SIERRA CLUB LOMA PRIETA CHAPTER GUIDELINES for DOWNTOWN AND STATION AREA PLANS (D/SAP)



Name	of	Pro	iect,	City
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To download: https://www.sierraclub.org/loma-prieta/guidelines-and-resources

Executive Summary



The Sierra Club Loma Prieta Chapter supports dense, walkable communities focused around transit to contain growth within the urban footprint and reduce traffic. These communities are rich with services, more walkable, bikeable and transit-accessible, limit urban sprawl, reduce greenhouse gas and other emissions, and provide a variety of housing types, sizes, and affordability.

Transportation accounts for over half of emissions in the Bay Area¹ and buildings account for an additional 39%². Reducing transportation demand, and building and retrofitting more energy-efficient buildings is the most significant opportunity to meet California's climate change goals.

The Sierra Club Loma Prieta Chapter uses these guidelines to make recommendations on **Downtown and Station Area Plans (D/SAP)** within ½ mile of major transit hubs and along major transit corridors. They are also used when we review General Plans. We publish these to make our evaluation process more transparent for residents, decision makers, planners and developers, and to provide a model for communities to meet SB32 and SB375 climate change goals.

A D/SAP with a ½ mile radius around major transit stations (i.e. Caltrain, BART, Bus Rapid Transit) and along transit-rich corridors (i.e. El Camino Real) should be focused on the following <u>five</u> issues:

Five Goals of a Downtown & Station Area Plan (D/SAP)

- 1. Compact Development
- 2. Community and Economic Benefits
- 3. Pedestrian Priority
- 4. Transportation Options
- 5. Energy and Resource Efficiency

The next FOUR PAGES are an EASY CHECKLIST to guide the user through the elements and strategies to achieve these goals

Overview of Plan Status

- 1. At what stage is the Plan in the City review process? Early planning? Public Input? Workshops? Staff review? Draft Plan? Draft EIR? Final EIR? Planning Commission review? City Council review? Final Plan? Describe status and upcoming applicable review dates:
- 2. What State Laws will apply that could increase housing and/or density? SB 35 ³ Affordable Housing development by-right, AB2135 ⁴ Surplus Public Land for affordable housing, and others.
- 3. Does the plan include an umbrella CEQA review that, upon approval, will allow individual developments within the Plan Area to be built "as-of-right", without further CEQA studies, if they meet the Plan's zoning and environmental requirements?
- 4. Will there be development caps on maximum amount of Office Space or Housing in the Plan? Describe:
- 5. Climate Action Plan: Is the CAP being actively used, staff support for CAP, last report to Council on CAP.

2. Minimum score red	ST AND SCORECARD: Importung the score at end of each section the score at end of each section the score of 110 period for a good plan is 55 (out of a total possible score of 110 period for endorsement - these are HIGHLIGHTED	SCORE
1. Compact Development uses less land than conventional low-	 a. Plan for compact development i. Include strategies for a healthy jobs/housing balance⁵ of 1.5 jobs per housing unit. (e.g. include 	0 or 3
density development.	goals and caps for, and desired ratio of, commercial space and housing development (3 pt.) ii. Include a Form-based zoning code ⁶ that graphically defines the height, setbacks, and	0 or 1
In compact mixed-use neighborhoods, people are likely to walk, bicycle, and ride transit	architectural character of development within the D/SAP (1 pt.) iii. Allow High-Density Commercial (office and retail) development by increasing FAR (floor-area-ratio), provided FAR is consistent with planning for a jobs/housing balance that will allow employees to live near their place of work and at a price they can afford (1 pt.)	0 or 1
		0 –10
	(40 units/acre = 2 pt.; 60 units = 4 pt.; 80 units = 6 pt.; 100 units = 8 pt.; > 100 units = 10 pt.)	
	v. Address Displacement of low-income residents: include "Right to Remain" Guarantee (1 pt.); Require existing affordable units demolished within D/SAP will be replaced in new development at 1:1 ratio (1 pt.)	0-2
	b. Include Affordable Housing ⁸	
		0 - 5
	for-sale and rental units. (20% ⁹ affordable = 1 pt.; 40% = 2 pt.; 60% = 3 pt.; 80% = 4 pt.; 100% = 5 pt.)	
	<u>ii. Incentivize affordable housing</u> by including Incentive Zoning ¹⁰ (also known as Density Bonus) to allow developers to build additional density (usually in the form of increased height limits, increased FAR, smaller minimum unit sizes, setback variances, reduced open space requirements, etc.) in exchange for affordable housing above the required minimum (4 pt.)	0 or 4
	iii. Affordable housing to be built on-site and not by substituting housing impact fees. (3 pt.)	0 or 3
	iv Reduce parking requirements or in lieu parking fees in exchange for additional affordable housing units ¹¹ . (2 pt.)	0 or 2
	v Require affordable housing as the preferred use for surplus public land within the D/SAP when the decision is made to either sell or lease the land to a private or non-profit developer in accordance with state law AB 2135. (2 pt.)	0 or 2
	Total Points for Compact Development- Maximum possible Score is 33 points	
2. Community and Economic	a. Plan for active streets serving a wide diversity of uses	
Benefits are part of a win-win development strategy to create a	I Focus on creating a high quality public realm using "Form-Based" ⁴ zoning where feasible (1 pt.)	0 or 1
sense of community and help to	ii Require ground floor retail along designated pedestrian priority zones (1 pt.)	0 or 1
ensure that new projects result in a positive impact on the	<u>lii Require sidewalk improvements</u> with reduced vehicle curb cuts for new buildings and existing buildings being remodeled or replaced (1 pt.)	0 or 1
community	Iv Give priority to local and family businesses as businesses turn over. Provide existing businesses displaced by new construction relocation funding and the opportunity to relocate into the new development after construction is completed (1 pt.)	0 or 1
	v Require new development to achieve a wide variety of housing types, sizes and affordability to meet the needs of different age groups, lifestyles, income, and abilities (1 pt.)	0 or 1
	 b. Plan for Access to services. Provide convenient access to open space, parks, health care, schools, recreation, day care, grocery store, and other essential community services (One pt. to each service. E.g. Health Care = 1 pt.; schools = 1 pt.; etc.) Describe other services that might apply = 1 pt. each. (Max. of 4 pts.) c. Include Public Community Benefits¹²: 	0 – 4
	i. <u>Establish Public Benefit Zoning¹³</u> within the D/SAP managed by a Public Benefit District ¹⁴ to ensure ongoing funding for public amenities, and to guarantee project fees and taxes are	0 or 1

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	allocated only to public benefits within the district. Amenities that may be considered as a community benefit are often chosen from a pre-determined list of alternatives, or may be negotiated between a municipality and a developer on a one time basis (1 pt.)	
	ii. Assure benefits funded by impact fees accrue only to the D/SAP so the area receives direct	0 or 1
	benefits from development (1 pt.) iii. Give importance to high quality design elements: Include guidelines for facades and materials and design review to ensure each new development contributes to an improved public realm.	0 or 1
		0 or 1
	v. Include cumulative development impact projections 15 for anticipated build-out (1 pt.)	0 or 1
		0 or 1
	<u>vii. Allow Transfer of Development Rights</u> (TDR) ¹⁷ to protect off-site natural features like creeks, hillsides, bay front or wooded areas by transferring the development rights into the D/SAP where the receiving property can qualify for zoning exemptions (2 pt.)	0 or 2
	d. Create a Healthier Public Environment	
	i. Mandate compliance with City's Climate Action Plan goals using a simple checklist as part of entitlement process ¹⁸ (1 pt.)	0 or 1
	ii. Require regular monitoring of local air quality within the D/SAP ¹⁹ (1 pt.)	0 or 1
ACRESSA.	<u>iii. Set noise thresholds and monitor for noise pollution</u> ²⁰ (e.g. leaf blowers, quiet rubberized road pavement, lower speeds, quiet equipment standards, etc.) (1 pt.)	0 or 1
	iv. Master Plan for a Healthy Tree Canopy: Monitor, preserve and master plan for enhancing the urban tree canopy. Plan for shaded sidewalks and streets, and emphasize native trees (1 pt.)	0 or 1
	v. Integrate bird-friendly ²¹ building and site design guidelines to avoid bird-strikes (1 pt.)	0 or 1
A healthy ecology is a community benefit to create healthy work	vi. Include Urban Habitat Design Guidelines ²² for all buildings, streets and parks. Have a master plan for sustainable landscaping, ²³ pollinator pathways, ²⁴ creek setbacks/wildlife corridors (1 pt)	0 or 1
and living environments and reduces the carbon burden	vii. Restore existing natural features such as creeks, wetlands, wooded areas, etc. (1 pt.)	0 or 1
	viii. Require urban agriculture opportunities and green roofs with rooftop gardens to provide a local food source, encourage a healthy ecology and mitigate the urban heat island effect (1 pt.)	0 or 1
	ix. Forbid harmful pesticide use for pest-control and landscaping (1 pt.)	0 or 1
	Total Points for Community and Economic Benefits – Maximum possible score is 26 points	
3. Pedestrian Priority	Make Walking the Easiest and the Most Pleasant way of Getting Around	
should be the primary goal for streets and public spaces	i Include pedestrian priority as the primary design criteria for block size, mid-block crossings streets and public spaces, with bikes second, transit third, and automobiles last (up to 2 pt.)	0 - 2
	<u>ii Limit traffic speed to 15 mp</u> h maximum for most streets within D/SAP for pedestrian and bicycle safety and priority. Fatalities rise exponentially above 15 mph (1 pt.)	0 or 1
	iii Implement "Vision Zero" ²⁵ street design to reduce traffic fatalities and injuries to pedestrians and bicyclists (1 pt.)	0 or 1
	<u>iv Consider "Walk Score"</u> in planning for pedestrian access to neighborhood needs (jobs, school, senior center, grocery store, and recreation). Walking to services should make up at least 50% of trips	0 - 3
	(Walk Score 70% -79% = 1 pt.; 80% -89% = 2 pt.; 90% -100% = 3 pt.)	
	v Require wide pedestrian-friendly sidewalks ²⁷ that are level and well-lit and include attractive, functional street furniture, art, and interesting experiences along the sidewalk to encourage walking. Plan sidewalk and street intersections with bulb-outs to reduce street width at pedestrian crossings and implement "Head Start" ²⁸ crossing signals to increase pedestrian crossing time. Install flashing pedestrian signals at potentially dangerous crossings (1 pt.)	0 or 1

	vi Designate a central public plaza or open space to be used as the focus of the D/SAP (1 pt.)	0 or 1
	vii Combine open space requirements for projects within 500 feet of the transit station into a common pedestrian space to work as a "place-making" setting (1 pt.)	0 or 1
	viii Require appealing street facades fronting on streets, using design guidelines, with parking concealed behind, underground, or on top of the buildings, or off-site to encourage pedestrian activity and access along street fronts (1 pt.)	0 or 1
	ix Integrate "Safe Routes to School" within the D/SAP to accommodate the most vulnerable street users first and to serve all ages and abilities (1 pt.)	0 or 1
	x Plan for mid-block pedestrian cross walks, paseos ³⁰ , paths, and pass-through lobbies preferably every 50 ft. to increase neighborhood walkability (1 pt.)	0 or 1
	Total Points for Pedestrian Priority – Maximum possible score is 13	
4. Transportation Alternatives	a. Reduce Parking Requirements and Reduce Incentives to Drive	
The D/SAP should include a Transportation Master Plan so that residents have options to conveniently and safely commute	i. Require unbundled parking. Unbundled parking (where users pay to park) is a disincentive to auto ownership that reduces the number of spaces needed and the cost to build the spaces. This construction cost savings can be passed on to tenants and home buyers as rent reduction or	0 or 2
and run errands without a car. There should be an emphasis on "Complete Streets" ³⁶	ii. Require reduced parking ratios and maximum parking ratios. Reduced parking should be paired with providing alternative transportation options such as transit passes, shuttle buses, membership in car-share, etc.(2 pts.)	0 or 2
		0 or 2
	<u>iv. Implement a Residential Permit Parking³² program</u> for existing residential neighborhoods, within or adjacent to the D/SAP. This is a vital and critical element to protect neighborhoods from overflow parking caused by reduced parking policies (2 pt.)	0 or 2
	v. Implement parking congestion pricing ³³ in a Public Benefit District ³⁴ to ease parking congestion by using price signals to alter automobile usage behavior (1 pt.)	0 or 1
	vi. Collect in-lieu fees to build public satellite parking. ³⁵ This avoids prime real estate in the D/SAP being used for parking rather than housing or commercial space (1 pt.)	0 or 1
	vii. Combine all D/SAP parking in a parking authority or Transportation Management Association (TMA) that can direct resources to reduce parking demand by managing and coordinating public parking meters, public garages, and smart parking strategies, and qualify under the State's Air Resource Board's "Parking Cash-Out Program" (1 pt.)	0 or 1
	viii. Provide designated pick-up and drop-off spaces for last-mile shuttles and Transportation Networks such as Uber, Lyft and car-share that provide alternative mobility options (1 pt.)	0 or 1
		0 or 1
	x. Require new above-ground parking garages to be designed to be convertible to other uses in the future should parking demand drop due to new technologies (1 pt.)	0 or 1
	b. Plan for Bicycle and Scooter Convenience	
	i. Implement a Bicycle Master Plan ³⁷ which includes protected bicycle-only lanes on major streets and corridors such as El Camino Real, and bicycle networks and boulevards at a half mile frequency for an urban bike trail system (1 pt.)	0 or 1
	ii. Require 25% bike-to-car ratio for public parking in gender safe, visible, well-lit areas (1 pt.)	0 or 1
	iii. Plan for signage and direct connection to designated bike lanes, routes or paths to create a "way-finding" system for pleasant and safe bike use, storage, and travel (1 pt.)	0 or 1

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	iv. Plan for manual & elec. bike share and s	scooter-share approximately every three blocks (1 pt.)	0 or 1	
	c. Plan for Public Transit and Transportation			
	i. Require incentives for transit use including transit passes ³⁹ provided or subsidized by developers to residents and by companies to employees for a minimum of five years (1 pt.)			
	ii. Provide or support public shuttles to tra financed through development fees or Pub	nsit hubs, with stops approximately every three blocks, blic Benefit District (1 pt.)	0 or 1	
	iii. Require a monitored Traffic Demand M	anagement program 40 for major developments.	0 - 3	
	Program must be adaptive, transparent, a	ctively monitored and enforced (up to 3 pts.)		
	d. Plan for Multi-modality			
	i. Rate each street's priority as: Pedestrian	priority, auto priority, or mixed traffic (1 pt.)	0 or 1	
	Total Points for Transportation Alternatives -	- Maximum possible score is 24		
5. Energy & Resource Efficiency*	Plan for Resource Efficiency – Buildings accou	int for about 40% of energy consumption nationally		
Efficiency is prioritized so that	i. Require LEED Neighborhood Develop	ment for D/SAP (2 pt.)	0 or 2	
buildings and streets provide a low carbon footprint	ii. Require LEED for Buildings in D/SAP to meet Gold (1pt.) or Platinum (2 pt.)			
iow carbon jootprint	iii. Require Net Zero Energy: 41 solar photo voltaic panels, all-electric buildings (up to2 pt.)			
	<u>iv. Require Net Zero Water</u> : ⁴² efficient water usage, gray water and black water systems; Low Impact Development (LID) strategies for improved storm water management ⁴³ (up to2 pt.)			
NETZERO ENERGY BUILDING CERTIFICATION **	v. Require Net Zero Waste: 44 recycling, sewage and waste management (up to 2 pt.)			
* Since this is a mainly a planning	issue vii. Additional innovative features may warrant points. (1 pt each) Describe			
tool, building efficiency may not be considered as a central issue to achieving the plan objectives				
	Total Points for Energy and Resource Efficien	cy – Maximum possible score is 14		
SUMMARY OF SCORES	GOALS 1. Compact Development	Max. possible score is 33		
Add up the score for each of the	2. Community & Economic Benefits	Max. possible score is 26		
five goals and total them for	3. Pedestrian Priority 4. Transportation Alternatives	Max. possible score is 13 Max. possible score is 24		
final score.	5. Energy and Resource Efficiency	Max. possible score is 14		
	TOTAL SCORE	MAX. POSSIBLE TOTAL SCORE: 110		
		(Minimum required score for a good plan and for endorsement is 55)		

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https://www.cityofsanmateo.org/DocumentCenter/View/45410/San-Mateo-CAP---Adopted

⁴ AB 2135 - requirements for the disposal of surplus land by a local agency which requires affordable housing as first priority.

¹ **GHG Emissions** – City of San Mateo Climate Action Plan, page IV, "Figure ES-2:2005 ---" -

² Building's contribution to GHG – U.S. Green Building Council, <u>www.eesi.org/files/climate.pdf</u>

³ **SB 35** – provides a streamlined process for developments that include a certain percentage of affordable housing, and limits the authority of local governments.

⁵ Healthy jobs /housing balance - According to the Building Industry Association, a healthy jobs-housing balance is 1.5. (One full time job and one part time job per housing unit.) The California Department of Finance also considers a 1.5 jobs-to-housing unit ratio to be healthy. Any ratio above 1.5 Jobs/housing unit signifies there is insufficient number of housing units to meet the needs of the local workforce. The EIR for the precise plan should specify the anticipated jobs growth and the anticipated number of residential units generated by the precise plan.

⁶ Form-Based Planning Code – Form-Based Codes Institute https://formbasedcodes.org/definition/

⁷ **Right-to-Remain Guarantee** – provides that if a tenant is displaced due to a demolition, the developer must house the tenant nearby at the same rent while the project is being built and must provide a comparable unit to the tenant at the same rent once the project is done.

⁸ **Affordable Housing** – Housing affordable to individuals and families making between 30% to 120% of Area Median Income (AMI) as defined by the U.S. Department of Housing and Urban development (HUD).

⁹ **Percentage of Affordable Housing** -. If affordable housing provided is specifically for "low-Income" or "Very Low Income" households, the 20% requirement may be reduced appropriately.

Incentive Zoning - https://www.useful-community-development.org/incentive-zoning.html

Opportunity cost of housing vs. parking – A parking space in a surface or above-ground parking facility takes approximately 300 square feet of area, thus two spaces take about as much floor area as a 600 square foot 1 BR housing unit, so projects in TODs or walkable communities which de-incentivise auto use should be allowed to substitute housing units for auto parking for the greatest community benefit

¹² Community Benefits - https://en.wikipedia.org/wiki/Community Benefits Agreement

Public Benefit Zoning – Public Benefit Districts (PBDs) strive to improve the overall quality of life in targeted commercial districts and mixed-use neighborhoods through a partnership between the City and local communities. In California, PBDs are also known as Business Improvement Districts. Once an area has voted to establish a PBD, local property owners are levied a special assessment to fund improvements to their neighborhood. The funds are administered by a non-profit organization established by the neighborhood. e.g. San Francisco PBDs - http://oewd.org/community-benefit-districts

¹⁴ Public Benefit District (aka CBD) –See item 12 above

¹⁵ **Cumulative Development Impact Projections** – The overall impact to a designated neighborhood once all anticipated developments are built in that neighborhood. This is used to analyze future traffic impacts and parking needs, but can also be used to determine future levels of pollution, noise, visual impact, and other impacts.

¹⁶ **Car Share & Shared Mobility** - https://www.move-forward.com/planning-for-shared-mobility and https://sharedusemobilitycenter.org/what-is-shared-mobility/

¹⁷ **Transfer of development rights** - https://www.mass.gov/service-details/smart-growth-smart-energy-toolkit-modules-transfer-of-development-rights-tdr

Climate Action Plan consistency checklist - See City of San Mateo Climate Action Plan Appendix 3, CAP Consistency Checklist as an example. <a href="https://www.cityofsanmateo.org/DocumentCenter/View/44698/San-MateoCAP-PublicReviewDraft 2-23-15 Clean?bidle="https://www.cityofsanmateo.org/DocumentCenter/View/44698/San-MateoCAP-PublicReviewDraft 2-23-15 Clean?bidle="https://www.cityofsanmateo.org/DocumentCenter/View/AdapticreviewDraft 2-23-15 Clean?bidle="https://www.cityofsanmateo.org/DocumentCenter/View/Adapticrevie

Noise mitigation and Noise Standards – http://www.governing.com/topics/urban/sl-noise-pollution.html Noise ordinances are starting to gain traction as urban noise increases to the detriment of human health and bird songs.

Bird Friendly Design - Bird deaths by flying into reflective glass buildings and windows kills millions of birds each year. Reduce building reflectivity, light pollution, transparency, etc. to prevent bird collisions with glazing https://www.go-gba.org/resources/green-building-methods/bird-friendly-design/; San Francisco Code https://sf-planning.org/standards-bird-safe-buildings

²² **Urban Habitat Design Guidelines** Based on H.T. Harvey's "Integrating Nature into Urban Cities" https://www.sierraclub.org/sites/www.sierraclub.org/files/sce-authors/u4142/Urban%20Habitat%20Design%20Guidelines%20%20Sierra%20Club%20Loma%20Prieta%20Sept%202018.pdf

²³ **Sustainable Landscaping** - Sustainable landscaping is in balance with the local climate and requires minimal resource inputs, such as fertilizer, pesticides, gasoline, time, and water, is re-generative, and can actively contribute to the development of healthy

communities. Sustainable landscapes sequester carbon, clean the air and water, increase energy efficiency, restore habitats, and create value through significant economic, social and environmental benefits.

- ²⁴ **Pollinator Pathways** https://www.fws.gov/pollinators/PollinatorPages/media.html
- ²⁵ **Vision Zero** Aims to reduce pedestrian fatalities to zero https://visionzeronetwork.org/about/what-is-vision-zero/
- ²⁶ **Walk Score** A web tool for comparing the walkability of a neighborhood by computing the time it would take a person to walk from a their home or place of work to common destinations such as the local coffee shop, a grocery store, a car share location, etc. The walkscore varies from 1 to 100 with 100 the most convenient and 1 the least convenient. www.walkscore.com
- ²⁷ **Pedestrian-Friendly Sidewalks** Minimum width of 7' wide, level, with planting strip if directly adjacent to moving traffic, designed for enhancing and encouraging pedestrian traffic and pedestrian priority.
- ²⁸ Head Start Pedestrian Crossing Signals https://www.nytimes.com/2017/11/24/nyregion/pedestrians-new-york-walk-signals.html
- ²⁹ **Safe Routes to School** A travel route designed to increase the number of children who walk or bicycle to school by removing the barriers that currently prevent them from doing so. Those barriers include lack of pedestrian infrastructure, unsafe intersections, and lack of programs that promote walking and bicycling. www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm
- ³⁰ **Pedestrian Allée, pass-through lobby, path:** A pedestrian-only passageway separated from auto traffic. e.g. In Mountain View along Castro Street downtown, there are attractive mid-block allées connecting Castro Street sidewalks with parking lots located behind buildings.
- ³¹ **Shared Parking** Private parking open to public use at certain times e.g. parking in office buildings is open for public parking at night; in Mountain View, CA, condo residential parking is shared with Caltrain commuters during the day.
- ³² **Residential Parking Permit** City parking restriction program to protect residential area street parking for use primarily by area residents.
- ³³ **Parking Congestion Pricing or Smart Metered Parking** uses variable pricing based on user demand to even out parking use by charging more for popular parking locations and less for less popular locations
- ³⁴ **Public Benefit District** see note 13 above.
- ³⁵ **Satellite Parking** Some cities, such as Portland, Oregon have low or no parking requirements in downtown buildings because the city provides public parking structures, in preferred locations, using "in-lieu" developer fees.
- ³⁶ Parking Cash Out Program California Air Resources Board https://arb.ca.gov/planning/tsaq/cashout/cashout.htm
- ³⁷ **Bicycle Master Plan** a document that describes long-range planning for developing bicycle infrastructure in a city, with emphasis on designating and expanding bike routes, fostering a safe environment for cycling, and promoting bicycling as a viable transportation option. It usually details connecting bike lanes to create continuous, safe bicycling routes.
- ³⁸ **Way-finding System-** Signage and other visual cues to help people move through a city and feel comfortable doing that because of the way-finding design
- ³⁹ **Bulk Transit Passes** Deeply discounted bulk rates. Caltrain "Go Pass" http://www.samtrans.com/fares/faretypes/Way2Go Program.html
- ⁴⁰ **Traffic Demand Management Program** e.g. The City of San Carlos requires TDM for residential projects over a certain size and includes a good description of TDM in its new zoning code at:

<u>www.codepublishing.com/CA/SanCarlos/html/SanCarlos18/SanCarlos1825.html#18.25</u>; See also Wikipedia TDM Toolkit - https://en.wikipedia.org/wiki/Transportation_demand_management#Demand_management_toolbox

- ⁴¹ **Zero Net Energy (ZNE)** a ZNE building, is a building with zero net energy consumption, meaning the total amount of energy used by the building on an annual basis is roughly equal to the amount of renewable energy created on the site. The upcoming 2020 California Building Code will require ZNE construction of all new residential buildings in 2020 with Commercial buildings to be ZNE by 2030 https://cleantechnica.com/2014/04/15/californias-net-zero-energy-building-will-reshape-us-construction-industry/. See also *Guide for 2020 update of California Building Code for new Residences* https://energycodeace.adobeconnect.com/aia-zne-guide/
- ⁴² **Net Zero Water Net zero water** is an analogous concept to **net zero** energy. Through a combination of rainfall harvesting, aggressive conservation, and **water** recycling, buildings can achieve self-sufficiency from the **water** "grid."
- ⁴³ **Low Impact Development** (LID) Low Impact Development is a sustainable practice that benefits water supply, increases infiltration and storage of storm water and contributes to water quality protection and protection for San Francisco Bay http://www.lid-stormwater.net/background.htm#What is LID
- ⁴⁴ **Net Zero Waste Zero Waste is** a philosophy that encourages the redesign of resource life cycles so that all products are reused. The goal **is** for no trash to be sent to landfills, incinerators, or the ocean. https://sfenvironment.org/zero-waste-in-SF-is-recycling-composting-and-reuse