Climate Smart Cities - Los Angeles

Model Criteria - August 3, 2016

1	3	4			6	7		
Goal	Criteria	Criteria Weights	Notes	Methodology	Data (Description, Date)	Data Source	Model Input Location	Model Details (for complex models, include strategy description, rationale, ppt link)
Cool								
	CL01: 2015 Daytime Heat Island Hot Spots	75%	Download the 2015 MODIS and rerun	This model identifies urban heat islands within Los Angeles city limits with elevated daytime land surface temperatures (LST) averaging at least 1.25 degrees Fahrenheit above the mean daily temperature during July and August of 2015. MODIS/Aqua MYD11A2 satellite data provides a 1 kilometer (0.6 mi) gridded average land surface temperature over 8 day periods derived using a split-window algorithm. Historical temperature records show that typically, the warmest months are July and August. Eight consecutive 8-day MODIS LST averages were compiled to create a 2-month average over the period July 4 - September 5 2015. This broad time span helps to alleviate issues relating to short term temperature fluxuations and absence of satellite data in specific areas due to cloud cover or other issues.	2015 MODIS (Moderate Resolution Imaging Spectro radiometer) MYD11A2 Land Surface Temperature & Emissivity 8 Day L3 Global 1km SIN http://www.laalmanac.com/weather/we01.htm	USGS Land Processes Distributed Active Archive Center (LP DAAC)		
	CL02: 2015 Nighttime Heat Island Hot Spots	25%	Download the 2015 MODIS and rerun	This model identifies urban heat islands within Los Angeles city limits with elevated nighttime land surface temperatures (LST) averaging at least 1.25 degrees Fahrenheit above the mean daily temperature during July and August of 2015. MODIS/Aqua MYD11A2 satellite data provides a 1 kilometer (0.6 mi) gridded average land surface temperature over 8 day periods derived using a split-window algorithm. Historical temperature records show that typically, the warmest months are July and August. Eight consecutive 8-day MODIS LST averages were compiled to create a 2-month average over the period July 4 - September 5 2015. This broad time span helps to alleviate issues relating to short term temperature fluxuations and absence of satellite data in specific areas due to cloud cover or other issues.	2015 MODIS (Moderate Resolution Imaging Spectro radiometer) MYD11A2 Land Surface Temperature & Emissivity 8 Day L3 Global 1km SIN http://www.laalmanac.com/weather/we01.htm	USGS Land Processes Distributed Active Archive Center (LP DAAC)		
Connect								
	CT01: Connect Low-income Communities to Job Rich Districts	11%		This model identifies the most cost effective potential routes for walking and biking between low income communities and job rich areas. Low income communities were identified as those block groups where more than 50% of the population was living below twice the federal poverty level. Job Rich districts were identified using employees per mile density layer derived from ESRI business analyst data. A least cost path analysis was completed to derive all possible routes between low income communities as the source and job rich districts as the destinations. The identified routes were buffered by 200 ft. to identify the corridors where a potential high demand for active transportation is needed.	*Source/Destinations:* Low Income Communities: Percent of the population living below two times the federal poverty level (5-year estimate, 2008-2012) Business Locations *Least Cost Path Cost Grid:* Potential Bike Baths Existing Bike Paths NAVTEQ Streets 2015 Q3	*Source/Destinations:* Cal Enviro Screen 2.0 ESRI Business Analyst *Least Cost Path Cost Grid:* SCAG LA County ESRI Business Analyst		
	CT02: Connect Low-income communities to Shopping Centers and Medical Facilities	11%		This model identifies the most cost effective potential routes for walking and biking between low income communities and key shopping facilities and medical facilities. Low income communities were identified as those block groups where more than 50% of the population was living below twice the federal poverty level. Key shopping facilities were considered all grocery stores with a produce section and medical facilities were considered all hospitals and medical offices identified in Business Analyst. A least cost path analysis was completed to derive all possible routes between low income communities as the source and key shopping facilities and medical offices as the destinations. The identified routes were buffered to identify the corridors where a potential high demand for active transportation is needed. All identified buffered routes were given a priority value of 5 (High).	*Source/Destinations:* Low Income Communities: Percent of the population living below two times the federal poverty level (5-year estimate, 2008-2012) Shopping Centers: NAICS codes for grocery stores and markets and pharmacies Medical Facilities: MAICS codes for medical facilities *Least Cost Path Cost Grid:* Potential Bike Baths Existing Bike Paths NAVTEQ Streets 2015 Q3	*Source/Destinations:* Cal Enviro Screen 2.0 ESRI Business Analyst *Least Cost Path Cost Grid:* SCAG LA County ESRI Business Analyst		

CT03: Connect Low-income communities to High Quality Transit	11%		This model prioritizes areas that have been mapped as High Quality Transit Areas and where these areas overlap areas with a mile of low income communities . High quality transit areas (HQTA) were identified and defined by SCAG as: generally a walkable transit village, consistent with the adopted SCS that has a minimum density of 20 dwelling units per acre and is within a ½ mile of a well-serviced transit stop, and includes transit corridors with minimum 15-minute or less service frequency during peak commute hours and are spatially represented by Major Transit Stops and High Quality Transit Corridors. Low income communities were identified as those block groups where more than 50% of the population was living below twice the federal poverty level. The model merges Major Transits Stops, 2012 High Quality Transit Corridors, 2040 High Quality Transit Corridors, and areas within a 20 minute (1-mile) walk of a low-income community using and equal weighted sum model. Priority values assigned using a natural breaks slice) to 5 scale, where the highest value (5) assigned to those areas where all four layers overlap.	*Source/Destinations:* Low Income Communities: Percent of the population living below two times the federal poverty level (5-year estimate, 2008-2012) High Quality Transit Corridors: draft High Quality Transit Areas (HQTA) in the SCAG Region for current year 2012 and planned year 2040, updated as of September 28, 2015. Major Transit Stops in the SCAG Region, updated as of September 28, 2015. *Least Cost Path Cost Grid:* Potential Bike Baths Existing Bike Paths NAVTEQ Streets 2015 Q3	*Source/Destinations:* Cal Enviro Screen 2.0 ESRI Business Analyst *Least Cost Path Cost Grid:* SCAG LA County ESRI Business Analyst		A. Major Transit Stop: a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods (CA Public Resource Code Section 21064.3). It also includes major transit stops that are included in the applicable regional transportation. B. High-Quality Transit Corridor (HQTC): A corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. A least cost path analysis was completed to derive all possible routes and the best single route between low income communities as the source and job rich districts as the destinations. The identified best single routes were buffered to identify the corridors where a prtential high demand for active transportration is needed.
CT04: Connect High Bike/Walk Communities to Job Rich Districts	11%		This model identifies the most cost effective potential routes for walking and biking between communities with populations with high bike walk participation and job rich areas. Populations with high bike walk participation were Job Rich districts were identified using employees per mile density layer derived from ESRI business analyst data. A least cost path analysis was completed to derive all possible routes between low income communities as the source and job rich districts as the destinations. The identified routes were buffered by 200 ft. to identify the corridors where a potential high demand for active transportation is needed. All identified buffered routes were given a priority value of 5 (High).	*Source/Destinations:* High Bike/Walk Communities: Business Analyst segments (demographic profiles) where bikers and walkers per square mile greater than the lowest quintile using a natural breaks classification. > 98 bikers per square mile and > 235 walkers per square mile. Business Locations *Least Cost Path Cost Grid:* Potential Bike Baths Existing Bike Paths NAVTEQ Streets 2015 Q3	*Source/Destinations:* ESRI Business Analyst *Least Cost Path Cost Grid:* SCAG LA County ESRI Business Analyst		
CT05: ConnectHigh Bike/Walk Communities to Shopping Centers and Medical Facilities	11%		This model identifies the most cost effective potential routes for walking and biking between communities with populations with high bike walk participation and key shopping facilities and medical facilities. Key shopping facilities were considered all grocery stores with a produce section and medical facilities were considered all hospitals and medical offices identified in Business Analyst. A least cost path analysis was completed to derive all possible routes between low income communities as the source and key shopping facilities and medical offices as the destinations. The identified routes were buffered to identify the corridors where a potential high demand for active transportation is needed. All identified buffered routes were given a priority value of 5 (High).	*Source/Destinations:* High Bike/Walk Communities: . Shopping Centers: NAICS codes for grocery stores and markets and pharmacies Medical Facilities: MAICS codes for medical facilities *Least Cost Path Cost Grid:* Potential Bike Baths Existing Bike Paths NAVTEQ Streets 2015 Q3	*Source/Destinations:* ESRI Business Analyst - business locations *Least Cost Path Cost Grid:* SCAG LA County ESRI Business Analyst - Street Network		
CT06: Connect to the LA River sustainable River Revitalization Projects	11%		This model identifies the areas within a 10 minute walk to all proposed Los Angeles River Revitalization Projects. A primary goal in the Sustainable LA Plan is to increase access to parks and open space with a focus on a revitalized LA River and building out the LA River Bike Path. The 10 minute walk areas for the top revitalization projects identified were given	*Source/Destinations:* High Bike/Walk Communities: Greenspace *Least Cost Path Cost Grid:* Potential Bike Baths Existing Bike Paths NAVTEQ Streets 2015 Q3	*Source/Destinations:* ESRI Business Analyst ParkScore- City parks and Open Space *Least Cost Path Cost Grid:* SCAG LA County ESRI Business Analyst		
CT07: Provide Access to Public Schools	11%		This model identifies the areas within a 10 minute walk to all public schools. The 10 minute walk areas for the top 50 priority schools identified in safe routes to schools report were given highest priority (5); the 10 minute walk service areas for the remainder of the public schools were given a priority moderate to high priority value of 4.	NAVTEQ Walkable streets 2015 Q3 LA Public Schools Top 50 Safe Routes to School Priorities	TPL - ESRI 2015 LA County LA Safe Routes to School (created by TPL) http://saferoutes.lacity.org/wp-content/uploads/2014/12/SRTS_Fact_Sheet_2013-05-28.pdf		
CT08: Provide Access to Universities and Colleges	11%		This model identifies the areas within a 10 minute walk to all universities and colleges. The 10 minute walk areas for any college or university were given highest priority (5).	NAVTEQ Walkable streets 2015 Q3 ESRI business analyst - Universities and Schools	ESRI Business Analyst - Walkable Street Network SCAG - College and University Locations		
CT09: First Last Mile Walkable Areas	11%		In 2012, the Los Angeles Metro Board authorized development of the First-Last Mile Strategic Plan with the goal of coordinating infrastructure investments that would expand reach and ridership of transit. The draft study found that "all metro riders must contend with the first-last mile challenge, and the easier it is to access the system, the more likely people are to use it" This model prioritizes areas within a mile of low-income communities, job-rich areas, grocery stores, and medical facilities. Areas with a 10 minute walk (2640 ft.) were given high priority value (5), and areas within 20 minute walk (5280 ft.) were given a	NAVTEQ Streets 2015 Q3 Low Income Communities: Percent of the population living below two times the federal poverty level (5-year estimate, 2008-2012) Job Rich Areas: LA County Business Locations Shopping Centers: NAICS codes for grocery stores and markets and	ESRI Business Analyst - Walkable Street Network US CENSUS - Low Income Communities ESRI Business Analyst - business location (groceries, job rich, medical facilities)		
Absorb							
AB01: Riparian Areas	5.0%	Have NHD, FWS Wetlands (NWI) Wing-constucted riparian areas/wetlands. New or restoration. Returning hydrology. G2, South LA wetlands. Green streets? Probably not raparian area. Big cisterns for capturing water and reusing. Have locations for projects.	This model identifies riparian areas that can store or absorb local rainfall. Areas mapped included streams, and riparian areas. All features were buffer areas by 30 feet. Southern California Wetlands Mapping Project riparian areas were not buffered as they appear buffered already. McElfish e.t al. 2008 found that pollutants are removed within a 15-30 ft. buffer of a wetland and sediment was removed within 30 to 100 feet. Priority value 5 (High) given to all features.	NHD Streams and Waterbodies. NWI Riparian Areas, Southern California Wetlands Mapping Project Riparian Areas	Downloaded from Los Angeles GIS portal Downloaded from US Fish and Wildlife Service Downloaded from Cal. State, Northridge		

	Item	Weight	Notes	Model Description	Data Layer	Source		Additional Notes
	AB02: Flood Prone Areas	5.0%	Have FEMA Flood Zones Wing- there is better mapping but for specific purposes. County responsible for 50 year flooding. City for 10 year flooding. The infrastructure ties together. Have some mapping for this. Streets designed to carry water. When over the curb it's a flood. Good arguement for implementing green streets, standing water.	This model assigns flooding risk priorities based on 2015 Flood Advisory Zones developed by FEMA. The Flood Advisory Zones take into consideration a combination storm surge, wave setup, and overland wave action. Zone A designates areas subject to coastal flood effects based on the 1% annual chance flood elevation (100-yr flood event). Zone X designates areas subject to coastal flood effects associated with 0.2% annual chance flood event (500-yr flood event). The Advisory Flood Zones are intended to serve as the best available data for understanding coastal flood hazard risk and the elevations that communities should build to in order to protect themselves from future coastal flood events. Priority values of known flooding areas (class A,AE,AH,AO) are 5 (High) and possible flooding areas (class D) are 3 moderate	FEMA Flood Zones, repetitive loss	Downloaded from FEMA.		
	AB03:Permeable Soils	25.0%	John Tangenberg-bringing together modeled data. Include slope in the model. Places with high slope but good infiltration. Places with permiable soils but not good access to basins. Where are opportune infiltration areas. New soils layer coming out, NRCS. Waiting for the new layer.	This model identifies areas with higher permeable soils. Permeable soils are soils with KSAT values of 0.75 and higher and slopes <=6%. The KSAT value is most reliable measure of the infiltration rate of a soil and is based on soil texture and structure. A KSAT Value above 0.3 are indicative of permeable soils. The Technical Advisory Team recommended KSAT value above 0.75 to identify priority permeable sois. Mapped areas with slope <=3% are coded 5 (High) and areas with slope >3% but <=6% are coded 4 (Medium High).	GWAM_High_Infilt_Soils January 2015	Council for Watershed Health GWAM High Infiltration Soils		
	AB04: Spreading Grounds	5.0%	Have Spreading Grounds from LA County	This model identifies spreading grounds that can store or absorb local rainfall. All features were buffer areas by 1500 feet. The Los Angeles Department of Public Works uses water conservation facilities or spreading grounds adjacent to river channels and in soft-bottom channels for flood	Spreading grounds from LA County.	Downloaded from Los Angeles GIS portal.		
	AB05: Wetlands	5.0%	Have NWI Talked about under riparian section.	This model identifies wetland areas that can store or absorb local rainfall. All features were buffer areas by 30 feet. Wetlands are critical natural infrastructure for mitigating and minimizing flood damage. Wetlands store precipitation and surface water and then slowly release the water into	NHD Streams and Waterbodies. NWI Wetlands Areas, Southern California Wetlands Mapping Project Wetlands	Downloaded from Los Angeles GIS portal. Downloaded from US Fish and Wildlife Service Downloaded from Cal. State, Northridge		
	AB06: Lakes and Ponds	5.0%	Have NHD In the NWI also Center for Geographic Studies at Cal State Northridge-may have updated data.	This model identifies lakes and pond areas that can store or absorb local rainfall. All features were buffer areas by 30 feet. Ponds are also critical natural infrastructure for mitigating and minimizing flood damage from urban runoff. In cities with high impervious cover like Los Angeles, a primary	NHD Streams and Waterbodies.	Downloaded from Los Angeles GIS portal.		
	AB07: Groundwater Forebay	20.0%		This model identifies groundwater forebay areas with highest likelihood of groundwater aquifer infiltration. Groundwater forebay areas are areas where recharge might occur and where confining layers in the aquifer do not prevent the downward migration of water as well	GWAM_High_Infilt_Soils January 2015	LA Department of Water and Power (LADWP) Council for Watershed Health		
	AB08: Ground Water Basins	30.0%		This model identifies areas overlaying ground water basins with at least some likelihood of infiltration to a ground water aquifer. Priority value 5 (High) given to all areas identified as overlaying groundwater basins.	Ground Water Basins	Downloaded from Los Angeles GIS portal.		
Protect								
	PR01: Coastal High Hazard Areas	15%		This model assigns Coastal High Hazard Areas risk based on FEMA Flood Insurance Rate Mapping (FIRM), specifically those areas mapped as flood zones V and VE. The FEMA Flood Advisory Zones take into consideration a combination storm surge, wave setup, and overland wave action. Flood Zone v indicates areas along coasts subject to inundation by the 1-percent-annual-chance flood event with additional hazards associated with storm-induced waves.b Flood Zone VE indicates areas subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action Flood zone polygons with codes V and VE were given the priority value of 5 (High).	Flood Insurance Rate Mapping (FIRM) panels for Los Angeles County date to 9/26/2008	Federal Emergency Management Agency (FEMA) http://msc.fema.gov/portal/advanceSearch		Coastal High Hazard Areas (CHHA) represent the area subject to inundation by 1-percent-annual chance flood, extending from offshore to the inland limit of a primary front al dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. Structures located within the CHHA have a 26-percent chance of flooding during the life of a standard 30-year mortgage. Federal floodplain management regulations and mandatory purchase requirements apply in these zones. Zone V designates areas in the coastal high hazard zone, subject to high velocity wave action with breaking waves over 3 ft in height based on the 1% annual chance flood elevation. Zone VE designates areas along coasts subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action.
	PR02: Projected Storm Innundation Areas	15%		This model assigns priority value to areas expected to have increased storm inundation due to climate change and expected sea-level rise. In the National Research Council report "Sea-Level Rise for the Coasts of California, Oregon, and Washington" (2012) sea level rise for Southern California is projected to be from 17 to 66 inches (0.43 to 1.68 meters) between the year 2000 and 2100. Using the CoSMoS 100 year storm flood projections and set the priority value to 5 for 0.5m sea level rise, 4 for 1m sea level rise, 3 for 1.5m sea level rise areas.	CoSMoS 100 year storm flood projections for sea level rise of 0.5m, 1m, and 1.5m (Feb. 2016)	USGS, Pacific Coastal Marine Science Center, Coastal Storm Modeling System (CoSMoS) 3.0 100 year storm flood projections https://walrus.wr.usgs.gov/coastal_processes/cosmos/socal3.0/index.html		

	PR03: Cliff Erosion	15%		This model assigns priority to areas with high probability for cliff erosion. In the National Research Council report "Sea-Level Rise for the Coasts of California, Oregon, and Washington" (2012) sea level rise for Southern California is projected to be from 17 to 66 inches (0.43 to 1.68 meters) between the year 2000 and 2100. Use the CoSMoS cliff retreat projection uncertainty polygons and set the priority value to 5 for 0.5m sea level rise, 4 for 1m sea level rise, 3 for 1.5m sea level rise areas.	CoSMoS cliff retreat projection uncertainty polygons for sea level rise of 0.5m, 1m and 1.5m (Feb. 2016)	USGS, Pacific Coastal Marine Science Center, Coastal Storm Modeling System (CoSMoS) 3.0 Cliff retreat projections https://walrus.wr.usgs.gov/coastal_processes/cosmos/socal3.0/index.html	
	PR04: Shoreline Change	15%		This model assign priority based on risk of expected shoreline change due to climate change and sea-level rise. In the National Research Council report "Sea-Level Rise for the Coasts of California, Oregon, and Washington" (2012) sea level rise for Southern California is projected to be from 17 to 66 inches (0.43 to 1.68 meters) between the year 2000 and 2100. Use the CoSMoS shoreline projection polylines for 0.5m, 1.0m and 1.5m sea level rise. Buffer each polyline by 30 feet and set the priority value to 5 for 0.5m sea level rise, 4 for 1m sea level rise, 3 for 1.5m sea level rise areas.	CoSMoS shoreline projection uncertainty polygons for sea level rise of 0.5m, 1m and 1.5m (Feb. 2016)	USGS, Pacific Coastal Marine Science Center, Coastal Storm Modeling System (CoSMoS) 3.0 Shoreline projections https://walrus.wr.usgs.gov/coastal_processes/cosmos/socal3.0/index.html	
	PR05: Flood Prone Areas	40%		This model assigns flooding risk priorities based on 2015 Flood Advisory Zones developed by FEMA. The Flood Advisory Zones take into consideration a combination storm surge, wave setup, and overland wave action. Zone A designates areas subject to coastal flood effects based on the 1% annual chance flood elevation (100-yr flood event). Zone X designates areas subject to coastal flood effects associated with 0.2% annual chance flood event (500-yr flood event). The Advisory Flood Zones are intended to serve as the best available data for understanding coastal flood hazard risk and the elevations that communities should build to in order to protect themselves from future coastal flood events. Priority values of known flooding areas (class A,AE,AH,AO) are 5 (High) and possible flooding areas (class D) are 3 moderate	FEMA Flood Zones, repetitive loss County date to 9/26/2008	Downloaded from FEMA.	
Social Vulnerability							
	SV01: People of Color	11%		This model assigns value to census block areas based on the percent of the population that is considered non-white. People of color is defined as The percent of individuals in a block group who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino. From the Plan for a Healthy Los Angeles: " A growing body of literature provides evidence of the heightened vulnerability of people of color and lower socioeconomic status to environmental pollutants. People of color in studied regions of southern California were found to have a greater likelihood of living in areas with higher toxic releases" Priority values (0 to 5) were assigned to the data using a natural breaks classification.	EJSCREEN uses demographic factors as very general indicators of a community's potential susceptibility to the types of environmental factors. The EJSCREEN includes people of color, which is referred to as Percent Minority in the EPA dataset. Percent Minority is defined as The percent of individuals in a block group who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino. That is, all people other than non-Hispanic white-alone individuals. The word "alone" in this case indicates that the person is of a single race, not multiracial. The source of all demographic data used in EJSCREEN is the American Community Survey (ACS) five-year summary file (2008 - 2012).	EPA (http://www.epa.gov/sites/production/files/2015-05/documents/ejscreen_technical_document_20150505.pdf)	
	SV02: Low Income Populations	11%		This model assigns value to census block areas based on percentage of population that is considered low-income. Low Income is defined as the present of a block group's population in households where the household income is less than or equal to twice the federal poverty level (based on 5-year estimates from ACS data - 2008 to 2012).. From the Plan for a Healthy Los Angeles: " Income is the greatest determinant of a person's health. The city will recognize the historical and political context that has produced income and health disparities in Los Angeles and will use economic development and planning tools to address income inequities " Priority values (0 to 5) were assigned to the data using a natural breaks classification.	EJSCREEN uses demographic factors as very general indicators of a community's potential susceptibility to the types of environmental factors. The EJSCREEN includes low-income households, which is referred to as Percent Low-income in the EPA dataset. Percent Low-Income is defined as the percent of a block group's population in households where the household income is less than or equal to twice the federal "poverty level." The source of all demographic data used in EJSCREEN is the American Community Survey (ACS) five-year summary file (2008 - 2012).	EPA (http://www.epa.gov/sites/production/files/2015-05/documents/ejscreen_technical_document_20150505.pdf)	

SV03: Less than High School Education	11%		This model assigns value to census block areas based on percentage of population over age 25 with less than a high school education (5-year estimate, 2008-2012). From the CalEnviroScreen 2.0 report: "Educational attainment is an important independent predictor of health (Cutler and Lleras-Muney, 2006). As a component of socioeconomic status, education is often inversely related to the degree of exposure to indoor and outdoor pollution. Several studies have associated educational attainment with susceptibility to the health impacts of environmental pollutants " Priority values (0 to 5) were assigned to the data using a natural breaks classification.	EJSCREEN uses demographic factors as very general indicators of a community's potential susceptibility to the types of environmental factors. The EJSCREEN includes block groups with populations age 25 or older that have not obtained a high school diploma which is referred to as Less than high school education n the EPA dataset. Less than high school education is defined as the percent of people age 25 or older in a block group whose education is short of a high school diploma. The source of all demographic data used in EJSCREEN is the American Community Survey (ACS) five-year summary file (2008 - 2012).	EPA (http://www.epa.gov/sites/production/files/2015-05/documents/ejscreen_technical_document_20150505.pdf)
SV04: Linguistic Isolation	11%		This model assigns value to census block areas based on percentage of households in which no one age 14 and over speaks English "very well" or speaks English only. From the CalEnviroScreen 2.0 report: "California has a higher proportion of immigrants than any other state and the immigrant population has increased by 400% since 1970. The inability to speak English well can affect an individual's communication with service providers and his or her ability to perform daily activities. " Priority values (0 to 5) were assigned to the data using a natural breaks classification.	EJSCREEN uses demographic factors as very general indicators of a community's potential susceptibility to the types of environmental factors. The EJSCREEN includes linguistically isolated households, which is referred to as Linguistic isolation in the EPA dataset. Linguistic isolation is defined as the percent of people in a block group living in linguistically isolated households. A household in which all members age 14 years and over speak a non-English language and also speak English less than "very well" (have difficulty with English) is linguistically isolated. The source of all demographic data used in EJSCREEN is the American Community Survey (ACS) five-year summary file (2008 - 2012).	EPA (http://www.epa.gov/sites/production/files/2015-05/documents/ejscreen_technical_document_20150505.pdf)
SV05: Population Under 5	11%		This model assigns value to census block areas based on percentage of individuals in a block group under the age of 5 (5-year estimate, 2008-2012). From the CalEnviroScreen 2.0 report: "Children can be especially sensitive to the adverse effects of pollutants for many reasons. Children are often more susceptible to the health effects of air pollution because their immune systems and organs are still immature. " Priority values (0 to 5) were assigned to the data using a natural breaks classification.	EJSCREEN uses demographic factors as very general indicators of a community's potential susceptibility to the types of environmental factors. The EJSCREEN includes block groups with populations under the age of 5 which is referred to as Individuals under age 5 in the EPA dataset. Individuals under age 5 is defined as the percent of people in a block group under the age of 5. The source of all demographic data used in EJSCREEN is the American Community Survey (ACS) five-year summary file (2008 - 2012).	EPA (http://www.epa.gov/sites/production/files/2015-05/documents/ejscreen_technical_document_20150505.pdf)
SV06: Population Over 64	11%		This model assigns value to census block areas based on percentage of individuals in a block group over the age of 64 (5-year estimate, 2008-2012. From the CalEnviroScreen 2.0 report: "Elderly populations can also be more vulnerable to adverse health effects from exposures to pollutants than younger adults. This population is more likely to have health conditions that may worsen responses, such as weakened immune system and existing cardiovascular and respiratory disease. " Priority values (0 to 5) were assigned to the data using a natural breaks classification.	EJSCREEN uses demographic factors as very general indicators of a community's potential susceptibility to the types of environmental factors. The EJSCREEN includes block groups with populations over the age of 64 which is referred to as Individuals over age 64 in the EPA dataset. Individuals over age 64 is defined as the percent of people in a block group over the age of 64. The source of all demographic data used in EJSCREEN is the American Community Survey (ACS) five-year summary file (2008 - 2012).	EPA (http://www.epa.gov/sites/production/files/2015-05/documents/ejscreen_technical_document_20150505.pdf)

SV07: Unemployment	11%		This model assigns value to census tract areas based on percent of the population over the age of 16 that is unemployed and eligible for the labor force, summarized for the CalEnviroScreen 2.0 tool and report. From the CalEnviroScreen 2.0 report: " Because low socioeconomic status often goes hand-in-hand with high unemployment, the rate of unemployment is a factor commonly used in describing disadvantaged communities. Unemployment is frequently used as a surrogate for neighborhood deprivation, which is associated with pollution exposure as well as poor health " Priority values (0 to 5) were assigned to the data using a natural breaks classification.	From the 2008-2012 American Community Survey, a dataset containing the unemployment rate was downloaded by census tracts for the state of California. The Census Bureau calculates an unemployment rate by dividing the 'Population Unemployed in the Civilian Labor Force' by 'Population in the Civilian Labor Force' and then converting to a percentage. A more detailed description of the methodology used to derive the data can be found in the CalEnviroScreen 2.0 report.	TPL data source was the CalEnviro Screen V2.0. Original data sources cited by Cal Enviro Screen include: American Community Survey U.S. Census Bureau	
SV08: Asthma	11%		This model assigns value to census tract areas based on spatially modeled, age-adjusted rate of emergency department (ED) visits for asthma per 10,000 (averaged over 2007-2009) summarized for the CalEnviroScreen 2.0 tool and report. From the CalEnviroScreen 2.0 report: " While the causes of asthma are poorly understood, it is well established that exposure to traffic and outdoor air pollutants, including particulate matter, ozone, and diesel exhaust, can trigger asthma attacks. Asthma rates are a good indicator of population sensitivity to environmental stressors because asthma is both caused by and worsened by pollutants (CDPH, 2010). " Priority values (0 to 5) were assigned to the data using a natural breaks classification.	CEHTP used OSHPD's data to calculate age-adjusted rates of asthma ED visits for California ZIP codes. These estimates make use of ZIP-code level population estimates from a private vendor (Esri) and the U.S. 2000 Standard Population to derive age-adjusted rates.	TPL data source was the CalEnviro Screen V2.0. Original data sources cited by Cal Enviro Screen include: California Office of Statewide Health Planning and Development (OSHPD) California Environmental Health Tracking Program (CEHTP) Environmental Health Investigations Branch, California Department of Public Health	
SV09: Low Birth Weight	11%		This model assigns value to census tract areas based on percent low birth weight, spatially modeled (averaged over 2006-2009) summarized for the CalEnviroScreen 2.0 tool and report. From the CalEnviroScreen 2.0 report: " Infants born weighing less than 2,500 grams (about 5.5 pounds) are classified as low birth weight (LBW), a condition that is associated with increased risk of later health problems as well as infant mortality. LBW is considered a key marker of overall population health. Being born low weight puts individuals at higher risk of health conditions that can subsequently make them more sensitive to environmental exposures. " Priority values (0 to 5) were assigned to the data using a natural breaks classification.	The crude low birth weight (LBW) rate was calculated from California birth records as the percent of live, singleton births during the 2006-2009 period weighing less than 2,500 grams. Each census tract was assigned a percentile based on its relative ranking of spatially modeled LBW compared to all other tracts. A more detailed description of the methodology used to derive the data can be found in the CalEnviroScreen 2.0 report.	TPL data source was the CalEnviro Screen V2.0. Original data sources cited by Cal Enviro Screen included California Department of Public Health (CDPH).	