.00014	Yreka	-4.20E-05	King City	-8.11E-05
61	Murrieta	-6.72E-05	Hemet	-0.00014	Covina	-4.01E-05	Sta. Barbara	-8.07E-05
62	Benicia	-6.58E-05	Northridge	-0.00014	Adelanto	-3.91E-05	Simi Valley	-7.66E-05
63	Hollister	-6.41E-05	Benicia	-0.00014	Morgan Hills	-3.82E-05	Morgan Hills	-7.63E-05
64	Martinez	-6.38E-05	Chowchilla	-0.00014	Milpitas	-3.80E-05	Canoga Park	-7.59E-05
65	Chowchilla	-6.34E-05	Victorville	-0.00014	King City	-3.73E-05	Riverside	-7.50E-05
66	Hesperia	-6.33E-05	El Centro	-0.00014	Fremont	-3.61E-05	Chowchilla	-7.38E-05
67	Milpitas	-6.30E-05	Morgan Hills	-0.00013	Manteca	-3.57E-05	Palm Springs	-7.31E-05
68	Fremont	-6.26E-05	Salinas	-0.00013	Antioch	-3.54E-05	Benicia	-7.20E-05
69	Morgan Hills	-6.18E-05	Martinez	-0.00013	Sta. Barbara	-3.51E-05	Manteca	-7.11E-05
70	Temecula	-6.17E-05	Murrieta	-0.00013	Simi Valley	-3.51E-05	Antioch	-7.10E-05
71	Sun City	-6.16E-05	Riverside	-0.00013	Riverside	-3.49E-05	Fremont	-7.10E-05
72	Salinas	-6.13E-05	Temecula	-0.00013	Palm Springs	-3.43E-05	Milpitas	-6.84E-05
73	Fairfield	-5.91E-05	Milpitas	-0.00013	Benicia	-3.41E-05	Salinas	-6.81E-05
74	Escondido	-5.89E-05	Hollister	-0.00013	Crescent City	-3.37E-05	Mtn. View	-6.80E-05
75	Adelanto	-5.80E-05	Escondido	-0.00013	Sta. Monica	-3.30E-05	Martinez	-6.76E-05
76	Auburn	-5.76E-05	Covina	-0.00012	Goleta	-3.22E-05	Hanford	-6.64E-05
77	Chico	-5.71E-05	Adelanto	-0.00012	Monterey	-3.22E-05	San Jose	-6.58E-05
78	Hanford	-5.70E-05	Hanford	-0.00012	Mtn. View	-3.18E-05	Crescent City	-6.55E-05
79	Weed	-5.67E-05	Fremont	-0.00012	Chowchilla	-3.18E-05	Northridge	-6.47E-05
80	Davis	-5.53E-05	Davis	-0.00012	Merced	-3.14E-05	Monterey	-6.40E-05

81	Ocotillo	-5.46E-05	Auburn	-0.00012	Martinez	-3.11E-05	Merced	-6.32E-05
82	Covina	-5.43E-05	Mtn. View	-0.00012	Dunsmuir	-3.02E-05	Lompoc	-6.08E-05
83	El Centro	-5.41E-05	Ocotillo	-0.00012	Chico	-3.02E-05	El Centro	-6.06E-05
84	Mtn. View	-5.38E-05	Sta. Clarita	-0.00011	Hanford	-2.97E-05	Chico	-5.99E-05
85	Mojave	-5.31E-05	San Jose	-0.00011	Auburn	-2.82E-05	Sta. Maria	-5.94E-05
86	Merced	-5.27E-05	Dublin	-0.00011	Cotton Wood	-2.80E-05	Auburn	-5.83E-05
87	Lafayette	-5.26E-05	Salton City	-0.00011	Salinas	-2.78E-05	Davis	-5.71E-05
88	Salton City	-5.18E-05	Simi Valley	-0.00011	Davis	-2.71E-05	Whittier	-5.65E-05
89	Monterey	-5.17E-05	Lafayette	-0.00011	Lafayette	-2.70E-05	Cotton Wood	-5.62E-05
90	Simi Valley	-5.16E-05	Mojave	-0.00011	Sta. Clarita	-2.65E-05	Lafayette	-5.38E-05
91	Palm Springs	-5.16E-05	Merced	-0.00011	Eureka	-2.63E-05	Eureka	-5.27E-05
92	Dunsmuir	-5.15E-05	Walnut Creek	-0.00011	Lompoc	-2.61E-05	Sacramento	-5.19E-05
93	San Jose	-5.13E-05	Crescent City	-0.00011	Tehama	-2.52E-05	Paradise	-5.07E-05
94	Sacramento	-5.08E-05	Palm Springs	-0.00011	Sacramento	-2.48E-05	Lodi	-5.06E-05
95	Whittier	-4.92E-05	Desert Center	-0.0001	Tracy	-2.45E-05	Tehama	-5.06E-05
96	Riverside	-4.89E-05	Monterey	-0.0001	Lodi	-2.40E-05	Dunsmuir	-5.06E-05
97	Cotton Wood	-4.87E-05	Tracy	-0.0001	Anderson	-2.36E-05	Napa	-5.01E-05
98	Tracy	-4.85E-05	Lodi	-0.0001	Napa	-2.27E-05	Tracy	-4.98E-05
99	Desert Center	-4.78E-05	Whittier	-0.0001	Dublin	-2.27E-05	Colusa	-4.92E-05
100	Lodi	-4.77E-05	Sacramento	-0.0001	Whittier	-2.24E-05	Oroville	-4.88E-05
101	Napa	-4.75E-05	Willits	-9.69E-05	Paradise	-2.23E-05	Anderson	-4.87E-05
102	Tehama	-4.72E-05	Sta. Rosa	-9.68E-05	Walnut Creek	-2.23E-05	Nevada City	-4.86E-05
103	Paradise	-4.71E-05	Napa	-9.54E-05	Sta. Maria	-2.23E-05	Dixon	-4.82E-05
104	Crescent City	-4.69E-05	Paradise	-9.42E-05	Colusa	-2.17E-05	Sta. Clarita	-4.74E-05
105	Sta. Clarita	-4.51E-05	Dixon	-9.34E-05	Sta. Rosa	-2.16E-05	Walnut Creek	-4.71E-05
106	Dixon	-4.47E-05	Dunsmuir	-9.30E-05	Pittsburgh	-2.15E-05	Sta. Rosa	-4.64E-05
107	Walnut Creek	-4.45E-05	Nevada City	-9.16E-05	Atascadero	-2.14E-05	Pittsburgh	-4.60E-05
108	Nevada City	-4.44E-05	Pittsburgh	-9.13E-05	Nevada City	-2.14E-05	Tehachapi	-4.54E-05
109	Willits	-4.43E-05	Eureka	-9.13E-05	Paso Robles	-2.06E-05	Solvang	-4.52E-05
110	Oroville	-4.38E-05	Sta. Maria	-8.96E-05	Oroville	-2.04E-05	Yuba City	-4.51E-05
111	Colusa	-4.33E-05	Chico	-8.90E-05	Westwood	-2.03E-05	Fairfield	-4.49E-05
112	Sta. Rosa	-4.32E-05	Tehachapi	-8.75E-05	Dixon	-2.01E-05	Patterson	-4.40E-05
113	Eureka	-4.21E-05	Lompoc	-8.70E-05	Patterson	-1.99E-05	Sutter	-4.34E-05
114	Livermore	-4.18E-05	Oroville	-8.63E-05	Turlock	-1.99E-05	Red Bluff	-4.33E-05
115	Lompoc	-4.10E-05	Patterson	-8.63E-05	Tehachapi	-1.96E-05	Fresno	-4.19E-05
116	Dublin	-4.07E-05	Colusa	-8.29E-05	Fresno	-1.93E-05	Paso Robles	-4.17E-05
117	Red Bluff	-4.07E-05	Fresno	-7.77E-05	Sutter	-1.88E-05	Atascadero	-4.14E-05
118	Patterson	-4.00E-05	Tahoe City	-7.66E-05	Yuba City	-1.88E-05	Turlock	-4.03E-05
119	Yuba City	-3.93E-05	Canoga Park	-7.64E-05	Susanville	-1.85E-05	Dublin	-3.75E-05
120	Tehachapi	-3.93E-05	Yuba City	-7.51E-05	Chester	-1.82E-05	Willits	-3.74E-05
121	Pittsburgh	-3.87E-05	Cloverdale	-7.46E-05	Solvang	-1.80E-05	Goleta	-3.70E-05
122	Tahoe City	-3.87E-05	Sutter	-7.40E-05	Tahoe City	-1.80E-05	Westwood	-3.58E-05
123	Sta. Maria	-3.83E-05	Fairfield	-7.36E-05	San Luis Obispo	-1.71E-05	Los Banos	-3.54E-05

124	Sutter	-3.77E-05	Downieville	-7.11E-05	Modesto	-1.69E-05	San Luis Obispo	-3.44E-05
125	Canoga Park	-3.67E-05	Chester	-6.91E-05	Los Banos	-1.66E-05	Tahoe City	-3.31E-05
126	Fresno	-3.58E-05	Independence	-6.88E-05	Murrieta	-1.66E-05	Modesto	-3.31E-05
127	Anderson	-3.40E-05	Solvang	-6.88E-05	Ludlow	-1.65E-05	Truckee	-3.25E-05
128	Independence	-3.32E-05	Yreka	-6.85E-05	Canoga Park	-1.53E-05	Hollister	-3.22E-05
129	Downieville	-3.30E-05	Tehama	-6.82E-05	Willits	-1.52E-05	Susanville	-3.19E-05
130	McCloud	-3.28E-05	Turlock	-6.54E-05	Red Bluff	-1.51E-05	Chester	-3.06E-05
131	Cloverdale	-3.23E-05	California City	-6.38E-05	Glamis	-1.49E-05	Cloverdale	-2.93E-05
132	Atascadero	-3.17E-05	Atascadero	-6.16E-05	Sun City	-1.46E-05	Independence	-2.90E-05
133	Turlock	-3.15E-05	Paso Robles	-6.13E-05	Temecula	-1.45E-05	Downieville	-2.86E-05
134	Paso Robles	-3.02E-05	Red Bluff	-6.02E-05	Independence	-1.44E-05	Sun City	-2.81E-05
135	Chester	-3.01E-05	Los Banos	-5.97E-05	Ocotillo	-1.38E-05	McCloud	-2.60E-05
136	Solvang	-2.98E-05	Cotton Wood	-5.74E-05	El Centro	-1.36E-05	Ocotillo	-2.56E-05
137	Los Banos	-2.87E-05	McCloud	-5.68E-05	Downieville	-1.33E-05	Yreka	-2.47E-05
138	Kettleman City	-2.75E-05	Modesto	-5.63E-05	Cloverdale	-1.18E-05	Mojave	-2.46E-05
139	Yreka	-2.70E-05	San Luis Obispo	-5.20E-05	Escondido	-1.17E-05	Roseville	-2.42E-05
140	Modesto	-2.64E-05	Kettleman City	-5.12E-05	Roseville	-1.15E-05	Temecula	-2.36E-05
141	San Luis Obispo	-2.49E-05	Roseville	-5.08E-05	Salton City	-1.15E-05	Escondido	-2.35E-05
142	Roseville	-2.37E-05	Westwood	-4.65E-05	Mojave	-1.12E-05	Murrieta	-2.35E-05
143	Goleta	-2.00E-05	Susanville	-4.60E-05	McCloud	-1.04E-05	Ludlow	-2.30E-05
144	Westwood	-1.95E-05	Goleta	-4.47E-05	Twentynine Palms	-1.01E-05	Salton City	-2.24E-05
145	Susanville	-1.92E-05	Weed	-4.31E-05	Desert Center	-1.01E-05	Barstow	-2.21E-05
146	Ludlow	-1.57E-05	Truckee	-4.12E-05	Barstow	-8.93E-06	Twentynine Palms	-2.18E-05
147	Twentynine Palms	-1.29E-05	Anderson	-3.83E-05	Hollister	-7.91E-06	Kettleman City	-2.02E-05
148	Barstow	-1.21E-05	Ludlow	-2.89E-05	Baker	-7.28E-06	Glamis	-1.98E-05
149	Baker	-1.03E-05	Twentynine Palms	-2.58E-05	Kettleman City	-4.33E-06	Desert Center	-1.97E-05
150	Glamis	-8.86E-06	Barstow	-2.32E-05	South Lake Tahoe	-7.42E-07	Baker	-1.69E-05
151	Alturas	-5.55E-07	Glamis	-2.18E-05	Fort Bragg	-3.04E-07	Weed	-1.34E-05
152	South Lake Tahoe	-2.10E-07	Alturas	-2.17E-05	Woodland	0	Alturas	-1.12E-05
153	Woodland	0	Baker	-2.04E-05	CitrusHeights	0	South Lake Tahoe	-6.61E-07
154	CitrusHeights	0	San Bernardino	-1.05E-05	Folsom Lake	0	Fort Bragg	-1.09E-07
155	Folsom Lake	0	Fort Bragg	-2.07E-06	Lake Havasu	0	Woodland	0
156	Lake Havasu	0	Mendocino	-1.89E-06	Citrus Heights	0	CitrusHeights	0
157	Citrus Heights	0	South Lake Tahoe	-1.48E-06	Mendocino	4.30E-08	Folsom Lake	0

Ranking	5M		5H		6M		6H	
1	Huntington Beach	-0.00028	Huntington Beach	-0.00057	Huntington Beach	-0.00085	Huntington Beach	-0.00172
2	Newport Beach	-0.00025	Newport Beach	-0.00051	Newport Beach	-0.00083	Newport Beach	-0.00168
3	Laguna Beach	-0.00023	Laguna Beach	-0.00048	Laguna Beach	-0.00074	Laguna Beach	-0.00149
4	Tustin	-0.00018	Tustin	-0.00037	Mission Viejo	-0.00052	Mission Viejo	-0.00104
5	Mission Viejo	-0.00016	Mission Viejo	-0.00034	Tustin	-0.00051	Tustin	-0.00101
6	Beverly Hills	-0.00016	Beverly Hills	-0.0003	LAX	-0.0003	Sta. Ana	-0.00053
7	Sherman Oaks	-0.00015	Sherman Oaks	-0.00028	Sta. Ana	-0.00027	LAX	-0.00053
8	Van Nuys	-0.00014	Van Nuys	-0.00025	Beverly Hills	-0.00025	Beverly Hills	-0.00048
9	Century City	-0.00014	Pomona	-0.00021	Vallejo	-0.00024	Inglewood	-0.00048
10	Pomona	-0.00011	Century City	-0.00021	Sta. Monica	-0.00023	Vallejo	-0.00047
11	Diamond Bar	-0.00011	Diamond Bar	-0.00021	Inglewood	-0.00023	Orange	-0.00042
12	Vallejo	-0.00011	Vallejo	-0.0002	Oxnard	-0.00023	Oxnard	-0.00042
13	Inglewood	-0.00011	Palmdale	-0.00019	Orange	-0.00022	Sherman Oaks	-0.00041
14	Palmdale	-9.85E-05	Banning	-0.00018	Century City	-0.00021	Banning	-0.0004
15	Oxnard	-9.80E-05	Inglewood	-0.00018	Sherman Oaks	-0.0002	Century City	-0.0004
16	Banning	-9.35E-05	Coachella	-0.00017	Banning	-0.0002	San Francisco	-0.00039
17	Coachella	-8.63E-05	Oxnard	-0.00016	Palmdale	-0.0002	Palmdale	-0.00039
18	Hollywood	-8.47E-05	Hollywood	-0.00016	San Francisco	-0.0002	Pomona	-0.00039
19	Hesperia	-8.29E-05	Rancho Cucamonga	-0.00016	Van Nuys	-0.0002	Van Nuys	-0.00039
20	Indio	-8.21E-05	Indio	-0.00016	Pomona	-0.0002	Coachella	-0.00038
21	Los Angeles	-8.11E-05	Burbank	-0.00016	Coachella	-0.00019	Diamond Bar	-0.00037
22	Thousand Oaks	-8.07E-05	Los Angeles	-0.00015	Los Angeles	-0.00018	Sta. Monica	-0.00036
23	Burbank	-8.07E-05	Thousand Oaks	-0.00015	Wasco	-0.00018	Wasco	-0.00036
24	San Dimas	-7.89E-05	San Dimas	-0.00015	Diamond Bar	-0.00018	Blythe	-0.00036
25	San Francisco	-7.84E-05	San Francisco	-0.00015	Porterville	-0.00018	Porterville	-0.00035
26	Rancho Cucamonga	-7.74E-05	San Jacinto	-0.00015	Blythe	-0.00017	Tulare	-0.00035
27	San Jacinto	-7.73E-05	San Bernardino	-0.00015	Tulare	-0.00017	Los Angeles	-0.00035
28	Pismo Beach	-7.62E-05	Sta. Ana	-0.00015	Hollywood	-0.00017	Indio	-0.00033
29	LAX	-7.53E-05	Ontario	-0.00015	Indio	-0.00017	Hollywood	-0.00033
30	Glendale	-7.45E-05	Pismo Beach	-0.00014	Corona	-0.00016	Corona	-0.00032
31	Rosemead	-7.19E-05	LAX	-0.00014	Anaheim	-0.00015	Rosemead	-0.00031
32	Ontario	-7.04E-05	Corona	-0.00014	Rosemead	-0.00015	Anaheim	-0.0003
33	Corona	-6.97E-05	Glendale	-0.00014	Downey	-0.00014	Redwood City	-0.00027
34	Sta. Ana	-6.90E-05	Adelanto	-0.00014	Visalia	-0.00014	Pismo Beach	-0.00027
35	Adelanto	-6.89E-05	Rosemead	-0.00014	Redwood City	-0.00014	San Rafael	-0.00027
36	Victorville	-6.83E-05	Hesperia	-0.00014	Rancho Cucamonga	-0.00013	Downey	-0.00026
37	San Rafael	-6.66E-05	Northridge	-0.00013	San Dimas	-0.00013	Visalia	-0.00026

38	Pasadena	-6.44E-05	Simi Valley	-0.00013	San Rafael	-0.00013	Rancho Cucamonga	-0.00026
39	Porterville	-6.38E-05	San Rafael	-0.00013	Livermore	-0.00013	National City	-0.00026
40	Redwood City	-6.33E-05	Pasadena	-0.00013	National City	-0.00013	Chula Vista	-0.00025
41	Blythe	-6.32E-05	Hemet	-0.00012	San Jacinto	-0.00013	Glendale	-0.00025
42	Simi Valley	-6.29E-05	Blythe	-0.00012	Glendale	-0.00013	San Dimas	-0.00025
43	Orange	-6.24E-05	Victorville	-0.00012	Chula Vista	-0.00013	San Jacinto	-0.00025
44	Sta. Cruz	-6.21E-05	Redwood City	-0.00012	El Cajon	-0.00012	Ontario	-0.00025
45	Downey	-5.94E-05	Orange	-0.00012	Bakersfield	-0.00012	El Cajon	-0.00024
46	Anaheim	-5.79E-05	Sta. Cruz	-0.00011	Ontario	-0.00012	Bakersfield	-0.00024
47	Antioch	-5.71E-05	Downey	-0.00011	Thousand Oaks	-0.00012	Malibu	-0.00024
48	Hemet	-5.66E-05	Fullerton	-0.00011	Pismo Beach	-0.00012	Thousand Oaks	-0.00023
49	Northridge	-5.57E-05	Palm Springs	-0.00011	San Diego	-0.00011	Sta. Cruz	-0.00023
50	Fullerton	-5.57E-05	Antioch	-0.0001	Malibu	-0.00011	San Diego	-0.00023
51	Visalia	-5.28E-05	Wasco	-0.0001	Sta. Cruz	-0.00011	Fullerton	-0.00023
52	Hollister	-5.24E-05	Anaheim	-0.0001	Sta. Barbara	-0.00011	Burbank	-0.00022
53	Covina	-5.17E-05	Covina	-0.0001	Fullerton	-0.00011	Pasadena	-0.00022
54	Chico	-5.12E-05	Canoga Park	-9.87E-05	Burbank	-0.00011	Riverside	-0.00021
55	Palm Springs	-5.10E-05	Porterville	-9.86E-05	Pasadena	-0.00011	Livermore	-0.00021
56	Tulare	-4.93E-05	Tulare	-9.78E-05	Victorville	-0.0001	Victorville	-0.0002
57	Wasco	-4.87E-05	Visalia	-9.61E-05	Northridge	-0.0001	Sta. Barbara	-0.0002
58	Morgan Hills	-4.85E-05	Chico	-9.52E-05	Hemet	-9.64E-05	Hemet	-0.0002
59	Tehama	-4.83E-05	Bakersfield	-9.28E-05	El Centro	-9.53E-05	Northridge	-0.0002
60	Canoga Park	-4.83E-05	Morgan Hills	-8.97E-05	Hesperia	-9.40E-05	El Centro	-0.00019
61	Bakersfield	-4.77E-05	Oroville	-8.70E-05	Covina	-9.34E-05	Adelanto	-0.00019
62	King City	-4.51E-05	Patterson	-8.56E-05	Adelanto	-9.24E-05	Hesperia	-0.00018
63	Manteca	-4.49E-05	Sta. Clarita	-8.44E-05	Hollister	-9.18E-05	Covina	-0.00018
64	Oroville	-4.48E-05	Chowchilla	-8.43E-05	Sta. Clarita	-9.08E-05	King City	-0.00018
65	Mtn. View	-4.36E-05	Sta. Barbara	-8.43E-05	Riverside	-8.99E-05	Morgan Hills	-0.00017
66	Merced	-4.33E-05	Merced	-8.26E-05	Morgan Hills	-8.58E-05	Hollister	-0.00017
67	Sutter	-4.33E-05	El Centro	-8.22E-05	King City	-8.56E-05	Chowchilla	-0.00017
68	San Bernardino	-4.30E-05	Malibu	-8.19E-05	Fremont	-8.35E-05	Simi Valley	-0.00017
69	Patterson	-4.29E-05	Benicia	-8.12E-05	Chowchilla	-8.28E-05	Benicia	-0.00016
70	California City	-4.01E-05	King City	-8.06E-05	Milpitas	-8.28E-05	Sta. Clarita	-0.00016
71	Benicia	-3.97E-05	Martinez	-8.05E-05	Simi Valley	-8.24E-05	Manteca	-0.00016
72	Pittsburgh	-3.93E-05	Sutter	-8.03E-05	Benicia	-8.12E-05	Salinas	-0.00016
73	Sta. Barbara	-3.92E-05	Pittsburgh	-8.00E-05	Antioch	-7.98E-05	Antioch	-0.00016
74	Auburn	-3.90E-05	Manteca	-7.79E-05	Manteca	-7.91E-05	Milpitas	-0.00016
75	Davis	-3.90E-05	Hollister	-7.72E-05	Salinas	-7.77E-05	San Jose	-0.00016
76	Martinez	-3.87E-05	Auburn	-7.65E-05	Crescent City	-7.69E-05	Palm Springs	-0.00015
77	Sacramento	-3.79E-05	Mtn. View	-7.61E-05	Palm Springs	-7.65E-05	Martinez	-0.00015
78	Paradise	-3.78E-05	Riverside	-7.59E-05	Martinez	-7.64E-05	Mtn. View	-0.00015
79	Yuba City	-3.76E-05	Hanford	-7.34E-05	Mtn. View	-7.63E-05	Fremont	-0.00015

80	Milpitas	-3.72E-05	Tracy	-7.14E-05	Hanford	-7.44E-05	Hanford	-0.00015
81	Cotton Wood	-3.71E-05	Fresno	-7.07E-05	San Jose	-7.26E-05	Sta. Maria	-0.00014
82	Chowchilla	-3.68E-05	Paradise	-7.03E-05	Monterey	-7.06E-05	Monterey	-0.00014
83	Dunsmuir	-3.64E-05	Lodi	-7.03E-05	Merced	-6.98E-05	Merced	-0.00014
84	Paso Robles	-3.62E-05	Fremont	-6.94E-05	Canoga Park	-6.77E-05	Lompoc	-0.00013
85	Turlock	-3.55E-05	Whittier	-6.84E-05	Sta. Maria	-6.67E-05	Crescent City	-0.00013
86	Hanford	-3.54E-05	Yuba City	-6.78E-05	Whittier	-6.53E-05	Auburn	-0.00013
87	Whittier	-3.54E-05	Davis	-6.73E-05	Auburn	-6.51E-05	Walnut Creek	-0.00013
88	Fremont	-3.50E-05	Sacramento	-6.71E-05	Lafayette	-6.46E-05	Lafayette	-0.00013
89	Lodi	-3.46E-05	Dixon	-6.71E-05	Lompoc	-6.44E-05	Davis	-0.00013
90	Los Banos	-3.45E-05	Paso Robles	-6.41E-05	Goleta	-6.40E-05	Eureka	-0.00012
91	Malibu	-3.41E-05	Livermore	-6.40E-05	Walnut Creek	-6.32E-05	Whittier	-0.00012
92	Fresno	-3.30E-05	Goleta	-6.36E-05	Davis	-6.23E-05	California City	-0.00012
93	Riverside	-3.27E-05	Milpitas	-6.26E-05	Eureka	-6.11E-05	Tracy	-0.00012
94	Colusa	-3.25E-05	California City	-6.25E-05	Chico	-5.95E-05	Paradise	-0.00012
95	Red Bluff	-3.23E-05	San Diego	-6.06E-05	Paradise	-5.85E-05	Lodi	-0.00012
96	Tracy	-3.13E-05	Turlock	-6.00E-05	Lodi	-5.80E-05	Dublin	-0.00011
97	San Luis Obispo	-3.10E-05	Sta. Rosa	-5.96E-05	Tracy	-5.75E-05	Chico	-0.00011
98	Modesto	-3.10E-05	National City	-5.87E-05	Dublin	-5.60E-05	Napa	-0.00011
99	San Jose	-3.04E-05	Lafayette	-5.78E-05	Dunsmuir	-5.54E-05	Nevada City	-0.00011
100	Sta. Rosa	-2.94E-05	El Cajon	-5.78E-05	Dixon	-5.53E-05	Solvang	-0.00011
101	Lafayette	-2.91E-05	Colusa	-5.71E-05	Sacramento	-5.51E-05	Sacramento	-0.00011
102	Dixon	-2.84E-05	Napa	-5.60E-05	Nevada City	-5.48E-05	Sta. Rosa	-0.00011
103	Nevada City	-2.83E-05	Chula Vista	-5.60E-05	Pittsburgh	-5.46E-05	Pittsburgh	-0.00011
104	Anderson	-2.78E-05	Los Banos	-5.58E-05	Napa	-5.39E-05	Dunsmuir	-0.00011
105	Atascadero	-2.76E-05	Cotton Wood	-5.41E-05	Oroville	-5.25E-05	Dixon	-0.00011
106	Sta. Clarita	-2.66E-05	Crescent City	-5.34E-05	Patterson	-5.19E-05	Oroville	-0.00011
107	San Diego	-2.60E-05	San Luis Obispo	-5.34E-05	Colusa	-5.16E-05	Patterson	-0.0001
108	Tahoe City	-2.57E-05	Nevada City	-5.33E-05	Tehachapi	-5.16E-05	Tehachapi	-0.0001
109	Crescent City	-2.56E-05	Modesto	-5.33E-05	Sta. Rosa	-5.15E-05	Colusa	-0.0001
110	Mojave	-2.49E-05	Dunsmuir	-5.18E-05	Solvang	-4.98E-05	Canoga Park	-0.0001
111	Solvang	-2.49E-05	San Jose	-5.07E-05	California City	-4.79E-05	Goleta	-0.0001
112	Monterey	-2.49E-05	Monterey	-4.94E-05	Fresno	-4.65E-05	Fresno	-9.53E-05
113	Eureka	-2.30E-05	Solvang	-4.89E-05	Paso Robles	-4.64E-05	Sutter	-9.20E-05
114	Tehachapi	-2.28E-05	Eureka	-4.77E-05	Turlock	-4.62E-05	Yuba City	-9.19E-05
115	National City	-2.22E-05	Walnut Creek	-4.75E-05	Yuba City	-4.61E-05	Turlock	-9.17E-05
116	El Cajon	-2.22E-05	Atascadero	-4.73E-05	Sutter	-4.53E-05	Atascadero	-9.02E-05
117	Napa	-2.18E-05	Anderson	-4.72E-05	Willits	-4.38E-05	Willits	-8.88E-05
118	Salinas	-2.18E-05	Fairfield	-4.69E-05	Tehama	-4.37E-05	Paso Robles	-8.82E-05
119	Chula Vista	-2.17E-05	Dublin	-4.55E-05	Los Banos	-4.19E-05	Los Banos	-8.50E-05
120	Ocotillo	-2.10E-05	Salinas	-4.46E-05	Cotton Wood	-4.18E-05	Truckee	-7.79E-05
121	El Centro	-2.07E-05	Red Bluff	-4.43E-05	Atascadero	-4.11E-05	Tehama	-7.78E-05

122	Lompoc	-2.04E-05	Yreka	-4.36E-05	San Luis Obispo	-4.07E-05	Modesto	-7.74E-05
123	Sta. Maria	-1.97E-05	Chester	-4.35E-05	Yreka	-3.74E-05	Cotton Wood	-7.58E-05
124	Salton City	-1.93E-05	Tehachapi	-4.34E-05	Modesto	-3.72E-05	San Luis Obispo	-7.50E-05
125	Roseville	-1.91E-05	Tehama	-4.24E-05	Tahoe City	-3.67E-05	Chester	-7.31E-05
126	Walnut Creek	-1.91E-05	Sta. Maria	-4.06E-05	Susanville	-3.65E-05	Anderson	-7.28E-05
127	Ludlow	-1.76E-05	Lompoc	-4.01E-05	Westwood	-3.57E-05	Tahoe City	-7.11E-05
128	Desert Center	-1.69E-05	Barstow	-3.78E-05	Chester	-3.54E-05	Westwood	-7.09E-05
129	Truckee	-1.63E-05	Tahoe City	-3.73E-05	Anderson	-3.52E-05	Fairfield	-7.03E-05
130	Cloverdale	-1.54E-05	Mojave	-3.65E-05	Red Bluff	-3.29E-05	Susanville	-6.81E-05
131	Murrieta	-1.54E-05	Roseville	-3.53E-05	Cloverdale	-3.24E-05	Cloverdale	-6.72E-05
132	Glamis	-1.51E-05	Ocotillo	-3.38E-05	Independence	-3.23E-05	Sun City	-6.67E-05
133	Independence	-1.45E-05	Kettleman City	-3.33E-05	San Bernardino	-3.22E-05	Independence	-6.27E-05
134	Willits	-1.39E-05	Independence	-3.22E-05	Downieville	-3.15E-05	Downieville	-6.20E-05
135	Dublin	-1.36E-05	Salton City	-3.15E-05	Sun City	-3.06E-05	Temecula	-6.19E-05
136	McCloud	-1.36E-05	Twentynine Palms	-3.08E-05	Ocotillo	-3.04E-05	Murrieta	-5.93E-05
137	Chester	-1.23E-05	Desert Center	-2.90E-05	Murrieta	-2.89E-05	Red Bluff	-5.80E-05
138	Weed	-1.17E-05	Ludlow	-2.88E-05	Ludlow	-2.86E-05	Ocotillo	-5.78E-05
139	Twentynine Palms	-1.14E-05	Westwood	-2.74E-05	McCloud	-2.85E-05	Yreka	-5.71E-05
140	Westwood	-1.13E-05	Cloverdale	-2.71E-05	Mojave	-2.78E-05	Ludlow	-5.54E-05
141	Downieville	-1.13E-05	Downieville	-2.71E-05	Escondido	-2.76E-05	Escondido	-5.54E-05
142	Temecula	-1.12E-05	Susanville	-2.65E-05	Temecula	-2.73E-05	Mojave	-5.51E-05
143	Sun City	-1.11E-05	Glamis	-2.54E-05	Roseville	-2.65E-05	Roseville	-5.42E-05
144	Susanville	-1.10E-05	Willits	-2.45E-05	Salton City	-2.59E-05	McCloud	-5.42E-05
145	Barstow	-1.10E-05	McCloud	-2.44E-05	Twentynine Palms	-2.57E-05	Weed	-5.33E-05
146	Kettleman City	-9.76E-06	Sun City	-2.19E-05	Barstow	-2.45E-05	Barstow	-5.25E-05
147	Yreka	-9.38E-06	Murrieta	-2.19E-05	Kettleman City	-2.44E-05	Salton City	-5.17E-05
148	Escondido	-9.23E-06	Baker	-2.17E-05	Glamis	-2.43E-05	Twentynine Palms	-5.12E-05
149	Goleta	-8.53E-06	Temecula	-1.98E-05	Desert Center	-2.36E-05	Glamis	-4.73E-05
150	Baker	-5.76E-06	Weed	-1.81E-05	Weed	-2.32E-05	Desert Center	-4.72E-05
151	Fort Bragg	-4.37E-08	Escondido	-1.58E-05	Baker	-2.07E-05	Kettleman City	-4.67E-05
152	Woodland	0	Alturas	-1.23E-05	Alturas	-1.03E-05	San Bernardino	-4.26E-05
153	CitrusHeights	0	Fort Bragg	-1.28E-06	Fairfield	-4.83E-06	Baker	-3.97E-05
154	Folsom Lake	0	Mendocino	-6.02E-07	Truckee	-4.37E-06	Alturas	-2.74E-05
155	Lake Havasu	0	Woodland	0	Mendocino	-1.25E-06	South Lake Tahoe	-1.27E-06
156	Citrus Heights	0	CitrusHeights	0	South Lake Tahoe	-6.61E-07	Mendocino	-3.44E-07
157	Mendocino	4.73E-07	Folsom Lake	0	Fort Bragg	-5.88E-07	Woodland	0

	7M		7H		8M		8H	
Ranking								
1	Tustin	-0.0002	Tustin	-0.00041	Tustin	-0.00014	Tustin	-0.0003
2	Mission Viejo	-0.00018	Mission Viejo	-0.00038	Mission Viejo	-0.00014	Mission Viejo	-0.00028
3	Huntington Beach	-0.00017	Huntington Beach	-0.00034	Laguna Beach	-0.00013	Laguna Beach	-0.00026
4	Laguna Beach	-0.00017	Laguna Beach	-0.00034	Huntington Beach	-0.00012	Huntington Beach	-0.00025
5	Newport Beach	-0.00016	Newport Beach	-0.00032	Newport Beach	-0.00011	Newport Beach	-0.00024
6	Coachella	-0.00014	Banning	-0.00029	Banning	-9.94E-05	Coachella	-0.00021
7	Banning	-0.00014	Coachella	-0.00029	Coachella	-9.88E-05	Banning	-0.00021
8	Indio	-0.00013	Indio	-0.00027	Indio	-9.33E-05	Indio	-0.00019
9	Palmdale	-0.00012	Palmdale	-0.00025	Palmdale	-8.65E-05	Palmdale	-0.00019
10	Century City	-0.00012	Beverly Hills	-0.00023	Sherman Oaks	-7.63E-05	Beverly Hills	-0.00015
11	Beverly Hills	-0.00011	Sherman Oaks	-0.00021	California City	-7.50E-05	Century City	-0.00015
12	Sherman Oaks	-0.0001	Blythe	-0.00019	Beverly Hills	-7.35E-05	Sherman Oaks	-0.00015
13	California City	-0.0001	Van Nuys	-0.00018	Blythe	-6.61E-05	Blythe	-0.00014
14	Blythe	-9.06E-05	Inglewood	-0.00018	Los Angeles	-6.34E-05	Visalia	-0.00013
15	San Jacinto	-9.02E-05	Pomona	-0.00018	Visalia	-6.19E-05	Inglewood	-0.00013
16	Inglewood	-9.02E-05	Visalia	-0.00017	Tulare	-6.10E-05	Tulare	-0.00012
17	Hesperia	-8.87E-05	Century City	-0.00017	Inglewood	-6.06E-05	Pomona	-0.00012
18	Los Angeles	-8.69E-05	San Jacinto	-0.00017	Porterville	-5.93E-05	Van Nuys	-0.00012
19	Visalia	-8.66E-05	Tulare	-0.00016	Pomona	-5.93E-05	Wasco	-0.00011
20	Tulare	-8.62E-05	Diamond Bar	-0.00016	Van Nuys	-5.89E-05	Porterville	-0.00011
21	Pomona	-8.60E-05	Wasco	-0.00016	Bakersfield	-5.82E-05	Sta. Ana	-0.00011
22	Van Nuys	-8.12E-05	Sta. Ana	-0.00015	Sta. Ana	-5.51E-05	Oxnard	-0.00011
23	Oxnard	-8.00E-05	Porterville	-0.00015	San Jacinto	-5.50E-05	Diamond Bar	-0.0001
24	Hemet	-7.56E-05	Los Angeles	-0.00015	Wasco	-5.32E-05	San Jacinto	-0.0001
25	Sta. Ana	-7.53E-05	Rosemead	-0.00015	Hesperia	-5.32E-05	Rosemead	-0.0001
26	Porterville	-7.43E-05	Bakersfield	-0.00015	Diamond Bar	-5.22E-05	Downey	-9.76E-05
27	Diamond Bar	-7.41E-05	Hemet	-0.00014	Rosemead	-5.02E-05	Los Angeles	-9.64E-05
28	Victorville	-7.16E-05	California City	-0.00014	Vallejo	-5.02E-05	Vallejo	-9.47E-05
29	Downey	-7.13E-05	Downey	-0.00014	Downey	-4.76E-05	Hollywood	-9.25E-05
30	Rosemead	-7.13E-05	Hollywood	-0.00013	Orange	-4.69E-05	Bakersfield	-9.25E-05
31	Vallejo	-7.08E-05	Pismo Beach	-0.00013	Hollywood	-4.69E-05	Pismo Beach	-9.21E-05
32	Corona	-7.06E-05	Hesperia	-0.00013	Hemet	-4.67E-05	Orange	-8.79E-05
33	Rancho Cucamonga	-7.06E-05	Vallejo	-0.00013	Corona	-4.64E-05	Hemet	-8.55E-05
34	Wasco	-7.02E-05	Corona	-0.00013	Antioch	-4.59E-05	Livermore	-8.38E-05
35	Hollywood	-6.93E-05	Palm Springs	-0.00013	Pismo Beach	-4.54E-05	Corona	-8.36E-05
36	Palm Springs	-6.88E-05	Orange	-0.00013	Victorville	-4.45E-05	San Bernardino	-8.34E-05
37	Ontario	-6.52E-05	Oxnard	-0.00013	Northridge	-4.42E-05	California City	-8.34E-05
38	Adelanto	-6.50E-05	Rancho Cucamonga	-0.00013	Palm Springs	-4.28E-05	Redwood City	-8.33E-05

39	Pismo Beach	-6.49E-05	Adelanto	-0.00012	Thousand Oaks	-4.27E-05	San Francisco	-8.13E-05
40	Orange	-6.42E-05	Victorville	-0.00012	Manteca	-4.15E-05	San Rafael	-8.11E-05
41	Bakersfield	-6.27E-05	Thousand Oaks	-0.00012	Rancho Cucamonga	-4.15E-05	Thousand Oaks	-8.04E-05
42	Glendale	-6.26E-05	Northridge	-0.00012	Glendale	-4.09E-05	Victorville	-8.00E-05
43	Pasadena	-6.15E-05	Redwood City	-0.00012	San Rafael	-4.08E-05	Rancho Cucamonga	-7.90E-05
44	San Rafael	-6.07E-05	San Rafael	-0.00012	Redwood City	-4.02E-05	Antioch	-7.87E-05
45	San Francisco	-5.95E-05	San Francisco	-0.00011	Burbank	-4.01E-05	Northridge	-7.82E-05
46	Thousand Oaks	-5.84E-05	Antioch	-0.00011	Oxnard	-3.98E-05	Chowchilla	-7.80E-05
47	Redwood City	-5.72E-05	Glendale	-0.00011	Cotton Wood	-3.95E-05	Palm Springs	-7.79E-05
48	San Bernardino	-5.64E-05	Pasadena	-0.00011	San Francisco	-3.93E-05	Sta. Barbara	-7.46E-05
49	San Dimas	-5.59E-05	Anaheim	-0.00011	Pasadena	-3.92E-05	El Cajon	-7.38E-05
50	Burbank	-5.58E-05	San Bernardino	-0.00011	Adelanto	-3.91E-05	Adelanto	-7.36E-05
51	Anaheim	-5.53E-05	Burbank	-0.00011	Fullerton	-3.86E-05	Ontario	-7.32E-05
52	Fullerton	-5.35E-05	Ontario	-0.00011	King City	-3.85E-05	Manteca	-7.26E-05
53	Northridge	-5.28E-05	Fullerton	-0.00011	Century City	-3.78E-05	Hesperia	-7.24E-05
54	Antioch	-5.11E-05	Chowchilla	-0.0001	El Cajon	-3.74E-05	Glendale	-7.20E-05
55	Manteca	-5.03E-05	El Cajon	-0.0001	Davis	-3.72E-05	Barstow	-7.05E-05
56	Chowchilla	-4.97E-05	San Dimas	-0.0001	Sacramento	-3.68E-05	Pasadena	-6.94E-05
57	Covina	-4.91E-05	Manteca	-9.83E-05	Anderson	-3.67E-05	King City	-6.88E-05
58	Chico	-4.91E-05	Merced	-9.76E-05	San Bernardino	-3.64E-05	Davis	-6.79E-05
59	El Cajon	-4.90E-05	Riverside	-9.30E-05	Ontario	-3.62E-05	Anaheim	-6.77E-05
60	Riverside	-4.87E-05	Simi Valley	-9.23E-05	Anaheim	-3.62E-05	Sacramento	-6.75E-05
61	Simi Valley	-4.85E-05	King City	-9.17E-05	Chico	-3.59E-05	Mojave	-6.66E-05
62	Sta. Clarita	-4.83E-05	Davis	-8.99E-05	Hollister	-3.58E-05	El Centro	-6.62E-05
63	Livermore	-4.76E-05	Sacramento	-8.98E-05	Chowchilla	-3.49E-05	Fresno	-6.51E-05
64	King City	-4.75E-05	Morgan Hills	-8.98E-05	Covina	-3.47E-05	Burbank	-6.45E-05
65	El Centro	-4.62E-05	Fresno	-8.94E-05	Barstow	-3.37E-05	Solvang	-6.36E-05
66	Canoga Park	-4.53E-05	Chula Vista	-8.83E-05	Malibu	-3.32E-05	Merced	-6.27E-05
67	Merced	-4.50E-05	LAX	-8.80E-05	San Dimas	-3.19E-05	Goleta	-6.26E-05
68	Davis	-4.45E-05	National City	-8.72E-05	Tehachapi	-3.11E-05	Tehachapi	-6.25E-05
69	Hanford	-4.42E-05	Chico	-8.57E-05	Chula Vista	-3.10E-05	Fullerton	-6.23E-05
70	Fresno	-4.39E-05	Hanford	-8.48E-05	Sutter	-3.10E-05	San Dimas	-6.20E-05
71	Sacramento	-4.36E-05	Covina	-8.34E-05	Riverside	-3.09E-05	Hanford	-6.20E-05
72	Morgan Hills	-4.22E-05	San Jose	-8.32E-05	Patterson	-3.07E-05	Chula Vista	-6.19E-05
73	Cotton Wood	-4.19E-05	El Centro	-8.30E-05	Solvang	-3.06E-05	Malibu	-6.08E-05
74	Patterson	-4.18E-05	Patterson	-8.13E-05	Dunsmuir	-3.06E-05	National City	-6.06E-05
75	Chula Vista	-4.13E-05	Hollister	-7.90E-05	Simi Valley	-3.05E-05	Chico	-5.93E-05
76	National City	-4.06E-05	Ludlow	-7.78E-05	Yuba City	-2.97E-05	Morgan Hills	-5.91E-05
77	San Jose	-4.02E-05	Mtn. View	-7.78E-05	National City	-2.97E-05	Ocotillo	-5.63E-05
78	Tracy	-3.97E-05	Oroville	-7.69E-05	Oroville	-2.95E-05	Covina	-5.60E-05
79	Dunsmuir	-3.93E-05	Benicia	-7.60E-05	Mojave	-2.94E-05	Riverside	-5.59E-05

80	Turlock	-3.92E-05	San Diego	-7.59E-05	Tracy	-2.93E-05	Anderson	-5.57E-05
81	Mtn. View	-3.88E-05	Tracy	-7.55E-05	Turlock	-2.92E-05	San Jose	-5.56E-05
82	Benicia	-3.82E-05	Sta. Cruz	-7.49E-05	Fresno	-2.90E-05	Cotton Wood	-5.55E-05
83	Oroville	-3.80E-05	Canoga Park	-7.43E-05	Lodi	-2.90E-05	Twentynine Palms	-5.49E-05
84	Sutter	-3.78E-05	Martinez	-7.39E-05	Ocotillo	-2.88E-05	Simi Valley	-5.44E-05
85	Martinez	-3.67E-05	Lodi	-7.35E-05	Benicia	-2.88E-05	Sta. Maria	-5.42E-05
86	Modesto	-3.65E-05	Sutter	-7.33E-05	Dixon	-2.84E-05	Tehama	-5.40E-05
87	Yuba City	-3.63E-05	Dixon	-6.97E-05	Glamis	-2.82E-05	Tracy	-5.38E-05
88	San Diego	-3.63E-05	Auburn	-6.93E-05	Auburn	-2.82E-05	Ludlow	-5.35E-05
89	Lodi	-3.61E-05	Yuba City	-6.92E-05	Martinez	-2.82E-05	San Diego	-5.33E-05
90	Colusa	-3.52E-05	Pittsburgh	-6.91E-05	Hanford	-2.81E-05	Benicia	-5.25E-05
91	Auburn	-3.50E-05	Turlock	-6.87E-05	San Diego	-2.75E-05	Glamis	-5.20E-05
92	Anderson	-3.45E-05	Whittier	-6.77E-05	Whittier	-2.75E-05	Salton City	-5.19E-05
93	Whittier	-3.45E-05	Paradise	-6.73E-05	Sta. Barbara	-2.72E-05	Martinez	-5.15E-05
94	Dixon	-3.41E-05	Livermore	-6.47E-05	Colusa	-2.71E-05	Patterson	-5.12E-05
95	Sta. Cruz	-3.39E-05	Colusa	-6.43E-05	Merced	-2.70E-05	Lodi	-5.11E-05
96	Paradise	-3.26E-05	Modesto	-6.31E-05	Paso Robles	-2.64E-05	Hollister	-5.03E-05
97	Los Banos	-3.22E-05	Fairfield	-6.31E-05	El Centro	-2.63E-05	Lompoc	-4.94E-05
98	Tehachapi	-3.17E-05	Los Banos	-5.97E-05	Twentynine Palms	-2.63E-05	Auburn	-4.91E-05
99	Paso Robles	-3.10E-05	Solvang	-5.91E-05	Ludlow	-2.63E-05	Red Bluff	-4.88E-05
100	Atascadero	-3.10E-05	Barstow	-5.85E-05	Modesto	-2.62E-05	Oroville	-4.87E-05
101	Tehama	-3.07E-05	Milpitas	-5.77E-05	Livermore	-2.61E-05	Mtn. View	-4.86E-05
102	Pittsburgh	-2.86E-05	Walnut Creek	-5.73E-05	Tehama	-2.60E-05	Turlock	-4.85E-05
103	Salinas	-2.80E-05	Malibu	-5.67E-05	Los Banos	-2.54E-05	Sta. Cruz	-4.85E-05
104	Lafayette	-2.70E-05	Lafayette	-5.62E-05	Morgan Hills	-2.54E-05	Dunsmuir	-4.70E-05
105	Red Bluff	-2.69E-05	Mojave	-5.56E-05	Salton City	-2.53E-05	Sutter	-4.70E-05
106	Walnut Creek	-2.65E-05	Tehachapi	-5.55E-05	Chester	-2.50E-05	LAX	-4.68E-05
107	Nevada City	-2.62E-05	Sta. Clarita	-5.54E-05	Paradise	-2.50E-05	Whittier	-4.68E-05
108	San Luis Obispo	-2.59E-05	Fremont	-5.50E-05	Pittsburgh	-2.46E-05	Dixon	-4.67E-05
109	Napa	-2.54E-05	Salinas	-5.48E-05	Mtn. View	-2.43E-05	Desert Center	-4.63E-05
110	Sta. Rosa	-2.48E-05	Dunsmuir	-5.39E-05	Walnut Creek	-2.42E-05	Yuba City	-4.59E-05
111	Solvang	-2.45E-05	Paso Robles	-5.36E-05	Lafayette	-2.32E-05	Pittsburgh	-4.54E-05
112	Dublin	-2.44E-05	Nevada City	-5.20E-05	Sta. Maria	-2.31E-05	Modesto	-4.52E-05
113	Crescent City	-2.37E-05	Sta. Maria	-5.16E-05	Desert Center	-2.29E-05	Colusa	-4.34E-05
114	Milpitas	-2.28E-05	Lompoc	-5.09E-05	Red Bluff	-2.28E-05	Sun City	-4.27E-05
115	Fremont	-2.28E-05	Dublin	-5.09E-05	Yreka	-2.27E-05	Los Banos	-4.13E-05
116	Mojave	-2.26E-05	Tehama	-5.02E-05	Canoga Park	-2.25E-05	Walnut Creek	-4.13E-05
117	Barstow	-2.26E-05	Sta. Rosa	-4.99E-05	Lompoc	-2.14E-05	Dublin	-4.10E-05
118	Lompoc	-2.24E-05	Napa	-4.78E-05	Murrieta	-2.12E-05	Paso Robles	-4.09E-05
119	Tahoe City	-2.22E-05	Cotton Wood	-4.76E-05	Nevada City	-2.05E-05	Paradise	-4.09E-05
120	Hollister	-2.04E-05	Anderson	-4.76E-05	Monterey	-2.05E-05	Lafayette	-4.07E-05
121	Ocotillo	-1.92E-05	Ocotillo	-4.67E-05	Sta. Rosa	-2.01E-05	Murrieta	-3.76E-05

122	Roseville	-1.91E-05	Twentynine Palms	-4.59E-05	Sun City	-1.99E-05	Salinas	-3.74E-05
123	Monterey	-1.90E-05	Atascadero	-4.58E-05	Sta. Clarita	-1.98E-05	Milpitas	-3.65E-05
124	Ludlow	-1.89E-05	Sta. Barbara	-4.44E-05	Atascadero	-1.97E-05	Fremont	-3.58E-05
125	Cloverdale	-1.89E-05	San Luis Obispo	-4.40E-05	Milpitas	-1.96E-05	Sta. Rosa	-3.50E-05
126	Alturas	-1.83E-05	Red Bluff	-4.35E-05	San Jose	-1.96E-05	Truckee	-3.48E-05
127	Sta. Maria	-1.80E-05	Salton City	-4.20E-05	San Luis Obispo	-1.89E-05	Susanville	-3.43E-05
128	Sta. Barbara	-1.78E-05	Chester	-3.87E-05	Sta. Cruz	-1.88E-05	Canoga Park	-3.38E-05
129	Twentynine Palms	-1.76E-05	Monterey	-3.84E-05	Temecula	-1.82E-05	Baker	-3.32E-05
130	Chester	-1.74E-05	Desert Center	-3.80E-05	Baker	-1.74E-05	Temecula	-3.30E-05
131	Malibu	-1.73E-05	Glamis	-3.76E-05	Salinas	-1.66E-05	Nevada City	-3.28E-05
132	Susanville	-1.72E-05	Roseville	-3.74E-05	Westwood	-1.64E-05	San Luis Obispo	-3.18E-05
133	Salton City	-1.65E-05	Crescent City	-3.69E-05	Dublin	-1.62E-05	Chester	-3.17E-05
134	Eureka	-1.65E-05	Susanville	-3.68E-05	Susanville	-1.62E-05	Atascadero	-3.17E-05
135	Desert Center	-1.62E-05	Goleta	-3.67E-05	Goleta	-1.62E-05	Escondido	-3.04E-05
136	Willits	-1.52E-05	Eureka	-3.64E-05	Napa	-1.59E-05	Napa	-3.00E-05
137	Westwood	-1.50E-05	Tahoe City	-3.58E-05	Roseville	-1.58E-05	Kettleman City	-2.99E-05
138	Sun City	-1.37E-05	Sun City	-3.55E-05	Escondido	-1.54E-05	Crescent City	-2.94E-05
139	Fairfield	-1.34E-05	Westwood	-3.25E-05	Crescent City	-1.42E-05	Tahoe City	-2.90E-05
140	Murrieta	-1.22E-05	Cloverdale	-3.19E-05	Tahoe City	-1.40E-05	Roseville	-2.80E-05
141	Independence	-1.20E-05	Murrieta	-3.10E-05	Cloverdale	-1.33E-05	Westwood	-2.68E-05
142	LAX	-1.17E-05	Baker	-2.90E-05	Fremont	-1.32E-05	Monterey	-2.63E-05
143	Downieville	-1.13E-05	Willits	-2.75E-05	Independence	-1.26E-05	Cloverdale	-2.53E-05
144	Kettleman City	-1.13E-05	Temecula	-2.70E-05	Willits	-1.23E-05	Independence	-2.38E-05
145	Temecula	-1.08E-05	Escondido	-2.54E-05	Eureka	-1.20E-05	Sta. Clarita	-2.28E-05
146	Baker	-1.00E-05	Independence	-2.32E-05	Downieville	-1.09E-05	Downieville	-2.20E-05
147	Glamis	-9.39E-06	Downieville	-2.23E-05	Kettleman City	-1.03E-05	Eureka	-2.20E-05
148	Escondido	-9.34E-06	McCloud	-1.94E-05	Truckee	-8.35E-06	Yreka	-2.15E-05
149	McCloud	-8.77E-06	Kettleman City	-1.80E-05	McCloud	-7.28E-06	Willits	-2.11E-05
150	Goleta	-7.42E-06	Weed	-1.78E-05	Weed	-5.10E-06	Weed	-2.09E-05
151	Weed	-6.38E-06	Truckee	-1.63E-05	Mendocino	-1.12E-06	McCloud	-1.58E-05
152	Mendocino	-7.31E-07	Alturas	-9.00E-06	Fort Bragg	-1.02E-06	Alturas	-6.58E-06
153	Woodland	0	Yreka	-6.71E-06	Woodland	0	Mendocino	-6.23E-07
154	CitrusHeights	0	Mendocino	-6.67E-07	CitrusHeights	0	Fort Bragg	-3.27E-07
155	Folsom Lake	0	Fort Bragg	-3.27E-07	Folsom Lake	0	Woodland	0
156	Lake Havasu	0	Woodland	0	Lake Havasu	0	CitrusHeights	0
157	Citrus Heights	0	CitrusHeights	0	Citrus Heights	0	Folsom Lake	0

Ranking	9M		9H		10M		10H	
1	Tustin	-0.00013	Tustin	-0.00027	Huntington Beach	-0.00085	Huntington Beach	-0.00172
2	Mission Viejo	-0.00012	Mission Viejo	-0.00024	Newport Beach	-0.00083	Newport Beach	-0.00168
3	Laguna Beach	-0.00011	Huntington Beach	-0.00022	Laguna Beach	-0.00074	Laguna Beach	-0.00149
4	Huntington Beach	-0.00011	Laguna Beach	-0.00022	Mission Viejo	-0.00052	Mission Viejo	-0.00104
5	Newport Beach	-0.0001	Newport Beach	-0.00021	Tustin	-0.00051	Tustin	-0.00101
6	Coachella	-9.96E-05	Banning	-0.0002	LAX	-0.0003	Sta. Ana	-0.00053
7	Banning	-9.95E-05	Coachella	-0.0002	Sta. Ana	-0.00027	LAX	-0.00053
8	Indio	-9.33E-05	Indio	-0.00018	Beverly Hills	-0.00025	Beverly Hills	-0.00048
9	Inglewood	-8.29E-05	Palmdale	-0.00018	Vallejo	-0.00024	Inglewood	-0.00048
10	Beverly Hills	-7.87E-05	Beverly Hills	-0.00017	Sta. Monica	-0.00023	Vallejo	-0.00047
11	Hesperia	-7.65E-05	California City	-0.00016	Inglewood	-0.00023	Orange	-0.00042
12	Sherman Oaks	-7.23E-05	Sherman Oaks	-0.00015	Oxnard	-0.00023	Oxnard	-0.00042
13	San Jacinto	-6.98E-05	Mojave	-0.00014	Orange	-0.00022	Sherman Oaks	-0.00041
14	Visalia	-6.56E-05	Inglewood	-0.00013	Century City	-0.00021	Banning	-0.0004
15	Blythe	-6.51E-05	Blythe	-0.00013	Sherman Oaks	-0.0002	Century City	-0.0004
16	Van Nuys	-6.40E-05	San Jacinto	-0.00013	Banning	-0.0002	San Francisco	-0.00039
17	San Bernardino	-6.09E-05	Pomona	-0.00013	Palmdale	-0.0002	Palmdale	-0.00039
18	Los Angeles	-6.09E-05	Los Angeles	-0.00012	San Francisco	-0.0002	Pomona	-0.00039
19	Mojave	-6.09E-05	Tulare	-0.00012	Van Nuys	-0.0002	Van Nuys	-0.00039
20	Tulare	-6.05E-05	Visalia	-0.00012	Pomona	-0.0002	Coachella	-0.00038
21	Hemet	-6.00E-05	Antioch	-0.00012	Coachella	-0.00019	Diamond Bar	-0.00037
22	Wasco	-5.93E-05	Van Nuys	-0.00012	Los Angeles	-0.00018	Sta. Monica	-0.00036
23	Diamond Bar	-5.93E-05	Diamond Bar	-0.00011	Wasco	-0.00018	Wasco	-0.00036
24	Pomona	-5.86E-05	Rosemead	-0.00011	Diamond Bar	-0.00018	Blythe	-0.00036
25	Antioch	-5.71E-05	Bakersfield	-0.00011	Porterville	-0.00018	Porterville	-0.00035
26	Chico	-5.58E-05	Ocotillo	-0.00011	Blythe	-0.00017	Tulare	-0.00035
27	Porterville	-5.57E-05	San Bernardino	-0.00011	Tulare	-0.00017	Los Angeles	-0.00035
28	Rancho Cucamonga	-5.57E-05	Sta. Ana	-0.00011	Hollywood	-0.00017	Indio	-0.00033
29	Ocotillo	-5.45E-05	Manteca	-0.00011	Indio	-0.00017	Hollywood	-0.00033
30	Canoga Park	-5.42E-05	Porterville	-0.00011	Corona	-0.00016	Corona	-0.00032
31	Palm Springs	-5.41E-05	Hemet	-0.00011	Anaheim	-0.00015	Rosemead	-0.00031
32	Victorville	-5.40E-05	Wasco	-0.00011	Rosemead	-0.00015	Anaheim	-0.0003
33	Century City	-5.26E-05	Hesperia	-0.0001	Downey	-0.00014	Redwood City	-0.00027
34	Hollister	-5.20E-05	Century City	-0.0001	Visalia	-0.00014	Pismo Beach	-0.00027
35	Bakersfield	-5.18E-05	Salton City	-0.0001	Redwood City	-0.00014	San Rafael	-0.00027
36	El Centro	-5.14E-05	Orange	-0.0001	Rancho Cucamonga	-0.00013	Downey	-0.00026

37	Vallejo	-5.14E-05	Downey	-9.87E-05	San Dimas	-0.00013	Visalia	-0.00026
38	Ontario	-5.07E-05	Rancho Cucamonga	-9.82E-05	San Rafael	-0.00013	Rancho Cucamonga	-0.00026
39	Salton City	-5.06E-05	King City	-9.82E-05	Livermore	-0.00013	National City	-0.00026
40	Chowchilla	-4.92E-05	Davis	-9.78E-05	National City	-0.00013	Chula Vista	-0.00025
41	Manteca	-4.87E-05	Hollywood	-9.77E-05	San Jacinto	-0.00013	Glendale	-0.00025
42	Adelanto	-4.85E-05	Sacramento	-9.68E-05	Glendale	-0.00013	San Dimas	-0.00025
43	Tehama	-4.83E-05	Chowchilla	-9.58E-05	Chula Vista	-0.00013	San Jacinto	-0.00025
44	Cotton Wood	-4.81E-05	Palm Springs	-9.57E-05	El Cajon	-0.00012	Ontario	-0.00025
45	Sta. Ana	-4.77E-05	Vallejo	-9.49E-05	Bakersfield	-0.00012	El Cajon	-0.00024
46	Desert Center	-4.75E-05	Pismo Beach	-9.47E-05	Ontario	-0.00012	Bakersfield	-0.00024
47	San Dimas	-4.71E-05	Victorville	-9.27E-05	Thousand Oaks	-0.00012	Malibu	-0.00024
48	Corona	-4.64E-05	Adelanto	-9.26E-05	Pismo Beach	-0.00012	Thousand Oaks	-0.00023
49	King City	-4.64E-05	Desert Center	-9.25E-05	San Diego	-0.00011	Sta. Cruz	-0.00023
50	Downey	-4.59E-05	Corona	-9.21E-05	Malibu	-0.00011	San Diego	-0.00023
51	Hollywood	-4.51E-05	Livermore	-9.04E-05	Sta. Cruz	-0.00011	Fullerton	-0.00023
52	Fresno	-4.48E-05	Merced	-8.90E-05	Sta. Barbara	-0.00011	Burbank	-0.00022
53	Merced	-4.48E-05	Oxnard	-8.82E-05	Fullerton	-0.00011	Pasadena	-0.00022
54	Pismo Beach	-4.48E-05	Thousand Oaks	-8.66E-05	Burbank	-0.00011	Riverside	-0.00021
55	Orange	-4.45E-05	El Centro	-8.61E-05	Pasadena	-0.00011	Livermore	-0.00021
56	Davis	-4.39E-05	Anaheim	-8.55E-05	Victorville	-0.0001	Victorville	-0.0002
57	Hanford	-4.37E-05	Sun City	-8.54E-05	Northridge	-0.0001	Sta. Barbara	-0.0002
58	Sacramento	-4.35E-05	Pasadena	-8.42E-05	Hemet	-9.64E-05	Hemet	-0.0002
59	Sun City	-4.30E-05	Chico	-8.41E-05	El Centro	-9.53E-05	Northridge	-0.0002
60	Glendale	-4.28E-05	Glendale	-8.35E-05	Hesperia	-9.40E-05	El Centro	-0.00019
61	Red Bluff	-4.28E-05	Redwood City	-8.23E-05	Covina	-9.34E-05	Adelanto	-0.00019
62	Thousand Oaks	-4.19E-05	Ontario	-8.18E-05	Adelanto	-9.24E-05	Hesperia	-0.00018
63	Covina	-4.16E-05	Morgan Hills	-8.15E-05	Hollister	-9.18E-05	Covina	-0.00018
64	San Francisco	-4.15E-05	Fresno	-8.13E-05	Sta. Clarita	-9.08E-05	King City	-0.00018
65	Murrieta	-4.15E-05	San Francisco	-8.07E-05	Riverside	-8.99E-05	Morgan Hills	-0.00017
66	Rosemead	-4.13E-05	San Rafael	-8.07E-05	Morgan Hills	-8.58E-05	Hollister	-0.00017
67	Oroville	-4.13E-05	El Cajon	-7.99E-05	King City	-8.56E-05	Chowchilla	-0.00017
68	San Rafael	-4.10E-05	Burbank	-7.90E-05	Fremont	-8.35E-05	Simi Valley	-0.00017
69	Redwood City	-4.05E-05	Hanford	-7.83E-05	Chowchilla	-8.28E-05	Benicia	-0.00016
70	Sutter	-4.03E-05	Murrieta	-7.74E-05	Milpitas	-8.28E-05	Sta. Clarita	-0.00016
71	Patterson	-3.99E-05	Tracy	-7.66E-05	Simi Valley	-8.24E-05	Manteca	-0.00016
72	Morgan Hills	-3.95E-05	Fullerton	-7.64E-05	Benicia	-8.12E-05	Salinas	-0.00016
73	Temecula	-3.92E-05	Northridge	-7.60E-05	Antioch	-7.98E-05	Antioch	-0.00016
74	Burbank	-3.92E-05	San Dimas	-7.56E-05	Manteca	-7.91E-05	Milpitas	-0.00016
75	Yuba City	-3.90E-05	Benicia	-7.50E-05	Salinas	-7.77E-05	San Jose	-0.00016
76	Tracy	-3.88E-05	Martinez	-7.43E-05	Crescent City	-7.69E-05	Palm Springs	-0.00015
77	Simi Valley	-3.87E-05	Lodi	-7.37E-05	Palm Springs	-7.65E-05	Martinez	-0.00015
78	Northridge	-3.76E-05	San Jose	-7.31E-05	Martinez	-7.64E-05	Mtn. View	-0.00015

79	Anaheim	-3.75E-05	Patterson	-7.18E-05	Mtn. View	-7.63E-05	Fremont	-0.00015
80	Colusa	-3.74E-05	Auburn	-7.06E-05	Hanford	-7.44E-05	Hanford	-0.00015
81	Mtn. View	-3.69E-05	Temecula	-7.02E-05	San Jose	-7.26E-05	Sta. Maria	-0.00014
82	Martinez	-3.69E-05	Mtn. View	-6.97E-05	Monterey	-7.06E-05	Monterey	-0.00014
83	Benicia	-3.68E-05	Cotton Wood	-6.95E-05	Merced	-6.98E-05	Merced	-0.00014
84	Pittsburgh	-3.65E-05	Pittsburgh	-6.94E-05	Canoga Park	-6.77E-05	Lompoc	-0.00013
85	Lodi	-3.62E-05	Oroville	-6.87E-05	Sta. Maria	-6.67E-05	Crescent City	-0.00013
86	Pasadena	-3.59E-05	Tehama	-6.81E-05	Whittier	-6.53E-05	Auburn	-0.00013
87	El Cajon	-3.56E-05	Sutter	-6.80E-05	Auburn	-6.51E-05	Walnut Creek	-0.00013
88	Auburn	-3.56E-05	Riverside	-6.77E-05	Lafayette	-6.46E-05	Lafayette	-0.00013
89	Paradise	-3.53E-05	Sta. Cruz	-6.75E-05	Lompoc	-6.44E-05	Davis	-0.00013
90	Dixon	-3.51E-05	Dixon	-6.74E-05	Goleta	-6.40E-05	Eureka	-0.00012
91	San Jose	-3.51E-05	Chula Vista	-6.70E-05	Walnut Creek	-6.32E-05	Whittier	-0.00012
92	California City	-3.48E-05	Simi Valley	-6.67E-05	Davis	-6.23E-05	California City	-0.00012
93	Fullerton	-3.44E-05	Dunsmuir	-6.56E-05	Eureka	-6.11E-05	Tracy	-0.00012
94	Sta. Cruz	-3.41E-05	National City	-6.53E-05	Chico	-5.95E-05	Paradise	-0.00012
95	Riverside	-3.39E-05	Yuba City	-6.46E-05	Paradise	-5.85E-05	Lodi	-0.00012
96	Dunsmuir	-3.37E-05	Whittier	-6.39E-05	Lodi	-5.80E-05	Dublin	-0.00011
97	Kettleman City	-3.36E-05	Canoga Park	-6.38E-05	Tracy	-5.75E-05	Chico	-0.00011
98	Escondido	-3.22E-05	Covina	-6.30E-05	Dublin	-5.60E-05	Napa	-0.00011
99	Milpitas	-3.15E-05	Escondido	-6.26E-05	Dunsmuir	-5.54E-05	Nevada City	-0.00011
100	Chula Vista	-3.05E-05	Sta. Clarita	-6.17E-05	Dixon	-5.53E-05	Solvang	-0.00011
101	National City	-3.01E-05	Colusa	-6.11E-05	Sacramento	-5.51E-05	Sacramento	-0.00011
102	Walnut Creek	-2.95E-05	Paradise	-6.01E-05	Nevada City	-5.48E-05	Sta. Rosa	-0.00011
103	Turlock	-2.94E-05	Milpitas	-5.87E-05	Pittsburgh	-5.46E-05	Pittsburgh	-0.00011
104	Sta. Barbara	-2.87E-05	Walnut Creek	-5.80E-05	Napa	-5.39E-05	Dunsmuir	-0.00011
105	Modesto	-2.81E-05	San Diego	-5.79E-05	Oroville	-5.25E-05	Dixon	-0.00011
106	Sta. Clarita	-2.76E-05	Red Bluff	-5.75E-05	Patterson	-5.19E-05	Oroville	-0.00011
107	San Diego	-2.69E-05	Hollister	-5.60E-05	Colusa	-5.16E-05	Patterson	-0.0001
108	Nevada City	-2.68E-05	Lafayette	-5.48E-05	Tehachapi	-5.16E-05	Tehachapi	-0.0001
109	Paso Robles	-2.66E-05	Tehachapi	-5.44E-05	Sta. Rosa	-5.15E-05	Colusa	-0.0001
110	Los Banos	-2.64E-05	Dublin	-5.16E-05	Solvang	-4.98E-05	Canoga Park	-0.0001
111	Lafayette	-2.56E-05	Fremont	-5.15E-05	California City	-4.79E-05	Goleta	-0.0001
112	Yreka	-2.55E-05	Salinas	-5.11E-05	Fresno	-4.65E-05	Fresno	-9.53E-05
113	Anderson	-2.54E-05	Sta. Rosa	-5.04E-05	Paso Robles	-4.64E-05	Sutter	-9.20E-05
114	Chester	-2.52E-05	Turlock	-4.90E-05	Turlock	-4.62E-05	Yuba City	-9.19E-05
115	Sta. Rosa	-2.50E-05	Napa	-4.84E-05	Yuba City	-4.61E-05	Turlock	-9.17E-05
116	Salinas	-2.47E-05	Anderson	-4.66E-05	Sutter	-4.53E-05	Atascadero	-9.02E-05
117	Whittier	-2.45E-05	Modesto	-4.61E-05	Willits	-4.38E-05	Willits	-8.88E-05
118	Oxnard	-2.40E-05	Nevada City	-4.56E-05	Tehama	-4.37E-05	Paso Robles	-8.82E-05
119	Tehachapi	-2.37E-05	LAX	-4.37E-05	Los Banos	-4.19E-05	Los Banos	-8.50E-05
120	Fremont	-2.32E-05	Tahoe City	-4.24E-05	Cotton Wood	-4.18E-05	Truckee	-7.79E-05
121	Napa	-2.19E-05	Los Banos	-4.09E-05	Atascadero	-4.11E-05	Tehama	-7.78E-05

122	Tahoe City	-2.16E-05	Solvang	-4.06E-05	San Luis Obispo	-4.07E-05	Modesto	-7.74E-05
123	Malibu	-2.15E-05	Roseville	-4.03E-05	Yreka	-3.74E-05	Cotton Wood	-7.58E-05
124	Monterey	-2.06E-05	Truckee	-3.96E-05	Modesto	-3.72E-05	San Luis Obispo	-7.50E-05
125	Atascadero	-2.05E-05	Chester	-3.91E-05	Tahoe City	-3.67E-05	Chester	-7.31E-05
126	Dublin	-2.02E-05	Paso Robles	-3.85E-05	Susanville	-3.65E-05	Anderson	-7.28E-05
127	Roseville	-1.92E-05	Cloverdale	-3.85E-05	Westwood	-3.57E-05	Tahoe City	-7.11E-05
128	Cloverdale	-1.91E-05	Kettleman City	-3.72E-05	Chester	-3.54E-05	Westwood	-7.09E-05
129	San Luis Obispo	-1.91E-05	Barstow	-3.57E-05	Anderson	-3.52E-05	Fairfield	-7.03E-05
130	Crescent City	-1.79E-05	Lompoc	-3.40E-05	Red Bluff	-3.29E-05	Susanville	-6.81E-05
131	Independence	-1.78E-05	Monterey	-3.39E-05	Cloverdale	-3.24E-05	Cloverdale	-6.72E-05
132	Solvang	-1.70E-05	Atascadero	-3.37E-05	Independence	-3.23E-05	Sun City	-6.67E-05
133	Downieville	-1.69E-05	Yreka	-3.35E-05	San Bernardino	-3.22E-05	Independence	-6.27E-05
134	Lompoc	-1.61E-05	Sta. Maria	-3.31E-05	Downieville	-3.15E-05	Downieville	-6.20E-05
135	Willits	-1.61E-05	Malibu	-3.20E-05	Sun City	-3.06E-05	Temecula	-6.19E-05
136	LAX	-1.56E-05	Crescent City	-3.18E-05	Ocotillo	-3.04E-05	Murrieta	-5.93E-05
137	Truckee	-1.47E-05	Willits	-3.14E-05	Murrieta	-2.89E-05	Red Bluff	-5.80E-05
138	Ludlow	-1.40E-05	Eureka	-3.13E-05	Ludlow	-2.86E-05	Ocotillo	-5.78E-05
139	Susanville	-1.40E-05	San Luis Obispo	-3.11E-05	McCloud	-2.85E-05	Yreka	-5.71E-05
140	Westwood	-1.34E-05	Independence	-2.96E-05	Mojave	-2.78E-05	Ludlow	-5.54E-05
141	Eureka	-1.27E-05	Downieville	-2.81E-05	Escondido	-2.76E-05	Escondido	-5.54E-05
142	Sta. Maria	-1.24E-05	Ludlow	-2.77E-05	Temecula	-2.73E-05	Mojave	-5.51E-05
143	Livermore	-1.19E-05	Glamis	-2.70E-05	Roseville	-2.65E-05	Roseville	-5.42E-05
144	McCloud	-9.95E-06	Twentynine Palms	-2.68E-05	Salton City	-2.59E-05	McCloud	-5.42E-05
145	Twentynine Palms	-9.93E-06	Susanville	-2.59E-05	Twentynine Palms	-2.57E-05	Weed	-5.33E-05
146	Barstow	-9.84E-06	Weed	-2.54E-05	Barstow	-2.45E-05	Barstow	-5.25E-05
147	Fairfield	-8.54E-06	Westwood	-2.49E-05	Kettleman City	-2.44E-05	Salton City	-5.17E-05
148	Weed	-8.38E-06	McCloud	-2.19E-05	Glamis	-2.43E-05	Twentynine Palms	-5.12E-05
149	Glamis	-7.14E-06	Sta. Barbara	-1.89E-05	Desert Center	-2.36E-05	Glamis	-4.73E-05
150	Baker	-5.09E-06	Baker	-1.66E-05	Weed	-2.32E-05	Desert Center	-4.72E-05
151	Alturas	-2.59E-06	Fairfield	-9.85E-06	Baker	-2.07E-05	Kettleman City	-4.67E-05
152	Fort Bragg	-1.22E-06	Alturas	-9.64E-06	Alturas	-1.03E-05	San Bernardino	-4.26E-05
153	Mendocino	-5.80E-07	Goleta	-7.48E-06	Fairfield	-4.83E-06	Baker	-3.97E-05
154	Goleta	-1.02E-07	Mendocino	-2.15E-06	Truckee	-4.37E-06	Alturas	-2.74E-05
155	Woodland	0	Fort Bragg	-2.11E-06	Mendocino	-1.25E-06	South Lake Tahoe	-1.27E-06
156	CitrusHeights	0	Woodland	0	South Lake Tahoe	-6.61E-07	Mendocino	-3.44E-07
157	Folsom Lake	0	CitrusHeights	0	Fort Bragg	-5.88E-07	Woodland	0

Ranking	11M		11H		12M		12H	
1	Huntington Beach	-0.00064	Huntington Beach	-0.00127	Huntington Beach	-0.00057	Huntington Beach	-0.00114
2	Newport Beach	-0.00061	Newport Beach	-0.00124	Newport Beach	-0.00054	Newport Beach	-0.0011
3	Laguna Beach	-0.00055	Laguna Beach	-0.00111	Laguna Beach	-0.00049	Laguna Beach	-0.00099
4	Mission Viejo	-0.00038	Mission Viejo	-0.00077	Mission Viejo	-0.00034	Mission Viejo	-0.00068
5	Tustin	-0.00037	Tustin	-0.00074	Tustin	-0.00033	Tustin	-0.00067
6	Inglewood	-0.00019	Sta. Ana	-0.00038	Livermore	-0.00021	Sta. Ana	-0.00037
7	Sta. Ana	-0.00019	LAX	-0.00033	LAX	-0.00018	LAX	-0.00035
8	Beverly Hills	-0.00017	Beverly Hills	-0.00033	Sta. Ana	-0.00018	Beverly Hills	-0.00035
9	Vallejo	-0.00016	Vallejo	-0.00033	Beverly Hills	-0.00017	Inglewood	-0.00034
10	Oxnard	-0.00015	Inglewood	-0.00032	Inglewood	-0.00017	Century City	-0.00033
11	Orange	-0.00015	Orange	-0.00031	Oxnard	-0.00016	Vallejo	-0.00032
12	Sherman Oaks	-0.00015	Oxnard	-0.0003	Vallejo	-0.00016	Orange	-0.00031
13	Banning	-0.00014	Banning	-0.00028	Sherman Oaks	-0.00015	Oxnard	-0.0003
14	Los Angeles	-0.00014	Palmdale	-0.00028	Van Nuys	-0.00014	Sta. Monica	-0.00029
15	Van Nuys	-0.00014	Sherman Oaks	-0.00028	Banning	-0.00014	Sherman Oaks	-0.00029
16	LAX	-0.00014	San Francisco	-0.00027	Orange	-0.00014	San Bernardino	-0.00029
17	Wasco	-0.00014	Coachella	-0.00027	Palmdale	-0.00014	Banning	-0.00028
18	Palmdale	-0.00014	Century City	-0.00027	Wasco	-0.00013	Van Nuys	-0.00028
19	Coachella	-0.00013	Van Nuys	-0.00027	San Francisco	-0.00013	Palmdale	-0.00028
20	San Francisco	-0.00013	Pomona	-0.00026	Pomona	-0.00013	Pomona	-0.00027
21	Pomona	-0.00013	Wasco	-0.00026	Coachella	-0.00013	San Francisco	-0.00027
22	Century City	-0.00013	Porterville	-0.00026	Los Angeles	-0.00013	Wasco	-0.00027
23	Porterville	-0.00013	Los Angeles	-0.00025	Tulare	-0.00012	Coachella	-0.00027
24	Blythe	-0.00013	Blythe	-0.00025	Century City	-0.00012	Los Angeles	-0.00026
25	Tulare	-0.00012	Diamond Bar	-0.00025	Diamond Bar	-0.00012	Diamond Bar	-0.00026
26	Diamond Bar	-0.00012	Tulare	-0.00024	Corona	-0.00012	Porterville	-0.00025
27	Malibu	-0.00012	Malibu	-0.00024	Blythe	-0.00012	Blythe	-0.00024
28	Indio	-0.00012	Indio	-0.00024	Porterville	-0.00012	Tulare	-0.00024
29	Hollywood	-0.00012	Hollywood	-0.00022	Hollywood	-0.00012	Hollywood	-0.00023
30	Corona	-0.00011	Corona	-0.00021	Indio	-0.00012	Corona	-0.00023
31	San Bernardino	-0.00011	Anaheim	-0.00021	Rosemead	-0.0001	Indio	-0.00023
32	Livermore	-0.00011	Rosemead	-0.00021	Anaheim	-0.0001	Anaheim	-0.00023
33	Northridge	-0.00011	Sta. Barbara	-0.00019	Downey	-0.0001	Rosemead	-0.00021
34	Sta. Barbara	-0.0001	Downey	-0.00019	Sta. Cruz	-0.0001	National City	-0.0002
35	Anaheim	-9.99E-05	San Rafael	-0.00019	National City	-0.0001	Sta. Cruz	-0.0002
36	Rosemead	-9.54E-05	National City	-0.00018	San Dimas	-9.89E-05	Rancho Cucamonga	-0.0002
37	Downey	-9.50E-05	Redwood City	-0.00018	Chula Vista	-9.77E-05	Chula Vista	-0.0002
38	Redwood City	-9.43E-05	Pismo Beach	-0.00018	San Jacinto	-9.66E-05	San Jacinto	-0.00019

39	Visalia	-9.43E-05	Visalia	-0.00018	Malibu	-9.62E-05	Pismo Beach	-0.00019
40	Goleta	-9.38E-05	Chula Vista	-0.00018	Pismo Beach	-9.52E-05	El Cajon	-0.00019
41	San Rafael	-9.28E-05	Bakersfield	-0.00017	Rancho Cucamonga	-9.51E-05	Downey	-0.00019
42	Bakersfield	-9.07E-05	El Cajon	-0.00017	Glendale	-9.43E-05	San Dimas	-0.00019
43	San Dimas	-9.04E-05	Rancho Cucamonga	-0.00016	El Cajon	-9.40E-05	Visalia	-0.00018
44	Pismo Beach	-9.02E-05	Glendale	-0.00016	Redwood City	-9.36E-05	Glendale	-0.00018
45	National City	-8.94E-05	San Dimas	-0.00016	King City	-9.04E-05	King City	-0.00018
46	Chula Vista	-8.82E-05	San Diego	-0.00016	San Rafael	-9.04E-05	San Rafael	-0.00018
47	Rancho Cucamonga	-8.80E-05	Thousand Oaks	-0.00016	Bakersfield	-8.96E-05	Redwood City	-0.00018
48	El Cajon	-8.49E-05	San Jacinto	-0.00015	San Diego	-8.88E-05	San Diego	-0.00018
49	Glendale	-8.36E-05	Sta. Monica	-0.00015	Ontario	-8.71E-05	Malibu	-0.00018
50	Ontario	-8.32E-05	California City	-0.00015	Visalia	-8.70E-05	El Centro	-0.00018
51	San Jacinto	-8.19E-05	Sta. Cruz	-0.00014	Burbank	-8.45E-05	Ontario	-0.00017
52	San Diego	-7.97E-05	Burbank	-0.00014	Thousand Oaks	-8.37E-05	Manteca	-0.00017
53	Thousand Oaks	-7.57E-05	Ontario	-0.00014	Antioch	-8.33E-05	Bakersfield	-0.00017
54	Hesperia	-7.37E-05	San Bernardino	-0.00014	Sta. Barbara	-8.32E-05	Thousand Oaks	-0.00017
55	Sta. Cruz	-7.15E-05	Sta. Maria	-0.00014	Manteca	-8.18E-05	Fullerton	-0.00016
56	Burbank	-7.15E-05	Fullerton	-0.00014	Victorville	-7.99E-05	Burbank	-0.00016
57	Pasadena	-6.85E-05	Pasadena	-0.00014	Hesperia	-7.87E-05	Antioch	-0.00016
58	Sta. Maria	-6.85E-05	Northridge	-0.00014	Pasadena	-7.84E-05	Sta. Barbara	-0.00016
59	Fullerton	-6.73E-05	El Centro	-0.00013	Hemet	-7.79E-05	Pasadena	-0.00016
60	Victorville	-6.61E-05	Riverside	-0.00013	Fullerton	-7.76E-05	Benicia	-0.00016
61	Sta. Monica	-6.59E-05	Lompoc	-0.00013	Northridge	-7.72E-05	Hemet	-0.00016
62	Lompoc	-6.53E-05	King City	-0.00013	Benicia	-7.70E-05	Chowchilla	-0.00016
63	Fairfield	-6.42E-05	Hemet	-0.00013	Murrieta	-7.69E-05	Sun City	-0.00015
64	King City	-6.34E-05	Victorville	-0.00012	El Centro	-7.65E-05	Martinez	-0.00015
65	Hemet	-6.33E-05	Hesperia	-0.00012	Salinas	-7.61E-05	Murrieta	-0.00015
66	Chowchilla	-5.99E-05	Chowchilla	-0.00012	Martinez	-7.53E-05	Salinas	-0.00015
67	Tehachapi	-5.99E-05	Tehachapi	-0.00012	Chowchilla	-7.45E-05	Northridge	-0.00015
68	San Jose	-5.89E-05	Manteca	-0.00012	Morgan Hills	-7.43E-05	Morgan Hills	-0.00015
69	Covina	-5.89E-05	Salinas	-0.00012	Temecula	-7.41E-05	Victorville	-0.00014
70	Antioch	-5.81E-05	Adelanto	-0.00012	Milpitas	-7.28E-05	Riverside	-0.00014
71	Manteca	-5.70E-05	Benicia	-0.00011	Sun City	-7.19E-05	Temecula	-0.00014
72	Monterey	-5.64E-05	Monterey	-0.00011	Fremont	-7.19E-05	Milpitas	-0.00014
73	Benicia	-5.62E-05	Hanford	-0.00011	San Jose	-6.95E-05	Escondido	-0.00014
74	Salinas	-5.57E-05	Antioch	-0.00011	Escondido	-6.91E-05	Hanford	-0.00014
75	Adelanto	-5.52E-05	Hollister	-0.00011	Mtn. View	-6.76E-05	Hollister	-0.00014
76	Riverside	-5.33E-05	Goleta	-0.00011	Hanford	-6.72E-05	Hesperia	-0.00014
77	Yreka	-5.32E-05	Covina	-0.00011	Canoga Park	-6.61E-05	Adelanto	-0.00014
78	Morgan Hills	-5.24E-05	Solvang	-0.00011	Auburn	-6.60E-05	Auburn	-0.00013
79	Hanford	-5.20E-05	Morgan Hills	-0.00011	Davis	-6.53E-05	Davis	-0.00013

80	Solvang	-5.13E-05	Simi Valley	-0.0001	Ocotillo	-6.47E-05	Fremont	-0.00013
81	Crescent City	-5.11E-05	Martinez	-0.0001	Covina	-6.47E-05	Covina	-0.00013
82	Martinez	-5.11E-05	Sta. Clarita	-0.0001	Adelanto	-6.46E-05	Ocotillo	-0.00013
83	Simi Valley	-5.10E-05	Milpitas	-0.0001	Fairfield	-6.39E-05	San Jose	-0.00013
84	Mtn. View	-5.04E-05	Fremont	-9.73E-05	Walnut Creek	-6.27E-05	Mtn. View	-0.00013
85	El Centro	-4.94E-05	Mtn. View	-9.62E-05	Crescent City	-6.23E-05	Salton City	-0.00012
86	Palm Springs	-4.76E-05	Palm Springs	-9.56E-05	Salton City	-6.21E-05	Monterey	-0.00012
87	Fremont	-4.75E-05	Whittier	-9.30E-05	Mojave	-6.03E-05	Mojave	-0.00012
88	Milpitas	-4.69E-05	Davis	-9.28E-05	Simi Valley	-6.01E-05	Lafayette	-0.00012
89	Davis	-4.56E-05	Auburn	-9.11E-05	Lafayette	-5.99E-05	Simi Valley	-0.00012
90	Auburn	-4.54E-05	Crescent City	-8.74E-05	California City	-5.93E-05	Walnut Creek	-0.00012
91	Canoga Park	-4.46E-05	Lafayette	-8.62E-05	Chico	-5.93E-05	Merced	-0.00012
92	California City	-4.36E-05	Merced	-8.52E-05	Merced	-5.90E-05	Tracy	-0.00012
93	Anderson	-4.30E-05	Walnut Creek	-8.46E-05	Palm Springs	-5.88E-05	Palm Springs	-0.00012
94	Lafayette	-4.30E-05	San Jose	-8.25E-05	Sta. Clarita	-5.86E-05	Sta. Clarita	-0.00012
95	Merced	-4.25E-05	Dublin	-8.24E-05	Hollister	-5.78E-05	California City	-0.00012
96	Napa	-4.21E-05	Tracy	-8.03E-05	Tracy	-5.78E-05	Crescent City	-0.00012
97	Whittier	-4.19E-05	Cotton Wood	-7.92E-05	Lodi	-5.71E-05	Whittier	-0.00012
98	Cotton Wood	-4.16E-05	Eureka	-7.87E-05	Desert Center	-5.68E-05	Lodi	-0.00011
99	Chico	-4.14E-05	Lodi	-7.83E-05	Riverside	-5.64E-05	Desert Center	-0.00011
100	Eureka	-4.06E-05	Sacramento	-7.79E-05	Sacramento	-5.63E-05	Sacramento	-0.00011
101	Sacramento	-3.94E-05	Chico	-7.54E-05	Napa	-5.61E-05	Dublin	-0.00011
102	Dunsmuir	-3.93E-05	Anderson	-7.53E-05	Dunsmuir	-5.55E-05	Willits	-0.00011
103	Lodi	-3.92E-05	Dixon	-7.36E-05	Dixon	-5.51E-05	Dunsmuir	-0.00011
104	Dixon	-3.91E-05	Sta. Rosa	-7.29E-05	Whittier	-5.49E-05	Paradise	-0.00011
105	Sun City	-3.87E-05	Napa	-7.27E-05	Monterey	-5.49E-05	Chico	-0.00011
106	Tracy	-3.80E-05	Livermore	-7.26E-05	Dublin	-5.40E-05	Sta. Rosa	-0.00011
107	Sta. Clarita	-3.79E-05	Paradise	-7.24E-05	Willits	-5.38E-05	Napa	-0.00011
108	Paradise	-3.71E-05	Nevada City	-7.09E-05	Paradise	-5.37E-05	Nevada City	-0.0001
109	Paso Robles	-3.62E-05	Sun City	-7.02E-05	Nevada City	-5.24E-05	Dixon	-0.0001
110	Pittsburgh	-3.61E-05	Canoga Park	-6.94E-05	Pittsburgh	-5.19E-05	Eureka	-0.0001
111	Colusa	-3.55E-05	Mojave	-6.92E-05	Sta. Rosa	-5.18E-05	Pittsburgh	-0.0001
112	Nevada City	-3.52E-05	Murrieta	-6.91E-05	Eureka	-5.09E-05	Oroville	-0.0001
113	Hollister	-3.50E-05	Colusa	-6.87E-05	Oroville	-5.03E-05	Lompoc	-9.92E-05
114	Fresno	-3.49E-05	Oroville	-6.84E-05	Colusa	-5.00E-05	Colusa	-9.92E-05
115	Sta. Rosa	-3.49E-05	Fresno	-6.81E-05	Cotton Wood	-4.90E-05	Patterson	-9.81E-05
116	Walnut Creek	-3.48E-05	Dunsmuir	-6.69E-05	Patterson	-4.89E-05	Sta. Maria	-9.80E-05
117	Murrieta	-3.40E-05	Patterson	-6.65E-05	Tehachapi	-4.88E-05	Tehachapi	-9.77E-05
118	Oroville	-3.38E-05	Turlock	-6.62E-05	Lompoc	-4.79E-05	Cotton Wood	-9.04E-05
119	Ludlow	-3.35E-05	Temecula	-6.56E-05	San Bernardino	-4.78E-05	Yuba City	-8.91E-05
120	Temecula	-3.29E-05	Pittsburgh	-6.50E-05	Sta. Maria	-4.59E-05	Fairfield	-8.76E-05
121	Patterson	-3.27E-05	Susanville	-6.42E-05	Yuba City	-4.56E-05	Sutter	-8.74E-05
122	Turlock	-3.27E-05	Paso Robles	-6.37E-05	Fresno	-4.48E-05	Truckee	-8.72E-05

123	Dublin	-3.20E-05	Escondido	-6.33E-05	Sutter	-4.34E-05	Cloverdale	-8.49E-05
124	Tehama	-3.15E-05	Atascadero	-6.31E-05	Tahoe City	-4.27E-05	Fresno	-8.48E-05
125	Westwood	-3.15E-05	Westwood	-6.26E-05	Tehama	-4.26E-05	Tahoe City	-8.45E-05
126	Susanville	-3.14E-05	Tehama	-6.22E-05	Cloverdale	-4.08E-05	Tehama	-8.02E-05
127	Ocotillo	-3.14E-05	Ludlow	-6.22E-05	Red Bluff	-4.04E-05	Solvang	-7.99E-05
128	Escondido	-3.13E-05	Barstow	-6.22E-05	Independence	-3.93E-05	Chester	-7.84E-05
129	Atascadero	-3.12E-05	Ocotillo	-6.17E-05	Paso Robles	-3.81E-05	Red Bluff	-7.55E-05
130	Sutter	-3.12E-05	Red Bluff	-6.14E-05	Downieville	-3.76E-05	Independence	-7.53E-05
131	Red Bluff	-3.10E-05	Los Banos	-6.14E-05	Turlock	-3.75E-05	Downieville	-7.52E-05
132	Yuba City	-3.09E-05	Chester	-6.09E-05	Anderson	-3.67E-05	Turlock	-7.29E-05
133	Mojave	-3.02E-05	Sutter	-6.06E-05	Chester	-3.65E-05	Kettleman City	-7.13E-05
134	Willits	-2.95E-05	Yuba City	-6.06E-05	Solvang	-3.46E-05	Yreka	-7.03E-05
135	Barstow	-2.92E-05	Willits	-5.91E-05	Kettleman City	-3.38E-05	Goleta	-7.00E-05
136	Salton City	-2.85E-05	Twentynine Palms	-5.86E-05	Atascadero	-3.34E-05	Paso Robles	-6.94E-05
137	Chester	-2.84E-05	Salton City	-5.72E-05	Weed	-3.18E-05	Atascadero	-6.86E-05
138	Twentynine Palms	-2.78E-05	Downieville	-5.62E-05	Los Banos	-3.10E-05	Canoga Park	-6.78E-05
139	Modesto	-2.76E-05	Modesto	-5.49E-05	Modesto	-3.06E-05	Los Banos	-6.46E-05
140	Tahoe City	-2.74E-05	Tahoe City	-5.44E-05	McCloud	-2.99E-05	McCloud	-6.32E-05
141	Los Banos	-2.73E-05	Glamis	-5.40E-05	San Luis Obispo	-2.91E-05	Anderson	-6.31E-05
142	San Luis Obispo	-2.72E-05	San Luis Obispo	-5.38E-05	Roseville	-2.76E-05	Modesto	-6.23E-05
143	Downieville	-2.68E-05	Independence	-5.34E-05	Westwood	-2.75E-05	Weed	-5.84E-05
144	Desert Center	-2.61E-05	Desert Center	-5.31E-05	Susanville	-2.54E-05	San Luis Obispo	-5.73E-05
145	Independence	-2.50E-05	Baker	-4.93E-05	Goleta	-1.96E-05	Roseville	-5.61E-05
146	Weed	-2.40E-05	Cloverdale	-4.56E-05	Ludlow	-1.79E-05	Westwood	-5.19E-05
147	Cloverdale	-2.33E-05	Fairfield	-4.16E-05	Twentynine Palms	-1.54E-05	Susanville	-4.82E-05
148	Glamis	-2.29E-05	Truckee	-4.15E-05	Yreka	-1.50E-05	Ludlow	-3.65E-05
149	Kettleman City	-2.23E-05	Weed	-4.00E-05	Alturas	-1.46E-05	Barstow	-3.42E-05
150	Baker	-2.14E-05	Roseville	-3.93E-05	Glamis	-1.29E-05	Twentynine Palms	-3.23E-05
151	Roseville	-1.93E-05	Yreka	-3.76E-05	Barstow	-1.24E-05	Glamis	-2.53E-05
152	McCloud	-1.92E-05	McCloud	-3.60E-05	Baker	-9.07E-06	Baker	-2.43E-05
153	Fort Bragg	-8.92E-07	Kettleman City	-3.22E-05	Truckee	-2.58E-06	Alturas	-2.37E-05
154	South Lake Tahoe	-5.16E-07	Alturas	-1.18E-05	Fort Bragg	-8.27E-07	Livermore	-2.31E-05
155	Alturas	-3.82E-07	Mendocino	-1.05E-06	South Lake Tahoe	-6.45E-07	South Lake Tahoe	-1.06E-06
156	Woodland	0	South Lake Tahoe	-9.83E-07	Woodland	0	Mendocino	-6.88E-07
157	CitrusHeights	0	Fort Bragg	-2.18E-07	CitrusHeights	0	Fort Bragg	-6.51E-08

Ranking	13M		13H	
1	Livermore	-6.08E-05	San Bernardino	-5.56E-05
2	Cotton Wood	-1.19E-05	Cotton Wood	-9.42E-06
3	Tehama	-1.09E-05	California City	-5.29E-06
4	California City	-7.91E-06	Tehama	-2.11E-06
5	Red Bluff	-3.23E-06	Mendocino	-1.27E-06
6	Anderson	-2.60E-06	Fort Bragg	-6.75E-07
7	Fort Bragg	-4.36E-07	Woodland	0
8	Mendocino	-6.45E-08	CitrusHeights	0
9	Woodland	0	Folsom Lake	0
10	CitrusHeights	0	Lake Havasu	0
11	Folsom Lake	0	Citrus Heights	0
12	Lake Havasu	0	South Lake Tahoe	3.55E-07
13	Citrus Heights	0	Anderson	1.77E-06
14	South Lake Tahoe	6.28E-07	Red Bluff	6.34E-06
15	Glamis	5.85E-06	Murrieta	2.12E-05
16	Kettleman City	8.30E-06	Mojave	2.15E-05
17	Roseville	1.04E-05	Baker	2.30E-05
18	Truckee	1.08E-05	Desert Center	2.32E-05
19	Murrieta	1.10E-05	Kettleman City	2.34E-05
20	Ludlow	1.17E-05	Roseville	2.35E-05
21	Desert Center	1.21E-05	Temecula	2.43E-05
22	Chester	1.24E-05	Barstow	2.43E-05
23	Temecula	1.25E-05	Ludlow	2.57E-05
24	Chico	1.27E-05	Twentynine Palms	2.63E-05
25	Baker	1.28E-05	Salton City	2.66E-05
26	Ocotillo	1.31E-05	Glamis	2.66E-05
27	Salton City	1.32E-05	Susanville	2.75E-05
28	Twentynine Palms	1.34E-05	Independence	2.76E-05
29	McCloud	1.39E-05	Chester	2.82E-05
30	Tahoe City	1.40E-05	Escondido	2.83E-05
31	Downieville	1.44E-05	Alturas	2.83E-05
32	Westwood	1.44E-05	Westwood	2.85E-05
33	Susanville	1.46E-05	Truckee	2.87E-05
34	Mojave	1.46E-05	Downieville	2.89E-05
35	Independence	1.46E-05	Ocotillo	2.91E-05
36	Escondido	1.48E-05	Dunsmuir	3.03E-05
37	Barstow	1.49E-05	Tahoe City	3.11E-05
38	Weed	1.63E-05	Weed	3.15E-05

39	Paso Robles	1.78E-05	Sun City	3.19E-05
40	Sun City	1.88E-05	Chico	3.30E-05
41	Yuba City	1.89E-05	McCloud	3.54E-05
42	Sutter	1.89E-05	Cloverdale	3.71E-05
43	Modesto	1.89E-05	Modesto	3.83E-05
44	San Luis Obispo	1.89E-05	San Luis Obispo	3.89E-05
45	Cloverdale	2.01E-05	Yuba City	3.99E-05
46	Napa	2.08E-05	Paso Robles	4.04E-05
47	Colusa	2.09E-05	Sutter	4.08E-05
48	Dixon	2.21E-05	Colusa	4.25E-05
49	Dunsmuir	2.28E-05	Los Banos	4.46E-05
50	Willits	2.29E-05	Turlock	4.59E-05
51	Alturas	2.29E-05	Willits	4.70E-05
52	Oroville	2.31E-05	Atascadero	4.79E-05
53	Turlock	2.32E-05	Oroville	4.88E-05
54	Atascadero	2.38E-05	Sacramento	4.94E-05
55	Crescent City	2.43E-05	Patterson	4.98E-05
56	Patterson	2.48E-05	Dixon	5.01E-05
57	Los Banos	2.50E-05	Yreka	5.03E-05
58	Tehachapi	2.58E-05	Napa	5.12E-05
59	Paradise	2.64E-05	Tehachapi	5.18E-05
60	Sacramento	2.67E-05	Pittsburgh	5.29E-05
61	Lodi	2.73E-05	Fresno	5.32E-05
62	Nevada City	2.74E-05	Solvang	5.45E-05
63	Tracy	2.76E-05	Nevada City	5.46E-05
64	San Jose	2.82E-05	Canoga Park	5.48E-05
65	Fresno	2.83E-05	Sta. Rosa	5.52E-05
66	Pittsburgh	2.88E-05	Paradise	5.55E-05
67	Sta. Rosa	2.89E-05	Lodi	5.66E-05
68	Lafayette	2.90E-05	Tracy	5.79E-05
69	Fremont	2.91E-05	San Jose	5.82E-05
70	Fairfield	2.92E-05	Crescent City	5.88E-05
71	Mtn. View	2.95E-05	Davis	5.93E-05
72	Davis	2.97E-05	Eureka	6.02E-05
73	Canoga Park	2.97E-05	Walnut Creek	6.13E-05
74	Eureka	2.99E-05	Merced	6.17E-05
75	Merced	3.05E-05	Lafayette	6.20E-05
76	Dublin	3.07E-05	Auburn	6.23E-05
77	Whittier	3.10E-05	Whittier	6.23E-05
78	Auburn	3.11E-05	Monterey	6.41E-05
79	Monterey	3.30E-05	Goleta	6.55E-05
80	Milpitas	3.37E-05	Dublin	6.56E-05

81	Solvang	3.39E-05	Fairfield	6.59E-05
82	Martinez	3.42E-05	Fremont	6.61E-05
83	Lompoc	3.45E-05	Livermore	6.78E-05
84	King City	3.59E-05	Mtn. View	6.87E-05
85	Hanford	3.60E-05	Lompoc	6.94E-05
86	Walnut Creek	3.76E-05	Hanford	7.24E-05
87	Benicia	3.79E-05	Milpitas	7.35E-05
88	Antioch	3.81E-05	Palm Springs	7.44E-05
89	Palm Springs	3.85E-05	Sta. Maria	7.44E-05
90	Manteca	3.89E-05	Antioch	7.47E-05
91	Victorville	3.93E-05	Martinez	7.54E-05
92	Fullerton	4.03E-05	King City	7.57E-05
93	Simi Valley	4.03E-05	Manteca	7.62E-05
94	Sta. Maria	4.05E-05	Benicia	8.00E-05
95	Hollister	4.10E-05	Hollister	8.18E-05
96	Hesperia	4.12E-05	Simi Valley	8.29E-05
97	Morgan Hills	4.15E-05	Morgan Hills	8.29E-05
98	Covina	4.17E-05	Salinas	8.29E-05
99	Chowchilla	4.17E-05	Chowchilla	8.60E-05
100	El Centro	4.46E-05	Hesperia	8.77E-05
101	Salinas	4.52E-05	Adelanto	8.94E-05
102	Yreka	4.55E-05	Victorville	9.02E-05
103	Sta. Clarita	4.58E-05	Covina	9.18E-05
104	Goleta	4.59E-05	Sta. Barbara	9.30E-05
105	Adelanto	4.66E-05	Fullerton	9.40E-05
106	Hemet	4.71E-05	Hemet	9.50E-05
107	Riverside	4.81E-05	Riverside	9.77E-05
108	Ontario	4.96E-05	Northridge	9.99E-05
109	Sta. Barbara	5.16E-05	Ontario	0.000103
110	Burbank	5.18E-05	Pasadena	0.000104
111	San Dimas	5.23E-05	Burbank	0.000107
112	Thousand Oaks	5.38E-05	Sta. Cruz	0.000107
113	Pasadena	5.42E-05	San Diego	0.000112
114	Glendale	5.46E-05	Thousand Oaks	0.000113
115	Bakersfield	5.59E-05	El Centro	0.000113
116	San Jacinto	5.72E-05	Glendale	0.000113
117	San Diego	5.72E-05	San Dimas	0.000113
118	Redwood City	5.79E-05	San Jacinto	0.000114
119	Los Angeles	5.83E-05	Sta. Clarita	0.000117
120	Sta. Cruz	5.90E-05	Rancho Cucamonga	0.000119
121	Rancho Cucamonga	6.01E-05	Bakersfield	0.000119

122	El Cajon	6.01E-05	El Cajon	0.000119
123	Malibu	6.02E-05	Visalia	0.000122
124	Pismo Beach	6.07E-05	Chula Vista	0.000124
125	San Rafael	6.22E-05	Redwood City	0.000124
126	Corona	6.34E-05	San Rafael	0.000126
127	Wasco	6.35E-05	Malibu	0.000126
128	Visalia	6.41E-05	Pismo Beach	0.000128
129	Chula Vista	6.42E-05	National City	0.00013
130	National City	6.70E-05	Downey	0.000135
131	Downey	6.81E-05	Anaheim	0.000141
132	Rosemead	7.29E-05	Corona	0.000146
133	Hollywood	7.33E-05	Hollywood	0.000152
134	Anaheim	7.34E-05	Rosemead	0.000152
135	Porterville	7.35E-05	Wasco	0.000155
136	San Bernardino	8.04E-05	Los Angeles	0.000156
137	Indio	8.38E-05	Porterville	0.000161
138	Blythe	8.79E-05	Indio	0.000166
139	Sherman Oaks	9.08E-05	Tulare	0.00018
140	Pomona	9.21E-05	Palmdale	0.000182
141	Van Nuys	9.23E-05	Blythe	0.000183
142	San Francisco	9.23E-05	Diamond Bar	0.000184
143	Diamond Bar	9.32E-05	Van Nuys	0.000184
144	Coachella	9.37E-05	Coachella	0.000186
145	Oxnard	9.48E-05	Pomona	0.000186
146	Palmdale	9.57E-05	Sherman Oaks	0.000187
147	Banning	9.76E-05	San Francisco	0.000188
148	Tulare	0.000101	Oxnard	0.00019
149	Beverly Hills	0.000103	Banning	0.000196
150	Vallejo	0.000109	Inglewood	0.000208
151	Orange	0.000114	Vallejo	0.000214
152	Inglewood	0.000118	Orange	0.00022
153	Northridge	0.000119	Beverly Hills	0.000222
154	Sta. Ana	0.00013	Century City	0.000235
155	Century City	0.000156	Sta. Ana	0.000256
156	LAX	0.000183	LAX	0.000346
157	Tustin	0.000249	Tustin	0.000489

For the following table: Changes in dh/day weighted by the ratio of cdh/day (>25C) to total dh/day at each location.This corresponds Section 10.1.A.3.

	1M		1H		2M		2H	
Ranking								
1	Blythe	-0.05036	Blythe	-0.10314	Blythe	-0.0215	Blythe	-0.04266
2	Van Nuys	-0.04394	Tustin	-0.08696	Tustin	-0.02107	Tustin	-0.04214
3	Tustin	-0.04322	Van Nuys	-0.08404	Van Nuys	-0.02041	Van Nuys	-0.04071
4	Coachella	-0.03802	Coachella	-0.07604	Sherman Oaks	-0.01778	Sherman Oaks	-0.034
5	Banning	-0.03756	Banning	-0.07467	Banning	-0.0162	Coachella	-0.03249
6	Sherman Oaks	-0.03593	Sherman Oaks	-0.07236	Coachella	-0.01615	Banning	-0.03245
7	Indio	-0.03375	Indio	-0.06726	Beverly Hills	-0.01503	Beverly Hills	-0.02973
8	Palmdale	-0.03174	Palmdale	-0.06397	Indio	-0.01434	Pomona	-0.02892
9	Beverly Hills	-0.03157	Beverly Hills	-0.06377	Pomona	-0.01418	Indio	-0.0289
10	Pomona	-0.03058	Pomona	-0.06158	Northridge	-0.01365	Northridge	-0.02744
11	Rosemead	-0.02847	Rosemead	-0.05742	Palmdale	-0.01363	Rosemead	-0.02723
12	Diamond Bar	-0.02817	Diamond Bar	-0.05593	Rosemead	-0.01291	Palmdale	-0.02718
13	Northridge	-0.02611	Los Angeles	-0.04957	Los Angeles	-0.01282	Diamond Bar	-0.0266
14	San Dimas	-0.02503	San Dimas	-0.0489	Diamond Bar	-0.0124	Los Angeles	-0.02344
15	Los Angeles	-0.02477	Northridge	-0.04818	San Dimas	-0.01211	Century City	-0.02333
16	Porterville	-0.02474	Orange	-0.04815	Glendale	-0.01144	San Dimas	-0.02284
17	Wasco	-0.02439	Century City	-0.04762	Ludlow	-0.01135	Orange	-0.02269
18	Orange	-0.02391	Glendale	-0.0476	Orange	-0.01119	Glendale	-0.02207
19	Glendale	-0.0239	Wasco	-0.04736	Hollywood	-0.01111	Hollywood	-0.0218
20	Rancho Cucamonga	-0.02374	Porterville	-0.04727	Rancho Cucamonga	-0.01101	San Bernardino	-0.02165
21	Century City	-0.02316	Hollywood	-0.04669	Wasco	-0.01053	Rancho Cucamonga	-0.02148
22	Hollywood	-0.02313	Rancho Cucamonga	-0.04643	Burbank	-0.0105	Porterville	-0.02103
23	Burbank	-0.02264	Corona	-0.04532	Porterville	-0.01041	Wasco	-0.02099
24	Corona	-0.02255	Burbank	-0.04474	Corona	-0.01031	Sta. Ana	-0.02085
25	Sta. Clarita	-0.02186	Sta. Ana	-0.04314	Century City	-0.01028	Burbank	-0.02076
26	Sta. Ana	-0.02141	Pasadena	-0.04307	Sta. Ana	-0.01015	Corona	-0.02064
27	Pasadena	-0.02103	San Bernardino	-0.04288	Pasadena	-0.00997	California City	-0.01984
28	Ontario	-0.02043	Sta. Clarita	-0.04203	San Bernardino	-0.00965	Downey	-0.01928
29	Thousand Oaks	-0.02037	Thousand Oaks	-0.04047	Thousand Oaks	-0.00964	Pasadena	-0.01919
30	Victorville	-0.0202	Downey	-0.04029	Downey	-0.00942	Thousand Oaks	-0.01899
31	San Jacinto	-0.01989	Riverside	-0.04029	Covina	-0.00938	Mission Viejo	-0.01847
32	San Bernardino	-0.01985	Ontario	-0.03972	Victorville	-0.00937	Ontario	-0.01815
33	Covina	-0.01981	San Jacinto	-0.03943	Ontario	-0.00932	Covina	-0.0179
34	Downey	-0.01969	Tulare	-0.0392	San Jacinto	-0.00925	Victorville	-0.01787
35	Tulare	-0.01954	Victorville	-0.03914	Mission Viejo	-0.00919	San Jacinto	-0.01781
36	Adelanto	-0.01925	Adelanto	-0.03883	Adelanto	-0.00876	El Centro	-0.01752
37	Riverside	-0.01902	Covina	-0.03879	Anaheim	-0.0084	Adelanto	-0.01731

38	Mission Viejo	-0.01876	Mission Viejo	-0.03788	California City	-0.00839	Anaheim	-0.01712
39	Anaheim	-0.0179	Bakersfield	-0.03716	Riverside	-0.00832	Riverside	-0.01702
40	Visalia	-0.01769	El Centro	-0.03714	Sta. Clarita	-0.00822	Tulare	-0.01668
41	Bakersfield	-0.01733	Visalia	-0.03692	Bakersfield	-0.00808	Sta. Clarita	-0.01541
42	Fullerton	-0.01667	Anaheim	-0.03556	Sta. Barbara	-0.00765	Fullerton	-0.0153
43	El Centro	-0.01663	Fullerton	-0.03329	Tulare	-0.00746	Inglewood	-0.01519
44	Inglewood	-0.01558	Inglewood	-0.03183	Hesperia	-0.00745	Bakersfield	-0.01515
45	Oxnard	-0.01543	Simi Valley	-0.03032	Inglewood	-0.00721	Visalia	-0.01452
46	Hesperia	-0.01537	Hemet	-0.03026	Fullerton	-0.00715	Oxnard	-0.01451
47	Hemet	-0.01533	Oxnard	-0.02971	Hemet	-0.00709	Sta. Barbara	-0.01389
48	Simi Valley	-0.0153	Palm Springs	-0.02954	Oxnard	-0.00707	Simi Valley	-0.01379
49	Palm Springs	-0.01476	Canoga Park	-0.02865	Visalia	-0.007	Hemet	-0.01368
50	Pismo Beach	-0.0137	Hesperia	-0.02788	Simi Valley	-0.00699	Palm Springs	-0.01327
51	Sta. Barbara	-0.01354	Pismo Beach	-0.02724	Palm Springs	-0.00679	Hesperia	-0.013
52	Canoga Park	-0.01267	Sta. Barbara	-0.02657	El Centro	-0.00662	Pismo Beach	-0.01278
53	Goleta	-0.01034	California City	-0.023	Pismo Beach	-0.00642	Ludlow	-0.01258
54	Ludlow	-0.01027	Goleta	-0.0211	Canoga Park	-0.00614	Goleta	-0.01165
55	Chowchilla	-0.00901	Ludlow	-0.02004	Baker	-0.00493	Canoga Park	-0.01146
56	Whittier	-0.00887	Chowchilla	-0.01802	Goleta	-0.00447	Baker	-0.01072
57	Baker	-0.00851	Whittier	-0.01788	Twentynine Palms	-0.00434	Whittier	-0.00876
58	Merced	-0.0082	Baker	-0.01785	Chowchilla	-0.00428	Chowchilla	-0.00856
59	Hanford	-0.0079	Merced	-0.01648	Solvang	-0.00423	Solvang	-0.00855
60	Solvang	-0.00762	Hanford	-0.01575	Desert Center	-0.00416	Twentynine Palms	-0.00852
61	Manteca	-0.00749	Solvang	-0.01529	Whittier	-0.00416	Glamis	-0.00839
62	Antioch	-0.00714	Manteca	-0.01501	Barstow	-0.0041	Desert Center	-0.00822
63	Fresno	-0.00692	Fresno	-0.01436	Ocotillo	-0.004	Ocotillo	-0.00806
64	Glamis	-0.00691	Twentynine Palms	-0.01414	Salton City	-0.00378	Barstow	-0.00799
65	Twentynine Palms	-0.00679	Antioch	-0.01408	Hanford	-0.00374	Hanford	-0.0077
66	Hollister	-0.00665	Barstow	-0.01338	Merced	-0.00372	Salton City	-0.00737
67	Morgan Hills	-0.0066	Glamis	-0.0133	Glamis	-0.00365	Merced	-0.00733
68	Barstow	-0.00654	Morgan Hills	-0.01316	Manteca	-0.00364	Manteca	-0.00726
69	Ocotillo	-0.00654	Ocotillo	-0.01283	Antioch	-0.00346	Antioch	-0.00686
70	Desert Center	-0.00651	Desert Center	-0.01275	Mojave	-0.0032	Fresno	-0.00678
71	Paso Robles	-0.00626	King City	-0.01227	Fresno	-0.00319	Mojave	-0.00616
72	King City	-0.00611	Paso Robles	-0.01201	Fairfield	-0.0031	Paso Robles	-0.006
73	Davis	-0.00587	Davis	-0.01169	Paso Robles	-0.00301	King City	-0.00592
74	Salton City	-0.00581	Salton City	-0.01151	King City	-0.00297	Morgan Hills	-0.00584
75	Sta. Cruz	-0.00567	Sta. Cruz	-0.01147	Davis	-0.00287	Davis	-0.00575
76	Lodi	-0.00563	Lodi	-0.01135	Morgan Hills	-0.00285	Hollister	-0.00553
77	Sacramento	-0.00547	Hollister	-0.01133	Sacramento	-0.00276	Sacramento	-0.00542
78	Napa	-0.00543	Napa	-0.01081	Lodi	-0.0027	Sun City	-0.00536

79	Dixon	-0.00541	Fairfield	-0.0108	Dixon	-0.00268	Lodi	-0.00531
80	Atascadero	-0.0053	Dixon	-0.01068	Atascadero	-0.00261	Dixon	-0.00519
81	El Cajon	-0.00521	Sacramento	-0.01065	Sta. Cruz	-0.00257	Sta. Cruz	-0.00515
82	Turlock	-0.00516	Atascadero	-0.01061	Napa	-0.00257	Atascadero	-0.00511
83	California City	-0.00506	El Cajon	-0.01038	Sun City	-0.00254	Napa	-0.005
84	Tracy	-0.00488	Turlock	-0.01031	El Cajon	-0.00252	El Cajon	-0.005
85	Fairfield	-0.00487	Livermore	-0.01019	Turlock	-0.00245	Turlock	-0.00493
86	Mojave	-0.00487	Tracy	-0.00979	Tracy	-0.0023	Tracy	-0.00464
87	Los Banos	-0.0048	Mojave	-0.00959	San Rafael	-0.00226	Yreka	-0.00462
88	San Rafael	-0.00467	Los Banos	-0.00956	Los Banos	-0.00221	Los Banos	-0.00458
89	Patterson	-0.00464	Patterson	-0.00933	Vallejo	-0.00217	San Rafael	-0.00444
90	Vallejo	-0.00453	San Rafael	-0.00932	Walnut Creek	-0.00212	Livermore	-0.00436
91	Modesto	-0.0045	Vallejo	-0.00919	Modesto	-0.00209	Vallejo	-0.00434
92	Walnut Creek	-0.00444	Modesto	-0.00917	Patterson	-0.00209	Modesto	-0.00434
93	Pittsburgh	-0.00425	Walnut Creek	-0.00902	Hollister	-0.00208	Patterson	-0.00427
94	Yreka	-0.00407	Pittsburgh	-0.00851	Sta. Maria	-0.00204	Walnut Creek	-0.00422
95	Mtn. View	-0.00403	Sun City	-0.00823	Pittsburgh	-0.002	Sta. Maria	-0.00414
96	Sta. Rosa	-0.00398	Sta. Rosa	-0.00822	Livermore	-0.002	Fairfield	-0.00396
97	San Jose	-0.00394	Mtn. View	-0.00783	Sta. Rosa	-0.00193	Pittsburgh	-0.00388
98	Sun City	-0.00393	Sta. Monica	-0.00781	San Jose	-0.00193	Sta. Rosa	-0.00378
99	Oroville	-0.0039	San Jose	-0.00774	Benicia	-0.00184	Dunsmuir	-0.00364
100	LAX	-0.00383	Oroville	-0.00769	Mtn. View	-0.00176	Oroville	-0.00362
101	Benicia	-0.00382	Dunsmuir	-0.00766	Oroville	-0.00176	Benicia	-0.00361
102	Dunsmuir	-0.00375	Benicia	-0.00762	Auburn	-0.00175	Mtn. View	-0.00359
103	Sta. Maria	-0.00365	LAX	-0.00755	Susanville	-0.00169	San Jose	-0.00351
104	Auburn	-0.00356	Sta. Maria	-0.00738	Milpitas	-0.00168	Auburn	-0.00339
105	Milpitas	-0.00349	Auburn	-0.00708	Murrieta	-0.00168	Milpitas	-0.00318
106	Sta. Monica	-0.00348	Milpitas	-0.00699	Dunsmuir	-0.00163	Malibu	-0.00316
107	Livermore	-0.00332	Martinez	-0.00652	Malibu	-0.00158	Susanville	-0.00316
108	Kettleman City	-0.00328	Lafayette	-0.00626	Martinez	-0.00157	Murrieta	-0.0031
109	Martinez	-0.00323	Redwood City	-0.00624	Redwood City	-0.00152	Martinez	-0.00306
110	Redwood City	-0.00318	San Luis Obispo	-0.00609	Kettleman City	-0.00151	LAX	-0.00306
111	Sutter	-0.00312	Sutter	-0.00608	Lafayette	-0.00148	Redwood City	-0.00297
112	Lafayette	-0.00311	Susanville	-0.00573	San Luis Obispo	-0.00148	Lafayette	-0.00295
113	San Luis Obispo	-0.00301	Malibu	-0.00558	LAX	-0.00145	Sutter	-0.00291
114	Malibu	-0.00286	Yreka	-0.00528	Sutter	-0.00144	San Luis Obispo	-0.00288
115	Yuba City	-0.00281	Chester	-0.00528	Temecula	-0.00144	Temecula	-0.00281
116	Chico	-0.00271	Kettleman City	-0.00519	Chico	-0.00138	Tehachapi	-0.0028
117	Susanville	-0.00271	Yuba City	-0.00518	Westwood	-0.00138	Westwood	-0.00275
118	Colusa	-0.00253	Chico	-0.00508	Tehachapi	-0.00137	Yuba City	-0.00258
119	Roseville	-0.0025	Roseville	-0.00503	Yuba City	-0.00128	Chico	-0.0025

120	Murrieta	-0.00248	Colusa	-0.00489	Roseville	-0.0012	Chester	-0.00247
121	Dublin	-0.00245	Dublin	-0.00487	McCloud	-0.00119	Roseville	-0.00244
122	Westwood	-0.00239	Westwood	-0.00472	Colusa	-0.00117	Colusa	-0.00232
123	Chester	-0.00227	Murrieta	-0.00469	Dublin	-0.00114	Weed	-0.0023
124	Temecula	-0.00219	McCloud	-0.00432	Cotton Wood	-0.00113	Dublin	-0.00225
125	Paradise	-0.00213	Paradise	-0.00425	Anderson	-0.00111	McCloud	-0.00222
126	McCloud	-0.00212	Tehachapi	-0.0042	Weed	-0.00107	Kettleman City	-0.0022
127	Tehachapi	-0.00211	Temecula	-0.00418	Chester	-0.00104	Sta. Monica	-0.00211
128	Alturas	-0.00206	Fremont	-0.00402	Paradise	-0.00099	Cotton Wood	-0.00198
129	Fremont	-0.00204	Weed	-0.00392	Alturas	-0.00099	Anderson	-0.00198
130	Weed	-0.00192	Alturas	-0.00383	Fremont	-0.00098	Paradise	-0.00196
131	Cotton Wood	-0.00178	Anderson	-0.00302	Tehama	-0.00088	Fremont	-0.00184
132	Anderson	-0.00168	Independence	-0.00294	Red Bluff	-0.00086	Independence	-0.00165
133	Red Bluff	-0.00153	Cotton Wood	-0.00284	Independence	-0.00083	Red Bluff	-0.00161
134	Independence	-0.0015	Cloverdale	-0.0028	Escondido	-0.00071	Alturas	-0.00159
135	Tehama	-0.00145	Nevada City	-0.00266	Cloverdale	-0.00063	Tehama	-0.00158
136	Cloverdale	-0.00134	Tehama	-0.00266	Nevada City	-0.0006	Escondido	-0.00139
137	Nevada City	-0.00133	Red Bluff	-0.00249	San Francisco	-0.00056	Cloverdale	-0.00129
138	San Francisco	-0.00119	San Francisco	-0.00226	Yreka	-0.00056	Nevada City	-0.00122
139	Escondido	-0.00108	Escondido	-0.00211	Laguna Beach	-0.0005	San Francisco	-0.00113
140	Laguna Beach	-0.00102	Laguna Beach	-0.00207	Sta. Monica	-0.00048	Laguna Beach	-0.00101
141	Downieville	-0.0009	Downieville	-0.00179	Downieville	-0.00048	Downieville	-0.00097
142	National City	-0.00086	National City	-0.00172	National City	-0.00041	National City	-0.00082
143	Chula Vista	-0.00085	Chula Vista	-0.00169	Chula Vista	-0.00041	Chula Vista	-0.00081
144	Salinas	-0.00073	Salinas	-0.00152	Salinas	-0.00036	Salinas	-0.00071
145	San Diego	-0.00066	San Diego	-0.00131	San Diego	-0.00032	San Diego	-0.00063
146	Lompoc	-0.00051	Lompoc	-0.00104	Lompoc	-0.00029	Lompoc	-0.00058
147	Huntington Beach	-0.00047	Huntington Beach	-0.00095	Huntington Beach	-0.00023	Huntington Beach	-0.00046
148	Newport Beach	-0.00043	Newport Beach	-0.00088	Newport Beach	-0.00021	Newport Beach	-0.00043
149	Truckee	-0.00034	Tahoe City	-0.00054	Tahoe City	-0.00014	Tahoe City	-0.00027
150	Tahoe City	-0.00027	Truckee	-0.00053	Willits	-9.2E-05	Truckee	-0.0002
151	Willits	-0.0002	Willits	-0.00041	Monterey	-7E-05	Willits	-0.00019
152	Monterey	-0.00014	Monterey	-0.00028	Truckee	-3.8E-05	Monterey	-0.00014
153	Crescent City	-2.6E-05	Crescent City	-5E-05	Crescent City	-1.2E-05	Crescent City	-2.3E-05
154	South Lake Tahoe	-2.4E-06	South Lake Tahoe	-5.3E-06	South Lake Tahoe	-9.2E-07	South Lake Tahoe	-3E-06
155	Woodland	0	Woodland	0	Woodland	0	Woodland	0
156	CitrusHeights	0	CitrusHeights	0	CitrusHeights	0	CitrusHeights	0
157	Folsom Lake	0	Folsom Lake	0	Folsom Lake	0	Folsom Lake	0

	3M		3H		4M		4H	
Ranking								
1	Blythe	-0.01185	Blythe	-0.02608	Blythe	-0.00835	Blythe	-0.01849
2	Van Nuys	-0.01072	Van Nuys	-0.02315	Tustin	-0.00758	Van Nuys	-0.01617
3	Tustin	-0.00996	Tustin	-0.0213	San Bernardino	-0.00688	Tustin	-0.01606
4	Sherman Oaks	-0.00992	Banning	-0.02003	Van Nuys	-0.00681	Sherman Oaks	-0.01444
5	Coachella	-0.00918	Sherman Oaks	-0.01988	Coachella	-0.00664	Coachella	-0.01431
6	Banning	-0.00904	Coachella	-0.01988	Sherman Oaks	-0.00655	Banning	-0.01409
7	California City	-0.00873	Indio	-0.01756	Banning	-0.00653	San Bernardino	-0.01309
8	Indio	-0.00808	Beverly Hills	-0.017	Indio	-0.00599	Indio	-0.0127
9	Beverly Hills	-0.00808	Palmdale	-0.0166	Beverly Hills	-0.00571	Beverly Hills	-0.01197
10	Palmdale	-0.00763	Pomona	-0.01641	Palmdale	-0.00564	Palmdale	-0.01188
11	Northridge	-0.00759	Rosemead	-0.01532	Diamond Bar	-0.00557	California City	-0.01172
12	Pomona	-0.00759	Northridge	-0.01496	Pomona	-0.00555	Pomona	-0.01157
13	Los Angeles	-0.00756	San Dimas	-0.0147	Los Angeles	-0.00517	Diamond Bar	-0.01101
14	Rosemead	-0.00689	Diamond Bar	-0.01436	San Dimas	-0.00511	Los Angeles	-0.01047
15	San Dimas	-0.00685	Los Angeles	-0.01422	Rosemead	-0.00502	Rosemead	-0.01041
16	Porterville	-0.00652	Rancho Cucamonga	-0.01357	Northridge	-0.00478	San Dimas	-0.01018
17	Diamond Bar	-0.00648	Glendale	-0.01333	Glendale	-0.00441	Glendale	-0.00947
18	Hollywood	-0.00642	Orange	-0.0131	Orange	-0.00435	Porterville	-0.00933
19	Glendale	-0.00637	Porterville	-0.01291	Corona	-0.00433	Rancho Cucamonga	-0.00926
20	Rancho Cucamonga	-0.0062	Wasco	-0.01266	Porterville	-0.00431	Burbank	-0.00893
21	Burbank	-0.00591	Hollywood	-0.01264	Rancho Cucamonga	-0.00428	Hollywood	-0.00887
22	Corona	-0.0058	Burbank	-0.01233	Wasco	-0.00422	Wasco	-0.00883
23	Orange	-0.0057	Corona	-0.01233	Hesperia	-0.0042	Corona	-0.00872
24	Pasadena	-0.0057	Ontario	-0.012	Downey	-0.00409	Orange	-0.00846
25	Victorville	-0.00569	Pasadena	-0.01177	Victorville	-0.00401	Pasadena	-0.00831
26	San Jacinto	-0.00569	Desert Center	-0.01165	Century City	-0.00399	Victorville	-0.00817
27	Downey	-0.00551	Century City	-0.01145	Hollywood	-0.00397	Ontario	-0.00815
28	Desert Center	-0.00537	San Jacinto	-0.01138	Sta. Ana	-0.00394	Covina	-0.00811
29	Century City	-0.00519	Sta. Ana	-0.01123	Bakersfield	-0.0039	Sta. Ana	-0.00798
30	Sta. Ana	-0.00518	Covina	-0.0111	Burbank	-0.00378	Downey	-0.00784
31	Thousand Oaks	-0.0051	Victorville	-0.01107	Ontario	-0.00375	San Jacinto	-0.00775
32	Wasco	-0.00503	Downey	-0.01099	San Jacinto	-0.00374	Canoga Park	-0.00772
33	Ontario	-0.00497	El Centro	-0.01096	Covina	-0.00361	Thousand Oaks	-0.00764
34	Ocotillo	-0.00494	Sta. Clarita	-0.01095	Pasadena	-0.00359	Century City	-0.00762
35	Adelanto	-0.0049	Thousand Oaks	-0.01087	Thousand Oaks	-0.00358	Tulare	-0.00732
36	Covina	-0.00487	Ocotillo	-0.01048	Oxnard	-0.00342	Adelanto	-0.00728
37	Salton City	-0.00475	Anaheim	-0.01044	Tulare	-0.00332	Northridge	-0.00698
38	Anaheim	-0.00467	Adelanto	-0.01035	Adelanto	-0.0033	Inglewood	-0.00696

39	Fullerton	-0.00454	Salton City	-0.01018	Mission Viejo	-0.00323	Mission Viejo	-0.00696
40	Tulare	-0.00446	Tulare	-0.01001	Inglewood	-0.00313	Bakersfield	-0.00686
41	El Centro	-0.00436	Bakersfield	-0.00986	Anaheim	-0.00299	Anaheim	-0.00672
42	Sta. Clarita	-0.00434	Riverside	-0.00946	Visalia	-0.00288	Fullerton	-0.00596
43	Sta. Barbara	-0.00434	Mission Viejo	-0.00921	Fullerton	-0.00269	Visalia	-0.00576
44	Inglewood	-0.0043	Fullerton	-0.00907	Hemet	-0.00267	Simi Valley	-0.00572
45	Bakersfield	-0.00429	Hesperia	-0.00881	Palm Springs	-0.00266	Oxnard	-0.00572
46	Mission Viejo	-0.00426	Hemet	-0.00878	Simi Valley	-0.00262	Hemet	-0.00568
47	Hemet	-0.00424	Inglewood	-0.0085	Pismo Beach	-0.00261	Palm Springs	-0.00566
48	Visalia	-0.00412	Visalia	-0.00845	Sta. Clarita	-0.00256	Hesperia	-0.00559
49	Oxnard	-0.00409	Oxnard	-0.00839	Riverside	-0.00255	Riverside	-0.00548
50	Palm Springs	-0.00399	Simi Valley	-0.00826	Ludlow	-0.00242	Pismo Beach	-0.00514
51	Mojave	-0.00387	Palm Springs	-0.00814	Goleta	-0.00238	El Centro	-0.00489
52	Hesperia	-0.00387	Mojave	-0.0079	Livermore	-0.00199	Sta. Clarita	-0.00456
53	Simi Valley	-0.00386	Canoga Park	-0.00778	Sta. Barbara	-0.00184	Sta. Barbara	-0.00422
54	Canoga Park	-0.00374	Sta. Barbara	-0.00753	Glamis	-0.00173	Whittier	-0.00337
55	Riverside	-0.00357	Pismo Beach	-0.00725	Canoga Park	-0.00156	Ludlow	-0.00337
56	Pismo Beach	-0.0034	Sun City	-0.00696	Merced	-0.00156	Chowchilla	-0.00327
57	Sun City	-0.00307	California City	-0.00614	Chowchilla	-0.00141	Merced	-0.00314
58	Whittier	-0.00293	Chowchilla	-0.0061	Yreka	-0.00137	Hanford	-0.00292
59	Chowchilla	-0.0028	Whittier	-0.00602	Manteca	-0.00137	Baker	-0.00282
60	Fairfield	-0.00274	Manteca	-0.00582	Whittier	-0.00133	Goleta	-0.00273
61	Manteca	-0.00266	Antioch	-0.0054	Antioch	-0.00132	Manteca	-0.00273
62	Merced	-0.00261	Hanford	-0.00533	Hanford	-0.00131	Antioch	-0.00265
63	Antioch	-0.00255	Merced	-0.00532	Ocotillo	-0.00125	Solvang	-0.00262
64	Hanford	-0.00251	Livermore	-0.00507	Baker	-0.00121	Fresno	-0.00248
65	Murrieta	-0.0023	King City	-0.00472	Morgan Hills	-0.00121	Morgan Hills	-0.00242
66	Ludlow	-0.0023	Davis	-0.00462	Paso Robles	-0.00118	Twentynine Palms	-0.00241
67	King City	-0.00218	Fresno	-0.00459	Fresno	-0.00114	Paso Robles	-0.00239
68	Davis	-0.00215	Murrieta	-0.00456	Desert Center	-0.00113	Ocotillo	-0.00232
69	Sacramento	-0.00213	Morgan Hills	-0.00428	Twentynine Palms	-0.00111	King City	-0.00231
70	Fresno	-0.00212	Ludlow	-0.00423	El Centro	-0.0011	Glamis	-0.0023
71	Hollister	-0.00199	Sacramento	-0.0042	King City	-0.00106	Davis	-0.00222
72	Temecula	-0.00197	Lodi	-0.00413	Salton City	-0.00106	Desert Center	-0.00221
73	Morgan Hills	-0.00196	Temecula	-0.00413	Davis	-0.00105	Barstow	-0.00221
74	Napa	-0.00196	Solvang	-0.00399	Solvang	-0.00105	Sacramento	-0.00217
75	Lodi	-0.00194	Hollister	-0.00394	Atascadero	-0.00104	Sta. Cruz	-0.00211
76	Dixon	-0.00188	Napa	-0.00394	Sacramento	-0.00104	Fairfield	-0.00208
77	Sta. Cruz	-0.00184	Dixon	-0.00393	San Jose	-0.00101	Napa	-0.00207
78	Solvang	-0.00173	Sta. Cruz	-0.00386	Lodi	-0.00098	Lodi	-0.00206
79	Paso Robles	-0.00173	Tracy	-0.00357	Napa	-0.00094	Salton City	-0.00205
80	Weed	-0.00172	Paso Robles	-0.00351	Turlock	-0.00092	Dixon	-0.00203

81	Baker	-0.00172	Fairfield	-0.00341	El Cajon	-0.00092	Atascadero	-0.00202
82	Tracy	-0.00169	Baker	-0.0034	Barstow	-0.00089	El Cajon	-0.00198
83	Atascadero	-0.00155	Goleta	-0.00331	Dunsmuir	-0.00089	Turlock	-0.00187
84	Dunsmuir	-0.00152	Patterson	-0.0032	Sta. Cruz	-0.00088	Mojave	-0.00179
85	Patterson	-0.00148	Walnut Creek	-0.00314	Tracy	-0.00085	San Rafael	-0.00176
86	Goleta	-0.00148	Pittsburgh	-0.00308	Dixon	-0.00084	Tracy	-0.00173
87	Turlock	-0.00146	Turlock	-0.00303	San Rafael	-0.00083	Vallejo	-0.0017
88	Twentynine Palms	-0.00142	Sta. Rosa	-0.00302	Mojave	-0.00082	Los Banos	-0.00164
89	El Cajon	-0.00139	Atascadero	-0.00301	Modesto	-0.00081	Patterson	-0.00163
90	Sta. Rosa	-0.00135	El Cajon	-0.003	Vallejo	-0.0008	Modesto	-0.00158
91	Oroville	-0.00135	Twentynine Palms	-0.00285	Los Banos	-0.00077	Pittsburgh	-0.00155
92	Los Banos	-0.00133	Los Banos	-0.00277	Patterson	-0.00074	San Jose	-0.00151
93	Walnut Creek	-0.00131	Dunsmuir	-0.00274	Sun City	-0.00073	Oroville	-0.0015
94	Pittsburgh	-0.0013	Benicia	-0.00271	Pittsburgh	-0.00072	Dunsmuir	-0.00149
95	Auburn	-0.0013	Modesto	-0.00268	LAX	-0.00072	Mtn. View	-0.00147
96	Benicia	-0.00129	Oroville	-0.00265	Milpitas	-0.00071	Sta. Rosa	-0.00145
97	Kettleman City	-0.00127	Auburn	-0.00264	Mtn. View	-0.00069	Benicia	-0.00141
98	Modesto	-0.00126	San Jose	-0.00256	Sta. Rosa	-0.00067	Sun City	-0.0014
99	Livermore	-0.00124	Glamis	-0.00252	Benicia	-0.00067	Walnut Creek	-0.00138
100	Barstow	-0.0012	Mtn. View	-0.0025	Walnut Creek	-0.00066	LAX	-0.00132
101	San Jose	-0.00118	San Rafael	-0.00242	Susanville	-0.00064	Auburn	-0.00131
102	Milpitas	-0.00117	Martinez	-0.00238	Auburn	-0.00063	Sta. Maria	-0.00128
103	Mtn. View	-0.00116	Milpitas	-0.00237	Oroville	-0.00063	Milpitas	-0.00127
104	Martinez	-0.00113	Kettleman City	-0.00236	Westwood	-0.00061	Sutter	-0.00123
105	San Rafael	-0.00111	Barstow	-0.00231	Chico	-0.00058	Martinez	-0.0012
106	Vallejo	-0.00111	Vallejo	-0.0023	San Luis Obispo	-0.00057	Chico	-0.00116
107	Chico	-0.00111	Yreka	-0.00224	Murrieta	-0.00057	San Luis Obispo	-0.00115
108	Lafayette	-0.00108	Lafayette	-0.00224	Cotton Wood	-0.00057	Yuba City	-0.00115
109	Sutter	-0.00107	Chester	-0.00214	Chester	-0.00056	Redwood City	-0.00114
110	McCloud	-0.00105	Sutter	-0.0021	Malibu	-0.00056	Cotton Wood	-0.00113
111	Glamis	-0.00102	Escondido	-0.00199	Redwood City	-0.00055	Susanville	-0.00111
112	Yuba City	-0.001	Roseville	-0.00194	Lafayette	-0.00055	Lafayette	-0.0011
113	Cotton Wood	-0.00098	Sta. Maria	-0.00193	Martinez	-0.00055	Westwood	-0.00107
114	Chester	-0.00093	Yuba City	-0.00191	Sutter	-0.00054	Malibu	-0.00105
115	Escondido	-0.00093	Dublin	-0.0019	Sta. Maria	-0.00048	Colusa	-0.001
116	Roseville	-0.0009	McCloud	-0.00182	Yuba City	-0.00048	Hollister	-0.001
117	Colusa	-0.00088	LAX	-0.00173	Temecula	-0.00046	Chester	-0.00095
118	Yreka	-0.00088	San Luis Obispo	-0.00173	Anderson	-0.00045	Anderson	-0.00093
119	Tehama	-0.00084	Chico	-0.00172	Tehama	-0.00045	Kettleman City	-0.00093
120	San Luis Obispo	-0.00083	Colusa	-0.00169	Colusa	-0.00044	Roseville	-0.00092
121	Sta. Maria	-0.00083	Malibu	-0.00165	Roseville	-0.00044	Tehama	-0.0009

122	Red Bluff	-0.00081	Redwood City	-0.00162	Fremont	-0.00041	Red Bluff	-0.00087
123	Paradise	-0.00073	Susanville	-0.0016	Dublin	-0.00039	McCloud	-0.00083
124	Fremont	-0.00072	Tehachapi	-0.00147	Paradise	-0.00035	Fremont	-0.00081
125	Redwood City	-0.00071	Paradise	-0.00146	McCloud	-0.00033	Yreka	-0.00081
126	Dublin	-0.00069	Fremont	-0.00139	Tehachapi	-0.00033	Murrieta	-0.0008
127	Malibu	-0.00069	Westwood	-0.00138	Red Bluff	-0.0003	Paradise	-0.00079
128	Susanville	-0.00067	Independence	-0.00134	Independence	-0.00028	Tehachapi	-0.00076
129	Tehachapi	-0.00066	Sta. Monica	-0.00133	Hollister	-0.00025	Temecula	-0.00075
130	Anderson	-0.00065	Weed	-0.00131	San Francisco	-0.00021	Dublin	-0.00064
131	Independence	-0.00065	Cloverdale	-0.00128	Nevada City	-0.00021	Alturas	-0.0006
132	Westwood	-0.00058	Tehama	-0.00121	Cloverdale	-0.0002	Independence	-0.00056
133	LAX	-0.00056	Red Bluff	-0.0012	Kettleman City	-0.0002	Cloverdale	-0.0005
134	Cloverdale	-0.00056	Cotton Wood	-0.00116	Escondido	-0.00018	Nevada City	-0.00048
135	Nevada City	-0.00044	Alturas	-0.00116	Laguna Beach	-0.00018	San Francisco	-0.00045
136	Downieville	-0.00038	San Bernardino	-0.00101	Downieville	-0.00015	Weed	-0.00041
137	San Francisco	-0.00028	Nevada City	-0.00091	Sta. Monica	-0.00015	Laguna Beach	-0.00038
138	Laguna Beach	-0.00024	Downieville	-0.00083	Chula Vista	-0.00014	Escondido	-0.00037
139	Salinas	-0.00023	Anderson	-0.00073	National City	-0.00014	Downieville	-0.00033
140	National City	-0.00023	San Francisco	-0.0006	San Diego	-0.00011	Chula Vista	-0.00032
141	Chula Vista	-0.00022	Salinas	-0.00051	Salinas	-0.00011	National City	-0.00032
142	San Diego	-0.00018	Laguna Beach	-0.00051	Lompoc	-8.27E-05	Salinas	-0.00026
143	Lompoc	-0.00013	National City	-0.00049	Huntington Beach	-8.03E-05	San Diego	-0.00025
144	Tahoe City	-0.00012	Chula Vista	-0.00049	Newport Beach	-7.51E-05	Lompoc	-0.00019
145	Huntington Beach	-0.00011	San Diego	-0.00038	Tahoe City	-5.65E-05	Huntington Beach	-0.00018
146	Newport Beach	-9.68E-05	Lompoc	-0.00028	Willits	-2.94E-05	Newport Beach	-0.00016
147	Willits	-8.55E-05	Tahoe City	-0.00024	Monterey	-2.66E-05	Truckee	-0.00012
148	Monterey	-4.27E-05	Huntington Beach	-0.00023	Crescent City	-5.33E-06	Tahoe City	-0.0001
149	Alturas	-2.97E-05	Newport Beach	-0.00021	South Lake Tahoe	-1.32E-06	Willits	-7.23E-05
150	Crescent City	-7.42E-06	Willits	-0.00019	Woodland	0	Monterey	-5.30E-05
151	South Lake Tahoe	-3.72E-07	Truckee	-0.00015	CitrusHeights	0	Crescent City	-1.04E-05
152	Woodland	0	Monterey	-8.50E-05	Folsom Lake	0	South Lake Tahoe	-1.17E-06
153	CitrusHeights	0	Crescent City	-1.67E-05	Lake Havasu	0	Woodland	0
154	Folsom Lake	0	South Lake Tahoe	-2.63E-06	Eureka	0	CitrusHeights	0
155	Lake Havasu	0	Woodland	0	Fort Bragg	0	Folsom Lake	0
156	Eureka	0	CitrusHeights	0	Mendocino	0	Lake Havasu	0
157	Fort Bragg	0	Folsom Lake	0	Citrus Heights	0	Eureka	0

	5M		5H		6M		6H	
Ranking								
1	Van Nuys	-0.0128	Van Nuys	-0.0227	Blythe	-0.02003	Blythe	-0.04166
2	Sherman Oaks	-0.01106	Sherman Oaks	-0.0205	Tustin	-0.01787	Tustin	-0.03533
3	Beverly Hills	-0.0084	Beverly Hills	-0.01607	Van Nuys	-0.01769	Van Nuys	-0.03505
4	Blythe	-0.00735	Banning	-0.01424	Coachella	-0.01568	Coachella	-0.03139
5	Banning	-0.00726	San Bernardino	-0.01412	Banning	-0.01551	Banning	-0.03109
6	Pomona	-0.0071	Northridge	-0.01411	Sherman Oaks	-0.01518	Sherman Oaks	-0.03018
7	Coachella	-0.00707	Blythe	-0.01403	Indio	-0.01388	Indio	-0.02789
8	Indio	-0.00686	Pomona	-0.01385	Beverly Hills	-0.01328	Palmdale	-0.02611
9	Burbank	-0.00671	Coachella	-0.01381	Palmdale	-0.01317	Beverly Hills	-0.02607
10	Palmdale	-0.00657	Indio	-0.01322	Pomona	-0.01259	Pomona	-0.02517
11	San Dimas	-0.00643	Burbank	-0.013	Rosemead	-0.01164	Rosemead	-0.0238
12	Diamond Bar	-0.00641	Tustin	-0.01292	Northridge	-0.01102	Diamond Bar	-0.02209
13	Tustin	-0.00637	Palmdale	-0.0127	Los Angeles	-0.011	Northridge	-0.02104
14	Century City	-0.00615	Diamond Bar	-0.01245	San Dimas	-0.01092	Los Angeles	-0.02094
15	Northridge	-0.00601	San Dimas	-0.01219	Diamond Bar	-0.0109	San Dimas	-0.02057
16	Glendale	-0.00587	Rancho Cucamonga	-0.01184	Porterville	-0.01043	Porterville	-0.02034
17	Adelanto	-0.00582	Adelanto	-0.01179	Orange	-0.01004	Glendale	-0.0199
18	Thousand Oaks	-0.00579	Glendale	-0.01122	Rancho Cucamonga	-0.01002	Rancho Cucamonga	-0.01945
19	Rancho Cucamonga	-0.00576	Thousand Oaks	-0.011	Glendale	-0.00999	Wasco	-0.01921
20	Rosemead	-0.00557	Rosemead	-0.01073	Wasco	-0.00981	Hollywood	-0.01909
21	Victorville	-0.00552	Pasadena	-0.01017	Hollywood	-0.00964	Corona	-0.01888
22	Pasadena	-0.00515	Ontario	-0.01011	Corona	-0.00961	Orange	-0.01876
23	Hesperia	-0.00506	Canoga Park	-0.01005	Century City	-0.0096	Burbank	-0.01868
24	San Jacinto	-0.00502	Simi Valley	-0.00966	Burbank	-0.00922	Century City	-0.01788
25	Canoga Park	-0.00491	San Jacinto	-0.00958	Sta. Ana	-0.00891	Sta. Ana	-0.01764
26	Ontario	-0.00488	Victorville	-0.00958	Downey	-0.0088	Pasadena	-0.01752
27	Hollywood	-0.00487	Century City	-0.00934	Sta. Clarita	-0.00874	Ontario	-0.01709
28	Los Angeles	-0.00485	Los Angeles	-0.00927	Pasadena	-0.00865	Thousand Oaks	-0.01672
29	Simi Valley	-0.0047	Hollywood	-0.00916	Thousand Oaks	-0.00843	Downey	-0.01662
30	Covina	-0.00464	Covina	-0.00898	Victorville	-0.00842	Tulare	-0.01637
31	San Bernardino	-0.00412	Hesperia	-0.00833	Covina	-0.00839	Victorville	-0.01628
32	Corona	-0.00406	Corona	-0.00831	San Jacinto	-0.00825	San Jacinto	-0.01607
33	Palm Springs	-0.00395	Palm Springs	-0.00826	Ontario	-0.00823	Covina	-0.01607
34	California City	-0.00386	Sta. Clarita	-0.00812	Tulare	-0.00789	Adelanto	-0.01566
35	Downey	-0.00374	Hemet	-0.00786	Adelanto	-0.00781	El Centro	-0.01565
36	Porterville	-0.00367	Downey	-0.00709	Mission Viejo	-0.00771	Sta. Clarita	-0.01564
37	Hemet	-0.00357	El Centro	-0.00663	El Centro	-0.00769	Mission Viejo	-0.0154

38	Fullerton	-0.00329	Fullerton	-0.00653	Bakersfield	-0.00755	Riverside	-0.01527
39	Pismo Beach	-0.0032	Pismo Beach	-0.00604	Anaheim	-0.00738	Bakersfield	-0.01516
40	Bakersfield	-0.00301	California City	-0.00602	Visalia	-0.0071	Anaheim	-0.01446
41	Oxnard	-0.00298	Bakersfield	-0.00585	Canoga Park	-0.00689	Visalia	-0.01374
42	Inglewood	-0.00285	Porterville	-0.00567	Oxnard	-0.00684	Fullerton	-0.01358
43	Anaheim	-0.0028	Riverside	-0.00554	Fullerton	-0.00662	Inglewood	-0.01289
44	Orange	-0.0028	Wasco	-0.00552	Riverside	-0.00656	Oxnard	-0.01265
45	Visalia	-0.00275	Orange	-0.00518	Inglewood	-0.00617	Simi Valley	-0.01247
46	Wasco	-0.0026	Visalia	-0.005	Simi Valley	-0.00616	Hemet	-0.01243
47	Ludlow	-0.00257	Mission Viejo	-0.00496	Hemet	-0.00607	Palm Springs	-0.012
48	Sta. Clarita	-0.00256	Oxnard	-0.00495	Palm Springs	-0.00592	California City	-0.0116
49	Mission Viejo	-0.00241	Inglewood	-0.00493	Sta. Barbara	-0.00589	Hesperia	-0.01126
50	Riverside	-0.00238	Anaheim	-0.00487	Hesperia	-0.00574	Pismo Beach	-0.01123
51	Sta. Ana	-0.0023	Sta. Ana	-0.00487	Pismo Beach	-0.00483	Sta. Barbara	-0.01035
52	Tulare	-0.00229	Goleta	-0.0047	Goleta	-0.00474	Canoga Park	-0.0103
53	Merced	-0.00215	Tulare	-0.00454	California City	-0.00461	Ludlow	-0.00811
54	Antioch	-0.00213	Sta. Barbara	-0.0044	Ludlow	-0.00418	Goleta	-0.00746
55	Whittier	-0.00211	Ludlow	-0.00421	Whittier	-0.00389	Chowchilla	-0.00742
56	Paso Robles	-0.00207	Fresno	-0.00418	Livermore	-0.00386	Whittier	-0.00723
57	Sta. Barbara	-0.00205	Merced	-0.0041	Chowchilla	-0.00366	Merced	-0.00674
58	Fresno	-0.00195	Whittier	-0.00408	Merced	-0.00346	Baker	-0.00662
59	Ocotillo	-0.00191	Antioch	-0.00386	Baker	-0.00346	Hanford	-0.0065
60	Desert Center	-0.00189	Barstow	-0.00377	Hanford	-0.00327	Solvang	-0.00645
61	Mojave	-0.00182	Chowchilla	-0.00373	San Bernardino	-0.00309	Manteca	-0.00622
62	Salton City	-0.00177	Paso Robles	-0.00367	Manteca	-0.00304	Livermore	-0.00607
63	Glamis	-0.00175	Baker	-0.00362	Antioch	-0.00298	Antioch	-0.00598
64	Manteca	-0.00172	Twentynine Palms	-0.0034	Solvang	-0.00289	Twentynine Palms	-0.00565
65	El Centro	-0.00167	Desert Center	-0.00326	Hollister	-0.00286	Fresno	-0.00564
66	Turlock	-0.00165	Hanford	-0.00323	Twentynine Palms	-0.00284	Glamis	-0.00547
67	Hollister	-0.00163	Patterson	-0.00318	Glamis	-0.00281	Morgan Hills	-0.00539
68	Chowchilla	-0.00163	Ocotillo	-0.00306	Ocotillo	-0.00276	Desert Center	-0.0053
69	Los Banos	-0.0016	Manteca	-0.00299	Fresno	-0.00275	Ocotillo	-0.00524
70	Patterson	-0.00159	Glamis	-0.00293	Morgan Hills	-0.00272	Barstow	-0.00524
71	Sacramento	-0.00159	Salton City	-0.00289	Paso Robles	-0.00266	Hollister	-0.00524
72	Hanford	-0.00156	Lodi	-0.00286	Desert Center	-0.00265	Paso Robles	-0.00505
73	Morgan Hills	-0.00154	Morgan Hills	-0.00285	Barstow	-0.00245	King City	-0.00503
74	Davis	-0.00151	Solvang	-0.00284	King City	-0.00243	Davis	-0.00489
75	Modesto	-0.00148	Dixon	-0.00282	Davis	-0.00241	Sta. Cruz	-0.00482
76	Solvang	-0.00144	Sacramento	-0.00281	Salton City	-0.00238	Salton City	-0.00474
77	Lodi	-0.00141	Turlock	-0.00278	Sta. Cruz	-0.00236	Lodi	-0.0047
78	Oroville	-0.00138	Pittsburgh	-0.00269	Lodi	-0.00236	Napa	-0.00463
79	Atascadero	-0.00135	Oroville	-0.00267	Dixon	-0.00233	Sacramento	-0.00462

80	Pittsburgh	-0.00132	Mojave	-0.00266	Sacramento	-0.00231	Dixon	-0.00448
81	Sta. Cruz	-0.00129	Davis	-0.00261	Napa	-0.00223	Atascadero	-0.0044
82	King City	-0.00128	Los Banos	-0.00259	El Cajon	-0.00217	El Cajon	-0.0043
83	Twentynine Palms	-0.00125	Modesto	-0.00254	Turlock	-0.00215	Turlock	-0.00425
84	Sutter	-0.00123	Tracy	-0.00248	Mojave	-0.00203	San Bernardino	-0.00409
85	Dixon	-0.0012	Hollister	-0.0024	San Rafael	-0.00201	Tracy	-0.00407
86	Barstow	-0.0011	Sta. Cruz	-0.00239	Atascadero	-0.002	Mojave	-0.00402
87	Tracy	-0.00109	Napa	-0.00231	Tracy	-0.002	San Rafael	-0.004
88	Dunsmuir	-0.00107	Atascadero	-0.00231	Vallejo	-0.00197	Los Banos	-0.00395
89	San Luis Obispo	-0.00104	King City	-0.00229	Los Banos	-0.00195	Patterson	-0.00387
90	San Rafael	-0.001	Sutter	-0.00228	Patterson	-0.00193	Vallejo	-0.00387
91	Chico	-0.00099	Fairfield	-0.00217	Walnut Creek	-0.00186	Walnut Creek	-0.00378
92	Baker	-0.00096	San Rafael	-0.00194	Pittsburgh	-0.00184	Modesto	-0.00369
93	Yuba City	-0.00095	Livermore	-0.00189	Modesto	-0.00178	Pittsburgh	-0.00361
94	Mtn. View	-0.00094	Sta. Rosa	-0.00186	San Jose	-0.00167	San Jose	-0.00357
95	Sta. Rosa	-0.00092	Chico	-0.00184	Mtn. View	-0.00165	Sta. Rosa	-0.00336
96	Napa	-0.0009	San Luis Obispo	-0.00178	Dunsmuir	-0.00163	Sun City	-0.00333
97	Auburn	-0.00088	Auburn	-0.00172	Oroville	-0.00161	Oroville	-0.00326
98	Vallejo	-0.00087	Yuba City	-0.00172	Sta. Rosa	-0.00161	Fairfield	-0.00326
99	Tehama	-0.00086	Vallejo	-0.00166	Benicia	-0.00159	Mtn. View	-0.00325
100	Benicia	-0.00078	Mtn. View	-0.00165	Milpitas	-0.00154	Benicia	-0.00321
101	Cotton Wood	-0.00075	Benicia	-0.00159	Sun City	-0.00153	Dunsmuir	-0.00315
102	Roseville	-0.00073	Kettleman City	-0.00153	LAX	-0.00152	Sta. Maria	-0.0031
103	San Jose	-0.0007	Dunsmuir	-0.00153	Auburn	-0.00146	Auburn	-0.00297
104	Milpitas	-0.00069	Martinez	-0.00143	Sta. Maria	-0.00144	Milpitas	-0.00291
105	Martinez	-0.00069	Yreka	-0.00142	Redwood City	-0.00136	Martinez	-0.00272
106	Colusa	-0.00066	Walnut Creek	-0.0014	Martinez	-0.00136	Redwood City	-0.0027
107	Red Bluff	-0.00065	Chester	-0.00135	San Luis Obispo	-0.00136	LAX	-0.00269
108	Redwood City	-0.00063	Roseville	-0.00135	Lafayette	-0.00132	Lafayette	-0.00262
109	Goleta	-0.00063	Lafayette	-0.00118	Sutter	-0.00129	Sutter	-0.00262
110	Lafayette	-0.0006	Redwood City	-0.00117	Susanville	-0.00127	San Luis Obispo	-0.0025
111	Paradise	-0.00059	Milpitas	-0.00117	Yreka	-0.00122	Susanville	-0.00236
112	Walnut Creek	-0.00056	Colusa	-0.00117	Yuba City	-0.00117	Yuba City	-0.00233
113	Sun City	-0.00055	San Jose	-0.00116	Chico	-0.00115	Malibu	-0.00231
114	Anderson	-0.00053	Sun City	-0.00109	Kettleman City	-0.00113	Chester	-0.00227
115	Murrieta	-0.00053	Cotton Wood	-0.00109	Chester	-0.0011	Chico	-0.00217
116	Kettleman City	-0.00045	Paradise	-0.00109	Malibu	-0.0011	Kettleman City	-0.00215
117	McCloud	-0.00044	El Cajon	-0.00103	Westwood	-0.00106	Westwood	-0.00211
118	Sta. Maria	-0.00043	Susanville	-0.00092	Sta. Monica	-0.00106	Colusa	-0.0021
119	Fremont	-0.0004	Anderson	-0.00091	Colusa	-0.00105	Roseville	-0.00207

120	El Cajon	-0.00039	Red Bluff	-0.00088	Roseville	-0.00101	Murrieta	-0.00203
121	LAX	-0.00039	Sta. Maria	-0.00087	Murrieta	-0.00099	Temecula	-0.00198
122	Tehachapi	-0.00038	Westwood	-0.00081	Fremont	-0.00096	Dublin	-0.00193
123	Susanville	-0.00038	Fremont	-0.0008	Dublin	-0.00095	Yreka	-0.00186
124	Chester	-0.00038	Malibu	-0.00079	McCloud	-0.00092	Paradise	-0.0018
125	Temecula	-0.00036	McCloud	-0.00078	Paradise	-0.00091	McCloud	-0.00174
126	Weed	-0.00036	Dublin	-0.00078	Temecula	-0.00087	Tehachapi	-0.00173
127	Westwood	-0.00034	Tehama	-0.00076	Tehachapi	-0.00087	Fremont	-0.0017
128	Malibu	-0.00033	Murrieta	-0.00075	Cotton Wood	-0.00084	Sta. Monica	-0.00167
129	Yreka	-0.00031	LAX	-0.00073	Tehama	-0.00078	Weed	-0.00162
130	Independence	-0.00028	Tehachapi	-0.00073	Weed	-0.00071	Cotton Wood	-0.00153
131	Nevada City	-0.00028	Alturas	-0.00066	Anderson	-0.00068	Alturas	-0.00147
132	Cloverdale	-0.00026	Temecula	-0.00063	Red Bluff	-0.00066	Anderson	-0.0014
133	Dublin	-0.00023	Independence	-0.00063	Independence	-0.00063	Tehama	-0.00139
134	San Francisco	-0.0002	Weed	-0.00055	Cloverdale	-0.00056	Independence	-0.00122
135	Escondido	-0.00015	Nevada City	-0.00053	Alturas	-0.00055	Red Bluff	-0.00116
136	Downieville	-0.00013	Cloverdale	-0.00047	Nevada City	-0.00054	Cloverdale	-0.00115
137	Laguna Beach	-0.00013	San Francisco	-0.00038	San Francisco	-0.0005	Nevada City	-0.00111
138	Salinas	-8.27E-05	Downieville	-0.00032	Escondido	-0.00044	San Francisco	-0.00101
139	Tahoe City	-8.06E-05	Laguna Beach	-0.00027	Laguna Beach	-0.00042	Escondido	-0.00087
140	Lompoc	-6.46E-05	Escondido	-0.00025	Downieville	-0.00037	Laguna Beach	-0.00085
141	Huntington Beach	-6.34E-05	Salinas	-0.00017	National City	-0.00035	Downieville	-0.00072
142	San Diego	-6.11E-05	National City	-0.00016	Chula Vista	-0.00035	National City	-0.0007
143	National City	-5.99E-05	Chula Vista	-0.00015	Salinas	-0.0003	Chula Vista	-0.0007
144	Chula Vista	-5.96E-05	San Diego	-0.00014	San Diego	-0.00027	Salinas	-0.00061
145	Truckee	-5.84E-05	Huntington Beach	-0.00013	Fairfield	-0.00022	San Diego	-0.00054
146	Newport Beach	-5.37E-05	Lompoc	-0.00013	Lompoc	-0.0002	Lompoc	-0.00042
147	Willits	-2.69E-05	Tahoe City	-0.00012	Huntington Beach	-0.00019	Huntington Beach	-0.00039
148	Monterey	-2.06E-05	Newport Beach	-0.00011	Newport Beach	-0.00018	Newport Beach	-0.00036
149	Crescent City	-4.05E-06	Willits	-4.73E-05	Tahoe City	-0.00012	Truckee	-0.00028
150	Woodland	0	Monterey	-4.08E-05	Willits	-8.46E-05	Tahoe City	-0.00022
151	CitrusHeights	0	Crescent City	-8.45E-06	Monterey	-5.84E-05	Willits	-0.00017
152	Folsom Lake	0	Woodland	0	Truckee	-1.57E-05	Monterey	-0.00012
153	Lake Havasu	0	CitrusHeights	0	Crescent City	-1.22E-05	Crescent City	-2.09E-05
154	Eureka	0	Folsom Lake	0	South Lake Tahoe	-1.17E-06	South Lake Tahoe	-2.26E-06
155	Fort Bragg	0	Lake Havasu	0	Woodland	0	Woodland	0
156	Mendocino	0	Eureka	0	CitrusHeights	0	CitrusHeights	0
157	Citrus Heights	0	Fort Bragg	0	Folsom Lake	0	Folsom Lake	0

Ranking	7M		7H		8M		8H	
1	Coachella	-0.0114	Coachella	-0.02348	Coachella	-0.0081	Coachella	-0.01701
2	Indio	-0.01082	Indio	-0.02234	Indio	-0.00779	Indio	-0.01616
3	Banning	-0.01071	Banning	-0.02229	Banning	-0.00772	Banning	-0.01608
4	Blythe	-0.01053	Blythe	-0.02182	Blythe	-0.00769	Blythe	-0.01598
5	California City	-0.00981	Palmdale	-0.01695	California City	-0.00723	Palmdale	-0.01235
6	Palmdale	-0.00831	Van Nuys	-0.01648	Palmdale	-0.00577	Sherman Oaks	-0.01088
7	Sherman Oaks	-0.00765	Sherman Oaks	-0.01566	Sherman Oaks	-0.00568	Van Nuys	-0.0105
8	Van Nuys	-0.00731	Tustin	-0.01426	Van Nuys	-0.0053	Tustin	-0.01046
9	Tustin	-0.00705	California City	-0.01356	Tustin	-0.00503	Northridge	-0.00843
10	Beverly Hills	-0.00614	Northridge	-0.01285	Northridge	-0.00477	Beverly Hills	-0.00824
11	San Jacinto	-0.00586	Beverly Hills	-0.0124	Beverly Hills	-0.00396	California City	-0.00803
12	Victorville	-0.00578	Rosemead	-0.01148	Rosemead	-0.00389	San Bernardino	-0.00801
13	Northridge	-0.00569	Pomona	-0.01139	Ludlow	-0.00385	Ludlow	-0.00782
14	Pomona	-0.00554	Ludlow	-0.01138	Pomona	-0.00382	Rosemead	-0.00775
15	Rosemead	-0.00552	San Jacinto	-0.0109	Los Angeles	-0.00379	Pomona	-0.00752
16	Adelanto	-0.0055	Adelanto	-0.01056	Bakersfield	-0.00367	Barstow	-0.00703
17	Hesperia	-0.00541	San Bernardino	-0.01036	Victorville	-0.00359	San Jacinto	-0.00664
18	San Bernardino	-0.00541	Palm Springs	-0.01007	San Jacinto	-0.00357	Century City	-0.00657
19	Palm Springs	-0.00533	Victorville	-0.00984	San Bernardino	-0.0035	Visalia	-0.00657
20	Century City	-0.0053	Diamond Bar	-0.00954	Porterville	-0.00341	Victorville	-0.00646
21	Rancho Cucamonga	-0.00526	Rancho Cucamonga	-0.00934	Barstow	-0.00336	Porterville	-0.00622
22	Los Angeles	-0.0052	Bakersfield	-0.00919	Burbank	-0.00334	Adelanto	-0.00622
23	Glendale	-0.00494	Visalia	-0.00901	Palm Springs	-0.00331	Diamond Bar	-0.00615
24	Pasadena	-0.00491	Los Angeles	-0.00899	Adelanto	-0.00331	Downey	-0.00614
25	Hemet	-0.00476	Hemet	-0.00892	Glamis	-0.00327	Twentynine Palms	-0.00605
26	Sta. Clarita	-0.00465	Burbank	-0.00883	Hesperia	-0.00325	Palm Springs	-0.00604
27	Burbank	-0.00464	Pasadena	-0.00883	Glendale	-0.00323	Glamis	-0.00601
28	Canoga Park	-0.00461	Glendale	-0.00876	Visalia	-0.00322	Rancho Cucamonga	-0.00588
29	San Dimas	-0.00456	Porterville	-0.00872	Pasadena	-0.00314	Wasco	-0.00586
30	Ontario	-0.00452	Thousand Oaks	-0.0086	Diamond Bar	-0.00313	Bakersfield	-0.00583
31	Visalia	-0.00451	Downey	-0.00859	Covina	-0.00312	Los Angeles	-0.00577
32	Downey	-0.00449	San Dimas	-0.00842	Rancho Cucamonga	-0.00309	Thousand Oaks	-0.00576
33	Diamond Bar	-0.00445	Wasco	-0.00831	Thousand Oaks	-0.00306	Tulare	-0.00572
34	Covina	-0.00441	Hesperia	-0.00811	Downey	-0.00299	Glendale	-0.00567
35	Porterville	-0.00428	Hollywood	-0.00775	Hemet	-0.00294	Baker	-0.00554
36	Thousand Oaks	-0.00419	Century City	-0.00773	Twentynine Palms	-0.0029	Pasadena	-0.00554
37	Corona	-0.00411	Corona	-0.00758	Baker	-0.0029	Hemet	-0.00539

38	Tulare	-0.004	Tulare	-0.00757	Wasco	-0.00284	Burbank	-0.00536
39	Hollywood	-0.00398	Canoga Park	-0.00756	Tulare	-0.00283	El Centro	-0.00534
40	Bakersfield	-0.00395	Covina	-0.00749	Corona	-0.0027	Hollywood	-0.00532
41	Wasco	-0.00375	Ontario	-0.00729	Hollywood	-0.0027	Desert Center	-0.0052
42	El Centro	-0.00373	Simi Valley	-0.0069	Ocotillo	-0.00261	Ocotillo	-0.0051
43	Simi Valley	-0.00363	Riverside	-0.00679	San Dimas	-0.0026	Ontario	-0.00507
44	Riverside	-0.00356	El Centro	-0.0067	Desert Center	-0.00257	San Dimas	-0.00505
45	Fullerton	-0.00316	Fullerton	-0.00622	Ontario	-0.00251	Covina	-0.00503
46	Orange	-0.00288	Barstow	-0.00583	Salton City	-0.00232	Corona	-0.00487
47	Ludlow	-0.00277	Orange	-0.00581	Canoga Park	-0.00228	Mojave	-0.00485
48	Mission Viejo	-0.00273	Pismo Beach	-0.00564	Fullerton	-0.00228	Salton City	-0.00476
49	Pismo Beach	-0.00273	Mission Viejo	-0.00554	Simi Valley	-0.00228	Goleta	-0.00463
50	Anaheim	-0.00268	Sta. Clarita	-0.00533	Riverside	-0.00225	Hesperia	-0.00442
51	Fresno	-0.0026	Fresno	-0.00528	Mojave	-0.00214	Mission Viejo	-0.0041
52	Sta. Ana	-0.00251	Anaheim	-0.00528	El Centro	-0.00212	Riverside	-0.00408
53	Inglewood	-0.00244	Sta. Ana	-0.00515	Orange	-0.0021	Simi Valley	-0.00406
54	Oxnard	-0.00243	Twentynine Palms	-0.00506	Mission Viejo	-0.002	Orange	-0.00394
55	Barstow	-0.00226	Inglewood	-0.00493	Pismo Beach	-0.00191	Sta. Barbara	-0.0039
56	Merced	-0.00223	Merced	-0.00484	Sta. Clarita	-0.00191	Pismo Beach	-0.00387
57	Chowchilla	-0.0022	Baker	-0.00483	Sta. Ana	-0.00184	Fresno	-0.00385
58	Whittier	-0.00205	Chowchilla	-0.00464	Solvang	-0.00178	Solvang	-0.00369
59	Hanford	-0.00194	Glamis	-0.00435	Anaheim	-0.00175	Fullerton	-0.00368
60	Twentynine Palms	-0.00194	Desert Center	-0.00427	Fresno	-0.00171	Sta. Ana	-0.00356
61	Manteca	-0.00193	Ocotillo	-0.00423	Antioch	-0.00171	Chowchilla	-0.00345
62	Antioch	-0.00191	Antioch	-0.0042	Century City	-0.0017	Canoga Park	-0.00344
63	Sacramento	-0.00183	Mojave	-0.00406	Inglewood	-0.00164	Inglewood	-0.00341
64	Turlock	-0.00182	Whittier	-0.00404	Whittier	-0.00164	Anaheim	-0.00328
65	Desert Center	-0.00181	Oxnard	-0.00388	Manteca	-0.00159	Oxnard	-0.00322
66	Paso Robles	-0.00178	Salton City	-0.00385	Chowchilla	-0.00154	Merced	-0.00311
67	Modesto	-0.00174	Manteca	-0.00378	Sacramento	-0.00154	Antioch	-0.00294
68	Ocotillo	-0.00174	Sacramento	-0.00376	Paso Robles	-0.00151	Sacramento	-0.00283
69	Davis	-0.00173	Hanford	-0.00373	Davis	-0.00144	Manteca	-0.00279
70	Baker	-0.00167	Davis	-0.00349	Sta. Barbara	-0.00142	Whittier	-0.00279
71	Mojave	-0.00165	Solvang	-0.00343	Turlock	-0.00136	Hanford	-0.00273
72	Patterson	-0.00155	Turlock	-0.00319	Merced	-0.00134	Davis	-0.00264
73	Salton City	-0.00152	Paso Robles	-0.00307	Modesto	-0.00125	Livermore	-0.00248
74	Atascadero	-0.00151	Patterson	-0.00302	Hanford	-0.00124	Paso Robles	-0.00234
75	Los Banos	-0.00149	Modesto	-0.00301	Oxnard	-0.00121	Turlock	-0.00225
76	Lodi	-0.00147	Lodi	-0.00299	Dixon	-0.00119	Sta. Clarita	-0.0022
77	Dixon	-0.00143	Dixon	-0.00293	Goleta	-0.00119	Modesto	-0.00216
78	Solvang	-0.00142	Fairfield	-0.00292	Los Banos	-0.00118	Sun City	-0.00213
79	Livermore	-0.00141	Morgan Hills	-0.00285	Lodi	-0.00118	Lodi	-0.00208

80	Tracy	-0.00138	Los Banos	-0.00277	Patterson	-0.00114	Dixon	-0.00197
81	King City	-0.00135	Goleta	-0.00271	Hollister	-0.00111	King City	-0.00195
82	Morgan Hills	-0.00134	Tracy	-0.00262	King City	-0.00109	Los Banos	-0.00192
83	Oroville	-0.00117	King City	-0.00261	Tracy	-0.00102	Patterson	-0.0019
84	Dunsmuir	-0.00116	Hollister	-0.00246	Sun City	-0.00099	Morgan Hills	-0.00187
85	Glamis	-0.00109	Oroville	-0.00236	Atascadero	-0.00096	Tracy	-0.00187
86	Sutter	-0.00107	Pittsburgh	-0.00233	Oroville	-0.00091	Hollister	-0.00157
87	Napa	-0.00105	Sta. Barbara	-0.00232	Dunsmuir	-0.0009	Atascadero	-0.00155
88	Alturas	-0.00098	Atascadero	-0.00224	Sutter	-0.00088	Pittsburgh	-0.00153
89	Pittsburgh	-0.00096	Sutter	-0.00208	Pittsburgh	-0.00083	Oroville	-0.0015
90	Chico	-0.00095	Napa	-0.00197	Morgan Hills	-0.00081	Dunsmuir	-0.00139
91	Sta. Barbara	-0.00093	Livermore	-0.00191	Cotton Wood	-0.0008	Kettleman City	-0.00138
92	Yuba City	-0.00092	San Jose	-0.00191	Chester	-0.00078	Sutter	-0.00134
93	San Jose	-0.00092	El Cajon	-0.00185	Livermore	-0.00077	El Cajon	-0.00131
94	San Rafael	-0.00091	Sun City	-0.00177	Yuba City	-0.00075	Murrieta	-0.00129
95	El Cajon	-0.00087	San Rafael	-0.00176	Yreka	-0.00074	San Jose	-0.00128
96	San Luis Obispo	-0.00086	Yuba City	-0.00176	Murrieta	-0.00073	Napa	-0.00124
97	Cotton Wood	-0.00085	Walnut Creek	-0.00168	Walnut Creek	-0.00071	San Rafael	-0.00122
98	Mtn. View	-0.00084	Mtn. View	-0.00168	Anderson	-0.0007	Walnut Creek	-0.00121
99	Auburn	-0.00079	Chico	-0.00166	Chico	-0.00069	Susanville	-0.00119
100	Walnut Creek	-0.00078	Dunsmuir	-0.00159	El Cajon	-0.00066	Sta. Maria	-0.00117
101	Sta. Rosa	-0.00077	Sta. Cruz	-0.00156	Napa	-0.00066	Yuba City	-0.00116
102	Benicia	-0.00075	Sta. Rosa	-0.00156	Auburn	-0.00063	Chico	-0.00115
103	Roseville	-0.00073	Auburn	-0.00156	San Luis Obispo	-0.00063	Cotton Wood	-0.00112
104	Colusa	-0.00072	Benicia	-0.00149	Sta. Rosa	-0.00063	Auburn	-0.0011
105	Sta. Cruz	-0.0007	San Luis Obispo	-0.00147	San Rafael	-0.00061	Sta. Rosa	-0.00109
106	Sun City	-0.00069	Roseville	-0.00142	Roseville	-0.0006	Anderson	-0.00107
107	Anderson	-0.00066	Martinez	-0.00131	Temecula	-0.00058	Roseville	-0.00106
108	Martinez	-0.00065	Colusa	-0.00131	Benicia	-0.00056	San Luis Obispo	-0.00106
109	Hollister	-0.00063	Susanville	-0.00128	Susanville	-0.00056	Mtn. View	-0.00105
110	Fairfield	-0.00062	Chester	-0.0012	Colusa	-0.00055	Temecula	-0.00105
111	Susanville	-0.0006	Redwood City	-0.00119	Mtn. View	-0.00052	Tehachapi	-0.00105
112	Vallejo	-0.00058	Lafayette	-0.00115	Tehachapi	-0.00052	Benicia	-0.00103
113	Redwood City	-0.00057	Sta. Maria	-0.00111	Martinez	-0.0005	Sta. Cruz	-0.00101
114	Lafayette	-0.00055	Vallejo	-0.00109	Sta. Maria	-0.0005	Chester	-0.00098
115	Goleta	-0.00055	Milpitas	-0.00107	Westwood	-0.00049	Red Bluff	-0.00097
116	Tehama	-0.00055	Murrieta	-0.00106	Lafayette	-0.00047	Tehama	-0.00096
117	Chester	-0.00054	Paradise	-0.00104	Kettleman City	-0.00047	Martinez	-0.00091
118	Red Bluff	-0.00054	Westwood	-0.00097	Tehama	-0.00046	Colusa	-0.00089
119	Tehachapi	-0.00053	Cotton Wood	-0.00096	Red Bluff	-0.00046	Redwood City	-0.00084
120	Kettleman City	-0.00052	Tehachapi	-0.00093	San Jose	-0.00045	Lafayette	-0.00083

121	Paradise	-0.00051	Anderson	-0.00091	Vallejo	-0.00041	Westwood	-0.0008
122	Westwood	-0.00045	Tehama	-0.00089	Redwood City	-0.0004	Vallejo	-0.00078
123	Milpitas	-0.00043	Red Bluff	-0.00087	Sta. Cruz	-0.00039	Yreka	-0.0007
124	Murrieta	-0.00042	Dublin	-0.00087	Paradise	-0.00039	Dublin	-0.0007
125	Dublin	-0.00042	Temecula	-0.00086	Milpitas	-0.00037	Milpitas	-0.00068
126	Sta. Maria	-0.00039	Kettleman City	-0.00083	Malibu	-0.00032	Weed	-0.00064
127	Temecula	-0.00034	Fremont	-0.00063	Dublin	-0.00028	Paradise	-0.00063
128	Cloverdale	-0.00032	McCloud	-0.00062	Independence	-0.00025	Malibu	-0.00058
129	McCloud	-0.00028	Cloverdale	-0.00055	Escondido	-0.00024	McCloud	-0.00051
130	Fremont	-0.00026	Malibu	-0.00055	McCloud	-0.00023	Escondido	-0.00048
131	Nevada City	-0.00026	Weed	-0.00054	Cloverdale	-0.00023	Independence	-0.00046
132	Independence	-0.00023	Nevada City	-0.00052	Nevada City	-0.0002	Cloverdale	-0.00044
133	Weed	-0.00019	Alturas	-0.00048	Weed	-0.00016	Fremont	-0.00041
134	Malibu	-0.00017	Independence	-0.00045	Fremont	-0.00015	Alturas	-0.00035
135	San Francisco	-0.00015	LAX	-0.00045	Downieville	-0.00013	Nevada City	-0.00033
136	Escondido	-0.00015	Escondido	-0.0004	San Francisco	-0.0001	Downieville	-0.00026
137	Downieville	-0.00013	San Francisco	-0.00029	Chula Vista	-8.54E-05	LAX	-0.00024
138	Chula Vista	-0.00011	Downieville	-0.00026	National City	-8.00E-05	San Francisco	-0.00021
139	National City	-0.00011	Chula Vista	-0.00024	Laguna Beach	-7.17E-05	Chula Vista	-0.00017
140	Salinas	-0.00011	National City	-0.00024	Lompoc	-6.76E-05	National City	-0.00016
141	Laguna Beach	-9.42E-05	Yreka	-0.00022	San Diego	-6.47E-05	Lompoc	-0.00016
142	San Diego	-8.53E-05	Salinas	-0.00021	Salinas	-6.29E-05	Laguna Beach	-0.00014
143	Lompoc	-7.10E-05	Laguna Beach	-0.00019	Tahoe City	-4.37E-05	Salinas	-0.00014
144	Tahoe City	-6.95E-05	San Diego	-0.00018	Truckee	-3.00E-05	San Diego	-0.00013
145	LAX	-5.97E-05	Lompoc	-0.00016	Huntington Beach	-2.65E-05	Truckee	-0.00012
146	Huntington Beach	-3.77E-05	Tahoe City	-0.00011	Willits	-2.38E-05	Tahoe City	-9.08E-05
147	Newport Beach	-3.30E-05	Huntington Beach	-7.69E-05	Newport Beach	-2.31E-05	Huntington Beach	-5.68E-05
148	Willits	-2.94E-05	Newport Beach	-6.87E-05	Monterey	-1.69E-05	Newport Beach	-5.05E-05
149	Monterey	-1.57E-05	Truckee	-5.86E-05	Crescent City	-2.25E-06	Willits	-4.06E-05
150	Crescent City	-3.74E-06	Willits	-5.31E-05	Woodland	0	Monterey	-2.17E-05
151	Woodland	0	Monterey	-3.18E-05	CitrusHeights	0	Crescent City	-4.66E-06
152	CitrusHeights	0	Crescent City	-5.84E-06	Folsom Lake	0	Woodland	0
153	Folsom Lake	0	Woodland	0	Lake Havasu	0	CitrusHeights	0
154	Lake Havasu	0	CitrusHeights	0	Eureka	0	Folsom Lake	0
155	Eureka	0	Folsom Lake	0	Fort Bragg	0	Lake Havasu	0
156	Fort Bragg	0	Lake Havasu	0	Mendocino	0	Eureka	0
157	Mendocino	0	Eureka	0	Citrus Heights	0	Fort Bragg	0

	9M		9H		10M		10H	
Ranking								
1	Coachella	-0.00817	Coachella	-0.01624	Blythe	-0.02003	Blythe	-0.04166
2	Indio	-0.00779	California City	-0.01581	Tustin	-0.01787	Tustin	-0.03533
3	Banning	-0.00773	Indio	-0.01543	Van Nuys	-0.01769	Van Nuys	-0.03505
4	Blythe	-0.00758	Banning	-0.01542	Coachella	-0.01568	Coachella	-0.03139
5	San Bernardino	-0.00585	Blythe	-0.0153	Banning	-0.01551	Banning	-0.03109
6	Van Nuys	-0.00576	Palmdale	-0.01189	Sherman Oaks	-0.01518	Sherman Oaks	-0.03018
7	Canoga Park	-0.00552	Sherman Oaks	-0.01096	Indio	-0.01388	Indio	-0.02789
8	Sherman Oaks	-0.00539	San Bernardino	-0.01059	Beverly Hills	-0.01328	Palmdale	-0.02611
9	Desert Center	-0.00533	Van Nuys	-0.01053	Palmdale	-0.01317	Beverly Hills	-0.02607
10	Ocotillo	-0.00493	Desert Center	-0.01038	Pomona	-0.01259	Pomona	-0.02517
11	Hesperia	-0.00467	Mojave	-0.01013	Rosemead	-0.01164	Rosemead	-0.0238
12	Salton City	-0.00464	Ocotillo	-0.01001	Northridge	-0.01102	Diamond Bar	-0.02209
13	San Jacinto	-0.00453	Tustin	-0.00934	Los Angeles	-0.011	Northridge	-0.02104
14	Mojave	-0.00444	Salton City	-0.00926	San Dimas	-0.01092	Los Angeles	-0.02094
15	Tustin	-0.0044	Beverly Hills	-0.00901	Diamond Bar	-0.0109	San Dimas	-0.02057
16	Victorville	-0.00436	Rosemead	-0.00864	Porterville	-0.01043	Porterville	-0.02034
17	Beverly Hills	-0.00424	San Jacinto	-0.0082	Orange	-0.01004	Glendale	-0.0199
18	Palm Springs	-0.00419	Northridge	-0.00819	Rancho Cucamonga	-0.01002	Rancho Cucamonga	-0.01945
19	Rancho Cucamonga	-0.00415	Pomona	-0.00811	Glendale	-0.00999	Wasco	-0.01921
20	El Centro	-0.00415	Adelanto	-0.00783	Wasco	-0.00981	Hollywood	-0.01909
21	Adelanto	-0.0041	Victorville	-0.00749	Hollywood	-0.00964	Corona	-0.01888
22	Northridge	-0.00405	Palm Springs	-0.00741	Corona	-0.00961	Orange	-0.01876
23	San Dimas	-0.00384	Rancho Cucamonga	-0.00731	Century City	-0.0096	Burbank	-0.01868
24	Hemet	-0.00378	Los Angeles	-0.00727	Burbank	-0.00922	Century City	-0.01788
25	Pomona	-0.00377	Bakersfield	-0.00698	Sta. Ana	-0.00891	Sta. Ana	-0.01764
26	Covina	-0.00374	El Centro	-0.00694	Downey	-0.0088	Pasadena	-0.01752
27	Los Angeles	-0.00364	Diamond Bar	-0.00677	Sta. Clarita	-0.00874	Ontario	-0.01709
28	Diamond Bar	-0.00356	Pasadena	-0.00673	Pasadena	-0.00865	Thousand Oaks	-0.01672
29	Ontario	-0.00351	Hemet	-0.0067	Thousand Oaks	-0.00843	Downey	-0.01662
30	Visalia	-0.00341	Glendale	-0.00658	Victorville	-0.00842	Tulare	-0.01637
31	Glendale	-0.00337	Burbank	-0.00657	Covina	-0.00839	Victorville	-0.01628
32	California City	-0.00335	Canoga Park	-0.00649	San Jacinto	-0.00825	San Jacinto	-0.01607
33	Bakersfield	-0.00326	Hesperia	-0.00632	Ontario	-0.00823	Covina	-0.01607
34	Burbank	-0.00326	Visalia	-0.00627	Tulare	-0.00789	Adelanto	-0.01566
35	Porterville	-0.00321	Downey	-0.00621	Adelanto	-0.00781	El Centro	-0.01565
36	Rosemead	-0.0032	Thousand Oaks	-0.00621	Mission Viejo	-0.00771	Sta. Clarita	-0.01564
37	Wasco	-0.00317	San Dimas	-0.00616	El Centro	-0.00769	Mission Viejo	-0.0154
38	Thousand	-0.003	Porterville	-0.00612	Bakersfield	-0.00755	Riverside	-0.01527

	Oaks							
39	Simi Valley	-0.00289	Sta. Clarita	-0.00594	Anaheim	-0.00738	Bakersfield	-0.01516
40	Downey	-0.00289	Ontario	-0.00566	Visalia	-0.0071	Anaheim	-0.01446
41	Pasadena	-0.00287	Covina	-0.00566	Canoga Park	-0.00689	Visalia	-0.01374
42	Tulare	-0.0028	Wasco	-0.00564	Oxnard	-0.00684	Fullerton	-0.01358
43	Corona	-0.0027	Hollywood	-0.00562	Fullerton	-0.00662	Inglewood	-0.01289
44	Sta. Clarita	-0.00266	Tulare	-0.00561	Riverside	-0.00656	Oxnard	-0.01265
45	Fresno	-0.00265	Corona	-0.00536	Inglewood	-0.00617	Simi Valley	-0.01247
46	Hollywood	-0.0026	Simi Valley	-0.00499	Simi Valley	-0.00616	Hemet	-0.01243
47	Riverside	-0.00247	Riverside	-0.00494	Hemet	-0.00607	Palm Springs	-0.012
48	Century City	-0.00237	Fresno	-0.00481	Palm Springs	-0.00592	California City	-0.0116
49	Inglewood	-0.00224	Century City	-0.00463	Sta. Barbara	-0.00589	Hesperia	-0.01126
50	Merced	-0.00222	Orange	-0.00453	Hesperia	-0.00574	Pismo Beach	-0.01123
51	Chowchilla	-0.00217	Fullerton	-0.00452	Pismo Beach	-0.00483	Sta. Barbara	-0.01035
52	Sun City	-0.00214	Antioch	-0.00449	Goleta	-0.00474	Canoga Park	-0.0103
53	Antioch	-0.00213	Merced	-0.00442	California City	-0.00461	Ludlow	-0.00811
54	Ludlow	-0.00205	Sun City	-0.00426	Ludlow	-0.00418	Goleta	-0.00746
55	Fullerton	-0.00203	Chowchilla	-0.00424	Whittier	-0.00389	Chowchilla	-0.00742
56	Orange	-0.002	Anaheim	-0.00414	Livermore	-0.00386	Whittier	-0.00723
57	Hanford	-0.00192	Manteca	-0.00409	Chowchilla	-0.00366	Merced	-0.00674
58	Pismo Beach	-0.00188	Sacramento	-0.00406	Merced	-0.00346	Baker	-0.00662
59	Manteca	-0.00187	Ludlow	-0.00405	Baker	-0.00346	Hanford	-0.0065
60	Sacramento	-0.00182	Pismo Beach	-0.00398	Hanford	-0.00327	Solvang	-0.00645
61	Mission Viejo	-0.00182	Whittier	-0.00381	San Bernardino	-0.00309	Manteca	-0.00622
62	Anaheim	-0.00182	Davis	-0.00379	Manteca	-0.00304	Livermore	-0.00607
63	Davis	-0.0017	Sta. Ana	-0.00365	Antioch	-0.00298	Antioch	-0.00598
64	Hollister	-0.00162	Mission Viejo	-0.00359	Solvang	-0.00289	Twentynine Palms	-0.00565
65	Sta. Ana	-0.00159	Inglewood	-0.00356	Hollister	-0.00286	Fresno	-0.00564
66	Kettleman City	-0.00155	Barstow	-0.00356	Twentynine Palms	-0.00284	Glamis	-0.00547
67	Paso Robles	-0.00152	Hanford	-0.00344	Glamis	-0.00281	Morgan Hills	-0.00539
68	Sta. Barbara	-0.0015	Glamis	-0.00313	Ocotillo	-0.00276	Desert Center	-0.0053
69	Patterson	-0.00148	Lodi	-0.003	Fresno	-0.00275	Ocotillo	-0.00524
70	Dixon	-0.00148	Twentynine Palms	-0.00296	Morgan Hills	-0.00272	Barstow	-0.00524
71	Lodi	-0.00147	Dixon	-0.00284	Paso Robles	-0.00266	Hollister	-0.00524
72	Whittier	-0.00146	King City	-0.00279	Desert Center	-0.00265	Paso Robles	-0.00505
73	Murrieta	-0.00142	Baker	-0.00278	Barstow	-0.00245	King City	-0.00503
74	Turlock	-0.00137	Oxnard	-0.00268	King City	-0.00243	Davis	-0.00489
75	Tracy	-0.00135	Livermore	-0.00268	Davis	-0.00241	Sta. Cruz	-0.00482
76	Modesto	-0.00134	Patterson	-0.00267	Salton City	-0.00238	Salton City	-0.00474
77	King City	-0.00132	Tracy	-0.00266	Sta. Cruz	-0.00236	Lodi	-0.0047
78	Oroville	-0.00127	Murrieta	-0.00265	Lodi	-0.00236	Napa	-0.00463

79	Morgan Hills	-0.00125	Morgan Hills	-0.00258	Dixon	-0.00233	Sacramento	-0.00462
80	Temecula	-0.00125	Solvang	-0.00236	Sacramento	-0.00231	Dixon	-0.00448
81	Pittsburgh	-0.00123	Pittsburgh	-0.00234	Napa	-0.00223	Atascadero	-0.0044
82	Los Banos	-0.00123	Turlock	-0.00228	El Cajon	-0.00217	El Cajon	-0.0043
83	Sutter	-0.00115	Temecula	-0.00224	Turlock	-0.00215	Turlock	-0.00425
84	Twentynine Palms	-0.0011	Paso Robles	-0.00221	Mojave	-0.00203	San Bernardino	-0.00409
85	Chico	-0.00108	Modesto	-0.0022	San Rafael	-0.00201	Tracy	-0.00407
86	Atascadero	-0.001	Oroville	-0.00211	Atascadero	-0.002	Mojave	-0.00402
87	Dunsmuir	-0.00099	Napa	-0.002	Tracy	-0.002	San Rafael	-0.004
88	Yuba City	-0.00099	Dunsmuir	-0.00193	Vallejo	-0.00197	Los Banos	-0.00395
89	Solvang	-0.00098	Sutter	-0.00193	Los Banos	-0.00195	Patterson	-0.00387
90	Barstow	-0.00098	Los Banos	-0.0019	Patterson	-0.00193	Vallejo	-0.00387
91	Cotton Wood	-0.00097	Hollister	-0.00174	Walnut Creek	-0.00186	Walnut Creek	-0.00378
92	Napa	-0.00091	Kettleman City	-0.00171	Pittsburgh	-0.00184	Modesto	-0.00369
93	Walnut Creek	-0.00087	Walnut Creek	-0.0017	Modesto	-0.00178	Pittsburgh	-0.00361
94	Tehama	-0.00086	San Jose	-0.00168	San Jose	-0.00167	San Jose	-0.00357
95	Red Bluff	-0.00085	Atascadero	-0.00165	Mtn. View	-0.00165	Sta. Rosa	-0.00336
96	Baker	-0.00085	Yuba City	-0.00164	Dunsmuir	-0.00163	Sun City	-0.00333
97	Yreka	-0.00083	Chico	-0.00163	Oroville	-0.00161	Oroville	-0.00326
98	Glamis	-0.00083	Auburn	-0.00159	Sta. Rosa	-0.00161	Fairfield	-0.00326
99	San Jose	-0.0008	Sta. Rosa	-0.00157	Benicia	-0.00159	Mtn. View	-0.00325
100	Auburn	-0.0008	Roseville	-0.00153	Milpitas	-0.00154	Benicia	-0.00321
101	Mtn. View	-0.0008	Mtn. View	-0.00151	Sun City	-0.00153	Dunsmuir	-0.00315
102	Chester	-0.00078	Benicia	-0.00147	LAX	-0.00152	Sta. Maria	-0.0031
103	Sta. Rosa	-0.00078	El Cajon	-0.00142	Auburn	-0.00146	Auburn	-0.00297
104	Colusa	-0.00076	Cotton Wood	-0.0014	Sta. Maria	-0.00144	Milpitas	-0.00291
105	Roseville	-0.00073	Sta. Cruz	-0.0014	Redwood City	-0.00136	Martinez	-0.00272
106	Oxnard	-0.00073	Martinez	-0.00132	Martinez	-0.00136	Redwood City	-0.0027
107	Benicia	-0.00072	Colusa	-0.00125	San Luis Obispo	-0.00136	LAX	-0.00269
108	Sta. Cruz	-0.00071	San Rafael	-0.00121	Lafayette	-0.00132	Lafayette	-0.00262
109	Martinez	-0.00066	Tehama	-0.00121	Sutter	-0.00129	Sutter	-0.00262
110	San Luis Obispo	-0.00064	Chester	-0.00121	Susanville	-0.00127	San Luis Obispo	-0.0025
111	El Cajon	-0.00063	Red Bluff	-0.00115	Yreka	-0.00122	Susanville	-0.00236
112	San Rafael	-0.00062	Lafayette	-0.00112	Yuba City	-0.00117	Yuba City	-0.00233
113	Milpitas	-0.00059	Yreka	-0.00109	Chico	-0.00115	Malibu	-0.00231
114	Paradise	-0.00055	Milpitas	-0.00109	Kettleman City	-0.00113	Chester	-0.00227
115	Lafayette	-0.00052	San Luis Obispo	-0.00104	Chester	-0.0011	Chico	-0.00217
116	Escondido	-0.00051	Escondido	-0.00099	Malibu	-0.0011	Kettleman City	-0.00215
117	Anderson	-0.00049	Sta. Barbara	-0.00099	Westwood	-0.00106	Westwood	-0.00211
118	Susanville	-0.00048	Paradise	-0.00093	Sta. Monica	-0.00106	Colusa	-0.0021
119	Vallejo	-0.00042	Tehachapi	-0.00091	Colusa	-0.00105	Roseville	-0.00207

120	Redwood City	-0.00041	Susanville	-0.0009	Roseville	-0.00101	Murrieta	-0.00203
121	Tehachapi	-0.0004	Anderson	-0.00089	Murrieta	-0.00099	Temecula	-0.00198
122	Westwood	-0.0004	Dublin	-0.00088	Fremont	-0.00096	Dublin	-0.00193
123	Fairfield	-0.0004	Redwood City	-0.00083	Dublin	-0.00095	Yreka	-0.00186
124	Livermore	-0.00035	Vallejo	-0.00078	McCloud	-0.00092	Paradise	-0.0018
125	Independence	-0.00035	Weed	-0.00077	Paradise	-0.00091	McCloud	-0.00174
126	Dublin	-0.00034	Westwood	-0.00074	Temecula	-0.00087	Tehachapi	-0.00173
127	Cloverdale	-0.00033	Sta. Maria	-0.00071	Tehachapi	-0.00087	Fremont	-0.0017
128	McCloud	-0.00032	McCloud	-0.0007	Cotton Wood	-0.00084	Sta. Monica	-0.00167
129	Sta. Maria	-0.00027	Cloverdale	-0.00066	Tehama	-0.00078	Weed	-0.00162
130	Fremont	-0.00027	Fremont	-0.00059	Weed	-0.00071	Cotton Wood	-0.00153
131	Nevada City	-0.00027	Independence	-0.00058	Anderson	-0.00068	Alturas	-0.00147
132	Weed	-0.00026	Goleta	-0.00055	Red Bluff	-0.00066	Anderson	-0.0014
133	Malibu	-0.00021	Alturas	-0.00052	Independence	-0.00063	Tehama	-0.00139
134	Downieville	-0.0002	Fairfield	-0.00046	Cloverdale	-0.00056	Independence	-0.00122
135	Alturas	-0.00014	Nevada City	-0.00045	Alturas	-0.00055	Red Bluff	-0.00116
136	San Francisco	-0.00011	Downieville	-0.00033	Nevada City	-0.00054	Cloverdale	-0.00115
137	Salinas	-9.40E-05	Malibu	-0.00031	San Francisco	-0.0005	Nevada City	-0.00111
138	Chula Vista	-8.40E-05	LAX	-0.00022	Escondido	-0.00044	San Francisco	-0.00101
139	National City	-8.13E-05	San Francisco	-0.00021	Laguna Beach	-0.00042	Escondido	-0.00087
140	LAX	-8.00E-05	Salinas	-0.00019	Downieville	-0.00037	Laguna Beach	-0.00085
141	Tahoe City	-6.77E-05	Chula Vista	-0.00018	National City	-0.00035	Downieville	-0.00072
142	Laguna Beach	-6.51E-05	National City	-0.00018	Chula Vista	-0.00035	National City	-0.0007
143	San Diego	-6.34E-05	Truckee	-0.00014	Salinas	-0.0003	Chula Vista	-0.0007
144	Truckee	-5.28E-05	San Diego	-0.00014	San Diego	-0.00027	Salinas	-0.00061
145	Lompoc	-5.10E-05	Tahoe City	-0.00013	Fairfield	-0.00022	San Diego	-0.00054
146	Willits	-3.10E-05	Laguna Beach	-0.00012	Lompoc	-0.0002	Lompoc	-0.00042
147	Huntington Beach	-2.49E-05	Lompoc	-0.00011	Huntington Beach	-0.00019	Huntington Beach	-0.00039
148	Newport Beach	-2.15E-05	Willits	-6.05E-05	Newport Beach	-0.00018	Newport Beach	-0.00036
149	Monterey	-1.70E-05	Huntington Beach	-5.00E-05	Tahoe City	-0.00012	Truckee	-0.00028
150	Goleta	-7.53E-06	Newport Beach	-4.46E-05	Willits	-8.46E-05	Tahoe City	-0.00022
151	Crescent City	-2.83E-06	Monterey	-2.81E-05	Monterey	-5.84E-05	Willits	-0.00017
152	Woodland	0	Crescent City	-5.03E-06	Truckee	-1.57E-05	Monterey	-0.00012
153	CitrusHeights	0	Woodland	0	Crescent City	-1.22E-05	Crescent City	-2.09E-05
154	Folsom Lake	0	CitrusHeights	0	South Lake Tahoe	-1.17E-06	South Lake Tahoe	-2.26E-06
155	Lake Havasu	0	Folsom Lake	0	Woodland	0	Woodland	0
156	Eureka	0	Lake Havasu	0	CitrusHeights	0	CitrusHeights	0
157	Fort Bragg	0	Eureka	0	Folsom Lake	0	Folsom Lake	0

	11M		11H		12M		12H	
Ranking								
1	Blythe	-0.01455	Blythe	-0.02879	Blythe	-0.01419	Blythe	-0.02848
2	Tustin	-0.01316	Tustin	-0.02597	Van Nuys	-0.01272	San Bernardino	-0.02745
3	Van Nuys	-0.01246	Van Nuys	-0.02391	Tustin	-0.01174	Van Nuys	-0.02551
4	Northridge	-0.01138	Coachella	-0.02222	Sherman Oaks	-0.01107	Tustin	-0.02355
5	Banning	-0.01106	Banning	-0.02209	Banning	-0.01092	Banning	-0.02204
6	Coachella	-0.01105	Sherman Oaks	-0.02081	Coachella	-0.01084	Coachella	-0.02175
7	Sherman Oaks	-0.01083	Indio	-0.01966	Indio	-0.00964	Sherman Oaks	-0.02136
8	San Bernardino	-0.01068	Palmdale	-0.01868	Beverly Hills	-0.00922	Indio	-0.01936
9	Indio	-0.00981	Beverly Hills	-0.01768	Palmdale	-0.00903	Beverly Hills	-0.01861
10	Beverly Hills	-0.00907	Pomona	-0.01693	Pomona	-0.00865	Palmdale	-0.0184
11	Palmdale	-0.00904	Rosemead	-0.01597	Northridge	-0.00832	Pomona	-0.01769
12	Pomona	-0.00855	Los Angeles	-0.01498	San Dimas	-0.00806	Rosemead	-0.0161
13	Los Angeles	-0.00837	Diamond Bar	-0.0148	Rosemead	-0.008	Northridge	-0.01571
14	Rosemead	-0.00739	Porterville	-0.01479	Los Angeles	-0.00773	Los Angeles	-0.01538
15	Porterville	-0.00738	Northridge	-0.01459	Glendale	-0.00744	Diamond Bar	-0.01532
16	San Dimas	-0.00737	California City	-0.01429	Diamond Bar	-0.00743	San Dimas	-0.01508
17	Wasco	-0.0073	Wasco	-0.01397	Wasco	-0.00721	Century City	-0.01484
18	Diamond Bar	-0.00722	Orange	-0.01377	Corona	-0.00716	Rancho Cucamonga	-0.01459
19	Goleta	-0.00694	San Bernardino	-0.0136	Rancho Cucamonga	-0.00708	Glendale	-0.01442
20	Hollywood	-0.00671	San Dimas	-0.01305	Burbank	-0.00703	Porterville	-0.0143
21	Orange	-0.00664	Hollywood	-0.01286	Canoga Park	-0.00673	Wasco	-0.01419
22	Glendale	-0.00659	Glendale	-0.01276	Porterville	-0.00672	El Centro	-0.01414
23	Corona	-0.00656	Sta. Ana	-0.01276	Hollywood	-0.00667	Orange	-0.01376
24	Rancho Cucamonga	-0.00655	Corona	-0.01236	Victorville	-0.00645	Corona	-0.01353
25	Sta. Ana	-0.00634	Rancho Cucamonga	-0.01209	Downey	-0.00641	Burbank	-0.01348
26	Downey	-0.00598	Century City	-0.01204	Desert Center	-0.00637	Hollywood	-0.01344
27	Burbank	-0.00595	Burbank	-0.01193	San Jacinto	-0.00628	Desert Center	-0.01275
28	Century City	-0.00589	Downey	-0.01172	Orange	-0.00627	Pasadena	-0.01256
29	Ontario	-0.00576	Mission Viejo	-0.01143	Pasadena	-0.00627	San Jacinto	-0.01256
30	Bakersfield	-0.00572	Thousand Oaks	-0.01128	Livermore	-0.00625	Sta. Ana	-0.01236
31	Mission Viejo	-0.00566	Tulare	-0.01115	El Centro	-0.00617	Ontario	-0.01211
32	Tulare	-0.00562	Pasadena	-0.01088	Sta. Ana	-0.00604	Thousand Oaks	-0.01192
33	Pasadena	-0.00547	Bakersfield	-0.01074	Ontario	-0.00603	Downey	-0.01175
34	Thousand Oaks	-0.00542	El Centro	-0.01071	Thousand Oaks	-0.006	Victorville	-0.0117
35	Victorville	-0.00534	Anaheim	-0.01026	Ocotillo	-0.00586	Covina	-0.01166
36	San Jacinto	-0.00532	Sta. Barbara	-0.01018	Covina	-0.00581	Ocotillo	-0.01158
37	Covina	-0.00529	San Jacinto	-0.01003	Tulare	-0.00576	Adelanto	-0.01149

38	Sta. Barbara	-0.00528	Victorville	-0.00997	California City	-0.00571	Salton City	-0.01131
39	Inglewood	-0.00525	Ontario	-0.00986	Salton City	-0.00569	California City	-0.0112
40	Ludlow	-0.00491	Adelanto	-0.00974	Bakersfield	-0.00565	Sta. Clarita	-0.0112
41	Visalia	-0.0049	Sta. Clarita	-0.00971	Sta. Clarita	-0.00565	Anaheim	-0.01108
42	Anaheim	-0.00484	Covina	-0.00958	Century City	-0.00557	Tulare	-0.01101
43	Adelanto	-0.00467	Riverside	-0.00956	Adelanto	-0.00546	Bakersfield	-0.01064
44	Oxnard	-0.00461	Visalia	-0.0093	Mission Viejo	-0.00503	Riverside	-0.01046
45	Canoga Park	-0.00454	Ludlow	-0.00911	Anaheim	-0.00496	Mission Viejo	-0.01007
46	Hesperia	-0.0045	Oxnard	-0.00903	Hemet	-0.0049	Hemet	-0.00979
47	California City	-0.0042	Inglewood	-0.00879	Oxnard	-0.00486	Fullerton	-0.00966
48	Hemet	-0.00399	Baker	-0.00823	Hesperia	-0.00481	Visalia	-0.00954
49	El Centro	-0.00398	Fullerton	-0.00809	Inglewood	-0.0046	Inglewood	-0.00928
50	Fullerton	-0.00398	Goleta	-0.00798	San Bernardino	-0.00459	Oxnard	-0.00916
51	Riverside	-0.00389	Hemet	-0.00788	Fullerton	-0.00459	Simi Valley	-0.00905
52	Simi Valley	-0.00381	Simi Valley	-0.00775	Palm Springs	-0.00455	Palm Springs	-0.00901
53	Pismo Beach	-0.00379	Pismo Beach	-0.00755	Visalia	-0.00453	Mojave	-0.00898
54	Palm Springs	-0.00369	Hesperia	-0.00741	Simi Valley	-0.00449	Sta. Barbara	-0.00837
55	Sta. Clarita	-0.00365	Palm Springs	-0.0074	Mojave	-0.0044	Hesperia	-0.00832
56	Baker	-0.00358	Canoga Park	-0.00706	Sta. Barbara	-0.00435	Pismo Beach	-0.00791
57	Livermore	-0.00315	Twentynine Palms	-0.00646	Riverside	-0.00412	Sun City	-0.00759
58	Twentynine Palms	-0.00307	Glamis	-0.00624	Pismo Beach	-0.004	Canoga Park	-0.0069
59	Solvang	-0.00298	Barstow	-0.0062	Sun City	-0.00359	Whittier	-0.00687
60	Fairfield	-0.00297	Solvang	-0.00617	Chowchilla	-0.0033	Chowchilla	-0.00687
61	Desert Center	-0.00293	Desert Center	-0.00596	Whittier	-0.00327	Manteca	-0.00659
62	Barstow	-0.00291	Ocotillo	-0.00559	Manteca	-0.00314	Hanford	-0.00609
63	Ocotillo	-0.00284	Whittier	-0.00554	Antioch	-0.00311	Antioch	-0.006
64	Glamis	-0.00265	Chowchilla	-0.00534	Fairfield	-0.00296	Merced	-0.00586
65	Chowchilla	-0.00265	Salton City	-0.00524	Hanford	-0.00296	Ludlow	-0.00534
66	Salton City	-0.00261	Mojave	-0.00505	Merced	-0.00293	King City	-0.00519
67	Whittier	-0.0025	Hanford	-0.00482	Fresno	-0.00265	Goleta	-0.00518
68	Hanford	-0.00229	Manteca	-0.00454	Murrieta	-0.00263	Murrieta	-0.00517
69	Mojave	-0.0022	Merced	-0.00423	Ludlow	-0.00262	Davis	-0.00505
70	Manteca	-0.00219	Antioch	-0.00409	King City	-0.00257	Fresno	-0.00502
71	Antioch	-0.00217	Fresno	-0.00403	Davis	-0.00253	Sacramento	-0.00476
72	Merced	-0.00211	King City	-0.00368	Temecula	-0.00237	Lodi	-0.00463
73	Paso Robles	-0.00208	Paso Robles	-0.00365	Sacramento	-0.00236	Solvang	-0.00463
74	Fresno	-0.00207	Davis	-0.0036	Morgan Hills	-0.00236	Morgan Hills	-0.0046
75	Sun City	-0.00193	Sun City	-0.0035	Lodi	-0.00233	Temecula	-0.00451
76	King City	-0.0018	Hollister	-0.0034	Dixon	-0.00232	Napa	-0.00445
77	Davis	-0.00177	Morgan Hills	-0.00334	Napa	-0.00232	Dixon	-0.00439
78	Napa	-0.00174	Sacramento	-0.00326	Paso Robles	-0.00218	Hollister	-0.00426
79	Yreka	-0.00174	Lodi	-0.00319	Sta. Cruz	-0.00211	Sta. Cruz	-0.00417

80	Morgan Hills	-0.00166	Dixon	-0.0031	Tracy	-0.00201	Tracy	-0.00406
81	Sacramento	-0.00165	Atascadero	-0.00308	Solvang	-0.00201	Fairfield	-0.00406
82	Dixon	-0.00164	Turlock	-0.00307	Walnut Creek	-0.00184	Baker	-0.00406
83	Lodi	-0.0016	Sta. Maria	-0.00301	Patterson	-0.00182	Paso Robles	-0.00398
84	Atascadero	-0.00152	Sta. Cruz	-0.00301	Hollister	-0.0018	Patterson	-0.00364
85	Turlock	-0.00152	Napa	-0.003	Pittsburgh	-0.00175	Twentynine Palms	-0.00356
86	El Cajon	-0.00151	El Cajon	-0.003	Turlock	-0.00174	Walnut Creek	-0.00351
87	Sta. Cruz	-0.00149	Los Banos	-0.00285	Twentynine Palms	-0.0017	Pittsburgh	-0.00346
88	Sta. Maria	-0.00147	Tracy	-0.00279	El Cajon	-0.00167	Barstow	-0.00341
89	San Rafael	-0.0014	San Rafael	-0.00278	Dunsmuir	-0.00164	Turlock	-0.00338
90	San Jose	-0.00135	Vallejo	-0.00268	Atascadero	-0.00163	Sta. Rosa	-0.00338
91	Vallejo	-0.00134	Modesto	-0.00262	Sta. Rosa	-0.00162	Atascadero	-0.00335
92	Tracy	-0.00132	Walnut Creek	-0.00248	San Jose	-0.00159	El Cajon	-0.00332
93	Modesto	-0.00132	Patterson	-0.00247	Kettleman City	-0.00156	Kettleman City	-0.00329
94	Los Banos	-0.00127	Murrieta	-0.00237	Oroville	-0.00155	Dunsmuir	-0.00321
95	Pittsburgh	-0.00122	Malibu	-0.00228	Baker	-0.00151	Oroville	-0.00309
96	Patterson	-0.00121	Sta. Rosa	-0.00228	Benicia	-0.00151	Benicia	-0.00307
97	Murrieta	-0.00116	Susanville	-0.00223	Glamis	-0.00149	Los Banos	-0.003
98	Dunsmuir	-0.00116	Benicia	-0.0022	Auburn	-0.00148	Auburn	-0.00299
99	Malibu	-0.00113	Pittsburgh	-0.00219	Mtn. View	-0.00146	Modesto	-0.00297
100	Benicia	-0.0011	Livermore	-0.00215	Modesto	-0.00146	Glamis	-0.00293
101	Mtn. View	-0.00109	Oroville	-0.0021	Goleta	-0.00145	San Jose	-0.00292
102	Hollister	-0.00109	Temecula	-0.00209	Los Banos	-0.00144	Mtn. View	-0.00275
103	Susanville	-0.00109	Mtn. View	-0.00208	San Rafael	-0.00136	San Rafael	-0.00272
104	Sta. Rosa	-0.00109	Auburn	-0.00205	Milpitas	-0.00136	Martinez	-0.0027
105	Temecula	-0.00105	Tehachapi	-0.00202	Martinez	-0.00134	Milpitas	-0.0026
106	Oroville	-0.00104	Dunsmuir	-0.00197	Vallejo	-0.00131	Vallejo	-0.0026
107	Kettleman City	-0.00103	Fairfield	-0.00193	Barstow	-0.00124	Lafayette	-0.0025
108	Walnut Creek	-0.00102	San Jose	-0.00189	Sutter	-0.00124	Sutter	-0.00249
109	Auburn	-0.00102	Chester	-0.00189	Lafayette	-0.00122	Chester	-0.00243
110	Tehachapi	-0.00101	Milpitas	-0.00188	Yuba City	-0.00116	Yreka	-0.00229
111	Redwood City	-0.00095	Westwood	-0.00186	Chico	-0.00115	Yuba City	-0.00226
112	Westwood	-0.00094	Martinez	-0.00183	Chester	-0.00113	Escondido	-0.00219
113	San Luis Obispo	-0.00091	Redwood City	-0.00181	Escondido	-0.00109	Roseville	-0.00214
114	Martinez	-0.00091	San Luis Obispo	-0.00179	Roseville	-0.00105	Sta. Maria	-0.00211
115	Sutter	-0.00089	Lafayette	-0.00176	Colusa	-0.00102	Chico	-0.0021
116	Chester	-0.00088	Sutter	-0.00172	Cotton Wood	-0.00099	McCloud	-0.00203
117	Lafayette	-0.00088	LAX	-0.00168	Sta. Maria	-0.00099	Colusa	-0.00202
118	Milpitas	-0.00087	Cotton Wood	-0.0016	San Luis Obispo	-0.00097	San Luis Obispo	-0.00191
119	Cotton Wood	-0.00084	Yuba City	-0.00154	Weed	-0.00097	Dublin	-0.00187
120	Anderson	-0.00083	Roseville	-0.0015	McCloud	-0.00096	Cotton Wood	-0.00183

121	Chico	-0.0008	Kettleman City	-0.00149	Redwood City	-0.00094	LAX	-0.00181
122	Yuba City	-0.00078	Chico	-0.00146	LAX	-0.00093	Redwood City	-0.0018
123	Roseville	-0.00073	Anderson	-0.00144	Malibu	-0.00092	Weed	-0.00178
124	Weed	-0.00073	Dublin	-0.0014	Dublin	-0.00092	Paradise	-0.00169
125	Colusa	-0.00072	Colusa	-0.0014	Susanville	-0.00088	Malibu	-0.00169
126	LAX	-0.00071	Yreka	-0.00123	Paradise	-0.00083	Susanville	-0.00167
127	Red Bluff	-0.00062	Red Bluff	-0.00123	Fremont	-0.00082	Tehachapi	-0.00164
128	McCloud	-0.00062	Weed	-0.00122	Tehachapi	-0.00082	Westwood	-0.00154
129	Paradise	-0.00058	McCloud	-0.00116	Westwood	-0.00082	Red Bluff	-0.00151
130	Tehama	-0.00056	Paradise	-0.00112	Red Bluff	-0.00081	Fremont	-0.00149
131	Dublin	-0.00055	Fremont	-0.00112	Alturas	-0.00078	Independence	-0.00146
132	Fremont	-0.00054	Tehama	-0.00111	Independence	-0.00077	Cloverdale	-0.00146
133	Escondido	-0.00049	Independence	-0.00104	Tehama	-0.00076	Tehama	-0.00143
134	Independence	-0.00049	Escondido	-0.001	Anderson	-0.0007	Sta. Monica	-0.00133
135	Cloverdale	-0.0004	Cloverdale	-0.00078	Cloverdale	-0.0007	Alturas	-0.00127
136	Nevada City	-0.00035	Nevada City	-0.0007	Nevada City	-0.00052	Anderson	-0.00121
137	San Francisco	-0.00035	Sta. Monica	-0.0007	Yreka	-0.00049	Nevada City	-0.00104
138	Laguna Beach	-0.00031	San Francisco	-0.0007	Downieville	-0.00044	Downieville	-0.00088
139	Downieville	-0.00031	Downieville	-0.00065	San Francisco	-0.00035	San Francisco	-0.00069
140	Sta. Monica	-0.0003	Alturas	-0.00063	Salinas	-0.00029	Livermore	-0.00068
141	Chula Vista	-0.00024	Laguna Beach	-0.00063	Laguna Beach	-0.00028	Salinas	-0.00057
142	National City	-0.00024	National City	-0.00049	National City	-0.00027	Laguna Beach	-0.00056
143	Salinas	-0.00021	Chula Vista	-0.00049	Chula Vista	-0.00027	National City	-0.00054
144	Lompoc	-0.00021	Salinas	-0.00044	San Diego	-0.00021	Chula Vista	-0.00054
145	San Diego	-0.00019	Lompoc	-0.00041	Lompoc	-0.00015	San Diego	-0.00042
146	Huntington Beach	-0.00014	San Diego	-0.00038	Tahoe City	-0.00013	Lompoc	-0.00031
147	Newport Beach	-0.00013	Huntington Beach	-0.00029	Huntington Beach	-0.00013	Truckee	-0.00031
148	Tahoe City	-8.59E-05	Newport Beach	-0.00026	Newport Beach	-0.00012	Tahoe City	-0.00026
149	Willits	-5.70E-05	Tahoe City	-0.00017	Willits	-0.0001	Huntington Beach	-0.00026
150	Monterey	-4.67E-05	Truckee	-0.00015	Monterey	-4.54E-05	Newport Beach	-0.00023
151	Alturas	-2.04E-05	Willits	-0.00011	Crescent City	-9.86E-06	Willits	-0.00021
152	Crescent City	-8.09E-06	Monterey	-9.19E-05	Truckee	-9.27E-06	Monterey	-0.0001
153	South Lake Tahoe	-9.16E-07	Crescent City	-1.38E-05	South Lake Tahoe	-1.14E-06	Crescent City	-1.84E-05
154	Woodland	0	South Lake Tahoe	-1.75E-06	Woodland	0	South Lake Tahoe	-1.89E-06
155	CitrusHeights	0	Woodland	0	CitrusHeights	0	Woodland	0
156	Folsom Lake	0	CitrusHeights	0	Folsom Lake	0	CitrusHeights	0
157	Lake Havasu	0	Folsom Lake	0	Lake Havasu	0	Folsom Lake	0

	13M		13H	
Ranking				
1	Livermore	-0.0018	San Bernardino	-0.00534
2	California City	-0.00076	California City	-0.00051
3	Cotton Wood	-0.00024	Cotton Wood	-0.00019
4	Tehama	-0.00019	Tehama	-3.76E-05
5	Red Bluff	-6.46E-05	Woodland	0
6	Anderson	-4.99E-05	CitrusHeights	0
7	Woodland	0	Folsom Lake	0
8	CitrusHeights	0	Lake Havasu	0
9	Folsom Lake	0	Eureka	0
10	Lake Havasu	0	Fort Bragg	0
11	Eureka	0	Mendocino	0
12	Fort Bragg	0	Citrus Heights	0
13	Mendocino	0	South Lake Tahoe	6.30E-07
14	Citrus Heights	0	Crescent City	9.31E-06
15	South Lake Tahoe	1.12E-06	Anderson	3.39E-05
16	Crescent City	3.84E-06	Monterey	5.30E-05
17	Monterey	2.73E-05	Willits	9.07E-05
18	Truckee	3.87E-05	Tahoe City	9.74E-05
19	Tahoe City	4.38E-05	Truckee	0.000103
20	Willits	4.42E-05	Red Bluff	0.000127
21	Newport Beach	8.66E-05	Newport Beach	0.000176
22	Huntington Beach	9.22E-05	Huntington Beach	0.000188
23	Lompoc	0.000109	Lompoc	0.000219
24	San Diego	0.000135	San Diego	0.000262
25	Downieville	0.000167	Salinas	0.000315
26	Salinas	0.000171	Downieville	0.000336
27	Chula Vista	0.000176	Chula Vista	0.000341
28	National City	0.000181	National City	0.000352
29	Laguna Beach	0.000201	Laguna Beach	0.00041
30	Escondido	0.000233	Escondido	0.000446
31	San Francisco	0.000237	San Francisco	0.000484
32	Chico	0.000245	Independence	0.000537
33	Nevada City	0.000272	Nevada City	0.000543
34	Independence	0.000284	Cloverdale	0.000637
35	Fremont	0.000334	Chico	0.000639
36	Cloverdale	0.000346	Murrieta	0.000725
37	Murrieta	0.000375	Fremont	0.000758
38	Kettleman City	0.000383	Temecula	0.000774

39	Chester	0.000384	Westwood	0.000848
40	Roseville	0.000395	Paradise	0.000861
41	Temecula	0.000398	Colusa	0.000867
42	Paradise	0.00041	Tehachapi	0.000872
43	Colusa	0.000426	Chester	0.000875
44	Westwood	0.000428	Dunsmuir	0.000894
45	Tehachapi	0.000434	Roseville	0.000895
46	McCloud	0.000448	Susanville	0.000954
47	Yuba City	0.000478	Weed	0.000958
48	Weed	0.000495	Yuba City	0.001012
49	Susanville	0.000506	Kettleman City	0.001079
50	Dublin	0.000523	Dublin	0.001119
51	Sutter	0.000537	McCloud	0.001137
52	Malibu	0.000579	Sutter	0.001161
53	Redwood City	0.000581	Malibu	0.001211
54	Lafayette	0.000593	Redwood City	0.001246
55	Martinez	0.000608	Lafayette	0.001268
56	Milpitas	0.000629	San Luis Obispo	0.001299
57	San Luis Obispo	0.000633	San Jose	0.001334
58	Mtn. View	0.000638	Martinez	0.001339
59	San Jose	0.000646	Milpitas	0.00137
60	Dunsmuir	0.000671	Auburn	0.0014
61	Glamis	0.000676	Mtn. View	0.001488
62	Auburn	0.000699	Oroville	0.0015
63	Oroville	0.000711	Alturas	0.001515
64	Benicia	0.000743	Mojave	0.001565
65	Napa	0.000857	Benicia	0.001567
66	Sta. Maria	0.000871	Sun City	0.001592
67	Vallejo	0.000895	Sta. Maria	0.001602
68	Sta. Rosa	0.000901	Yreka	0.001641
69	Modesto	0.000903	Sta. Rosa	0.001721
70	Patterson	0.000921	Vallejo	0.001766
71	Dixon	0.000932	LAX	0.001772
72	San Rafael	0.000935	Pittsburgh	0.001782
73	LAX	0.000937	Walnut Creek	0.001802
74	Sun City	0.00094	Modesto	0.001825
75	Tracy	0.000961	Patterson	0.001848
76	Pittsburgh	0.000971	San Rafael	0.001891
77	Paso Robles	0.001021	Livermore	0.002008
78	King City	0.001021	Tracy	0.002014
79	Mojave	0.001063	Sacramento	0.002069
80	El Cajon	0.001068	Los Banos	0.002073

81	Turlock	0.001077	Dixon	0.002108
82	Walnut Creek	0.001104	Napa	0.002114
83	Lodi	0.001113	El Cajon	0.002116
84	Sacramento	0.001117	Turlock	0.002131
85	Davis	0.001151	King City	0.002151
86	Atascadero	0.00116	Sta. Cruz	0.002232
87	Los Banos	0.001162	Davis	0.002301
88	Ocotillo	0.001186	Lodi	0.002307
89	Salton City	0.001213	Paso Robles	0.002313
90	Alturas	0.001227	Atascadero	0.002337
91	Sta. Cruz	0.001228	Barstow	0.002427
92	Hollister	0.001275	Salton City	0.002436
93	Morgan Hills	0.001316	Hollister	0.002547
94	Fairfield	0.001353	Desert Center	0.002604
95	Desert Center	0.001354	Morgan Hills	0.002629
96	Antioch	0.001422	Ocotillo	0.002633
97	Twentynine Palms	0.00148	Antioch	0.00279
98	Yreka	0.001485	Sta. Monica	0.002899
99	Barstow	0.00149	Twentynine Palms	0.002904
100	Manteca	0.001493	Manteca	0.002926
101	Merced	0.001516	Fairfield	0.003054
102	Hanford	0.001582	Merced	0.003063
103	Fresno	0.001675	Glamis	0.003076
104	Ludlow	0.001716	Fresno	0.003147
105	Whittier	0.001846	Solvang	0.003163
106	Chowchilla	0.001846	Hanford	0.003185
107	Sta. Monica	0.00191	Whittier	0.003712
108	Solvang	0.001968	Ludlow	0.003764
109	Baker	0.00213	Chowchilla	0.003805
110	Fullerton	0.002382	Baker	0.003829
111	Hesperia	0.002515	Goleta	0.00484
112	Pismo Beach	0.002547	Sta. Barbara	0.00486
113	Sta. Barbara	0.002696	Hesperia	0.005355
114	Oxnard	0.002882	Pismo Beach	0.005381
115	Hemet	0.002968	Fullerton	0.005561
116	Palm Springs	0.002982	Canoga Park	0.005579
117	Simi Valley	0.003013	Inglewood	0.005621
118	Canoga Park	0.00302	Palm Springs	0.005758
119	Victorville	0.003169	Oxnard	0.005766
120	Inglewood	0.003206	Hemet	0.005983
121	Visalia	0.003336	Simi Valley	0.006191
122	Wasco	0.003394	Visalia	0.006369

123	Goleta	0.003396	Anaheim	0.006817
124	Ontario	0.003432	Ontario	0.007101
125	Los Angeles	0.003489	Riverside	0.00713
126	Riverside	0.00351	Victorville	0.007281
127	Bakersfield	0.003527	San Jacinto	0.00741
128	Anaheim	0.003554	Bakersfield	0.007504
129	El Centro	0.003596	Adelanto	0.007555
130	Corona	0.003693	Mission Viejo	0.007677
131	San Jacinto	0.003716	Thousand Oaks	0.008076
132	Covina	0.003749	Covina	0.008248
133	Mission Viejo	0.003849	Wasco	0.008269
134	Thousand Oaks	0.003856	Pasadena	0.008323
135	Adelanto	0.003943	Tulare	0.008357
136	Hollywood	0.004217	Downey	0.008465
137	Porterville	0.004225	Corona	0.008505
138	San Dimas	0.004262	Sta. Ana	0.008518
139	Downey	0.004282	Hollywood	0.008738
140	Glendale	0.004305	Rancho Cucamonga	0.008833
141	Burbank	0.004309	Burbank	0.008895
142	Sta. Ana	0.004317	Glendale	0.008913
143	Pasadena	0.004333	El Centro	0.009097
144	Sta. Clarita	0.004409	San Dimas	0.009232
145	Rancho Cucamonga	0.004475	Porterville	0.009287
146	Tulare	0.00468	Los Angeles	0.009361
147	Orange	0.005095	Orange	0.009873
148	Beverly Hills	0.005559	Century City	0.010578
149	Diamond Bar	0.005593	Northridge	0.010771
150	Rosemead	0.005643	Diamond Bar	0.011031
151	Pomona	0.005935	Sta. Clarita	0.011273
152	Palmdale	0.006385	Rosemead	0.011791
153	Sherman Oaks	0.006762	Beverly Hills	0.011935
154	Indio	0.007	Pomona	0.011992
155	Century City	0.007	Palmdale	0.012147
156	Banning	0.007584	Sherman Oaks	0.013894
157	Coachella	0.007681	Indio	0.013901

Following tables: Ranking of measures within each given community (city location).

Crescent City	Eureka	Fort Bragg	Mendocino	Napa	Santa Rosa	Willits	Cloverdale	San Rafael	San Francisco
1H	1H	9H	9H	1H	1H	1H	1H	1H	1H
1M	1M	3H	3H	1M	1M	12H	12H	1M	1M
2H	2H	1H	13H	2H	2H	1M	1M	2H	2H
6H	6H	1M	6M	6H	12H	3H	2H	6H	6H
10H	10H	5H	10M	10H	6H	2H	3H	10H	10H
12H	12H	9M	8M	12H	10H	6H	6H	11H	11H
3H	3H	2M	11H	3H	3H	10H	10H	12H	12H
11H	11H	8M	2M	11H	11H	11H	11H	3H	3H
6M	2M	2H	7M	2M	2M	12M	12M	2M	2M
10M	6M	11M	12H	12M	5H	2M	9H	6M	6M
2M	10M	12M	7H	5H	12M	3M	2M	10M	10M
4H	4H	13H	8H	6M	6M	6M	6M	5H	4H
12M	12M	6M	5H	10M	10M	10M	10M	4H	5H
5H	5H	10M	9M	4H	9H	4H	3M	7H	12M
11M	3M	13M	1H	9H	7H	9H	7H	11M	11M
3M	11M	7H	2H	7H	4H	11M	4H	12M	7H
7H	7H	8H	1M	3M	3M	7H	5H	8H	3M
4M	9H	4M	6H	11M	8H	5H	8H	9H	4M
9H	4M	11H	10H	8H	11M	8H	11M	3M	8H
8H	5M	4H	13M	7M	5M	9M	9M	5M	9H
5M	8H	12H	3M	4M	9M	7M	7M	7M	5M
7M	7M	5M	4M	9M	7M	4M	5M	4M	7M
9M	9M	7M	12M	5M	4M	5M	8M	9M	9M
8M	8M	3M	5M	8M	8M	8M	4M	8M	8M
13M	13M	6H	11M	13M	13M	13M	13M	13M	13M
13H	13H	10H	4H	13H	13H	13H	13H	13H	13H

Vallejo	Redwood City	Milpitas	Fremont	Santa Cruz	Salinas	Monterey	King City	San Jose	Morgan Hills
1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
1M	1M	1M	1M	1M	1M	2H	1M	1M	1M
2H	2H	2H	2H	2H	2H	1M	2H	6H	2H
6H	6H	6H	6H	6H	6H	6H	12H	10H	6H
10H	10H	10H	10H	10H	10H	10H	6H	2H	10H
11H	11H	12H	12H	12H	12H	12H	10H	12H	12H

12H	12H	3H	3H	3H	3H	11H	3H	3H	3H
3H	3H	11H	11H	11H	11H	3H	11H	2M	11H
2M	2M	2M	2M	2M	2M	2M	2M	7H	2M
6M	6M	6M	6M	5H	6M	6M	9H	11H	7H
10M	10M	10M	10M	6M	10M	10M	7H	9H	5H
4H	7H	12M	12M	10M	12M	4H	12M	6M	6M
5H	5H	4H	4H	12M	4H	11M	6M	10M	10M
11M	4H	3M	5H	4H	3M	12M	10M	12M	9H
12M	11M	5H	3M	3M	11M	3M	4H	4H	4H
3M	12M	9H	7H	7H	7H	5H	5H	11M	12M
7H	8H	7H	9H	11M	9H	7H	3M	8H	3M
5M	9H	11M	11M	9H	5H	9H	8H	3M	8H
4M	3M	4M	4M	5M	8H	4M	11M	5H	11M
9H	5M	5M	8H	8H	7M	8H	7M	4M	5M
8H	7M	8H	5M	4M	4M	5M	9M	7M	7M
7M	4M	9M	9M	9M	9M	9M	5M	9M	9M
9M	9M	7M	7M	7M	5M	8M	8M	5M	4M
8M	8M	8M	8M	8M	8M	7M	4M	8M	8M
13M	13M	13M	13M	13M	13M	13M	13M	13M	13M
13H	13H	13H	13H	13H	13H	13H	13H	13H	13H

Hollister	Mountain View	Atascadero	Paso Robles	San Luis Obispo	Pismo Beach	Santa Maria	Lompoc	Solvang	Santa Barbara
1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
1M	1M	1M	1M	1M	1M	2H	2H	2H	2H
2H	2H	2H	2H	2H	2H	1M	1M	1M	1M
6H	6H	6H	6H	6H	6H	6H	6H	6H	6H
10H	10H	10H	10H	10H	10H	10H	10H	10H	10H
12H	12H	12H	12H	12H	12H	11H	11H	11H	11H
3H	3H	11H	5H	11H	11H	12H	12H	12H	12H
11H	11H	3H	11H	5H	3H	2M	2M	2M	2M
6M	2M	2M	3H	3H	2M	3H	3H	3H	3H
10M	7H	5H	7H	2M	5H	11M	11M	8H	6M
7H	6M	7H	2M	7H	7H	6M	6M	7H	10M
5H	10M	4H	6M	6M	4H	10M	10M	11M	11M
2M	5H	6M	10M	10M	6M	4H	4H	6M	5H
3M	9H	10M	4H	4H	10M	8H	7H	10M	12M
12M	4H	9H	8H	8H	12M	7H	8H	5H	3M
9H	12M	12M	9H	9H	9H	12M	12M	4H	4H
5M	3M	3M	12M	5M	8H	5H	3M	9H	8H

9M	11M	8H	11M	12M	11M	3M	5H	12M	7H
8H	8H	11M	5M	11M	3M	9H	9H	8M	5M
8M	5M	7M	7M	7M	5M	8M	4M	3M	4M
11M	7M	5M	3M	3M	7M	4M	7M	5M	9M
4H	9M	4M	9M	9M	4M	5M	8M	7M	8M
7M	4M	9M	8M	8M	8M	7M	5M	4M	9H
4M	8M	8M	4M	4M	9M	9M	9M	9M	7M
13M	13M	13M	13M	13M	13M	13M	13M	13M	13M
13H	13H	13H	13H	13H	13H	13H	13H	13H	13H

Goleta	Oxnard	LAX	Santa Monica	Malibu	Huntington Beach	Laguna Beach	Newport Beach	Beverly Hills	San Diego
1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
2H	1M	1M	1M	2H	1M	1M	1M	1M	1M
1M	2H	2H	2H	1M	2H	2H	2H	2H	2H
11H	6H	6H	6H	6H	6H	6H	6H	6H	6H
6H	10H	10H	10H	10H	10H	10H	10H	10H	10H
10H	12H	12H	3H	11H	11H	11H	11H	12H	12H
11M	11H	3H	12H	12H	12H	12H	12H	11H	11H
12H	3H	11H	6M	3H	3H	3H	3H	3H	3H
6M	2M	6M	10M	2M	2M	2M	2M	5H	2M
10M	6M	10M	11H	11M	6M	6M	6M	2M	6M
5H	10M	2M	2M	6M	10M	10M	10M	6M	10M
8H	4H	4H	11M	10M	4H	4H	4H	10M	4H
2M	5H	12M	4M	4H	11M	11M	11M	7H	12M
3H	12M	5H	5H	12M	5H	12M	12M	4H	11M
4H	11M	4M	7H	5H	12M	5H	5H	12M	7H
7H	3M	11M	12M	3M	3M	3M	3M	11M	3M
4M	7H	3M	8H	8H	4M	7H	4M	9H	5H
3M	4M	7H	3M	4M	7H	4M	7H	5M	9H
12M	8H	5M	4H	7H	5M	8H	5M	8H	8H
8M	5M	8H	9H	5M	8H	5M	8H	3M	4M
5M	9H	9H	5M	8M	9H	9H	9H	7M	7M
9H	7M	9M	9M	9H	7M	7M	7M	4M	8M
7M	8M	7M	8M	9M	8M	8M	8M	9M	9M
9M	9M	8M	7M	7M	9M	9M	9M	8M	5M
13M	13M	13M	13M	13M	13M	13M	13M	13M	13M
13H	13H	13H	13H	13H	13H	13H	13H	13H	13H

Chula Vista	National City	Century City	Anaheim	Santa Ana	Fullerton	Inglewood	Downey	Orange	Tustin
1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
1M	1M	2H	1M	1M	1M	1M	1M	1M	1M
2H	2H	1M	2H	2H	2H	2H	2H	2H	2H
6H	6H	6H	6H	6H	6H	6H	6H	6H	6H
10H	10H	10H	10H	10H	10H	10H	10H	10H	10H
12H	12H	12H	12H	11H	12H	12H	12H	11H	11H
3H	11H	11H	3H	12H	3H	11H	11H	12H	12H
11H	3H	3H	11H	3H	11H	3H	3H	3H	3H
2M	2M	2M	2M	2M	2M	2M	2M	2M	2M
6M	6M	6M	6M	6M	6M	4H	6M	6M	6M
10M	10M	10M	10M	10M	10M	6M	10M	10M	10M
4H	4H	5H	4H	4H	5H	10M	7H	4H	4H
12M	12M	7H	7H	11M	7H	11M	4H	11M	7H
7H	11M	4H	12M	12M	4H	7H	5H	12M	11M
11M	7H	8H	5H	3M	12M	5H	12M	7H	5H
3M	3M	5M	11M	7H	3M	12M	9H	3M	12M
9H	9H	11M	3M	5H	9H	3M	8H	5H	8H
8H	8H	12M	9H	4M	11M	9H	11M	9H	3M
5H	5H	7M	8H	9H	8H	8H	3M	4M	9H
4M	4M	3M	4M	8H	5M	4M	7M	8H	4M
7M	7M	9H	5M	7M	7M	5M	4M	7M	7M
8M	9M	4M	7M	5M	4M	7M	5M	5M	5M
9M	8M	9M	9M	8M	8M	9M	8M	8M	8M
5M	5M	8M	8M	9M	9M	8M	9M	9M	9M
13M	13M	13M	13M	13M	13M	13M	13M	13M	13M
13H	13H	13H	13H	13H	13H	13H	13H	13H	13H

Mission Viejo	Los Angeles	Thousand Oaks	Canoga Park	Van Nuys	Burbank	Hollywood	Whittier	Rosemead	Covina
1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
1M	1M	1M	1M	1M	1M	1M	1M	1M	1M
2H	2H	2H	2H	2H	2H	2H	2H	2H	2H
6H	6H	6H	6H	6H	6H	6H	6H	6H	6H
10H	10H	10H	10H	10H	10H	10H	10H	10H	10H
11H	12H	12H	5H	12H	12H	12H	12H	12H	12H
12H	11H	11H	3H	11H	5H	11H	3H	11H	3H

3H	3H	5H	4H	3H	3H	3H	11H	3H	11H
2M	2M	3H	7H	5H	11H	2M	2M	2M	2M
6M	6M	2M	11H	2M	2M	6M	5H	6M	5H
10M	10M	7H	12H	6M	6M	10M	7H	10M	6M
4H	4H	6M	6M	10M	10M	5H	6M	7H	10M
11M	5H	10M	10M	7H	4H	4H	10M	5H	4H
7H	7H	4H	12M	4H	7H	7H	9H	4H	7H
12M	11M	9H	9H	5M	12M	11M	4H	9H	12M
5H	12M	12M	2M	12M	5M	12M	12M	12M	9H
3M	3M	5M	9M	11M	9H	3M	3M	8H	11M
8H	9H	8H	5M	3M	11M	9H	8H	11M	8H
9H	8H	11M	7M	9H	3M	8H	11M	3M	3M
4M	7M	3M	11M	8H	8H	5M	5M	5M	5M
7M	4M	7M	3M	7M	7M	7M	7M	7M	7M
5M	5M	4M	8H	4M	4M	4M	8M	4M	9M
8M	8M	8M	8M	9M	8M	8M	9M	8M	4M
9M	9M	9M	4M	8M	9M	9M	4M	9M	8M
13M	13M	13M	13M	13M	13M	13M	13M	13M	13M
13H	13H	13H	13H	13H	13H	13H	13H	13H	13H

Diamond Bar	Glendale	Pasadena	Sherman Oaks	San Dimas	Pomona	Simi Valley	Santa Clarita	Northridge	Rancho Cucamonga
1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
1M	1M	1M	1M	1M	1M	1M	1M	2H	1M
2H	2H	2H	2H	2H	2H	2H	6H	1M	2H
6H	6H	6H	6H	6H	6H	6H	10H	6H	6H
10H	10H	10H	10H	10H	10H	10H	2H	10H	10H
12H	12H	12H	12H	12H	12H	5H	12H	12H	12H
11H	3H	3H	11H	3H	11H	12H	3H	3H	3H
3H	11H	11H	5H	11H	3H	3H	11H	11H	11H
5H	2M	5H	3H	5H	2M	11H	6M	5H	5H
2M	5H	2M	2M	2M	5H	2M	10M	2M	2M
4H	6M	7H	7H	6M	6M	7H	2M	7H	6M
6M	10M	6M	6M	10M	10M	6M	5H	11M	10M
10M	4H	10M	10M	4H	4H	10M	9H	6M	7H
7H	7H	4H	4H	7H	7H	4H	12M	10M	4H
12M	12M	9H	12M	12M	12M	9H	7H	8H	9H
11M	11M	12M	5M	11M	11M	5M	7M	12M	12M
9H	9H	3M	9H	3M	9H	12M	4H	9H	11M
3M	3M	8H	8H	5M	3M	8H	3M	3M	3M

5M	5M	11M	11M	9H	8H	3M	11M	4H	8H
8H	8H	5M	3M	4M	5M	11M	9M	5M	5M
4M	7M	7M	7M	8H	4M	7M	5M	7M	7M
7M	4M	4M	4M	7M	7M	9M	4M	4M	4M
9M	9M	8M	8M	9M	8M	4M	8H	8M	9M
8M	8M	9M	9M	8M	9M	8M	8M	9M	8M
13M	13M	13M	13M	13M	13M	13M	13M	13H	13M
13H	13H	13H	13H	13H	13H	13H	13H	13M	13H

San Bernardino	Riverside	Temecula	Escondido	Ontario	Corona	Sun City	San Jacinto	Hemet	Murrieta
1H	1H	12H	12H	1H	1H	1H	1H	1H	12H
12H	1M	1H	1H	1M	1M	12H	1M	1M	1H
2H	2H	3H	3H	2H	2H	3H	2H	2H	3H
1M	6H	2H	2H	6H	6H	2H	6H	6H	2H
5H	10H	12M	12M	10H	10H	9H	10H	10H	9H
11H	12H	9H	1M	12H	12H	1M	12H	12H	12M
4H	11H	1M	11H	3H	11H	12M	3H	7H	1M
11M	3H	11H	9H	5H	3H	11H	7H	3H	11H
9H	2M	6H	3M	11H	2M	6H	11H	11H	3M
7H	7H	10H	6H	2M	6M	10H	5H	5H	6H
2M	6M	3M	10H	6M	10M	3M	2M	2M	10H
8H	10M	2M	2M	10M	4H	2M	6M	9H	2M
4M	5H	9M	9M	4H	5H	9M	10M	6M	9M
9M	4H	8H	11M	7H	7H	8H	9H	10M	8H
7M	9H	11M	8H	12M	12M	11M	4H	4H	11M
13H	12M	6M	6M	11M	11M	7H	8H	8H	7H
12M	8H	10M	10M	9H	3M	6M	12M	12M	6M
5M	11M	7H	7H	8H	9H	10M	7M	7M	10M
6H	3M	4H	4H	3M	8H	4H	3M	3M	4H
10H	7M	5H	5H	5M	4M	5H	11M	11M	5H
8M	4M	8M	8M	7M	7M	8M	5M	9M	8M
6M	9M	4M	4M	4M	5M	4M	9M	5M	4M
10M	5M	5M	7M	9M	8M	7M	4M	8M	5M
3H	8M	7M	5M	8M	9M	5M	8M	4M	7M
13M	13M	13M	13M	13M	13M	13M	13M	13M	13M
3M	13H	13H	13H	13H	13H	13H	13H	13H	13H

Al Cajon	Cottonwood	Red Bluff	Tehama	Chico	Paradise	Oroville	Colusa	Sutter	Yuba City
1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
1M	2H	2H	2H	1M	1M	1M	1M	1M	1M
2H	12H	1M	1M	2H	2H	2H	2H	2H	2H
6H	1M	12H	12H	6H	6H	6H	6H	6H	6H
10H	11H	11H	6H	10H	10H	10H	10H	10H	10H
12H	6H	3H	10H	12H	12H	12H	12H	12H	12H
3H	10H	6H	3H	5H	3H	5H	3H	5H	3H
11H	9H	10H	9H	3H	11H	3H	11H	3H	7H
2M	3H	9H	11H	7H	5H	7H	7H	7H	5H
6M	2M	8H	8H	9H	7H	9H	9H	9H	9H
10M	4H	5H	4H	11H	2M	11H	2M	11H	11H
4H	8H	7H	7H	2M	9H	2M	5H	2M	2M
7H	5H	4H	2M	4H	6M	6M	6M	8H	6M
12M	12M	2M	9M	6M	10M	10M	10M	6M	10M
11M	3M	9M	5M	10M	12M	12M	12M	10M	8H
9H	9M	3M	3M	12M	4H	4H	4H	12M	12M
3M	7H	12M	6M	8H	3M	8H	8H	4H	4H
8H	7M	6M	10M	3M	8H	5M	3M	5M	3M
5H	6M	10M	12M	9M	5M	3M	9M	9M	9M
4M	10M	5M	5H	5M	11M	9M	11M	7M	5M
7M	11M	11M	11M	7M	9M	7M	7M	3M	7M
8M	8M	7M	7M	11M	7M	11M	5M	11M	11M
9M	5M	8M	8M	8M	8M	8M	8M	8M	8M
5M	4M	4M	4M	4M	4M	4M	4M	4M	4M
13M	13M	13M	13M	13M	13M	13M	13M	13M	13M
13H	13H	13H	13H	13H	13H	13H	13H	13H	13H

Roseville	Nevada City	Anderson	Auburn	Davis	Sacramento	Dixon	Murrieta	Al Cajon	Cottonwood
1H	1H	1H	1H	1H	1H	1H	12H	1H	1H
1M	1M	2H	1M	1M	1M	1M	1H	1M	2H
2H	2H	1M	2H	2H	2H	2H	3H	2H	12H
12H	6H	11H	12H	12H	12H	6H	2H	6H	1M
6H	10H	6H	6H	6H	6H	10H	9H	10H	11H
10H	12H	10H	10H	10H	10H	12H	12M	12H	6H
3H	3H	12H	3H	3H	3H	3H	1M	3H	10H
9H	11H	2M	11H	9H	9H	11H	11H	11H	9H

11H	2M	8H	2M	11H	7H	7H	3M	2M	3H
7H	6M	4H	5H	7H	11H	9H	6H	6M	2M
5H	10M	7H	9H	2M	8H	5H	10H	10M	4H
2M	5H	5H	7H	8H	5H	2M	2M	4H	8H
8H	12M	9H	12M	5H	2M	6M	9M	7H	5H
12M	7H	11M	6M	12M	12M	10M	8H	12M	12M
6M	4H	3H	10M	6M	6M	12M	11M	11M	3M
10M	9H	8M	4H	10M	10M	4H	7H	9H	9M
4H	3M	12M	3M	4H	4H	8H	6M	3M	7H
3M	11M	6M	8H	3M	3M	3M	10M	8H	7M
11M	8H	10M	11M	11M	7M	11M	4H	5H	6M
9M	5M	7M	5M	7M	9M	9M	5H	4M	10M
5M	9M	3M	9M	9M	11M	7M	8M	7M	11M
7M	7M	5M	7M	5M	5M	5M	4M	8M	8M
8M	4M	9M	4M	8M	8M	8M	5M	9M	5M
4M	8M	4M	8M	4M	4M	4M	7M	5M	4M
13M	13M	13M	13M	13M	13M	13M	13M	13M	13M
13H	13H	13H	13H	13H	13H	13H	13H	13H	13H

Red Bluff	Tehama	Chico	Paradise	Oroville	Colusa	Sutter	Yuba City	Roseville	Nevada City
1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
2H	2H	1M	1M	1M	1M	1M	1M	1M	1M
1M	1M	2H	2H	2H	2H	2H	2H	2H	2H
12H	12H	6H	6H	6H	6H	6H	6H	12H	6H
11H	6H	10H	10H	10H	10H	10H	10H	6H	10H
3H	10H	12H	12H	12H	12H	12H	12H	10H	12H
6H	3H	5H	3H	5H	3H	5H	3H	3H	3H
10H	9H	3H	11H	3H	11H	3H	7H	9H	11H
9H	11H	7H	5H	7H	7H	7H	5H	11H	2M
8H	8H	9H	7H	9H	9H	9H	9H	7H	6M
5H	4H	11H	2M	11H	2M	11H	11H	5H	10M
7H	7H	2M	9H	2M	5H	2M	2M	2M	5H
4H	2M	4H	6M	6M	6M	8H	6M	8H	12M
2M	9M	6M	10M	10M	10M	6M	10M	12M	7H
9M	5M	10M	12M	12M	12M	10M	8H	6M	4H
3M	3M	12M	4H	4H	4H	12M	12M	10M	9H
12M	6M	8H	3M	8H	8H	4H	4H	4H	3M
6M	10M	3M	8H	5M	3M	5M	3M	3M	11M
10M	12M	9M	5M	3M	9M	9M	9M	11M	8H

5M	5H	5M	11M	9M	11M	7M	5M	9M	5M
11M	11M	7M	9M	7M	7M	3M	7M	5M	9M
7M	7M	11M	7M	11M	5M	11M	11M	7M	7M
8M	8M	8M	8M	8M	8M	8M	8M	8M	4M
4M	4M	4M	4M	4M	4M	4M	4M	4M	8M
13M	13M	13M	13M	13M	13M	13M	13M	13M	13M
13H	13H	13H	13H	13H	13H	13H	13H	13H	13H

Anderson	Auburn	Davis	Sacramento	Dixon	Fresno	Visalia	Bakersfield	Kettleman City	Wasco
1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
2H	1M	1M	1M	1M	1M	1M	1M	12H	1M
1M	2H	2H	2H	2H	2H	2H	6H	1M	2H
11H	12H	12H	12H	6H	6H	6H	10H	3H	6H
6H	6H	6H	6H	10H	10H	10H	2H	2H	10H
10H	10H	10H	10H	12H	7H	12H	11H	6H	12H
12H	3H	3H	3H	3H	12H	11H	12H	10H	11H
2M	11H	9H	9H	11H	9H	7H	3H	9H	3H
8H	2M	11H	7H	7H	3H	3H	7H	12M	2M
4H	5H	7H	11H	9H	5H	6M	2M	9M	6M
7H	9H	2M	8H	5H	11H	10M	6M	5H	10M
5H	7H	8H	5H	2M	8H	2M	10M	2M	4H
9H	12M	5H	2M	6M	2M	8H	9H	11H	7H
11M	6M	12M	12M	10M	6M	9H	4H	8H	11M
3H	10M	6M	6M	12M	10M	4H	5H	3M	12M
8M	4H	10M	10M	4H	9M	5H	8H	6M	8H
12M	3M	4H	4H	8H	12M	11M	11M	10M	9H
6M	8H	3M	3M	3M	7M	12M	12M	11M	5H
10M	11M	11M	7M	11M	4H	7M	3M	4H	3M
7M	5M	7M	9M	9M	3M	3M	7M	7H	4M
3M	9M	9M	11M	7M	11M	9M	4M	7M	7M
5M	7M	5M	5M	5M	5M	8M	8M	8M	9M
9M	4M	8M	8M	8M	8M	4M	9M	5M	8M
4M	8M	4M	4M	4M	4M	5M	5M	4M	5M
13M	13M	13M	13M	13M	13M	13M	13M	13M	13M
13H	13H	13H	13H	13H	13H	13H	13H	13H	13H

Hanford	Tulare	Porterville	Chowchilla	Palmdale	Mojave	Hesperia	Twentynine palms	Barstow	Baker

1H	1H	1H	1H	1H	9H	1H	1H	1H	1H
1M	1M	1M	1M	1M	1H	1M	2H	2H	2H
2H	2H	2H	2H	2H	12H	2H	1M	8H	1M
6H	6H	6H	6H	6H	3H	6H	11H	1M	11H
10H	10H	10H	10H	10H	2H	10H	8H	11H	6H
12H	11H	11H	12H	11H	11H	3H	6H	7H	10H
3H	12H	12H	3H	12H	1M	5H	10H	6H	8H
11H	3H	3H	11H	7H	8H	12H	7H	10H	2M
2M	6M	6M	7H	3H	9M	7H	2M	2M	7H
7H	10M	10M	2M	2M	12M	2M	12H	5H	12H
9H	7H	2M	9H	6M	7H	11H	5H	9H	5H
6M	2M	4H	5H	10M	6H	9H	11M	12H	11M
10M	4H	7H	6M	5H	10H	6M	9H	8M	6M
5H	12M	11M	10M	8H	3M	10M	8M	11M	10M
12M	8H	12M	8H	9H	2M	4H	3H	6M	3H
4H	11M	3M	12M	4H	5H	7M	6M	10M	8M
8H	9H	8H	4H	11M	11M	5M	10M	3H	4H
3M	5H	9H	3M	12M	8M	12M	4H	7M	9H
11M	3M	5H	11M	7M	6M	9M	7M	4H	3M
7M	7M	4M	7M	3M	10M	11M	12M	12M	7M
9M	4M	7M	9M	5M	5M	8H	3M	3M	12M
5M	8M	5M	5M	8M	4H	4M	5M	5M	4M
4M	9M	8M	8M	4M	7M	3M	4M	9M	5M
8M	5M	9M	4M	9M	4M	8M	9M	4M	9M
13M	13M	13M	13M	13M	13M	13M	13M	13M	13M
13H	13H	13H	13H	13H	13H	13H	13H	13H	13H

Ludlow	Victorville	Adelanto	California City	Palm Springs	El Centro	Ocotillo	Indio	Coachella	Salton City
1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
2H	1M	1M	2H	1M	2H	12H	1M	1M	12H
7H	2H	2H	9H	2H	1M	3H	2H	2H	3H
2M	6H	6H	11H	6H	6H	9H	6H	6H	9H
1M	10H	10H	7H	10H	10H	2H	10H	10H	2H
11H	12H	5H	4H	7H	12H	1M	7H	7H	1M
6H	3H	12H	6H	12H	3H	12M	11H	11H	12M
10H	11H	7H	10H	5H	11H	11H	12H	12H	11H
8H	7H	3H	12H	3H	6M	6H	3H	3H	8H
12H	5H	11H	7M	9H	10M	10H	8H	8H	3M

11M	2M	2M	3M	11H	9H	8H	9H	9H	6H
3H	6M	9H	2M	2M	7H	3M	2M	2M	10H
5H	10M	6M	8H	8H	5H	9M	6M	6M	9M
6M	4H	10M	8M	6M	2M	7H	10M	10M	7H
10M	9H	4H	3H	10M	12M	2M	5H	4H	2M
9H	8H	8H	5H	4H	8H	5H	4H	5H	5H
8M	12M	5M	12M	7M	4H	11M	7M	7M	11M
4H	7M	7M	1M	12M	3M	6M	11M	11M	6M
7M	3M	12M	6M	9M	9M	10M	12M	12M	10M
12M	5M	3M	10M	3M	11M	8M	3M	3M	8M
5M	11M	11M	11M	5M	7M	4H	9M	9M	4H
4M	9M	9M	5M	11M	8M	5M	8M	8M	5M
3M	4M	8M	9M	8M	5M	7M	5M	5M	7M
9M	8M	4M	13M	4M	4M	4M	4M	4M	4M
13M	13M	13M	13H	13M	13M	13M	13M	13M	13M
13H	13H	13H	4M	13H	13H	13H	13H	13H	13H

Glamis	Banning	Desert Center	Blythe	Yreka	Weed	Dunsmuir	Alturas	McCloud	Susanville
1H	1H	12H	1H	1H	1H	1H	1H	1H	1H
2H	1M	1H	1M	2H	2H	1M	1M	2H	2H
1M	2H	3H	2H	1M	1M	2H	2H	1M	1M
11H	6H	9H	6H	12H	12H	12H	6H	12H	6H
8H	10H	2H	10H	3H	3M	6H	10H	3H	10H
6H	7H	1M	11H	6H	6H	10H	12H	6H	11H
10H	11H	12M	12H	10H	10H	3H	3H	10H	2M
7H	12H	11H	3H	11M	3H	11H	2M	2M	12H
2M	3H	3M	7H	5H	11H	9H	7M	11H	3H
8M	2M	9M	2M	4M	2M	12M	12M	3M	7H
9H	8H	6H	6M	11H	12M	2M	5H	12M	6M
5H	6M	10H	10M	6M	9H	6M	11H	6M	10M
12H	10M	8H	4H	10M	11M	10M	4H	10M	8H
6M	9H	7H	8H	9H	6M	7H	6M	4H	4H
10M	5H	2M	9H	3M	10M	5H	10M	5H	11M
11M	4H	5H	11M	9M	8H	3M	9H	9H	5H
3H	11M	11M	12M	4H	5H	4H	7H	7H	9H
4H	12M	6M	5H	8M	7H	8H	8H	11M	12M
5M	7M	10M	3M	8H	4H	11M	9M	8H	3M
4M	3M	8M	7M	2M	5M	7M	3M	5M	4M
12M	9M	4H	4M	12M	9M	5M	11M	4M	7M

7M	8M	5M	8M	5M	7M	9M	5M	9M	8M
3M	5M	7M	9M	7H	8M	8M	4M	7M	9M
9M	4M	4M	5M	7M	4M	4M	8M	8M	5M
13M	13M	13M	13M	13M	13M	13M	13M	13M	13M
13H	13H	13H	13H	13H	13H	13H	13H	13H	13H

Westwood	Chester	Downieville	Tahoe City	South Lake Tahoe	Truckee	Independence	Tehachapi
1H	1H	1H	1H	1H	1H	1H	1H
2H	2H	2H	2H	2H	1M	2H	2H
1M	12H	1M	1M	3H	12H	1M	1M
6H	1M	12H	12H	1M	6H	12H	11H
10H	6H	3H	3H	6H	10H	3H	6H
11H	10H	6H	6H	10H	2H	6H	10H
12H	3H	10H	10H	12H	11H	10H	12H
3H	11H	11H	11H	11H	3H	11H	3H
2M	5H	2M	2M	4M	9H	2M	2M
4H	9H	12M	12M	6M	8H	12M	8H
6M	7H	3M	9H	10M	4H	3M	11M
10M	12M	6M	3M	4H	7H	6M	7H
7H	6M	10M	5H	12M	5M	10M	9H
11M	10M	4H	6M	2M	9M	5H	6M
12M	2M	9H	10M	11M	2M	9H	10M
5H	8H	5H	7H	3M	8M	4H	12M
8H	4H	11M	4H	13H	6M	11M	4H
9H	3M	7H	8H	8M	10M	8H	5H
4M	11M	8H	11M	8H	12M	7H	3M
3M	9M	9M	5M	9M	5H	9M	7M
8M	8M	4M	7M	13M	3M	5M	8M
7M	4M	7M	9M	5H	11M	4M	9M
9M	7M	5M	4M	5M	7M	8M	5M
5M	5M	8M	8M	9H	13M	7M	4M
13M	13M	13M	13M	7M	4M	13M	13M
13H	13H	13H	13H	7H	13H	13H	13H