SF Planning Department

2017 Greenhouse Gas Reduction Strategy Update

Revised July 2017

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I. INTRODUCTION

In 2010, the San Francisco Planning Department published the *Greenhouse Gas Reduction Strategy* in compliance with the California Environmental Quality Act (CEQA) Air Quality Guidelines. This served to evaluate the air quality impacts of the projects and plans proposed in the San Francisco Bay Area according to the Bay Area Air Quality Management District (BAAQMD) thresholds of significance. The report was a compilation of implementation efforts to address the strategies outlined in the 2004 Climate Action Plan. Since the 2010 *Greenhouse Gas Reduction Strategy*, the San Francisco Department of the Environment (SF Environment) has published the 2013 Climate Action Strategy, the City's 2012 emissions report has been released, and the Planning Department has introduced new measures to address greenhouse gas emission reduction strategies. This document aims to serve as the 2017 update to the policies, plans, and codes that San Francisco and the Planning Department have implemented to assist in achieving the City's ambitious climate action goals.

I.1 TARGETS

The most recent greenhouse gas emissions reduction targets for the City & County of San Francisco were adopted in 2008. These goals are more aggressive than those outlined for the state of California by Assembly Bill 32 ("Global Warming Solutions Act of 2006"). A brief timeline of city and state greenhouse gas reduction goals is outlined below.

2002 San Francisco's original GHG reduction targets were passed by the Board of Supervisors in 2002 with Resolution 158-02. This resolution establishes a goal of reducing GHG emissions to 20 percent below 1990 levels by 2012.

2004 In September 2004, SF Environment and the San Francisco Public Utilities Commission (SFPUC) published the Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Emissions[1] (Appendix D). The Climate Action Plan included both an emissions inventory and projections.

2005 Governor Schwarzenegger adopted Executive Order S-3-05 to set a greenhouse gas reduction target of 2000 emission levels by 2010, 1990 emission levels by 2020, and an 80 percent reduction below 1990 levels by 2050.

2006 Assembly Bill 32, the California Global Warming Solutions Act of 2006 (CA Health and Safety Code Section 38,500 et seq.) was signed into law in 2006. AB32 calls for the following:

- Reduce greenhouse gas emissions to 1990 levels by 2020

The California Air Resources Board (ARB) to develop a Scoping Plan that outlines the state's strategy to achieve compliance with the targets. This Scoping Plan must be updated every five years (the most recent update was approved in 2014 with an new update forthcoming in 2017).

2008 In May 2008, San Francisco adopted ordinance 81-08 amending the San Francisco Environment Code to establish City GHG emission targets, superseding Resolution 158-02. In addition to reduction goals, ordinance 81-08 mandated City departments to publish annual reports and reduction plans to achieve compliance. The following GHG emission reduction limits and target dates remain the goals for the City and County of San Francisco:

- Determine 1990 City GHG emissions by 2008, the baseline level with reference to which target reductions are set

1 San Francisco Department of the Environment and San Francisco Public Utilities Commission, Climate Action Plan for San Francisco, Local Actions to Reduce Greenhouse Emissions, September 2004. Accessed August 4, 2016.

- Reduce GHG emissions by 25 percent below 1990 levels by 2017
- Reduce GHG emissions by 40 percent below 1990 levels by 2025
- Reduce GHG emissions by 80 percent below 1990 levels by 2050

2015 On April 29, 2015, Governor Brown signed executive order B-30-15, which established a mid-term target of 40 percent reduction of 1990 greenhouse gas emissions levels by 2030.[2] This goal was implemented to help the state achieve 80 percent reduction by 2050.

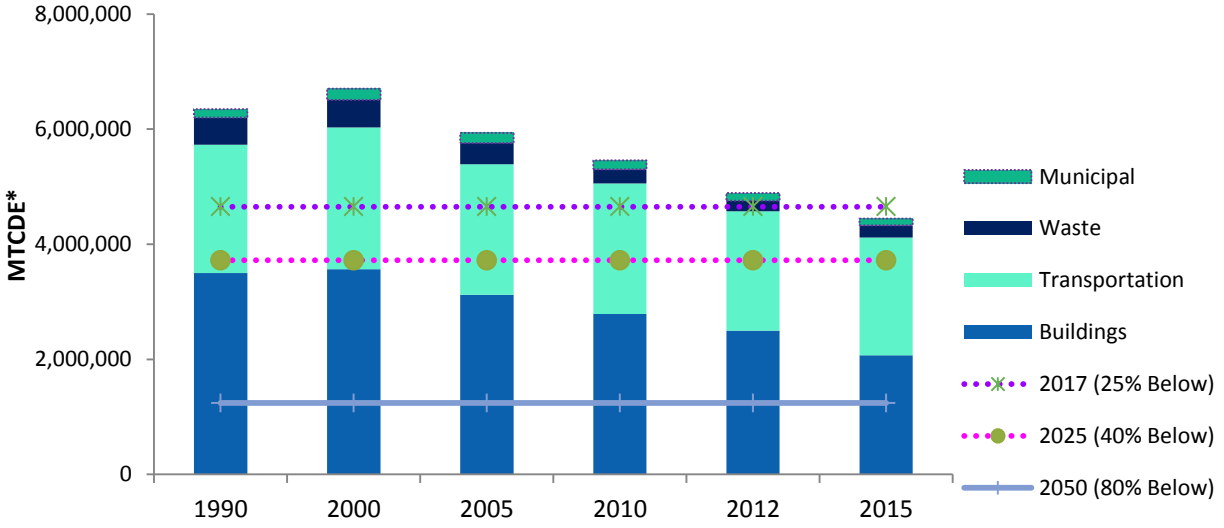
2016 On August 24, 2016, the California legislature passed Senate Bill 32, which amended the California Global Warming Solutions Act of 2006. SB 32 directs the State Air Resources Board to facilitate the reduction of greenhouse gas emissions to 40 percent below 1990 levels by 2030.

2017 On July 25, 2017, Governor Brown signed Assembly Bill 398, which will extend the California Cap and Trade Program until 2030, instead of allowing it to expire in 2020. The program is five years old and is the only one of its kind in the United States, requiring companies to buy permits to release greenhouse gas emissions.

I.2 PROGRESS TO DATE

In 2013, the SF Environment published an updated Climate Action Strategy. According to the report, San Francisco's greenhouse gas emissions in 2010 were 14.5 percent below 1990 levels. Since the report was published, there was an update to the 2012 inventory in 2015. Despite a 19.5 percent growth in population and a 78 percent growth in GDP, San Francisco's 2015 emission levels were 28.4 percent below 1990 levels, thus achieving a major reduction milestone of a 25 percent reduction by 2017, per San Francisco Board of Supervisors ordinance 81-08.[3,4]

CHART 1. EMISSIONS BY MAJOR SECTOR 1990-2015



From 2015 Inventory
**MTCDE stands for Metric Tons of Carbon Dioxide Equivalent*

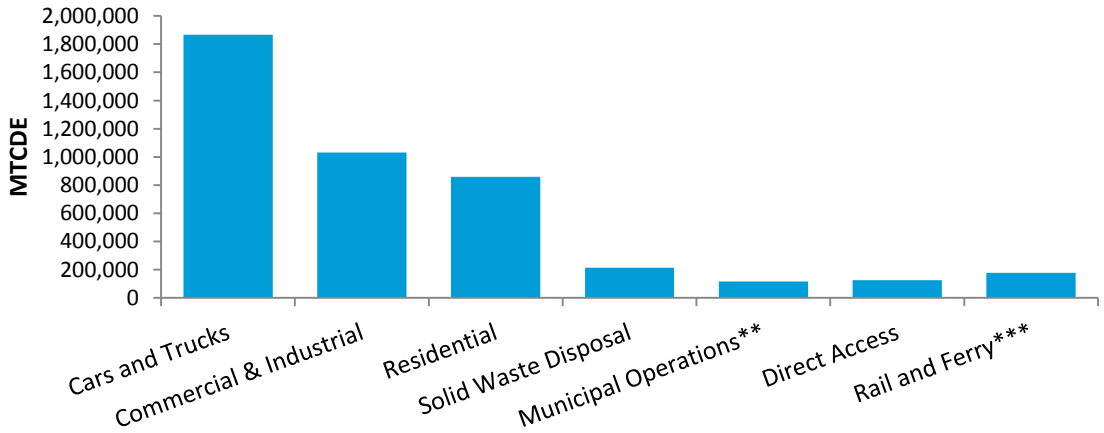
2 The U.S. has committed to 42 percent reductions below 2005 levels by 2030, in accordance with the Copenhagen Accord. This is equivalent to 35 percent below 1990 levels by 2030. California Air Resources Board, Climate Change Scoping Plan, 2013, Accessed August 4, 2016.
3 ICF International, Memorandum: Technical Review of the 2012 Community-wide GHG Inventory for the City and County of San Francisco, January 2015, Accessed August 4, 2016.
4 The ICF reports that "It should be noted that the 1990 inventory includes some differences in methodology when compared to the 2012 inventory, resulting in minor limitations in comparability between the two inventories."

TABLE 1. EMISSIONS BY MAJOR SECTOR
1990-2015

Year	Buildings	Transportation	Waste	Municipal	TOTAL	2017 (25 percent Below)	2025 (40 percent Below)	2050 (80 percent Below)
1990	3,497,263	2,232,040	472,646	146,763	6,201,949	4,651,461	3,721,169	1,240,390
2000	3,563,968	2,465,673	480,407	191,965	6,510,048			
2005	3,121,408	2,270,568	365,526	176,998	5,757,502			
2010	2,788,810	2,266,322	244,625	158,448	5,299,757			
2012	2,500,590	2,073,988	180,398	134,404	4,754,976			
2015	2,071,242	2,043,617	212,941	115,137	4,442,937			

From 2015 Inventory

CHART 2. 2015 EMISSIONS BY TYPE



From 2015 Inventory

TABLE 2. 2015 EMISSIONS BY TYPE

Cars & Trucks	Commercial & Industrial	Residential	Solid Waste Disposal	Municipal Operations**	Direct Access	Rail & Ferry***	TOTAL
1,866,601	1,031,992	858,142	212,941	115,137	123,720	177,016	4,385,549

From 2015 Inventory
***Municipal operations includes: Municipal, District, MUNI Buses*
****Rail includes BART and CalTrain*

I.3 DOCUMENT ORGANIZATION

This strategy is organized around six sectors of emissions. These sectors are influenced by SF Environment's 2013 Climate Action Strategy and serve as the key contributors to the city's carbon footprint. The six core sectors are:


Energy Use in Buildings


Transportation & Land Use


Zero Waste


Water Efficiency


Municipal Operations


Ecological Sustainability & Conservation

Within each section, the citywide targets, progress towards targets, and current implementation actions are highlighted. The implementation actions consist of city ordinances, applicable planning code sections, and objectives and policies from the general plan. For each sector, there is also a description of the State's targets and efforts.

I.4 BAAQMD ELEMENTS OF A GREENHOUSE GAS REDUCTIONS STRATEGY

BAAQMD's *CEQA Air Quality Guidelines*, identified below, provide guidance on the standard elements of a greenhouse gas reduction strategy.[5] The vision of San Francisco's reduction strategy is expressed in the 2013 Climate Action Strategy as well as citywide plans, policies, and regulations, which are highlighted by sector in this report. The actions identified in this document do not represent the totality of San Francisco's climate-related actions, but represent the most influential and important of these actions.

A. Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area.

A GHG Reduction Strategy must include an emissions inventory that quantifies an existing baseline level of emissions and projected GHG emissions for a given horizon year. In September 2004, SF Environment and the SFPUC published the *Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Emissions*, which included both an emissions inventory and projections. The 2010 *Greenhouse Gas Reduction Strategy* relied on the 2004 projections to comply with BAAQMD's *CEQA Air Quality Guidelines.* The 2010 Strategy also incorporated estimated greenhouse gas savings predicted by the California Air Pollution Control Officers Association (CAPCOA) white paper *CEQA and Climate Change* (2008). This white paper was provided by CAPCOA as a toolkit to support local governments seeking to quantify emissions reductions from specific actions. CAPCOA has not published an updated quantification of greenhouse gas mitigation measures since 2010.[6]

This *Greenhouse Gas Reduction Strategy Update* relies on the 2013 *Climate Action Strategy* published by SF Environment and the City's 2015 Greenhouse Gas Inventory for greenhouse gas emissions quantifications, projections, and predicted emissions reductions from specific actions. The 2013 Climate Action Strategy report had the most up to date inventory of the time (2010 emissions) and compared levels to 1990, 2000, and 2005. The greenhouse gas emissions from 1990 are the commonly referred to baseline for the 2013 Strategy and for this report due to the City's specific reduction targets. The 2013 *Climate Action Strategy* forecasts through 2030.

5 BAAQMD. California Environmental Quality Act Air Quality Guidelines, May 2017, Accessed August 7, 2017.
6 California Air Pollution Control Officers Association (CAPCOA), CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, January 2008. Accessed August 4, 2016. In 2010, CAPCOA published Quantifying Greenhouse Gas Mitigation Measures.
The most recent report, California's Progress Toward Clean Air highlights the progress made by 35 local air districts throughout the State.

B. Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable.

The intent of this requirement is to establish a GHG reduction target that meets or exceeds the goals outlined by Assembly Bill 32 ("Global Warming Solutions Act of 2006"). The reduction targets for the City and County of San Francisco are more aggressive than those of AB32 (as outlined by Ordinance 81-08) and meet BAAQMD's requirements for which the contribution of GHG emissions would not be cumulatively considerable.

C. Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area.

The 2013 *Climate Action Strategy* identifies historical trends, existing actions, and proposed strategies that influence GHG emissions. The report assigns an overall GHG reduction value to each group of actions. While it is not possible at this time to tie many of the individual strategies to a numerical GHG reduction value, it is anticipated that the group of proposed actions within each sector will collectively achieve the GHG emission reduction targets.

As reported in the 2013 *Climate Action Strategy,* greenhouse gas emissions in 2010 were 14.5 percent below 1990 levels. The *Climate Action Strategy* finds that the combined proposed actions would result in a carbon footprint of 2.9 million Metric Tons of Carbon Dioxide Equivalent (MTCDE) in 2030, a 44 percent reduction from 1990 levels. The strategy outlines specific emission savings for 2030 by action, highlighted in the appropriate sections of this report. The actions were estimated to save over 2 million MTCDE compared to business as usual (see Table below).[7]

The Strategy also estimates predicted savings from State Actions related to standards for renewable energy and fuel economy. In addition to these two areas, GHG reductions can be expected from regional policies and statewide GHG actions, particularly Senate Bill 375 (SB375). SB375 is anticipated to result in emission reductions through alignment of local land use and transportation planning. SB375 requires regional transportation plans, developed by Metropolitan Planning Organizations (MPOs), to incorporate a "Sustainable Communities Strategy" in their regional transportation plans (RTPs) that would achieve regional GHG emission reduction targets set by ARB.

Several of the actions in the 2013 *Climate Action Strategy* do not align with the most up to date goals and the City's progress, but the report serves as reference and is the most recent effort by the City to estimate GHG savings from specific actions. The following reductions were listed according to the actions outlined in the 2013 *Climate Action Strategy*:

7 San Francisco Department of the Environment, San Francisco Climate Action Strategy, 2013, Accessed August 4, 2016.

TABLE 3.[8] REDUCTIONS INCORPORATED INTO THE 2013 CLIMATE ACTION STRATEGY

Climate Action Strategy:	2030 Savings (MTCDE)
100 Percent Renewable Electricity	**(941,785)**
Energy Efficiency	**(301,979)**
Zero Waste by 2020	**(292,957)**
Transportation Demand Management & Pricing	**(217,794)**
BART 100 Percent Renewable Energy	**(89,048)**
Transportation Mode Shift	**(72,154)**
Muni Buses 100 Percent Carbon Free	**(69,302)**
Electric Vehicles	**(59,774)**
Urban Forest (700,000 additional trees)	**(15,594)**
Total Savings Over BAU	**(2,060,388)**
State Actions:	
Renewables Portfolio Standard	**(279,496)**
Pavley Auto Fuel Economy Standards	**(890,495)**

D. Specify measures or a group of measures, including performance standards that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level.

As San Francisco's GHG reduction goals are more aggressive than statewide goals outlined in SB32, San Francisco continues to pursue GHG reduction programs to meet the goals outlined in the 2008 GHG Reduction Ordinance, which are to reduce GHG emissions by 25 percent below 1990 levels by 2017; reduce GHG emissions by 40 percent below 1990 levels by 2025; and reduce GHG emissions by 80 percent below 1990 levels by 2050. The long-term goal to reduce GHG emissions by 80 percent below 1990 levels by 2050 is consistent with the state's long term GHG reduction goal outlined in Executive Order S-3-05. This document highlights the policies, programs, and plans that are in place to collectively achieve local, regional, and state targets. SF Environment will continue to monitor the progress towards these goals through greenhouse gas emissions inventories.

E. Establish a mechanism to monitor the plan's progress toward achieving the level.

This action calls for an implementation plan for the GHG Reduction Strategy. Since the 2010 *Greenhouse Gas Reduction Strategy*, new programs have been implemented while others have evolved. Plans from a diverse range of agencies have been executed and updated. This report serves as an update to the 2010 Strategy and should continue to be monitored in the future. BAAQMD's guidelines require that inventories and reduction measures are updated every three to five years with annual reviews of progress on implementation of specific measures. City Departments submit annual Climate Action Plans as pursuant to Ordinance 81-08. SF Environment will be updating the City's progress towards greenhouse gas reductions in 2017 to align with the next major milestone year.

8 Ibid.

In order to have a qualified GHG Reduction Strategy, such a strategy must also identify those measures that are applicable to new development. This Strategy includes measures that are applicable to existing developments, municipal government operations, as well as voluntary and mandatory measures to be applied to new development for public and private projects. Mandatory GHG reduction programs that are applicable to new development are summarized in checklists in Appendix L of this document. The checklists identify applicable regulations, applicability, requirements, and monitoring and reporting required by regulations.

F. Adopt the Greenhouse Gas Reduction Strategy in a Public Process Following Environmental Review.

The BAAQMD has interpreted this section as follows:

If the GHG Reduction Strategy consists of a number of different elements, such as a general plan, a climate action plan and/or separate codes, ordinances and policies, each element that is applicable to new development projects would have to complete an environmental review in order to allow tiering for new development projects.[9]

Each chapter identifies the applicable regulations to both existing and new public and private development projects. Appendix L outlines these in a Greenhouse Gas Checklist for new development. Appendix E identifies the environmental review that has been completed for applicable regulations that have been passed since the 2010 *Greenhouse Gas Reduction Strategy.* Although copies of the environmental review documents have not been located for some regulations, they are included in this table as they are still regulations that are consistently applied to new development projects, but for which this GHG Reduction Strategy does not solely rely upon.

I.5 STATE STRATEGIES

Assembly Bill 32 requires the California Air Resources Board (ARB) to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2030 (representing a 25 percent reduction in emissions). ARB's *Climate Change Scoping Plan* (2008) was the culmination of this effort and identified measures to meet the State's GHG reduction targets. The plan set a specific greenhouse gas reduction for local governments to reduce emissions 15 percent from then-current levels by 2020.[10]

ARB recognizes that successful implementation of statewide goals relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. As evidenced in this document, the City has implemented many of the measures that require local government action, such as a green building ordinance, a zero waste strategy, a construction and demolition debris recovery ordinance, and a solar energy generation subsidy program, to realize meaningful reductions in GHG emissions. The original Scoping Plan was published in 2008, approved with amendments by the board in 2011, and was most recently updated in 2013. The 2013 update monitors the progress of the action items originally proposed and can be found in Appendix K.

9 BAAQMD. California Environmental Quality Act Air Quality Guidelines, May 2017, Accessed August 7, 2017.
10 California Environmental Protection Agency, Air Resources Board, Climate Change Scoping Plan, December 2008, Accessed August 4, 2016.

II ENERGY USE IN BUILDINGS

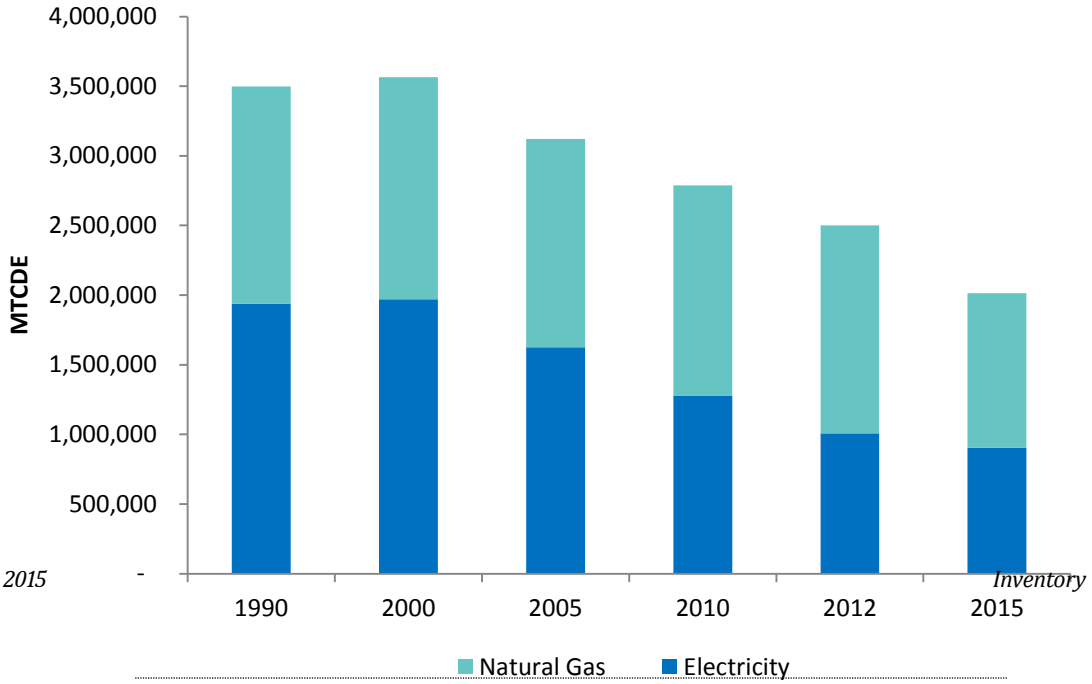
II.1 TARGETS

City and County of San Francisco Targets:

- Fossil Fuel free by 2030 (Ordinance 81-08)
- 100 percent renewable electricity by 2020 (Mayors Newsom & Lee goal, announced 2010)

II.2 PROGRESS TO DATE

CHART 3. EMISSIONS FROM ELECTRICITY & NATURAL GAS IN BUILDINGS (MTCDE)



From 2015 Inventory

TABLE 4 EMISSIONS FROM ELECTRICITY & NATURAL GAS IN BUILDINGS (MTCDE)

Year	Electricity	Natural Gas
1990	**1,939,014**	**1,558,248**
2000	**1,970,722**	**1,593,246**
2005	**1,625,168**	**1,496,240**
2010	**1,276,468**	**1,512,341**
2012	**1,008,303**	**1,492,287**
2015	**904,944**	**1,109,301**

From 2015 Inventory

In 2011, the SFPUC published an update to the City's Electricity Resource Plan and identified strategies to achieve zero greenhouse gas emissions from the electric sector. The three key recommendations included: empowering

citizens and businesses to reduce GHG emissions associated with their electric usage, increasing the amount of zero-GHG electricity supplied to customers and expanding the SFPUC electric service.[11]

In 2012, the Mayor's Office Renewable Energy Task Force published a report that concluded that it is possible for the City to achieve a 100 percent renewable power supply by 2020. The report outlined the strategies listed below, which are further detailed in the 2013 Climate Action Strategy and in the original report *San Francisco's Mayor's Renewable Energy Task Force Recommendations Report*[12]:

- Reduce electricity demand
- Maximize on-site renewable generation where possible
- Expand access to community-scale renewable generation
- Provide 100 percent renewable power purchasing options
- Encourage private sector investment in renewable energy projects

The City has made progress towards these goals. Between 1990 and 2012, natural gas emissions from energy consumed in buildings decreased 4 percent.[13] The natural gas decrease is the result of a reduction in residential consumption, as both the municipal and commercial sectors increased.[14] Between 1990 and 2012 there was a 10 percent increase in electric consumption, in line with the growth of the City's population. However, while consumption increased, overall electric-related greenhouse gas emissions in buildings declined 48 percent between 1990 and 2012.[15]

The overall reduction in electric emissions can be attributed to a cleaner electric grid and more efficient power plants. The main providers of electricity for the City are PG&E, San Francisco Public Utilities Commission (SFPUC) and independent contract providers. All of the energy produced by these suppliers is subject to the guidelines established by California's Renewable Portfolio Standard (first codified in 2002 by SB-1078 and most recently updated with SB350), which requires that 50 percent of retail electricity come from renewable, clean sources by 2050 (interim goals listed in Section II.4 below). Several key actions and ordinances have further reduced emissions. In the past ten years, the City's dirtiest power plants, Hunters Point (2006) and Potrero (2010), were closed. SFPUC has performed energy analysis on over 465 public buildings and has published annual reports with energy performance data, in accordance with the Existing Commercial Buildings Energy Performance Ordinance (adopted in 2011). The Hetch Hetchy Water and Power division delivers an average of 1.7 billion kilowatt hours of 100 percent clean electric to the City.[16] SFPUC's biogas generating facilities provide three megawatts of clean energy capacity as a byproduct of the wastewater treatment process per year. [17] In addition, SFPUC is responsible for 19 municipal solar installations that can generate up to 7.9 megawatts of energy.[18] Between 1990 and 2010, the emissions per MWh of energy produced by PG&E decreased 19.6 percent and the emissions per MWh of energy produced by SFPUC decreased 77.7 percent.[19] In 2010, 13 percent of the City's electricity mix came from RPS-eligible renewable sources, with an additional 28 percent from low-emitting large hydro.[20]

Electricity and natural gas consumption in buildings comprised 45.3 percent of the City's 2012 greenhouse gas emissions profile. Efforts to curb greenhouse gas emissions in this sector, therefore, have significant impacts on

[11] SFPUC, San Francisco's 2011 Updated Electricity Resource Plan, March 2011. Accessed August 4, 2016.
[12] San Francisco Department of the Environment, San Francisco Mayor's Renewable Energy Task Force Recommendations Report, September 2012. Accessed August 4, 2016.
[13] San Francisco Department of Environment, 2015 San Francisco Greenhouse Gas Inventory. Accessed August 11, 2017. This number includes all natural gas for the city.
[14] Ibid.
[15] Ibid.
[16] SFPUC, Hetch Hetchy Water and Power Financial Statements, 2014. Accessed August 4, 2016.
[17] SFPUC, SFPUC's Renewable Energy Portfolio and GoSolarSF Program, April 2014. Accessed August 4, 2016. & SFPUC, Generating Clean Energy for San Francisco, July 2013. Accessed August 4, 2016.
[18] SFPUC, Solar Installation. Accessed August 4, 2016.
[19] San Francisco Department of the Environment, San Francisco Climate Action Strategy, 2013. Accessed August 4, 2016.
[20] Small hydro can qualify under RPS but large hydroelectric facilities (greater than 30 MW) are not eligible.

the overall footprint of the City. The 2013 Climate Action Strategy predicted that energy efficiency programs will reduce the footprint by 301,979 metric tons of carbon dioxide equivalent (MTCDE) and that switching to 100 percent renewable electricity will save 941,785 MTCDE by 2030 over business as usual.[21] While San Francisco has strict green building codes and LEED® requirements for new construction (outlined in Table 5), the City also houses a number of older and historic buildings. The programs and policies that have been put into place seek to address both the opportunity for lowering emissions in new buildings as well as the potential for increasing efficiency through renovation and retrofits. These are outlined below, followed by tables of applicable ordinances.

II.3 IMPLEMENTATION ACTIONS

CleanPowerSF

The Community Choice Aggregation (CCA) law, passed in 2002, allows California cities and counties to combine their citizens' purchasing power to buy electricity, thus reducing consumer costs and enhancing local control and consumer protections. Ordinance 0086-04, adopted by the Board of Supervisors on May 11, 2004, established the Community Choice Aggregation Program to further the implementation of a program to purchase electrical power directly for the citizens of the City and County of San Francisco and to accelerate renewable energy, conservation, and energy efficiency programs. In 2016, the Community Choice Aggregation program CleanPowerSF was fully launched. CleanPowerSF offers PG&E customers the option to purchase a "Basic Plan" (35 percent renewable) or a "Super Green" plan (100 percent renewable).[22] The Basic Plan offers renewable power for .25 percent less than the investor owned utility rates.[23]

Residential Rehabilitation Loan Program

Chapter 32 of the San Francisco Administrative Code, 1977, establishes the Residential Rehabilitation Loan Program. The purpose of the program is to improve the condition of housing and the quality of life in San Francisco by providing financial assistance to property owners in residential areas that are deteriorating. Through rehabilitation, instead of demolition and new construction, the program conserves the embodied energy of the building materials that are in good condition.[24]

San Francisco Energy Watch

San Francisco Energy Watch, launched in 2006, offers incentives, free energy assessments and project management of efficient appliances to small businesses, medium-sized commercial buildings and multifamily buildings. The program includes the Commercial Plus Program, Small Business Direct Install Program, and Multifamily Plus Program. According to the 2013 Department of the Environment Climate Action Strategy, between 2006 and 2013, SF Energy Watch worked with over 4,300 businesses and commercial buildings, and nearly 1,400 multifamily building owners.[25]

GoSolarSF Program

GoSolarSF is a rebate program that was passed by the San Francisco Board of Supervisors in 2008 (San Francisco Environment Code, Chapter 18). The program works in accordance with other state and federal tax credits and

[21] San Francisco Department of the Environment, San Francisco Mayor's Renewable Energy Task Force Recommendations Report, September 2012. Accessed August 4, 2016. & California Energy Commission, California Energy Commission – Tracking Progress, December 2015. Accessed August 4, 2016.
[22] SFPUC, CleanPowerSF. Accessed August 4, 2016.
[23] Go100Percent, San Francisco – 100% Renewable Power by 2030. Accessed August 4, 2016.
[24] City of San Francisco, San Francisco Administrative Code, Chapter 32. Accessed August 2, 2017.
[25] San Francisco Department of the Environment, San Francisco Climate Action Strategy, 2013. Accessed August 4, 2016.

helps to achieve the goals laid out in the California Solar Initiative (see below).[26] In 2014, the Board of Supervisors passed resolution 406-14, which continued funding for GoSolarSF and established a goal to produce 50MW of solar energy for SF by 2020. This goal is assisted by the Better Roof Requirement, which requires solar panels on new construction.

Energy Savings Programs

San Francisco residents and businesses have access to a number of affordable financing programs for clean energy and conservation projects. The Property Assessed Clean Energy program (PACE) is a national financing tool that funds 100 percent of the upfront costs with a long-term payback option (up to 20 years).[27] PACE is offered for commercial properties through GreenFinanceSF.[28] The State has a wide array of incentive payment options, which are outlined in the section below. In addition, SFPUC and PG&E offer a variety of assistance programs, such as the Water-Wise Evaluation (SFPUC), High Efficiency Toilet Rebates (SFPUC), Energy Upgrade California program (PG&E), Zero Net Energy Pilot program (PG&E), and the Energy Savings Assistance program (PG&E).[29]

Energy Performance

In 2011, the Board of Supervisors adopted Ordinance 17-11 to add Chapter 20 to the Environment Code, which requires disclosure of energy performance data for commercial buildings larger than 10,000 square feet. With the adoption of this code, the SFPUC has performed energy analysis on over 468 public buildings across 30 building types and has published annual energy performance benchmarking reports.[30] The 2015 report for municipal buildings found that energy use intensity (kBtu/square foot) improved over 18.9 percent between 2009 and 2014 and the average carbon footprint decreased by over 33 percent in the same period.[31] The airport, hospital, and educational buildings comprised roughly 67 percent of energy consumption for the inventoried buildings.[32] The report for private commercial buildings found a 7.9 percent reduction in energy consumption (steam, natural gas and electricity) and greenhouse gas emissions reduction of 16.9 percent for the 176 reported properties between 2010 and 2014.[33]

Chapter 20 of the Environment Code comprises one part of the codes that projects must follow for green energy practices. The Green Building Code has particular requirements for energy conservation and efficiency (noted in Table 5). In 2016, Supervisor Wiener introduced amendments to the Green Building Code and Environment Code to establish requirements for specific types of new construction to incorporate solar photovoltaic systems and solar thermal systems (see Table 5).[34] Larger development projects have coordinated to create more efficient utility systems. In 2015, the SFPUC published the Civic Center Sustainable Utilities District Plan for the 62-acre area. The key goals of the plan are to achieve zero waste, zero wastewater, and net-zero imported energy use and carbon emissions. The plan's proposal include a water treatment facility, an energy generation facility, and green stormwater infrastructure.[35] The Transbay Center project is designed to be a Sustainable Resource District with a

[26] SB2006: to install 3,000 megawatts of solar energy systems on new and existing residential and commercial sites and install solar on half of new homes by 2020. California Solar Initiative.
[27] PACENation, About PACENation. Accessed August 4, 2016.
[28] GreenFinanceSF (Commercial PACE program).
[29] PG&E, Residential Energy Savings Programs. Accessed August 4, 2016. & SFPUC, Rebates and Incentives. Accessed August 4, 2016.
[30] SFPUC, Energy Benchmarking for Municipal Buildings, 2015. Accessed June 29, 2017.
[31] Ibid.
[32] Ibid.
[33] San Francisco Department of the Environment & ULI Greenprint Center for Building Performance, San Francisco Existing Commercial Buildings Performance Report 2010-2014. Accessed August 4, 2016.
[34] Board of Supervisors, Legislation Introduced Memorandum File 160154, 2016. Accessed August 4, 2016
[35] SFPUC, Civic Center Sustainable Utilities District Plan, June 2015. Accessed August 4, 2016.

combined heat and power and combined heating and cooling system to decrease energy and maximize utility efficiency.[36]

In addition to the ordinances, rebates, and incentive programs, the City has conducted a number of feasibility studies and reports to incorporate renewable sources into long term energy strategies. In 2008, Mayor Newsom established an Urban Wind Task Force to identify areas in which the City could support the expansion and development of urban wind resources under Executive Directive 08-08. The report notes that while San Francisco has "only a 'moderate' medium- to large-scale wind on-shore resource, the City's small-scale wind resource is not yet fully understood" and there is potential for small "urban" wind applications.[37]

The 2008 *Tidal Power Feasibility Study* reported on the feasibility of capturing tidal power at the Golden Gate. The study concluded that it is not commercially feasible at this time, but recommended a demonstration project.[38] One year later, in 2009, a report was conducted to identify the potential of wave power from the Pacific Ocean. The feasibility study concluded that while technology is still in its infancy, there is sufficient energy that could be captured at costs similar to solar photovoltaic projects. Furthermore, wave power appears to be more feasible than tidal power, with greater power potential and lower cost.[39]

In 2013, SFPUC initiated efforts for a new biosolids digester facility at the Southeast Treatment Plant. As noted above, the City's wastewater treatment plants already produce biosolids as a part of the treatment process and capture generated energy. The proposed facility would upgrade the biosolids treatment (from Class B to Class A), resulting in 100 percent of the produced biosolids to be used for agricultural or horticultural purposes. In addition, 100 percent of the biogas produced would be able to be converted to heat and energy.[40]

There have been numerous actions taken to begin to address the recommendations from the above studies. San Francisco Planning Code Section 260(b)(1)(A) permits height exemptions up to 16 feet for wind generators and solar voltaic mechanical equipment.[41] AB004, updated in 2015, mandates expedited permitting for solar photovoltaic systems, wind generation projects and development projects proposing to achieve a LEED® Platinum (or equivalent green building standards).[42] In 2015, SF Environment initiated a project to incorporate solar power and energy storage methods in the City's Emergency Response Plans pursuant to FEMA.[43]

TABLE 5. SAN FRANCISCO CODES RELATED TO ENERGY USE IN BUILDINGS

Code	Description

[36] San Francisco Planning Department, Transit Center District Plan Update, October 2010. Accessed August 4, 2016.
[37] San Francisco Urban Wind Power Task Force, San Francisco Urban Wind Power Task Force Report & Recommendations, August 2009. Accessed August 4, 2016.
[38] SFPUC, Tidal Feasibility Study, March 2008. Accessed August 2, 2017.
[39] URS & SFPUC, Wave Power Feasibility Study Report, December 2009. Accessed August 4, 2016.
[40] SFPUC, Biosolids Digester Facilities Project. Accessed August 4, 2016.
[41] San Francisco Planning Code, Section 260.
[42] Department of Building Inspection, Administrative Bulletin 004, April 2015. Accessed August 4, 2016.
[43] San Francisco Department of the Environment, Solar and Energy Storage for Resiliency. Accessed August 4, 2016.

Requirements for Energy Efficiency **[SF Green Building Code, Section 4.103, 5.103]**	New low-rise and high-rise residential buildings must be GreenPoint Rated and demonstrate minimum of 75 GreenPoints from checklist. Alternatively, obtain LEED® Silver. Major alterations must achieve LEED® Gold or minimum of 75 GreenPoints from GreenPoint Rated Multifamily checklist. For new mid-size and large commercial buildings, submit documentation verifying either: Acquisition of renewable on-site energy or purchase of green energy credits in accord with LEED® EA2 or EA6, OR In addition to meeting 5.103.2.5 Energy Performance requirement, achieve an additional 10 percent compliance margin over Title 24 Part 6 (2013) California Energy Standards.
Commissioning of Building Energy and Water Systems **[SF Green Building Code, Section 5.103.1.4.** **CALGreen Sections 5.410.2, 5.410.4]**	New non-residential buildings and alterations to non-residential buildings must conduct design and construction commissioning to verify energy and water using components meet the owner's or owner representative's project requirements. Commissioning requirements apply to all building operating systems covered by Title 24 Part 6, as well as process equipment and controls, and renewable energy systems. New non-residential buildings must submit documentation verifying that the facility has been or will meet the criteria necessary to achieve CALGreen section 5.410.2 and Option 1 of LEED EA credit (Enhanced Commissioning), in addition to LEED EA Prerequisite (Fundamental Commissioning) and Verification. New non-residential projects ≥25,000 sq. ft.: submit documentation verifying that the facility has been or will meet the criteria necessary to meet LEED® credit EA3.0, in addition to LEED® prerequisite EAp1 Non-residential new buildings and alterations <25,000 square feet and ≥10,000 square feet: commission all energy systems. Non-residential new buildings and alterations less than 10,000 square feet must complete testing and adjusting of energy systems.
Residential Energy Conservation Ordinance **[SF Building Code - Housing Code, Chapter 12]**	Prior to transfer of title as a result of sale (including condominiums), residential properties that received a building permit prior to July 1978 the seller must provide the buyer a certificate of compliance, and the certificate must be recorded with the San Francisco Recorder's Office. To comply, install the following measures as applicable: Attic insulation; weather-stripping all doors leading from heated to unheated areas; insulating hot water heaters and insulating hot water pipes; installing low-flow showerheads; caulking and sealing any openings or cracks in the building's exterior; and insulating accessible heating and cooling ducts. Apartment buildings and hotels are also required to insulate steam and hot water pipes and tanks, clean and tune their boilers, repair boiler leaks, and install a time-clock on the burner. Maximum required expenditure: $1,300 for 1-2 unit dwellings, and for buildings with 3 or more units, 1 percent of the assessed value or purchase price as applicable. Although these requirements apply to existing buildings, compliance must be completed through the Department of Building Inspection, for which a discretionary permit (subject to CEQA) would be issued.
Existing Commercial Buildings Energy Performance Ordinance **[SF Environment Code, Chapter 20]**	Owners of nonresidential buildings in San Francisco with ≥10,000 square feet that are heated or cooled must conduct energy efficiency audits, and annually measure and disclose energy performance. Certain exceptions apply for new construction or if specified performance criteria are met. Furthermore, as pursuant to section 2006, municipal facilities should follow particular compliance plans if developed.

Light Pollution Reduction **[CALGreen, Section 5.106.8]**	For nonresidential projects, comply with lighting power requirements in CA Energy Code, CCR Part 6. Meet California Energy Code minimum for Lighting Zones 1-4 with Backlight/Uplight/Glare ratings meeting CALGreen Table 5.106.8. Lighting for public streets is exempt as pursuant to section 140.7 of the Energy Code.
Better Roof Requirements **[SF Environment Code, Chapter 26, SF Green Building Code, Proposed Sections 4.201.2 & 5.201.1.2]**	Newly constructed Group R occupancy buildings of 10 occupied floors or less shall install solar photovoltaic systems and/or solar systems in the Solar Ready Area required by Title 24 Part 6 Section 110.10 of the California Code of Regulations. Newly constructed buildings of nonresidential occupancy which are 2,000 square feet or greater and possess 10 occupied floors or less shall install solar electric photovoltaic systems and/or solar hot water heating systems in the Solar Ready Area required by Title 24 Part 6 Section 110.10 of the California Code of Regulations. Pursuant to Chapter 26 of the Environment Code, the Environment Director shall collaborate with the Department of Building Inspection, Department of Planning, and the Public Utilities Commission to prepare and publish an annual report on the renewable energy resources developed in compliance with the Better Roof Requirement codes.
Regulation of Diesel Backup Generators **[SF Health Code, Article 30]**	All diesel generators to be registered with the Department of Public Health. All new diesel generators must be equipped with the best available air emissions control technology as determined by the California Air Resources Board or the Bay Area Air Quality Management District.

ADDITIONAL CODE FOR PUBLIC BUILDINGS

Green Building Requirements for City Buildings **[SF Environment Code, Sections 705 & 706]**	All municipal new construction and major alteration projects over 10,000 square feet must achieve at a minimum LEED® Gold certification. Municipal projects must demonstrate compliance with locally-required measures as provided in Section 706. For all municipal construction projects subject to a LEED certification must demonstrate that the project meets LEED prerequisite Minimum Energy Performance EA 1 Energy Performance requirement and compliance with Title 24, Part 6 California Energy Standards.

Renewable Energy Efficiency, Better Roofs, and Energy Resilience **[SF Environment Code, Section 706]**	Municipal construction projects subject to a LEED certification requirement must demonstrate that the project meets LEED prerequisite Minimum Energy Performance EA1 Energy Performance and complies with Title 24, Part 6 California Energy Standards. Municipal new construction or whole building renovation projects must set a target for annual net energy consumption and report this to the Task Force. Municipal new construction or whole building renovation projects with an estimate height no more than three stories above grade must determine the feasibility of designing and constructing such projects to have zero net annual site energy consumption, including all building end uses. Municipal new construction must include a combination of photovoltaic, solar thermal, and/or living roof area, meeting the requirements of Planning Code Section 149 and Green Building Code Chapter 5. Municipal new construction or whole building major renovation projects must analyze the costs and benefits of incorporating onsite batteries that store electricity from onsite solar photovoltaic systems and can be temporarily separated from the electricity grid to supply the community with electricity in event of a disaster.

Commissioning **[SF Environment Code, Section 706]**	For municipal construction projects subject to a LEED certification requirement, the design team must demonstrate that the project achieves Option 1 LEED credit (Enhanced and Monitoring-Based Commissioning) in addition to LEED prerequisite (Fundamental Commissioning and Verification).

TABLE 6. SAN FRANCISCO GENERAL PLAN GOALS RELATED TO ENERGY USE IN BUILDINGS

General Plan Element	Objective/Policy
Air Quality	Objective 6. Link the positive effects of energy conservation and waste management to emission reductions.
Air Quality	Policy 6.1 Encourage emission reduction through energy conservation to improve air quality.
Air Quality	Policy 6.3 Encourage energy conservation through retrofitting of existing facilities.
Commerce and Industry	Policy 1.2 Assure that all commercial and industrial uses meet minimum, reasonable performance standards.
Environmental Protection	Objective 12. Establish the City and County of San Francisco as a model for energy management.
Environmental Protection	Policy 12.1 Incorporate energy management practices into building, facility, and fleet maintenance and operations.
Environmental Protection	Policy 12.2 Integrate energy cost reduction measures into the budget process.
Environmental Protection	Policy 12.3 Investigate and implement techniques to reduce municipal energy requirements.
Environmental Protection	Policy 12.4 Encourage investment in capital projects that will increase municipal energy production in an environmentally responsible manner.
Environmental Protection	Policy 12.5 Include energy emergency preparedness plans in municipal operations.
Environmental Protection	Objective 13. Enhance the energy efficiency of housing in San Francisco.
Environmental Protection	Policy 13.1 Improve the energy efficiency of existing homes and apartment buildings.
Environmental Protection	Policy 13.2 Strengthen enforcement of the state's residential energy conservation building standards.
Environmental Protection	Policy 13.3 Expand the environmental review process to encourage the use of additional measures to save energy in new housing.
Environmental Protection	Policy 13.4 Encourage the use of energy conserving appliances and lighting systems
Environmental Protection	Policy 13.5 Emphasize energy conservation in local government housing assistance programs.
Environmental Protection	Policy 3.6 Advocate real estate association participation in residential energy management program efforts.
Environmental Protection	Objective 14. Promote effective energy management practices to maintain the economic vitality of commerce and industry.
Environmental Protection	Policy 14.1 Increase the energy efficiency of existing commercial and industrial buildings through cost-effective energy management measures.
Environmental Protection	Policy 14.3 Expand the environmental review process to encourage the use of additional measures to save energy in new commercial buildings.
Environmental Protection	Policy 14.4 Promote commercial office building design appropriate for local climate conditions.
Environmental Protection	Policy 14.5 Encourage use of integrated energy systems.

Environmental Protection	Objective 16. Promote the use of renewable energy sources.
Environmental Protection	Policy 16.1 Develop land use policies that will encourage the use of renewable energy sources.
Environmental Protection	Policy 16.2 Remove obstacles to energy conservation and renewable energy systems in zoning and building codes.
Environmental Protection	Policy 16.3 Develop information resources to assist in the use of renewable energy.
Environmental Protection	Objective 17. Support Federal, State and PG&E energy programs that are equitable, and encourage conservation and renewable energy use.
Environmental Protection	Policy 17.1 Support continuation of state and federal tax incentives and credits for conservation and renewable energy technologies.
Environmental Protection	Policy 17.2 Promote state energy building standards that are cost-effective and take into account San Francisco's climate and density patterns.
Environmental Protection	Policy 17.3 Encourage PG&E involvement in energy management programs for residential, commercial and industrial users.
Environmental Protection	Objective 8. Develop financing opportunities to implement local energy programs.
Environmental Protection	Policy 18.1 Promote government and private financing partnerships to carry out local energy programs.
Environmental Protection	Policy 18.2 Encourage private financial institutions to offer energy loan programs responsive to local market needs.
Environmental Protection	Policy 18.3 Establish a self-supporting system for funding municipal energy cost reduction investments.
Housing Element - 1990	Policy 7.5 Encourage energy efficiency in new residential development and weatherization in existing housing to reduce overall housing costs.
Housing Element - 2004	Policy 11.10 Include energy efficient features in new residential development and encourage weatherization in existing housing to reduce overall housing costs and the long-range cost of maintenance.
Housing Element - 2014	Policy 10.4 Support state legislation and programs that promote environmentally favorable projects.
Housing Element - 2014	Policy 13.4 Promote the highest feasible level of "green" development in both private and municipally-supported housing.
Transportation	Policy 2.2 Reduce pollution, noise and energy consumption.

TABLE 7. SAN FRANCISCO AREA PLAN GOALS RELATED TO ENERGY USE IN BUILDINGS

Area Plan	Objective/Policy
Balboa	Policy 4.7.1 New development should meet minimum levels of green construction.
Balboa	Policy 6.5.1 The connection between building form and ecological sustainability should be enhanced by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
Balboa	Policy 6.5.2 New buildings should comply with strict environmental efficiency standards.
Central Waterfront	Objective 2.5 Promote health through residential development design and location
Central Waterfront	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Central Waterfront	Policy 2.5.4 Provide design guidance for the construction of healthy neighborhoods and buildings.

Central Waterfront	Policy 3.3.3 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
Central Waterfront	Policy 3.3.4 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
East SoMa	Policy 2.5.3 Require new development to meet minimum levels of green construction.
East SoMa	Policy 2.5.4 Provide design guidance for the construction of healthy neighborhoods and buildings.
East SoMa	Policy 3.3.3 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
East SoMa	Policy 3.3.4 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
Mission Area	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Mission Area	Policy 3.3.3 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
Mission Area	Policy 3.3.5 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
Showplace/Potrero	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Showplace/Potrero	Policy 3.3.3 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
Showplace/Potrero	Policy 3.3.4 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
Transit Center	Objective 2.17 Promote a high level of quality of design and execution, and enhance the design and material quality of the neighboring architecture.
Transit Center	Policy 2.24 Maximize daylight on streets and open spaces and reduce heat-island effect, by using materials with high light reflectance, without producing glare.
Transit Center	Policy 2.25 Encourage the use of green, or "living," walls as part of a building design in order to reduce solar heat gain as well as to add interest and lushness to the pedestrian realm.
Transit Center	Objective 6.1 Increase energy efficiency, reduce carbon-intensiveness of energy production, and enhance energy reliability in the district.
Transit Center	Objective 6.2 Capitalize on the balanced, dense, mixed-use development in the Transit Center district and Transbay redevelopment areas to enact district-scale energy measures.
Transit Center	Objective 6.3 Streamline potential implementation of a district energy distribution network by phasing major streetscape and utility works in line with new building development in the Transit Center District and Transbay redevelopment area.
Transit Center	Policy 6.1 Pursue creation of efficient, shared district-scale energy systems in the district.

Transit Center	Policy 6.2 Pursue a Combined Heat and Power (CHP) system or series of systems for the Transit Center District and the Transbay Redevelopment Area (Zone 1).
Transit Center	Policy 6.3 Require all new buildings to be designed to plug into such a system in the future.
Transit Center	Policy 6.4 Require all buildings undergoing major refurbishment (defined as requiring new HVAC plant) to be designed to plug into such a system in the future.
Transit Center	Policy 6.5 Identify and protect either suitable public sites or major development sites within the plan area for locating renewable or CHP generation facilities.
Transit Center	Policy 6.6 Require all major development to demonstrate that proposed heating and cooling systems have been designed in accordance with requirements outlined in the Transit Center Area Plan.
Transit Center	Policy 6.7 Investigate city support for energy service companies to finance, build, operate, and maintain Transit Center District energy networks; and work with necessary private utilities to facilitate connection of new electricity supply from CHP to the grid.
Transit Center	Policy 6.8 Require all major development in the plan area to produce a detailed energy strategy document outlining how the design minimizes use of fossil fuel driven heating, cooling and power—through energy efficiency, efficient supply, and no or low carbon generation.
Transit Center	Objective 6.4 Ensure that new buildings constructed in the plan area represent leading edge design in terms of sustainability, both high performance for their inhabitants and low impact on the environment.
Transit Center	Policy 6.9 Encourage buildings to take maximum advantage of San Francisco's moderate year-round climate through integration of passive solar features into building design.
Transit Center	Policy 6.10 Encourage the use of natural ventilation to reduce the need for mechanical air conditioning.
Transit Center	Policy 6.11 Use renewable energy systems to reduce the use of fossil fuel generated energy.
Transit Center	Policy 6.12 Consider requiring all major buildings in the plan area to achieve the minimum LEED® levels established in the SF Green Building Ordinance excluding credits for the given inherent factors of location, density, and existing city parking controls, in order to achieve high-performance buildings.
Transit Center	Policy 6.13 All major buildings in the plan area should exceed the minimum credits required by the SF Green Building Ordinance under the Energy and Water categories of the LEED® schemes.
Western SoMa	Policy 3.7.3 Provide design guidance for the construction of healthy neighborhoods and buildings.
Western SoMa	Policy 5.2.1 Fully support and integrate into the western SoMa SUD the environmental policies embodied in green building legislation.
Western SoMa	Policy 5.2.2 Require new development to meet minimum levels of "green" construction.

Western SoMa	Policy 5.2.3 Encourage mandatory targets for certain components of the rating systems, specifically, 5 percent to 10 percent of material re-use for development projects, 100 percent diversion of all non-hazardous construction and demolition debris for recycling and/or salvage, 10 to 25 percent onsite renewable generation, water efficient landscaping to reduce potable water consumption for irrigation by 50 percent, and maximize water efficiency within buildings to reduce waste water by 30 percent.
Western SoMa	Policy 5.2.8 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
Western SoMa	Policy 5.2.9 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
Western SoMa	Policy 6.7.1 Encourage the use of recycled materials in all new restoration, preservation, adaptive re-use and rehabilitation development in Western SoMa.
Western SoMa	Policy 7.10.4 Encourage sensitive building design and use of solar energy whenever possible in the improvement of streets and alleys.
Western SoMa	Policy 7.10.5 Maximize solar access to all existing and new recreational open space.
Western SoMa	Policy 7.10.6 Encourage the use of solar energy in lighting and irrigation systems on new recreational facilities and open spaces.

II.4 State Strategies for Energy Use in Buildings

Reducing greenhouse gas emissions from energy use in buildings must be addressed through both local and state policies. As noted in the 2012 report by the Renewable Energy Task Force, "While we would have unique opportunities to take increased control of our local power supply through CCA, much of our energy supply will remain outside of City control. We would like to see not just San Francisco but the entire State become renewably powered…San Francisco can lead the way by creating demand for renewable energy, enabling local generation, and driving market development and investment."[44]

The State has goals and policies for energy use in buildings, increasing renewable energy generation, and expanding the Renewable Portfolio Standards program. In 2004, Governor Schwarzenegger passed Executive Order S-20-04 to reduce energy consumption in state-owned buildings 20 percent by 2015 and for the California Energy Commission to establish benchmarking methodology and energy efficiency building commissioning guidelines. The Executive Order also required new and renovated state-owned facilities paid for with state funds to achieve minimum LEED® Silver.[45] Buildings throughout the State must comply with the California Green Building Standards (Part 11 of Title 24, California Code of Regulations, commonly referred to as CALGreen), which were most recently updated in 2016.[46] The State's Long Term Energy Efficiency Strategic Plan highlights targets for zero net energy:

- All new residential building starting in 2020 will be zero net energy
- All new commercial buildings starting in 2030 will be zero net energy
- 50 percent of existing buildings will be zero net energy by 2030[47]

[44] San Francisco Department of the Environment, San Francisco Mayor's Renewable Energy Task Force Recommendations Report, September 2012. Accessed August 4, 2016.
[45] Governor Schwarzenegger, Executive Order S-20-04, December 2014. Accessed August 4, 2016.
[46] California Energy Commission, 2016 Building Energy Efficiency Standards, 2016. Accessed August 4, 2016.
[47] California Public Utilities Commission, Energy Efficiency Strategic Plan, September 2008. Accessed August 4, 2016.

In the broader category of energy consumption and production, the State has mandated the following Renewable Portfolio Standards goals. These were first implemented in 2002 but have most recently been updated in 2011 and again in 2013 (SBX1-2, SB350). The 2013 Climate Action Strategy estimated that the state's Renewable Portfolio Standards would result in a savings of 279,496 MTCDE in 2030.[48]

- Procure energy with 20 percent renewable sources by end of 2013
- Procure energy with 25 percent renewable sources by end of 2016
- Procure energy with 33 percent renewable sources by end of 2020
- Procure energy with 40 percent renewable sources by end of 2024
- Procure energy with 45 percent renewable sources by end of 2027
- Procure energy with 50 percent renewable sources by end of 2030

The Energy Commission estimated that nearly 25 percent of electric retail sales were served by wind, solar, geothermal, biomass, and small hydroelectric in 2014. The overall in-state operating capacity of energy generated through renewable sources was 21,700 MW as of 2015. Of that, the majority comes from solar (8,700 MW), with wind in second (6,000MW) and geothermal third (2,700).[49]

The state has implemented programs and policies to increase renewable energy production and consumption by both the utility provider and the consumer. Of the 26,300 MW of renewable energy produced, 5,200 MW was self-generated, meaning that energy was consumed on-site such as rooftop solar photovoltaic (PV).[50] The Self-Generation Incentive Program, first conceived in 2001, encourages renewable energy production installation on the customer's side of the utility meter through financial incentives.[51] In 2006, the State Senate passed SB1, establishing Go Solar California and the California Solar Initiative (CSI). SB1 mandated a statewide goal to install 3,000 megawatts of solar energy systems on new and existing residential and commercial sites and install solar on half of all new homes by 2017. Go Solar California has a budget of $3.35 billion.[52] Under the umbrella of CSI are several targeted incentive programs such as the Single-Family Affordable Solar Homes Program (SASH), the Multi-Family Affordable Solar Homes Program (MASH), Solar Water Heating (CSI Thermal), and the New Solar Homes Partnership (NSHP). In 2010, Jerry Brown announced his Clean Energy Jobs Plan, which included a statewide goal of installing an additional 20,000MW of renewable energy by 2020 (12,000 MW of renewable distributed generation and 8,000 MW of large-scale renewable generation).[53] While the State has implemented many pieces of legislation related to energy production and consumption, the key goals related to greenhouse gas emission reduction strategies are outlined below.

TABLE 8. STATE SENATE & ASSEMBLY BILLS RELATED TO ENERGY USE IN BUILDINGS

Bill	Year	Description
SB1078 / Executive order S-14-08 / SBX1-2	2002; updated in 2011	SB1078 (2002) established the Renewable Portfolio Standard (RPS) program. The targets through 2020 have most recently been updated and codified through SBX1-2. They require 20 percent of sales from renewable energy by 2013, 25 percent by 2016, and 33 percent by 2020. See SB350 below for the most updated targets.

[48] San Francisco Department of the Environment, San Francisco Climate Action Strategy, 2013. Accessed August 4, 2016.
[49] California Energy Commission, California Energy Commission – Tracking Progress, December 2016. Accessed June 29, 2017.
[50] Ibid.
[51] CPCU, Self-Generation Incentive Program. Accessed on August 2, 2017.
[52] California Energy Commission, History of California's Renewable Energy Programs. Accessed August 4, 2016.
[53] California Energy Commission, California Energy Commission – Tracking Progress, December 2015. Accessed August 4, 2016.

Executive Order S-20-04	2004	Directed state agencies, departments, and other entities under the direct authority of the Governor to take measures to reduce grid-based energy purchases for buildings by 20 percent by 2015 and to construct new and renovated state-owned facilities paid for with state funds to achieve a minimum of LEED® Silver. The order also directed the California Energy Commission establish a methodology to benchmark energy consumption and energy efficiency building commissioning guidelines.
SB1 Electricity Solar Energy / Net Metering	2006	Established the California Solar Initiative; with a goal to install 3,000 megawatts of solar energy systems on new and existing residential and commercial sites and install solar on half of new homes by 2017. Under SB1, publicly owned utility companies must report on the progress of the solar incentive program annually.
AB758 Energy: Energy Audit	2009	Requires publicly owned electric utility companies to create and implement energy efficiency programs
SB1122 Bioenergy Feed-in Tariff	2012	Directed CA Public Utility Commission to require the State's investor owned utilities to develop and offer 10 to 20 year market-price contracts to procure 250MW of electric generated from biogas facilities
AB1257 Natural Gas Act	2013	Requires report updates on strategies to maximize benefits of using natural gas
SB43 Green Tariff Shared Renewables Program	2013	Allows individual buyers who cannot produce renewable on their property to purchase 100 percent of electricity from renewable sources and receive a bill credit for the clean power that they purchase
SB350 Clean Energy and Pollution Reduction Act	2015	Requires the State to procure 40 percent of electricity from renewable sources by 2024, 45 percent by 2027, and 50 percent by 2030, and to double the rate of natural gas and electricity efficiency savings
Building Energy Efficiency Standards, Title 24	2013 effective 2016 update	Building energy standards for all residential and non-residential buildings in the State. The standards are typically updated every three years.
AB1103, AB802 Energy Benchmarking Disclosure	2016, effective 2017	AB1103 was passed in 2007 mandating the disclosure of commercial buildings' energy consumption in private transactions. The bill was repealed in 2016 and superseded by AB802, which goes into effect in January of 2017. AB802 still requires disclosure of energy use but is intended to improve implementation. A difference in AB802 is that disclosure will now be in the form of annual public disclosure rather than per private transaction

III TRANSPORTATION & LAND USE

III.1 TARGETS

City and County of San Francisco Targets

- Shift half of trips to non-automobile trips[54]
- Grow public transportation options and expand alternative transit infrastructure
- Expand access to clean vehicles and fuels
- Vision Zero: Eliminate traffic deaths by 2024 (Resolution 91-2014)
- Zero emissions taxi fleet by 2020 (Resolution 2007-21)

III.2 PROGRESS TO DATE

Transportation-related activity comprises a significant portion of the City's overall greenhouse gas emissions profile and has been the focus of many ordinances and public agency strategies. In 2015, emissions associated with vehicle miles traveled (VMT) and fuel emissions from Muni, BART, Caltrain and the City's ferries accounted for 44 percent of the City's greenhouse gas inventory (42 percent and 4 percent, respectively). Between 1990 and 2015, emissions from public transportation declined 25 percent.[55] During the same period, personal VMT increased 7.9 percent.[56] However, due to improvements in fuel standards, GHG emissions from VMT declined 5 percent below 1990 levels (see Chart 4).[57]

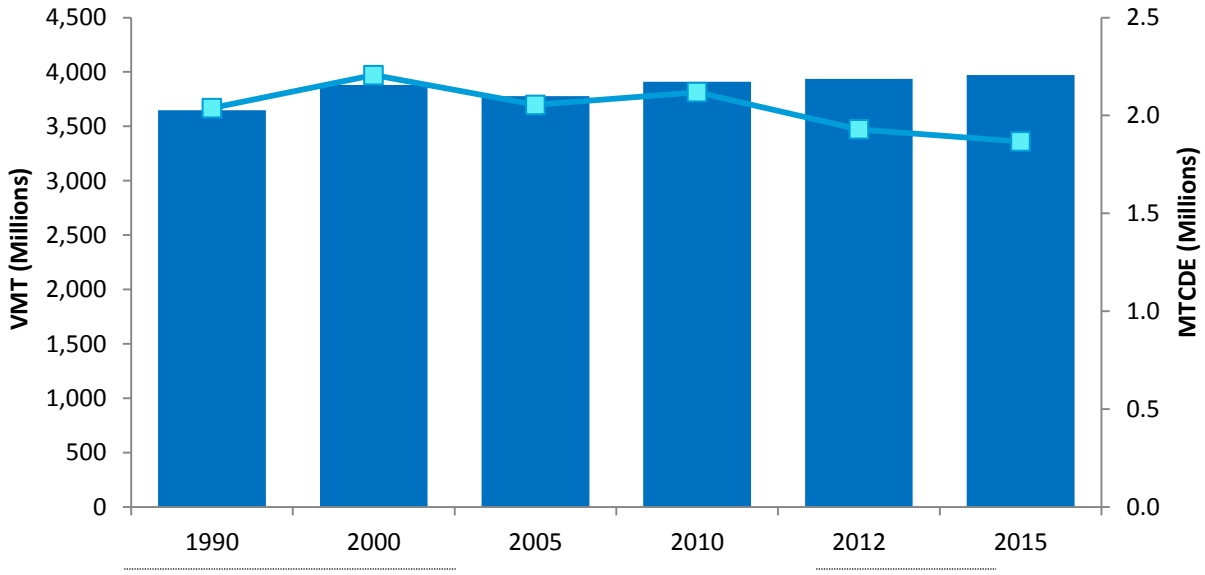


CHART 4. VEHICLE MILES TRAVELED (VMT) AND VMT EMISSIONS

From the 2015 Emissions Inventory

[54] The year outlined by SFMTA's Strategic Plan to achieve this target is FY2018. SFMTA, SFMTA Strategic Plan FY2013-2018. Accessed August 4, 2016.
[55] San Francisco Department of Environment, 2015 San Francisco Greenhouse Gas Inventory. Accessed August 11, 2017.
[56] Ibid.
[57] Ibid.

TABLE 9. VMT & VMT EMISSIONS

Year	VMT (Miles)	VMT Emissions (MTCDE)
1990	3,648,000,000	2,037,736
2000	3,880,000,000	2,205,904
2005	3,777,853,741	2,053,823
2010	3,910,784,576	2,118,863
2012	3,935,735,774	1,928,865
2015	3,973,162,571	1,866,601

**From the 2015 Emissions Inventory*

The key components of transportation-related emissions are fuel type, fuel economy and mode shift. These three factors are influenced by a host of exogenous variables including technological advancements, land use decisions, and demographics. It is therefore imperative to employ a comprehensive and diverse range of policies and strategies in order to reduce emissions in the transportation sector. In the past ten years, the City and State have implemented sweeping transportation and land use legislation and have invested heavily in alternative modes of transportation. These efforts have resulted in significant progress: according to the most recent mode share analysis for the City of San Francisco conducted in 2015 mode share in San Francisco was 47 percent private trips and 52 percent non-private auto trips (walk, transit, bicycle, TNC and other).[58]

III.3 IMPLEMENTATION ACTIONS

The 2013 Climate Action Strategy identified a three-tiered strategy to approach reducing transportation-related emissions:

- Transportation demand management
- Land use integration
- Congestion and parking pricing
- Travel choices and information
- Strategic Infrastructure Support
- Priority transit
- Complete streets
- Vehicle and ride sharing
- Efficient Vehicles, Clean Fuels
- Electrification & 100 percent renewable electricity
- Liquid and gaseous biofuels

In addition to these comprehensive strategies, the 2013 document outlined predicted emissions savings from specific actions such as: changing BART to 100 percent renewable energy, switching MUNI buses to 100 percent carbon-free fuel, implementation of improved fuel economy standards, and increased percentage of electric and low-emitting / zero-emitting vehicles. Together, it is projected that the implementation of these goals would save over half a million in 2030 GHG emissions over business as usual estimates.[59] Several of these goals have already been fully implemented and are discussed below in addition to other ongoing and planned reduction strategies.

[58] The was published in SFMTA's Travel Decisions Survey 2015 summary report, which was based on a telephone study conducted to inform the progress toward the goal of 50% non-auto trips by 2018, as outlined by Objective 2.3 in the SFMTA Strategic Plan.

[59] SFMTA, Travel Decisions Survey 2015. Accessed on August 2, 2017.

Bay Area Land Use & Transportation Plans

One of the most effective means of reducing vehicle emissions is to decrease VMT, which requires an expanded multi-modal transportation network and land use development that supports alternative transportation modes. Land uses within San Francisco are governed by the City's General Plan, Neighborhood Area Plans, regulations in the Planning Code, and regional and state policies related to density and land use.

Jobs-Housing Linkage Program

The Bay Area has been at the forefront of legislation and policies related to the coordination of transportation and land use development. In 1996, the Board of Supervisors adopted the Jobs-Housing Linkage Program. The Board of Supervisors declared that large-scale entertainment, hotel, office, research and development, and retail developments in the City attract additional employees to the City, resulting in the need for additional housing, particularly housing affordable to lower and moderate income households. Section 413 of the Planning Code requires that new development contribute land suitable for housing to a developer to construct housing or pay an in-lieu fee to the City Treasurer to be used exclusively for the development of housing affordable to households of lower or moderate income. Providing housing near jobs is intended to reduce vehicle miles traveled and greenhouse gas emissions.

General Plan & Area Plans

The City's Housing Element addresses the general location and extent that land is used for housing as well as population density and building intensity standards. The Air Quality Element specifies increasing coordination of land use and transportation to decrease negative air impacts of development (Objective 3). The Commerce and Industry Element discusses population density and building intensity standards and addresses the distribution, location, and use of land for business and industry. The Recreation and Open Space Element describes and indicates the location of land used for open space and recreation. The Community Facilities Element provides coverage of land use issues such as education, public buildings, and waste disposal. The General Plan reduces San Francisco's vehicle miles traveled and overall carbon footprint through its overall guidance towards compact design and high-density infill development in locations with neighborhood-serving retail and where transit service is available. Under the City's Better Neighborhoods Program, the Planning department has adopted area plans that encourage the preservation of commercial uses within walking proximity to housing and increased density and housing along transit corridors. The specific policies and objectives related to transportation and land use are highlighted in Table 10. Neighborhoods around the City also have transportation-specific plans, including the SFMTA area transportation plans, the 2011 Eastern Neighborhoods Transportation Implementation Planning Study (EN TRIPS) and the currently ongoing Balboa Area Transportation Demand Management Plan and Railyard Alternatives and I-280 Boulevard Feasibility Study (RAB). These plans address widespread transportation needs through a coordinated approach to improve circulation, safety, and streetscapes.

Plan Bay Area

In 2013, the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governors (ABAG) adopted Plan Bay Area. The plan outlines strategies for the region to accommodate the expected population growth of 2 million people while simultaneously meeting future housing needs and GHG emissions reduction targets. The regional plan is compliant with the state's Sustainable Communities and Climate Protection Act of 2008 (SB375), which mandates coordinated transportation and land use planning to support the statewide greenhouse gas reduction targets (SB375 is discussed in more detail in the State Strategies section). With the identification of Priority Development Areas, Plan Bay Area specifies how nearly $292 billion in expected funding from federal, state and local sources will be expended.[60]

Plan Bay Area is currently being updated and Plan Bay Area 2040 is expected to be adopted in July 2017. As part of the update, the MTC, along with SFCTA, BART, Muni, AC Transit, Caltrain and the Water Emergency Transportation

[60] MTC, Plan Bay Area. Accessed August 4, 2016.

Authority, are currently working on a Core Capacity Transit Study to identify short-term and long-term projects that will alleviate congestion and increase capacity in the Transbay Corridor and the San Francisco Metro Corridor.[61] For more information on Plan Bay Area, visit: planbayarea.org. For information on state strategies and state legislation mandating emission reduction efforts, see State Strategies below.

San Francisco Transportation Plan

In 2013, the San Francisco County Transportation Authority (SFCTA), the region's Congestion Management Agency, adopted the San Francisco Transportation Plan 2040 to outline $75 billion in expected funds for transportation projects.[62] Due to the expected growth in population and employment, the City's VMT is expected to increase 30 percent by 2040. While state vehicle emission regulations are predicted to reduce greenhouse gas emissions by over 40 percent, other measures need to be implemented in order to achieve the City's GHG reduction goals set by ordinance 81-08. The Transportation Plan 2040 highlights congestion management, employer incentives, and outreach and private sector and community involvement as the three main methods of achieving greenhouse gas reductions in a growing region.[63]

In addition to the transportation investment plan, the SFCTA publishes a biennial Congestion Management Program in accordance with California Code 65089. The 2015 report outlines a number of Transportation Demand Management projects currently underway, a number of which are discussed below.[64]

Transportation Sustainability Program

In March of 2016, the San Francisco Planning Commission proposed a resolution modifying the transportation impact analysis to align the review with the City's Transit-First Policy, Better Streets Plan, and Vision Zero (discussed in further detail below). The three main components of this proposal are:

LOS Reform

Historically, the state has measured the impacts on transportation by new developments using a Level of Service (LOS) calculation, which emphasizes vehicle delay as a key component of a project. Level of Service requires mitigation actions under CEQA, even when projects are projected to result in improved conditions for other modes of transportation. For example, small infrastructure projects such as bike lanes can be required to conduct an environmental impact report or may be halted due to their impact on LOS. After the state passed SB743 (described in more detail below), the Governor's Office of Planning and Research (OPR) produced a study of key recommendations for implementation. As part of their report, OPR proposed using vehicle miles traveled (VMT) as a substitute measure. A VMT metric is less timely and expensive to study and aligns with the Transit First Policy and climate action goals.

Transportation Demand Management Program

Recently adopted, the City's Transportation Demand Management (TDM) Program is designed to work with developers to provide on-site amenities that encourage smarter and more sustainable travel options and reduce vehicle trips. Under Section 163 of the Planning Code, the ordinance requires new buildings or additions greater than 25,000 square feet within certain zoning districts (including downtown, south of market, and several eastern neighborhoods) to implement a Transportation Management Program and provide on-site transportation management brokerage services for the life of the building.

[61] MTC, Core Capacity Study, July 2016. Accessed August 4, 2016.
[62] SFCTA, San Francisco Transportation Plan 2040, December 2013. Accessed August 4, 2016.
[63] Ibid.
[64] SFCTA, Congestion Management Program, December 2015. Accessed August 4, 2016.

Transit Impact Development Fee/Transportation Sustainability Fee

In 1981, the San Francisco Board of Supervisors passed an ordinance to collect a transit impact development fee for new office space in the downtown area. This ordinance was updated in 2004 to include all proposed non-residential uses in San Francisco. Five years later, the City conducted the *TSF Nexus Study*, which concluded that all new land uses in San Francisco generate increased demand for transportation infrastructure and services. As a result of these findings, the City passed ordinance 150790 in 2015, which increased the rates of the Transportation Impact Fee and expanded the types of projects that must pay the fee (SF Planning Code, section 411A). With the new Transportation Sustainability Fee, commercial developments and market rate residential developments with more than 20 units will be required to pay. The fee is projected to pay for $1.2 billion in improvements to the City's transportation system over the next 30 years.[65]

Public Transit

Transit First

The City's Transit First Policy, passed in 1973 and incorporated into the City Charter, gives priority to public transit investments, adopts street capacity and parking policies to discourage increased automobile traffic, and encourages the use of transit, bicycling and walking rather than the use of single-occupant vehicles. The Transit First Policy continues to influence the expenditure of funds in support of alternative modes of transportation.

Bay Area Regional Transit (BART)

The Bay Area Regional Transit (BART) system serves 112 miles, 46 stations and an average of 430, 000 passenger trips per weekday and 129 million trips annually.[66] Since 2011, BART ridership has increased almost 25 percent.[67] BART riders save over 300 gallons of gas and 6,277 pounds of C02 annually.[68] Over the past several years, the BART electric emissions factor (lbs. / MWh) has declined significantly due to an increase in renewable fuel sources.[69] BART met their goal of procuring 75 percent renewable powered electricity by 2017. As of 2017, 97 percent of electric comes from hydro and renewable sources, with a new goal to transition to 100 percent carbon-free by 2035 and 100 percent renewable by 2045.[70, 71] In 2015, the State Senate passed SB502, permitting the agency to procure additional electricity from eligible renewable energy resources rather than being restricted by federal power marketing authority or a local POU (SB502, 2015).[72]

The agency has several extension projects underway as well as plans for new fleet cars that will increase access to public transit, capacity and efficiency. Expansion projects include:

- Fremont South extension (2016)
- East Contra Costa County extension (2017/2018)
- Livermore extension (project-level EIR 2017)
- Silicon Valley extension (Phase 1 2018, Phase II 2025)[73]

By 2018, BART will expand its fleet with an additional 66 new train cars. It is expected that increasing the number of cars during peak period commuting times will result in an increase of 9,468 riders daily and an annual

[65] SF Planning, Transportation Sustainability Fee Frequently Asked Questions. Accessed August 4, 2016.
[66] Bay Area Rapid Transit, BART 2016 Factsheet, April 2016. Accessed July 5, 2017.
[67] Ibid.
[68] Bay Area Rapid Transit, BART's Environmental Credentials. Accessed August 4, 2016.
[69] San Francisco Department of Environment, 2015 San Francisco Greenhouse Gas Inventory. Accessed August 11, 2017.
[70] Bay Area Rapid Transit, Expanding BART Peak Period Trains via Construction of a Vehicle Overhaul and Heavy Repair Shop, April 2016. Accessed August 4, 2016.
[71] Bay Area Rapid Transit, BART Green Factsheet, 2017. Accessed July 5, 2017.
[72] Assembly Committee on Utilities and Commerce, SB502, 2015. Accessed August 4, 2016.
[73] Valley Transportation Authority.

reduction of 25.5 million VMT.[74] In 2016, the agency applied for funding from the Transit/Intercity Rail Capital Program to finance a new maintenance and repair service complex in Hayward to support the fleet additions.[75]

In addition to expanding its fleet, BART has implemented several new transit rewards programs to enhance experience and manage the rapid increase in ridership. The BART Perks Pilot Program, launched in spring of 2016, aims to reduce congestion during peak hour by offering rewards and cash incentives for people to alter their commute times to peak period shoulder hours.[76] BART has also launched BARTable, a website that offers discounts and promotes activities that are accessible by BART.[77] These programs aim to alleviate congestion, increase capacity, improve rider satisfaction, and encourage off-peak use of the BART network.

BART plays a significant role in coordinating transportation and land use development to reduce VMT. In 2005, the BART adopted a Transit-Oriented Development Policy to develop land near BART that encourages the use of transit.[78] There are 18 transit-oriented development projects underway that are on BART property or near stations. The developments are projected to add nearly 6,917 units of housing.[79] The modes people are using to get to BART have changed over time, with an increase towards biking and walking. In 1990, about 25 percent of riders walked or biked to BART stations. This number was over 40 percent in 2015. Over the same period, the amount of riders who drove and parked to BART stations decreased around 15 percent.[80]

SFMTA

In 2007, the City passed Proposition A through public ballot approval. The proposition set emissions targets for the City's transportation sector to reduce emissions 20 percent below 1990 levels by 2012. In addition to this broad goal, the Proposition highlighted specific key actions for SFMTA, including zero GHG emissions for SFMTA transit vehicles, increasing transit trips, increasing bike and walk mode share and improving transit connections. SFMTA responded to this legislation with a Climate Action Strategy in 2011 that outlined core elements to achieve significant greenhouse gas reductions.[81] More recently, the agency published their Strategic Plan (FY2013-FY2018), which highlights four main goals:

- "Create a safer transportation experience for everyone
- Make transit, walking, bicycling, taxi, ridesharing, and carsharing the preferred means of travel
- Improve the environment and quality of life in San Francisco
- Create a workplace that delivers outstanding service[82]

Objective 2.3 under the second goal is to achieve a 50 percent non-auto mode shift by FY2018. Preliminary data published by SFMTA's *Travel Decisions Survey 2015* concludes that it is possible this goal has already been achieved. Objective 3.1 establishes a goal to reduce GHG emissions by 25 percent below 1990 levels by 2017 for the system. The agency's emissions profile peaked in 2010 and has been declining every year since then, driven in large part to switching the primary fuel source from diesel to biodiesel B20 and most recently to renewable diesel.[83] Renewable diesel is made from the same main components as biodiesel B20 but is produced through a cleaner process, the full lifecycle emissions of which can be more than 60 percent lower than those from

[74] Bay Area Rapid Transit, Expanding BART Peak Period Trains via Construction of a Vehicle Overhaul and Heavy Repair Shop, April 2016. Accessed August 4, 2016.
[75] Ibid.
[76] Bay Area Rapid Transit, BART Perks Pilot Program Fact Sheet, May 2016. Accessed August 4, 2016.
[77] Bay Area Rapid Transit, BARTable. Accessed August 4, 2016.
[78] Bay Area Rapid Transit, Transit-Oriented Development Policy, July 2005. Accessed August 4, 2016.
[79] Bay Area Rapid Transit, Expanding BART Peak Period Trains via Construction of a Vehicle Overhaul and Heavy Repair Shop, April 2016. Accessed August 4, 2016.
[80] Ibid.

[81] SFMTA, 2011 Climate Action Strategy for San Francisco's Transportation System, April 2011. Accessed August 2, 2017.
[82] SFMTA, SFMTA Strategic Plan FY2013-2018. Accessed August 4, 2016.
[83] SFMTA, SFMTA Carbon Footprint. Accessed August 4, 2016.

petroleum or B20.[84] In 2015, SFMTA was one of four public transportation agencies to be recognized by the American Public Transportation Association as a Platinum-level member of their Sustainability Commitment.[85]

SFMTA Transit Effectiveness Project, MUNI Forward & Central Subway

The Transit Effectiveness Project identified the City's main transit network challenges. The recommendations were approved by the SFMTA Board of Directors in March 2014 and have started to be implemented through Muni Forward. The projects identified center around increasing the City's Rapid Transit Network, improving the frequency of service, expanding transit-only lanes, adding buses to the fleet and Vision Zero pedestrian safety projects.[86]

Bus Rapid Transit lines for Van Ness and Geary as well as an extension to Muni's T Third Line are core network projects currently underway. Muni's T Third Line will be extended 1.7 miles from the 4th street Caltrain Station to Chinatown with four new stations being built along the way. It is anticipated that the route will increase transit capacity, decrease travel time, improve regional transit connections and decrease air and noise pollution.[87] As noted in the project's EIR, 72 percent of the households along the Central Subway Corridor do not have a vehicle, as compared to the citywide percentage of 29 percent.[88] The project is expected to be completed by 2019. The Van Ness Improvement project broke ground in 2016 to make way for the City's first Bus Rapid Transit line. The route will have physically-separated transit-only lanes and Transit Signal Priority and is expected to decrease travel times by 32 percent.[89] The Geary Bus Rapid Transit project seeks to increase safety along the high-traffic Geary corridor and reduce bus travel times by up to 24 percent by 2020. In 2015, SFMTA received 300 comments during the environmental review phase, which were incorporated into the final environmental document and released in late 2016.[90]

Caltrain

Caltrain is a commuter rail system that serves 32 stations over 77.4 miles.[91] Average weekday ridership in fiscal year 2015 was 58,429, a 9.3 percent increase from the previous year.[92] The system is undergoing a major modernization program to electrify the rail service, upgrade the fleet and increase efficiency, safety, capacity and reliability.[93] Under the program, 75 percent of the diesel fleet will be replaced with electric trains. In 2012, the diesel fleet contributed 11,522 MTCDE to the City's emissions profile. Overall, the Caltrain Modernization Program would reduce the GHG emissions by 24,000 MTCDE compared to the current Caltrain service without accounting for VMT emissions reduced due to the increase service. Taking into account the expected reduction in VMT, the Modernization Program would reduce emissions by 79,000 MTCDE compared to the No Project scenario.[94] The Caltrain Modernization Program is scheduled to be completed by 2020.

[84] Aaron Bialick, Switch to Renewable Diesel Will Make Your Muni Ride Cleaner & More Reliable, December 2015. Accessed August 4, 2016.
[85] SFMTA, Future in Focus FY2014-2015 Annual Report. Accessed August 4, 2016.
[86] SFMTA, Muni Forward Rapid Projects. Accessed August 2, 2017.
[87] SFMTA, Central T Subway Project Overview. Accessed August 4, 2016.
[88] Federal Transit Administration & San Francisco Planning Department, Central Subway Final Supplemental Environmental Impact Statement / Supplemental Environmental Impact Report, September 2008. Accessed August 4, 2016.
[89] SFMTA, Van Ness Improvement Project. Accessed August 4, 2016.

[90] SFCTA, Geary Corridor Bus Rapid Transit. Accessed August 4, 2016
[91] Caltrain, Caltrain 2015 Annual Passenger Count Key Findings. Accessed August 4, 2016.
[92] Caltrain, Ridership. Accessed August 4, 2016.
[93] Caltrain, Caltrain Modernization. Accessed August 4, 2016.
[94] Caltrain, Peninsula Corridor Electrification Project EIR, December 2014. Accessed August 4, 2016.

High Speed Rail

The High Speed Rail project was included in the AB32 scoping plan as Measure #T-9 in the 2008 report to achieve the statewide greenhouse gas reduction targets. The implementation of the project began in 2008 when voters approved a bond through Proposition 1A, "Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century".[95] The EIRs for the Merced to Fresno portion (2012) and the Fresno to Bakersfield portion (2014) of the lines have been finalized and have concluded that compared to a No Project Alternative, the project would beneficially impact the state's GHG emissions primarily due to reduced VMT and intrastate plane travel.[96] The project is expected to be completed in 2029, with 800 miles of rail and 24 stations along the route.[97]

Transbay Transit Center

The Transbay Transit Center project consists of three interconnected elements: (1) replacing the existing Transbay Terminal building with a new Transbay Transit Center, (2) extending Caltrain from Fourth and King Streets into the new Transbay Transit Center at 1st and Mission Streets, with accommodations for future high speed rail, and (3) creating a new transit-friendly neighborhood with 4,400 new homes (with 1,200 permanently affordable), and mixed-use commercial development.[98] Phase I (temporary terminal and construction of the new Transit Center Building) is set to be completed in 2018. The project, which will host eleven different public transportation systems, satisfies elements of transit oriented development and is expected to accommodate over 100,000 passengers each weekday.[99] The development itself is also designed to have low emissions impact, with LEED certification, a 5.4 acre rooftop park, stormwater reuse management practices, and a Sustainable Resource District Utility as described in the Transit Center District Plan.[100]

Bike & Pedestrian

Bicycle Strategic Plan

San Francisco has 434 miles of bikeways and more than 5,000 bike racks. The bike network is continuing to expand with numerous projects to increase bike safety, system connectivity, and overall convenience. In 2009, the SFMTA adopted the San Francisco Bicycle Plan, the first update since the 1997 plan. The master plan identified five years of near-term improvements and long-term route upgrades. In 2013, the SFMTA published the Bicycle Strategy, which outlined a citywide needs assessment and bike-oriented objectives in accordance with the SFMTA Strategic Plan for FY2013-2018.[101] In addition, the SFMTA 2012-2017 Capital Improvements Plan identified $30.3M in funding for bike projects, of which $23.2M will come from City/County funds (see section below: Clean Transportation Funding Opportunities).[102] Projects to increase the City's bike mode share include:

- Installation of new bike lanes
- The launch of Bay Area Bike Share in 2013

[95] California Environmental Protection Agency and Air Resources Board, Climate Change Scoping Plan, December 2008. Accessed August 4, 2016.
[96] California High-Speed Rail Authority and U.S. Federal Railroad Administration, California High-Speed Train Project EIR/EIS Merced to Fresno Section, May 2012. Accessed August 4, 2016.
[97] California High-Speed Rail Authority, California High-Speed Rail Big Picture, June 2016. Accessed August 4, 2016.
[98] Transbay Joint Powers Authority, Transbay Transit Center. Accessed August 4, 2016.
[99] Transbay Joint Powers Authority, Transbay Transit Center FAQs. Accessed August 4, 2016.
[100] Transbay Joint Powers Authority, Sustainability Features of Transbay Transit Center. Accessed August 4, 2016.
[101] SFMTA, SFMTA Bicycle Strategy, April 2013. Accessed August 4, 2016.
[102] City & County funds include: Proposition B, One Bay Area Grant, Proposition AA, Proposition K & Transportation Fund for Clean Air SFMTA, SFMTA Bicycle Strategy, April 2013. Accessed August 4, 2016.

- The pilot program, with 350 bikes at 35 stations around the City, was deemed a success. As a result, the bike share system has continued to expand throughout the Bay Area since launching in 2013 and currently has a regional fleet of 700 bikes at 70 stations.[103]
- Bike storage lockers in SFMTA garages and parking lots
- Bikeway upgrades such as barriers, contraflow lanes and bulbouts
- Complete Streets and traffic calming projects[104]

In addition to the above, bike parking is incorporated into the Planning Code (sections 155.1, 155.2, and 155.3), which requires bicycle parking for city-owned and leased buildings, city-owned parking garages, privately owned parking garages, new and renovated commercial buildings, and residential uses. The installation of bike parking requirements can reduce the number of required automobile parking spaces as per Section 155.1(d).

Biking has significantly increased over the last decade. In 2006, Census data found that bikes comprised 2.3 percent of all commute trips made within San Francisco. This number was up to 4.4 percent in 2014 and is projected to continue to grow.[105] Since 2006, the SFMTA has published an annual Bicycle Count Report. The 2016 report found that there are an estimated 82,000 bike trips in San Francisco every day. In 2015, the Market Street bike counter reached 1 million logged bike trips, which represents a 25 percent increase over 2014.[106]

Better Streets

In 2006, the City adopted the Better Streets Policy as part of the San Francisco Administrative Code (Chapter 98). The policy ensures that streets serve pedestrian and transit priorities through "attractive, safe, and usable public open spaces corridors" that support "sustainable and healthy components of the City's ecology" and take "advantage of available technologies to reduce the environmental impact of our street systems."[107] In 2010, the Better Streets Plan was adopted. Major concepts of the Better Streets Plan include distinctive, unified streetscape design; space for public life; enhanced pedestrian safety; improved street ecology; universal design and accessibility; integration of pedestrians with transit; creative use of parking lanes; traffic calming to reduce speeding and enhance pedestrian safety; pedestrian-priority designs; and extensive greening.[108]

Green Connections

The Green Connections plan was finalized in 2014. The project, which is a collaborative effort with the San Francisco Planning Department, SFMTA, San Francisco Department of Public Health, Mayo's Office of Housing and several community-based organizations, aims to increase connectivity between open spaces and access to parks.[109] The plan outlines principles to encourage active transportation through pedestrian and bicycle infrastructure and to support livability through beautification, landscaping, stewardship and public art.[110]

Vision Zero

In 2010, Mayor Newsom passed Mayoral Executive Directive 10-03, setting a goal to reduce serious and fatal pedestrian injuries 25 percent by 2016 and 50 percent by 2021. In 2014, the City and County of San Francisco adopted Vision Zero through Resolution 91-2014. Vision Zero SF aims to eliminate traffic deaths in San Francisco by 2024.[111] As of 2010, walking was the primary transportation mode for 17.5 percent of trips, but according to a

[103] SFMTA, Bike Sharing. Accessed August 4, 2016.
[104] SFMTA, Bicycle Project List. Accessed August 2, 2017.
[105] Tom Maguire, San Francisco's Surge in Biking Continues, April 2016. Accessed August 4, 2016.
[106] SFMTA, San Francisco Bicycle Count Report 2015, April 2016. Accessed August 4, 2016.
[107] City of San Francisco, San Francisco Administrative Code, Chapter 98. Accessed August 4, 2017.
[108] SF Planning, Better Streets Plan, January 2011. Accessed August 4, 2016.
[109] Green Connections organizations: Nature in the City, San Francisco Parks Alliance and Walk San Francisco.
[110] SF Planning, SF Department of Public Health, SFMTA, Green Connections San Francisco, March 2014. Accessed August 4, 2016.
[111] Vision Zero SF.

2013 study pedestrian deaths were 60 percent of all transportation-related fatalities.[112] Improving pedestrian safety is a key component to increasing the pedestrian mode share. Over 70 percent of severe and fatal traffic injuries occur on only 12 percent of the City's streets.[113] In 2013, the Mayor's Pedestrian Safety Task Force published the *San Francisco Pedestrian Strategy,* which outlined key strategies for reducing injuries and identified a citywide goal to increase walking and reduce short auto trips (<1 mile) by 25 percent by 2021.[114] Between 2014 and 2016, 24 projects were completed in identified High Injury Corridors to remove obstructions, improve visibility, install painted safety zones and crosswalks and modify traffic signal timing.[115] As part of Vision Zero, the City has also launched Walkfirst, an initiative that aims to achieve the original pedestrian goals set by ED 10-03.[116]

Vehicles

Car Share & Carpooling

It has been estimated that carsharing reduces VMT and results in the use of newer, lower-emitting vehicles.[117] In addition, carsharing results in a more efficient use of parking spaces and research has shown that one shared vehicle can take seven to fifteen private vehicles off the road. [118,119] The first carsharing program in San Francisco was founded in 2001 by the non-profit City CarShare (now called Carma). Since then, a number of other carsharing and ridesharing programs have been introduced and riders and drivers are connected with increasing ease. Sections 151 and 166 of the Planning Code identify requirements for accommodating carpool, vanpool, and carshare parking. Since 2013, SFMTA has operated an On-Street Car Sharing Pilot Program to make on-street parking spaces available for Car Share Organizations (CSOs) Zipcar, City CarShare and Getaround.

Carpooling also reduces the number of single occupancy vehicles (SOV) on the road and can result in decreased congestion and lower emissions. There are a number of incentives for riders to carpool, including the ability to take advantage of high occupancy vehicle (HOV) lanes, discounted parking permits, preferential parking spots, promotions and prize drawing. SFEnvironment and 511.org host platforms to connect drivers and riders to take advantage of these incentives, while Casual Carpool has a site for informal carpool pick-ups. There are options for carpooling, vanpooling and SchoolPool (a program specific to help families get to school via walking, biking, carpool or public transit).

In recent years, the Metropolitan Transportation Commission (MTC) has transformed several of the region's carpool lanes to express lanes. Cars that do not have enough people to qualify as high occupancy are given the option to pay and drive in the less congested express lane. The purpose of this is to maximize the capacity of the system and decrease overall congestion. Express lanes are now open on sections of I-580, I-680, and SR-237.[120]

Low Emitting & Zero Emitting Vehicles

In 1999, San Francisco passed the Healthy Air and Smog Prevention Ordinance, establishing a Clean Air Program to aid the City in identifying funding sources for the purchase of low-emission alternative fuel vehicles (AFVs) and zero-emission electric vehicles (ZEVs), to assist the City in development of alternative fuel infrastructure, to develop a clean air plan for San Francisco, and to educate and promote the use of AFVs and ZEVs in the private and public sector. This ordinance has most recently been superseded by Chapter 4 of the SF Environment Code: "Healthy Air and Clean Transportation Program". Specific codes are highlighted in Table 10. The requirements

[112] Megan Wier, Pedestrian Safety and Vision Zero in San Francisco, October 2014. Accessed August 4, 2016.
[113] SFMTA, Vision Zero San Francisco Two-Year Action Strategy, February 2015. Accessed August 4, 2016.
[114] SFMTA, San Francisco Pedestrian Strategy, January 2013. Accessed August 4, 2016.
[115] Office of the Mayor, Mayor Lee Announces Vision Zero Projects Completed Ahead of Schedule, November 2015. Accessed August 4, 2016.
[116] SF Planning, Walkfirst: Making San Francisco safer one step at a time. Accessed August 4, 2016.
[117] Kristin Lovejoy, Susan Handy & Marlon Boarnet, Impacts of Carsharing on Passenger Vehicle Use and Greenhouse Gas Emissions, October 2013. Accessed August 4, 2016.
[118] Ibid.
[119] SFMTA, Future in Focus FY2014-2015 Annual Report. Accessed August 4, 2016.
[120] Metropolitan Transportation Commission, Bay Area Express Lanes FAQs, 2016. Accessed August 4, 2016.

outlined in this chapter work to ensure more efficient vehicles ("zero or super ultra-low emissions"), encourage alternative modes of transit, and promote trip reduction. In addition to local targets, the State has initiated a major campaign to increase the zero emission vehicle share of the auto industry (described in detail in State Strategies).

The City has become a leader in the development and employment of electric vehicles. In 2008, Mayors Newsom (San Francisco), Reed (San Jose), and Dellums (Oakland) announced a joint effort to make the San Francisco Bay Area the "Electric Vehicle Capital of America." According to SF Environment, the City has installed 300 Level 2 charging points in municipal garages. In addition, there are plans for approximately 2,000 Level 2 chargers around the Bay Area.[121] In 2013, the Bay Area Plug-in Electric Vehicle Coordinating Council (EV Coordinating Council) worked to develop the Bay Area PEV Readiness Plan. As of 2013, there were over 15,000 light duty plug-in electric vehicles in the Bay Area, representing 11 percent of the country's total PEV market.[122] In 2014, the White House launched the Climate Action Champions competition to recognize cities. Regions and Native American tribes around the country that have successfully taken action against climate change. In May of 2016, San Francisco became the first Climate Action Champion to be selected to receive $4.75 million in funding from the U.S. Department of Energy to pursue fuel cell technology in vehicles and supporting hydrogen infrastructure.[123] The same month, the City's first hydrogen fuel station opened in South San Francisco.[124] By the end of 2017, ARB projects 38 stations will be open and all 50 currently funded stations, including updates for many non-retail stations, will be complete.[125]

Taxis

In June 2007, the Taxi Commission passed Resolution 2007-21, which called for the San Francisco taxi industry to reduce GHG emissions by 20 percent from 1990 levels and 50 percent from current levels by 2012, as well as to work to offset remaining emissions with investments in renewable energy or energy efficiency by 2015, and to move to a Zero Emissions taxi fleet by 2020. In January 2008, the San Francisco Taxi Commission adopted a resolution to address the greenhouse gas emissions from San Francisco's taxi fleet. In order to achieve the Taxi Commission's greenhouse gas reduction goals, the Board of Supervisors passed the taxicab gate cap, which ratified previous gate fees, instituted a gate surcharge for low emission vehicles, and requires taxi companies to reduce average per vehicle greenhouse gas emissions by 20 percent from 1990 levels by 2012 (ordinance 26-08 SF Police Code). In 2012, Mayor Lee announced that the taxi fleet had achieved and exceed this goal, with a 49 percent reduction in taxi emissions.[126] As of 2016, 98 percent of the SFMTA taxi fleet was comprised of alternative / zero emissions vehicles.[127]

[121] San Francisco Department of the Environment, Municipal Installations. Accessed August 4, 2016.

[122] San Francisco Department of the Environment and BAAQMD, Municipal Installations. Accessed August 4, 2016.

[123] Office of Energy Efficiency and Renewable Energy, Energy Department Announces Climate Action Champion, City of San Francisco, Embracing Hydrogen and Fuel Cell Technologies. Accessed August 4, 2016.

[124] California Energy Commission, Hydrogen Fueling Station in South San Francisco Expands Network, May 2016. Accessed August 4, 2016.

[125] Air Resources Board, Fuel Cell Electric Vehicle Deployment and Hydrogen Fuel Station Network Development, July 2016. Accessed July 5, 2017.

[126] ""The combustion of biomass and biomass-based fuels emit CO2 emissions…[but] are tracked separately because the carbon in biomass is of a biogenic origin – meaning that it was recently contained in living organic matter [and would be naturally released during decomposition] –while the carbon in fossil fuels has been trapped in geologic formations for millennia.' This distinction between biogenic and anthropogenic emissions applies only to CO2, and not to CH4 and N20, which are also emitted from biomass combustion due to the reason that 'no CH4 or N20 would have been produced had the biomass naturally decomposed.' So, for the purposes of operational municipal GHG inventory reporting, both the biodiesel (B100) portion and the renewable diesel (RD100) portion of diesel fuel is not included." Preliminary studies show that "PM, THC, and CO emissions from biodiesel showed consistent and significant reductions from ULSD [Ultra Low Sulfur Diesel], but NOx emissions increased with increasing biodiesel blend level." [San Francisco Renewable Diesel GHG Memo, 2015. Accessed August 4, 2016]. & "The LCA of renewable diesel under the Low Carbon Fuel

Municipal Fleet

The municipal fleet has been working towards lowering emissions for over a decade. In 2005, the Board of Supervisors passed Ordinance 278-10, The Healthy Air and Clean Transportation Ordinance codified by Executive Directive 05-103. The directive required that 70 percent of the City's new, non-emergency light-duty vehicles were alternative fuel vehicles and that 90 percent of the new light-duty purchases were alternative fuel or high efficiency vehicles. In 2006, the Mayor announced Executive Directive 06-02 for municipal fleets to use 25 percent B20 by March of 2007 and 100 percent B20 by December of that year.[128] Most recently, targets have been updated in section 403B of the San Francisco Environment Code, which calls for the City to optimize fleet management and align greenhouse gas reduction goals with the Federal Executive Order: Planning for Federal Sustainability in the Next Decade (March 2015). The goal is to achieve a 4 percent reduction in emissions by 2017 and a 15 percent reduction by end of fiscal 2021 for light-duty fleet vehicles. Under the code, the City Administrator must submit an annual report to the Board of Supervisors of findings and recommendations towards this goal.[129] In 2015, Mayor Lee announced that 100 percent of the City's municipal fleet was switching to renewable diesel from petroleum. In fiscal year 2014, 4.9 million of the 5.8 million gallons of diesel fuel were petroleum diesel, which had an estimated 100,000 metric tons of greenhouse gas emissions. It was estimated that this switch would result in a 50 percent reduction in emissions.[130]

Parking Management

San Francisco parking requirements (Section 151.1 of the Planning Code) have been updated from parking minimums to maximums in most of the city's mixed-use and transit-oriented districts. In addition, Section 167 of the Planning Code unbundles parking spaces for accessory parking in residential developments. In 2011, San Francisco instituted SFPark, a unique parking program that varies prices according to demand. The goal of the program is to reduce congestion and pollution associated with cruising for parking spots. The parking meters accept many forms of payment with a goal of charging the amount to obtain a target occupancy rate of 85 percent. The success of the pilot program, which ended in 2013, resulted in the expansion of SFPark throughout the city.[131]

Bay Area Clean Transportation Funding Options

Transportation Fund for Clean Air (1996)

In 1996, the Bay Area Air Quality Management District was authorized by the State Legislature to impose a $4 surcharge on vehicle registration to fund projects that reduce emissions, establishing the Transportation Fund for Clean Air (TFCA) program. Forty percent of these funds go to Program Managers, while the remaining sixty percent are dedicated to projects that apply for the competitive grant program.[132] In San Francisco, the Transportation Authority (the designated Congestion Management Agency) manages roughly $800,000 in annual

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Standard showed reductions in GHGs of about 15% to 80% depending on feedstock source." [California Environmental Protection Agency, Staff Report Multimedia Evaluation of Renewable Diesel, May 2015. Accessed August 4, 2016.]

[127] SFMTA, Strategic Plan Metrics Report, July 2016. Accessed August 4, 2016.

[128] C40 Cities, A World-Leading Low Emissions Transport System with Zero-Emission Vehicles, November 2011. Accessed August 4, 2016.

[129] City of San Francisco, Environment Code, section403B. Accessed August 2, 2017.

[130] Office of the Mayor, Mayor Lee Announces City's Fleet Reaches Goal of Eliminating Use of All Petroleum Diesel, December 2015. Accessed August 4, 2016.

[131] Michael Cabanatuan, SFPark Called a Success, Will Expand Throughout the City, June 2014. Accessed August 4, 2016.

[132] Bay Area Air Quality Management District, Transportation Fund for Clean Air (TFCA) Regional Fund Guidance FY2010/2011, July 2010. Accessed August 4, 2016.

TFCA funds. Projects funded in 2016 included: Short Term Bicycling Parking, Emergency Ride Home Program, Alternative Fuel Taxicab Incentive Program, and the Gator Pass Implementation Project.[133]

Proposition K (2003)

San Francisco voters approved Proposition K in 2003 with over 75 percent approval. Prop K extended the existing half-cent sales tax (Prop B, 1990) while also approving a 30-year expenditure plan. The program generates roughly $94 million annually. As of 2015, $125 million has gone towards Muni paratransit service and maintenance, $450 million has been spent on major capital projects and $619 million has funded city and neighborhood programs, totaling over one billion in funds since implementation. In addition to the funds directly from the tax, the SFCTA has also been able to use the tax as leverage to match state and regional funds for improvements to the transportation system.[134]

Each year, a maximum of $600,000 of Prop K funds are available for projects that qualify under the Neighborhood Transportation Improvement Program (NTIP). The NTIP grants $100,000 to each of the City's district supervisors to apply to community-based or neighborhood-oriented transportation planning efforts.

Lifeline Transportation Program (2007)

MTC established the Lifeline Transportation Program to fund projects that improve accessibility for low-income populations and address barriers identified through community-based efforts in low-income neighborhoods. The fourth cycle of the program accepted applications through December 2015. It will be funded through up to $3.8 million in State Transit Assistance funds and $1 million in Federal Job Access and Reverse Commute funds. Proposition 1B funds (a statewide transportation modernization bond) will also be used towards LTP projects, including $6.1 million for SFMTA and $4.6 million towards BART.[135] Major projects funded in part through Cycle 4 include expanding late night transit to communities in need ($4.8M from Cycle 4 funds) and the Van Ness Bus Rapid Transit ($6.2M from Cycle 4 funds).[136]

Proposition AA (2010)

Voters in the City approved Proposition AA in 2010 to dedicate funds towards local road repairs, pedestrian safety projects and transit improvements. The revenue is generated from a $10 motor vehicle registration fee and was collected starting in 2011.[137] The 2012 Prop AA Strategic Plan, which was most recently amended in March of 2016, identifies $27.7 million in funds spent and allocated between fiscal year 2012/13 and 2016/17. Half of the funds were spent or allocated towards transit reliability, mobility, and pedestrian safety improvements.[138]

One Bay Area Grant (2012)

In 2012, the Metropolitan Transportation Commission created the One Bay Area Grant (OBAG) program to fund the region's transportation priorities and land-use goals. Projects funded by OBAG must be in line with Plan Bay Area 2040 and are typically in Priority Development or Priority Conservation Areas. The first set of grants totaled $827 million in federal funds for projects between 2012/13 and 2016/17. In 2015, MTC adopted the funding for a second cycle to be funded from 2017/18 through 2021/22 for roughly $800 million in grants.[139] In the first cycle, San Francisco received nearly $39 million in OBAG funds.[140]

[133] SFCTA, Transportation Fund for Clean Air. Accessed August 4, 2016.
[134] SFCTA, Putting Your Prop K Sales Tax Dollars to Work, July 2015. Accessed August 4, 2016.
[135] SFCTA, Cycle 4 Lifeline Transportation Program, Call for Projects. Accessed August 4, 2016.
[136] SFCTA, Lifeline Transportation Program (LTP) San Francisco Project List, May 2015. Accessed August 4, 2016.
[137] SFCTA, Proposition AA. Accessed August 4, 2016.
[138] SFCTA, Prop AA Strategic Plan: Programming and Allocations (Pending Board Approval 4.26.16). Accessed August 4, 2016.
[139] Metropolitan Transportation Commission, One Bay Area Grants. Accessed August 4, 2016.
[140] SFCTA, OneBayArea Grant. Accessed August 4, 2016.

Proposition A & Proposition B (2014)

Proposition A (Prop A) and Proposition B (Prop B) were two major transportation infrastructure programs passed by voters in 2014. Prop A, the Transportation and Road Improvement Bond (Ordinance 148-14) authorized the City and County of San Francisco to issue a $500 million bond to be spent towards transportation improvement projects such as: Muni Forward, Vision Zero, and Caltrain.[141] Prop B was an amendment to the City's Charter to adjust the amount of funding that SFMTA receives from the General Fund based on changes in population rather than based only on the City's overall revenue. In addition, 75 percent of that population-based increase would need to be invested into reliability, service, maintenance and capacity improvements for Muni.[142] The projects that are funded by Proposition A are tracked by SFMTA and Transportation 2030, with the most recent status report published in May 2016.[143]

TABLE 10. SAN FRANCISCO CODES RELATED TO TRANSPORTATION & LAND USE

Code	Description
Commuter Benefits Ordinance **[SF Environment Code, Section 427(b)]**	All employers of 20 or more employees must provide at least one of the following benefit programs: A Pre-Tax Election consistent with 26 U.S.C. § 132(f), allowing employees to elect to exclude from taxable wages and compensation, employee commuting costs incurred for transit passes or vanpool charges, OR Employer Paid Benefit whereby the employer supplies a transit or vanpool subsidy for each Covered Employee. The subsidy must be at least equal in value to the current cost of the Muni Fast Pass including BART travel, OR Employer Provided Transportation furnished by the employer at no cost to the employee in a vanpool or bus, or similar multi-passenger vehicle operated by or for the employer.
Emergency Ride Home Program [SF Environment Code, Section 427(d)]	All San Francisco companies are eligible to register for the Emergency Ride Home program. Employers must register annually. Once registered, all San Francisco employees of the company are eligible to request reimbursement. All City employees are automatically enrolled in the San Francisco Emergency Ride Home program.
Transportation Management Programs *[SF Planning Code, Section 163]*	Requires new buildings or additions over a specified size (buildings >25,000 sf or 100,000 sf depending on the use and zoning district) within certain zoning districts to implement a Transportation Management Program and provide on-site transportation management brokerage services for the life of the building.
Transportation Sustainability Fee *[SF Planning Code, Section 411A]*	Establishes citywide fees for all new development. Fees based on a proportion of the gross area of the project based on the type of use. Fees are paid to the Department of Building Inspection and provided to the San Francisco Municipal Transportation Agency to improve local transit services.
Jobs-Housing Linkage Program [SF Planning Code, Section 413]	The Jobs-Housing Program found that new large scale developments attract new employees to the City who require housing. The program is designed to provide housing for those new uses within San Francisco, thereby allowing employees to live close to their place of employment. The program requires a developer to pay a fee or contribute land suitable for housing to a housing developer or pay an in-lieu fee.

[141] SFMTA, 2014 Transportation and Road Improvement Bond Quarterly Report to the General Obligation Bond Oversight Committee, May 2016. Accessed August 4, 2016.
[142] SPUR, San Francisco Voter Guide, November 2014. Accessed August 4, 2016.
[143] SF Transportation 2030, Current Progress. Accessed August 2, 2017.

Showers and Lockers [SF Planning Code, Section 155.4]	Requires showers and clothes lockers for short-term use for tenants or employees of the building in new and expanded buildings, change of occupancy, or increase of use intensity. Number of showers based on size and use of building - see Section 155.4(c).
Bicycle Parking [SF Planning Code, Section 155.2 & CALGreen, Section 5.106.4]	Requires bicycle facilities for new and expanded buildings, new dwelling units, change of occupancy, increase of use intensity, and added parking capacity/area. Refer to Section 155.2 for requirements by use. Projects that add 10 or more tenant vehicular parking spaces: meet Planning Code, Section 155 and CALGreen, Section 5.106.4 (provide short and long-term (secure) bicycle parking for at least 5 percent of motorized vehicle capacity), whichever is stricter.
Requirements for Fuel Efficient Vehicle and Carpool Parking *[CALGreen, Section 5.106.5]*	Requires New Large Commercial projects, New High-rise Residential projects and Commercial Interior projects to provide designated parking for low-emitting, fuel efficient, and carpool/van pool vehicles. Refer to Table 5.106.5.2 to determine number of stalls. If over 200 spaces, mark 8 percent of parking stalls for such vehicles. For non-residential additions and interior alterations to existing buildings, the regulation applies for projects that would add 10 or more parking spaces to the project site.
Car Sharing Requirements [SF Planning Code, Section 166]	New residential projects or renovation of buildings being converted to residential uses within most of the City's mixed-use and transit-oriented residential districts are required to provide car share parking spaces (refer to Table 166 in the Planning Code).
ADDITIONAL CODE FOR PUBLIC BUILDINGS	
Bicycle Parking for City-Owned and Leased Properties [SF Planning Code, Sections 155.1-155.3 & CALGreen, Section 5.106.4]	Requires bicycle facilities for City-Owned and Leased Properties. Refer to Section 155.2 for requirements by use. Requires bicycle facilities for new and expanded buildings, new dwelling units, change of occupancy, increase of use intensity, and added parking capacity/area. Projects that add 10 or more tenant vehicular parking spaces: meet Planning Code, Section 155 and CALGreen, Section 5.106.4 (provide short and long-term (secure) bicycle parking for at least 5 percent of motorized vehicle capacity), whichever is stricter.
Healthy Air and Clean Transportation: Transit First Policy *[SF Environment Code, Section 403(a)]*	Requires all City officers, boards, commissions and department heads responsible for departments that require transportation to fulfill their official duties to reduce the Municipal Fleet by implementing Transit First policies by: Maximizing the use of public transit, including taxis, vanpools, and car-sharing; Facilitating travel by bicycle, or on foot; and, Minimizing the use of single-occupancy motor vehicles, for travel required in the performance of public duties.
Healthy Air and Clean Transportation : Purchase of Clean Fleet *[SF Environment Code, Section 403(b)]*	Requires the reduction of the number of passenger vehicles and light-duty trucks in the Municipal Fleet. In addition, requires new purchases or leases of passenger vehicles and light-duty trucks to be the cleanest and most efficient vehicles available on the market and that all light duty vehicles in the City fleet be Zero Emission Vehicles by December 31, 2022. Also aligns the greenhouse gas reduction goals with the Federal Executive Order – Planning for Federal Sustainability in the Next Decade, dated March 19, 2015 – reducing average per-mile greenhouse gas emissions from general purpose, light-duty fleet vehicles, relative to a baseline of emissions in fiscal year 2014, to achieve the following percentage reductions: (A) not less than 4 percent by the end of fiscal year 2017; and (B) not less than 15 percent by the end of fiscal year 2021.

Clean Construction Ordinance [SF Environment Code, Chapter 25 (Sections 2505 & 2506)]	Section 2505 Requirements within Air Pollutant Exposure Zones: For all work performed on a Major Construction Project located in an Air Pollutant Exposure Zone, equipment is subject to emission and idling standards as outlined in Section 2505. Additionally, before starting on-site Construction Activities, the Contractor shall submit a Construction Emissions Minimization Plan ("Emissions Plan") to the Department Head for review and approval. After the start of Construction Activities, the Contractor shall maintain quarterly reports at the construction site documenting compliance with the Construction Emissions Minimization Plan. Section 2506 Requirements outside Air Pollutant Exposure Zones: For public works projects located outside Air Pollutant Exposure Zones, the Contractor shall utilize only off-road equipment and off-road engines fueled by biodiesel fuel grade B20 or higher and utilize only off-road equipment that either: (A) meets or exceeds Tier 2 standards for off-road engines, or (B) operates with the most effective VDECS.

TABLE 11. SAN FRANCISCO GENERAL PLAN GOALS RELATED TO TRANSPORTATION & LAND USE

General Plan Element	Objective/Policy
Air Quality	Objective 1 Adhere to State and Federal Air Quality Standards and regional programs.
Air Quality	Policy 1.1 Cooperate with regional agencies to promote air quality improvement in San Francisco which, in turn, will contribute to air quality improvements at the regional level.
Air Quality	Policy 1.3 Support and encourage implementation of stationary control measures established by the State.
Air Quality	Objective 2. Reduce mobile sources of air pollution through implementation of the Transportation Element of the General Plan.
Air Quality	Objective 3. Decrease the air quality impacts of development by coordination of land use and transportation decisions.
Air Quality	Policy 3.1 Take advantage of the high density development in San Francisco to improve the transit infrastructure and also encourage high density and compact development where an extensive transportation infrastructure exists.
Air Quality	Policy 3.2 Encourage mixed land use development near transit lines and provide retail and other types of service oriented uses within walking distance to minimize automobile dependent development.
Air Quality	Policy 3.3 Continue existing city policies that require housing development in conjunction with office development and expand this requirement to other types of commercial developments.
Air Quality	Policy 3.4 Continue past efforts and existing policies to promote new residential development in and close to the downtown area and other centers of employment, to reduce the number of auto commute trips to the city and to improve the housing/job balance within the city.
Air Quality	Policy 3.5 Continue existing growth management policies in the city and give consideration to the overall air quality impacts of new development including its impact on the local and regional transportation system in the permit review process. Ensure that growth will not outpace improvements to transit or the circulation system.
Air Quality	Policy 3.6 Link land use decision making policies to the availability of transit and consider the impacts of these policies on the local and regional transportation system.

Air Quality	Policy 3.8 Promote the development of non-polluting industries and insist on compliance with established industrial emission control regulations by existing industries.
Air Quality	Objective 4. Improve air quality by increasing public awareness regarding the negative health effects of pollutants generated by stationary and mobile sources.
Air Quality	Policy 4.1 Increase awareness and educate the public about negative health effects of pollution caused by mobile sources.
Air Quality	Policy 4.3 Minimize exposure of San Francisco's population, especially children and the elderly, to air pollutants.
Air Quality	Policy 6.4 Retain and upgrade the current network of trolley buses and, where feasible, replace diesel buses with buses powered by electricity or retrofit these buses to create fewer pollutants.
Commerce and Industry	Policy 3.2 Promote measures designed to increase the number of San Francisco jobs held by San Francisco residents.
Commerce and Industry	Policy 4.7 Improve public and private transportation to and from industrial areas.
Commerce and Industry	Objective 6. Maintain and Strengthen viable neighborhood commercial areas easily accessible to City residents.
Commerce and Industry	Policy 6.1 Ensure and encourage the retention and provision of neighborhood-serving goods and services in the city's neighborhood commercial districts, while recognizing and encouraging diversity among the districts.
Commerce and Industry	Policy 6.3 Preserve and promote the mixed commercial-residential character in neighborhood commercial districts. Strike a balance between the preservation of existing affordable housing and needed expansion of commercial activity.
Commerce and Industry	Policy 6.4 Encourage the location of neighborhood shopping areas throughout the city so that essential retail goods and personal services are accessible to all residents.
Commerce and Industry	Policy 6.5 Discourage the creation of major new commercial areas except in conjunction with new supportive residential development and transportation capacity.
Commerce and Industry	Policy 6.6 Adopt specific zoning districts which conform to a generalized neighborhood commercial land use and density plan.
Commerce and Industry	Policy 6.8 Preserve historically and/or architecturally important buildings or groups of buildings in neighborhood commercial districts.
Commerce and Industry	Policy 6.9 Regulate uses so that traffic impacts and parking problems are minimized.
Community Facilities	Policy 3.4 Locate neighborhood centers so they are easily accessible and near the natural center of activity.
Community Facilities	Objective 8. Assure that public school facilities are distributed and located in a manner that will enhance their efficient and effective use.
Community Facilities	Objective 9. Assure that institutional uses are located in a manner that will enhance their efficient and effective use.
Community Safety	Objective 1 Reduce structural and non-structural hazards to life safety and minimize property damage resulting from future disasters.

Environmental Protection	Policy 4.2 Encourage the development and use of urban mass transportation systems in accordance with the objectives and policies of the Transportation Element.
Environmental Protection	Policy 4.3 Encourage greater use of mass transit in the downtown area and restrict the use of motor vehicles where such use would impair air quality.
Environmental Protection	Policy 4.4 Promote the development of nonpolluting industry and insist on compliance of existing industry with established industrial emission control regulations.
Environmental Protection	Objective 7. Assure that the land resources in San Francisco are used in ways that both respect and preserve the natural values of the land and serve the best interest of all the City's citizens.
Environmental Protection	Policy 9.5 Retain and expand the electric trolley network.
Environmental Protection	Objective 15. Increase the energy efficiency of transportation and encourage land use patterns and methods of transportation which use less energy.
Environmental Protection	Policy 15.1 Increase the use of transportation alternatives to the automobile.
Environmental Protection	Policy 15.2 Provide incentives to increase the energy efficiency of automobile travel.
Environmental Protection	Policy 15.3 Encourage an urban design pattern that will minimize travel requirements among working, shopping, recreation, school and childcare areas.
Environmental Protection	Policy 15.4 Promote more efficient commercial freight delivery.
Environmental Protection	Policy 15.5 Encourage consideration of energy use issues when making transportation investment decisions.
Environmental Protection	Policy 15.6 Promote alternative work arrangements which will contribute to more efficient transportation use.
Environmental Protection	Policy 16.1 Develop land use policies that will encourage the use of renewable energy sources.
Housing Element - 1990	Objective 1. To provide new housing, especially permanently affordable housing, in appropriate locations which meets identified housing needs and takes into account the demand for affordable housing created by employment growth.
Housing Element - 1990	Policy 1.3 Create incentives for the inclusion of housing, including permanently affordable housing in commercial developments.
Housing Element - 1990	Policy 1.7 Obtain assistance from office developments and higher educational institutions in meeting the housing demand they generate, particularly the need for affordable housing for lower income workers and students.
Housing Element - 1990	Policy 2.2 Encourage higher residential density in areas adjacent to downtown, in underutilized commercial and industrial areas proposed for conversion to housing, and in neighborhood commercial districts where higher density will not have harmful effects, especially if the higher density provides a significant number of units that are permanently affordable to lower income households.
Housing Element - 1990	Policy 2.3 Allow flexibility in the number and size of units within permitted volumes of larger multi-unit structures, especially if the flexibility results in creation of a significant number of dwelling units that are permanently affordable to lower income households.
Housing Element - 1990	Objective 3. To retain the existing supply of housing.
Housing Element - 1990	Policy 3.1 Discourage the demolition of sound existing housing.

Housing Element - 1990	Policy 5.5 Preserve landmark and historic residential buildings.
Housing Element - 1990	Policy 7.3 Grant density bonuses for construction of affordable or senior housing.
Housing Element - 1990	Objective 12. To provide a quality living environment.
Housing Element - 1990	Policy 12.6 Modify proposed developments which have substantial adverse environmental impacts or otherwise conflict with the Master Plan.
Housing Element - 1990	Policy 16.1 Encourage the balancing of regional employment growth with the development and growth of affordable housing in the region.
Housing Element - 1990	Policy 16.2 Encourage development of housing in the bay area which will meet regional housing needs and contribute to the quality of life in the region.
Housing Element - 2004	Objective 1. To provide new housing, especially permanent affordable housing, in appropriate locations which meets identified housing needs and takes into account the demand for affordable housing created by employment demand.
Housing Element - 2004	Policy 1.1. Encourage higher residential density in areas adjacent to downtown, in underutilized commercial and industrial areas proposed for conversion to housing, and in neighborhood commercial districts where higher density will not have harmful effects, especially if the higher density provides a significant number of units that are affordable to lower income households. Set allowable densities in established residential areas at levels which will promote compatibility with prevailing neighborhood scale and character where there is neighborhoods support.
Housing Element - 2004	Policy 1.2 Encourage housing development, particularly affordable housing, in neighborhood commercial areas without displacing existing jobs, particularly blue-collar jobs or discouraging new employment opportunities.
Housing Element - 2004	Policy 1.6. Create incentives for the inclusion of housing, particularly permanently affordable housing, in new commercial development projects.
Housing Element - 2004	Policy 1.9. Require new commercial developments and higher educational institutions to meet the housing demand they generate, particularly the need for affordable housing for lower income workers and students.
Housing Element - 2004	Objective 2. Retain the existing supply of housing.
Housing Element - 2004	Policy 2.1. Discourage the demolition of sound existing housing.
Housing Element - 2004	Policy 3.6 Preserve landmark and historic residential buildings.
Housing Element - 2004	Policy 4.4 Consider granting density bonuses and parking requirement exemptions for the construction of affordable housing or senior housing.
Housing Element - 2004	Objective 11. In increasing the supply of housing, pursue place-making and neighborhood building principles and practices to maintain San Francisco's desired urban fabric and enhance livability in all neighborhoods.
Housing Element - 2004	Policy 12.1 Work with localities across the region to establish a better relationship between economic growth and increased housing needs.
Housing Element - 2014	Objective 1 Identify and make available for development adequate sites to meet the city's housing needs, especially permanently affordable housing.
Housing Element - 2014	Policy 1.8 Promote mixed use development, and include housing, particularly permanently affordable housing, in new commercial, institutional or other single use development projects.

Housing Element - 2014	Policy 1.9 Require new commercial developments and higher educational institutions to meet the housing demand they generate, particularly the need for affordable housing for lower income workers and students.
Housing Element - 2014	Policy 1.10 Support new housing projects, especially affordable housing, where households can easily rely on public transportation, walking and bicycling for the majority of daily trips.
Housing Element - 2014	Objective 2 Retain existing housing units, and promote safety and maintenance standards, without jeopardizing affordability.
Housing Element - 2014	Policy 2.1 Discourage the demolition of sound existing housing, unless the demolition results in a net increase in affordable housing.
Housing Element - 2014	Objective 4 Foster a housing stock that meets the needs of all residents across lifecycles.
Housing Element - 2014	Policy 4.7 Consider environmental justice issues when planning for new housing, especially affordable housing.
Housing Element - 2014	Policy 10.4 Support state legislation and programs that promote environmentally favorable projects.
Housing Element - 2014	Objective 11 Support and respect the diverse and distinct character of San Francisco's neighborhoods.
Housing Element - 2014	Policy 11.7 Respect San Francisco's historic fabric, by preserving landmark buildings and ensuring consistency with historic districts.
Housing Element - 2014	Objective 12 Balance housing growth with adequate infrastructure that serves the city's growing population.
Housing Element - 2014	Policy 12.1 Encourage new housing that relies on transit use and environmentally sustainable patterns of movement.
Housing Element - 2014	Policy 12.2 Consider the proximity of quality of life elements, such as open space, child care, and neighborhood services, when developing new housing units.
Housing Element - 2014	Policy 12.3 Ensure new housing is sustainably supported by the city's public infrastructure systems.
Housing Element - 2014	Objective 13 Prioritize sustainable development in planning for and constructing new housing.
Housing Element - 2014	Policy 13.1 Support "smart" regional growth that locates new housing close to jobs and transit.
Housing Element - 2014	Policy 13.2 Work with localities across the region to coordinate the production of affordable housing region wide according to sustainability principles.
Housing Element - 2014	Policy 13.3 Promote sustainable land use patterns that integrate housing with transportation in order to increase transit, pedestrian, and bicycle mode share.
Housing Element - 2014	Policy 13.4 Promote the highest feasible level of "green" development in both private and municipally-supported housing.
Recreation and Open Space	Policy 1.12 Preserve historic and culturally significant landscapes, sites, structures, buildings and objects.
Recreation and Open Space	Policy 3.4 Encourage non-auto modes of transportation - transit, bicycle and pedestrian access - to and from open spaces while reducing automobile traffic and parking in public open spaces.

Transportation	Objective 1. Meet the needs of all residents and visitors for safe, convenient and inexpensive travel within San Francisco and between the City and other parts of the region while maintaining the high quality living environment of the Bay Area.
Transportation	Policy 1.2 Ensure the safety and comfort of pedestrians throughout the city.
Transportation	Policy1.3 Give priority to public transit and other alternatives to the private automobile as the means of meeting San Francisco's transportation needs, particularly those of commuters.
Transportation	Policy 1.4 Increase the capacity of transit during the off-peak hours.
Transportation	Policy 1.5 Coordinate regional and local transportation systems and provide for interline transit transfers.
Transportation	Policy 1. 6 Ensure choices among modes of travel and accommodate each mode when and where it is most appropriate.
Transportation	Policy 1.7 Assure expanded mobility for the disadvantaged.
Transportation	Policy 1.9 Develop a multi-modal emergency transportation plan for the city and encourage the development of complementary plans in the private and public sector, to provide for movement to and from emergency and health facilities from all areas of the city, and to and from the city and other Bay Area communities.
Transportation	Objective 2. Use the transportation system as a means for guiding development and improving the environment.
Transportation	Policy 2.1 Use rapid transit and other transportation improvements in the city and region as the catalyst for desirable development, and coordinate new facilities with public and private development.
Transportation	Policy 2.2 Reduce pollution, noise and energy consumption.
Transportation	Policy 2.4 Organize the transportation system to reinforce community identity, improve linkages among interrelated activities and provide focus for community activities.
Transportation	Policy 2.5 Provide incentives for the use of transit, carpools, vanpools, walking and bicycling and reduce the need for new or expanded automobile and automobile parking facilities.
Transportation	Policy 2.6 In conversion and re-use of inactive military bases, provide for a balanced, multi-modal transportation system that is consistent with and complementary to the planned land use and the local and regional transportation system.
Transportation	Objective 3. Maintain San Francisco’s position as a regional destination without inducing a greater volume of through automobile traffic.
Transportation	Policy 3.1 The existing capacity of the bridges, highways and freeways entering the city should not be increased for single-occupant vehicles, and should be reduced where possible.
Transportation	Objective 4. Maintain and enhance San Francisco’s position as the hub of a regional, city-centered transit system.
Transportation	Policy 4.1 Rapid transit lines from all outlying corridors should lead to stations and terminals that are adjacent or connected to each other in downtown San Francisco.
Transportation	Policy 4.2 Increase transit ridership capacity in all congested regional corridors.

Transportation	Policy 4.3 Where significant transit service is provided, bridges and freeways should have priority transit treatment, such as exclusive transit lanes.
Transportation	Policy 4.4 Integrate future rail transit extensions to, from, and within the city as technology permits so that they are compatible with and immediately accessible to existing BART, CalTrain or Muni rail lines.
Transportation	Policy 4.5 Provide convenient transit service that connects the regional transit network to major employment centers outside the downtown area.
Transportation	Policy 4.6 Facilitate transfers between different transit modes and services by establishing simplified and coordinated fares and schedules, and by employing design and technology features to make transferring more convenient.
Transportation	Policy 4. 7 Locate outlying rapid transit stations close to the commercial and high-density residential districts and employment centers of each community.
Transportation	Policy 4.8 Expand and coordinate the use of ferries, water taxis and other forms of water-based transportation with each other and with landside transportation in waterfront communities in San Francisco and across the bay, using San Francisco's Ferry Building as the main transfer point.
Transportation	Policy 5.2 Develop direct transit connections from downtown to the Airport that will maximize convenience and minimize confusion for airport patrons.
Transportation	Policy 5.4 Encourage the use of public transportation and improve its services between the airport and all Bay Area communities, for airport employees as well as air passengers.
Transportation	Policy 5.5 Develop high-speed rail that links downtown San Francisco to major interstate and national passenger rail corridors as the principle alternative to interstate air travel, and as the primary means to relieve air traffic congestion.
Transportation	Policy 5.6 Secure a berth for cruise ships in an attractive location, well-served by public transportation, to enhance San Francisco as a recreational port destination.
Transportation	Policy 6.4 Identify new freight rail corridors and enhance existing ones to improve and shorten links between key freight distribution points in the city and the main interstate railroads and to minimize conflicts with pedestrian, street and passenger rail traffic.
Transportation	Policy 7.3 Maintain a supply of parking commensurate with demand at outlying intercept parking facilities that have good connections to transit and ride-sharing opportunities.
Transportation	Objective 8. Maintain and enhance regional pedestrian and hiking access to the coast, the Bay and ridge trails.
Transportation	Policy 8.2. Clearly identify the Citywide Pedestrian Networks where they intersect with the Coast, Bay and Ridge Trails.
Transportation	Objective 9. Improve bicycle access to San Francisco from all outlying corridors.
Transportation	Policy 9.1 Accommodate bicycles on regional transit vehicles, such as trains and ferries, whenever practically feasible.
Transportation	Policy 9.2 Where bicycles are prohibited on roadway segments, provide parallel routes accessible to bicycles or shuttle services that transport bicycles.
Transportation	Objective 10. Develop and employ methods of measuring the performance of the City's transportation system that respond to its multi-modal nature.

Transportation	Policy 10.1 Assess the performance of the city's transportation system by measuring the movement of people and goods rather than merely the movement of vehicles.
Transportation	Policy 10.2 Employ performance measures that address the problems of transportation deficiencies.
Transportation	Policy 10.4 Consider the transportation system performance measurements in all decisions for projects that affect the transportation system.
Transportation	Objective 11. Establish public transit as the primary mode of transportation in San Francisco and as a means through which to guide future development and improve regional mobility and air quality.
Transportation	Policy 11.1 Maintain and improve the Transit Preferential Streets program to make transit more attractive and viable as a primary means of travel.
Transportation	Policy 11.2 Continue to favor investment in transit infrastructure and services over investment in highway development and other facilities that accommodate the automobile.
Transportation	Policy 11.3 Encourage development that efficiently coordinates land use with transit service, requiring that developers address transit concerns as well as mitigate traffic problems.
Transportation	Policy 11.4 Encourage the development of one or more multi-service transportation outlets at transit-accessible locations for the sale of transit fare instruments and the provision of other kinds of trip information.
Transportation	Objective 12. Develop and implement programs in the public and private sectors, which will support congestion management and air quality objectives, maintain mobility and enhance business vitality at minimum cost.
Transportation	Policy 12.1 Develop and implement strategies which provide incentives for individuals to use public transit, ridesharing, bicycling and walking to the best advantage, thereby reducing the number of single occupant auto trips.
Transportation	Policy 12.2 Build on successful efforts implemented at numerous private sector worksites, such as the downtown Transportation Brokerage Program and voluntary programs, and adapt such programs for application in new areas as appropriate.
Transportation	Policy 12.3 Implement private and public sector Transportation Demand Management programs which support each other and explore opportunities for private-public responsibility in program implementation.
Transportation	Policy 12.4 Encourage private and public sector cooperation in the promotion of alternative work programs designed to reduce congestion and the number of automobile trips.
Transportation	Policy 12.7 Promote coordination between providers of transportation management services, where possible, to enhance the quality of individual programs.
Transportation	Policy 12.8 Encourage the creation of Transportation Management Associations where specific needs are identified and coordination with other similar associations and agencies is pursued.
Transportation	Objective 13. Promote the development of marketing strategies that encourage and facilitate the use of transit and other alternatives to the single-occupant automobile for shopping, recreation, cultural and other non-work trips.

Transportation	Policy 13.1 Encourage the use of alternatives to the automobile for all age groups in the advertisement of business, recreational and cultural attractions by identifying their proximity to transit facilities and significant landmarks.
Transportation	Policy 13.2 Promote the identification of core fixed guideway and regional transit lines, such as BART, Muni Metro, cable car, CalTrain and ferry lines, on maps and literature designed for tourists and visitors.
Transportation	Policy 13.3 Use Transit Centers and Visitor Information Centers for the promotion of transit services and the distribution of transit service information.
Transportation	Objective 14. Develop and implement a plan for operational changes and land use policies that will maintain mobility and safety despite a rise in travel demand that could otherwise result in system capacity deficiencies.
Transportation	Policy 14.2 Ensure that traffic signals are timed and phased to emphasize transit, pedestrian, and bicycle traffic as part of a balanced multi-modal transportation system.
Transportation	Policy 14.3 Improve transit operation by implementing strategies that facilitate and prioritize transit vehicle movement and loading.
Transportation	Policy14.4 Reduce congestion by encouraging alternatives to the single occupant auto through the reservation of right-of-way and enhancement of other facilities dedicated to multiple modes of transportation.
Transportation	Policy 14.5 Encourage the use of alternative fuels for City vehicles, transit vehicles and as feasible, any other motor vehicles as a means of reducing toxic automobile emissions and conserving energy.
Transportation	Policy 14.6 Reduce peak period congestion through the promotion of flexible work schedules at worksites throughout the City.
Transportation	Policy 14.7 Encourage the use of transit and other alternatives modes of travel to the private automobile through the positioning of building entrances and the convenient location of support facilities that prioritizes access from these modes.
Transportation	Policy 14.8 Implement land use controls that will support a sustainable mode split, and encourage development that limits the intensification of automobile use.
Transportation	Objective 15. Encourage alternative to the automobile and reduced traffic levels on residential streets that suffer from excessive traffic through the management of transportation systems and facilities.
Transportation	Policy 15.1 Discourage excessive automobile traffic on residential streets by incorporating traffic-calming treatments.
Transportation	Policy 15.2 Consider partial closure of certain residential streets to automobile traffic where the nature and level of automobile traffic impairs livability and safety, provided that there is an abundance of alternative routes such that the closure will not create undue congestion on parallel streets.
Transportation	Objective 16. Develop and implement programs that will efficiently manage the supply of parking at employment centers through the City so as to discourage single-occupant ridership, and encourage ridesharing, transit and other alternatives to the single-occupant automobile.
Transportation	Policy 16.1 Reduce parking demand through the provision of comprehensive information that encourages the use of alternative modes of transportation.
Transportation	Policy 16.2 Reduce parking demand where parking is subsidized by employers with "cash-out" programs in which the equivalency of the cost of subsidized parking is offered to those employees who do not use the parking facilities.

Transportation	Policy 16.3 Reduce parking demand through the provision of incentives for the use of carpools and vanpools at new and existing parking facilities throughout the City.
Transportation	Policy16.4 Manage parking demand through appropriate pricing policies including the use of premium rates near employment centers well-served by transit, walking and bicycling, and progressive rate structures to encourage turnover and the efficient use of parking.
Transportation	Policy 16.5 Reduce parking demand through limiting the absolute amount of spaces and prioritizing the spaces for short-term and ride-share uses.
Transportation	Policy 16.6 Encourage alternatives to the private automobile by locating public transit access and ride-share vehicle and bicycle parking at more close-in and convenient locations on-site, and by locating parking facilities for single-occupant vehicles more remotely.
Transportation	Objective 17. Develop and implement parking management programs in the Downtown what will provide alternatives encouraging the efficient use of the area's limited parking supply and abundant transit services.
Transportation	Policy 17.1 Discourage the provision of new long-term parking downtown and near major employment centers.
Transportation	Objective 18. Establish a street hierarchy system in which the function and design of each street are consistent with the character and use of adjacent land.
Transportation	Policy 18.2 Design streets for a level of traffic that serves, but will not cause a detrimental impact on adjacent land uses.
Transportation	Policy 18.3 The existing single-occupant vehicular capacity of the bridges, highways and freeways entering the city should not be increased and should be reduced if needed to increase the capacity for high-occupancy vehicles, transit and other alternative means of commuting, and for the safe and efficient movement of freight trucks.
Transportation	Policy 18.4 Discourage high-speed through traffic on local streets in residential areas through traffic "calming" measures that are designed not to disrupt transit service or bicycle movement.
Transportation	Policy 19.2 Promote increased traffic safety, with special attention to hazards that could cause personal injury.
Transportation	Objective 20. Give first priority to improving transit service throughout the City, providing a convenient and efficient system as a preferable alternative to automobile use.
Transportation	Policy 20.1 Give priority to transit vehicles based on a rational classification system of transit preferential streets.
Transportation	Policy 20.3 Develop transit preferential treatments according to established guidelines.
Transportation	Policy 20.4 Develop transit centers according to established guidelines.
Transportation	Policy 20.5 Place and maintain all sidewalk elements, including passenger shelters, benches, trees, newsracks, kiosks, toilets, and utilities at appropriate transit stops according to established guidelines.
Transportation	Policy 20.6 Provide priority enforcement of parking and traffic regulations on all Transit Streets, particularly Transit Preferential Streets
Transportation	Policy 20.7 Encourage ridership and clarify transit routes by means of a city-wide plan for street landscaping, lighting and transit preferential treatments.

Transportation	Policy 20.8 Intensify overall transit service in the "central area."
Transportation	Policy 20.9 Improve inter-district and intra-district transit service.
Transportation	Policy 20.10 Keep fares low enough to obtain consistently high patronage and encourage more off-peak use.
Transportation	Policy 20.11 Promote the electrification of bus operation.
Transportation	Policy 20.13 Create dedicated bus lanes and Bus Rapid Transit (BRT) lanes to expedite bus travel times and improve transit reliability.
Transportation	Policy 20.14 Engage new technologies that will emphasize and improve transit services on transit preferential streets.
Transportation	Objective 12. Develop transit as the primary mode of travel to and from Downtown and all major activity centers within the region.
Transportation	Policy 21.1 Provide transit service from residential areas to major employment centers outside the downtown area.
Transportation	Policy 21.2 Where a high level of transit ridership or potential ridership exists along a corridor, existing transit service or technology should be upgraded to attract and accommodate riders.
Transportation	Policy 21.3 Make future rail transit extensions in the city compatible with existing BART, CalTrain or Muni rail lines.
Transportation	Policy 21.4 Provide for improved connectivity and potential facility expansion where any two fixed-guideway transit corridors connect.
Transportation	Policy 21.5 Facilitate and continue ferries and other forms of water-based transportation as an alternative mode of transit between San Francisco and other communities along the Bay, and between points along the waterfront within San Francisco.
Transportation	Policy 21.6 Establish frequent and convenient transit service, including water-based transit, to major recreational facilities and provide special service for sports, cultural and other heavily attended events.
Transportation	Policy 21.7 Make convenient transfers between transit lines, systems and modes possible by establishing common or closely located terminals for local and regional transit systems
Transportation	Policy 21.8 Bridges and freeways should have exclusive transit lanes where significant transit service is provided by transit.
Transportation	Policy 21.9 Improve pedestrian and bicycle access to transit facilities.
Transportation	Policy 21.10 Ensure passenger and operator safety in the design and operation of transit vehicles and station facilities.
Transportation	Policy 21.11 Ensure the maintenance and efficient operation of the fleet of transit vehicles.
Transportation	Objective 22. Develop and improve demand-responsive onsite transit systems as a supplement to regular transit services.
Transportation	Policy 22.1 Maintain a taxi service adequate to meet the needs of the city and to keep fares reasonable.
Transportation	Policy 22.2 Consider possibilities for supplementary, privately operated transit services.

Transportation	Policy 22.3 Guarantee complete and comprehensive transit service and facilities that are accessible to all riders, including those with mobility impairments.
Transportation	Objective 23. Improve the City's pedestrian circulation system to provide for efficient, pleasant, and safe movement.
Transportation	Policy 23.1 Provide sufficient pedestrian movement space with a minimum of pedestrian congestion in accordance with a pedestrian street classification system.
Transportation	Policy 23.2 Widen sidewalks where intensive commercial, recreational, or institutional activity is present, sidewalks are congested and where residential densities are high.
Transportation	Policy 23.3 Maintain a strong presumption against reducing sidewalk widths, eliminating crosswalks and forcing indirect crossings to accommodate automobile traffic.
Transportation	Policy 23.4 Tow-away lanes should not be approved, and removal should be considered, if they impair existing and potential pedestrian usage and level of service on abutting sidewalks, as well as the needs of transit operation on the street.
Transportation	Policy 23.5 Minimize obstructions to through pedestrian movement on sidewalks by maintaining an unobstructed width that allows for passage of people, strollers and wheelchairs.
Transportation	Policy 23.6 Ensure convenient and safe pedestrian crossings by minimizing the distance pedestrians must walk to cross a street.
Transportation	Policy 23.7 Ensure safe pedestrian crossings at signaled intersections by providing sufficient time for pedestrians to cross streets at a moderate pace.
Transportation	Policy 23.8 Support pedestrian needs by incorporating them into regular short-range and long-range planning activities for all city and regional agencies and include pedestrian facility funding in all appropriate funding requests.
Transportation	Policy 23.9 Implement the provisions of the Americans with Disabilities Act and the city's curb ramp program to improve pedestrian access for all people
Transportation	Policy 24.3 Install pedestrian-serving street furniture where appropriate.
Transportation	Policy 24.4 Preserve pedestrian-oriented building frontages.
Transportation	Policy 24.5 Where consistent with transportation needs, transform streets and alleys into neighborhood-serving open spaces or "living streets", especially in neighborhoods deficient in open space.
Transportation	Objective 25. Develop a Citywide pedestrian network
Transportation	Policy 25.2 Utilizing the pedestrian street classification system, develop a citywide pedestrian network that includes streets devoted to or primarily oriented to pedestrian use.
Transportation	Policy 25.3 Develop design guidelines for pedestrian improvements in Neighborhood Commercial Districts, Residential Districts, Transit-Oriented Districts, and other pedestrian-oriented areas as indicated by the pedestrian street classification plan.
Transportation	Policy 25.4 Maintain a presumption against the use of demand-activated traffic signals on any well-used pedestrian street, and particularly those streets in the Citywide Pedestrian and Neighborhood Networks.

Transportation	Policy 25.5 Where intersections are controlled with a left-turn only traffic signal phase for automobile traffic, encourage more efficient use of the phase for pedestrians where safety permits.
Transportation	Policy 25.6 Provide enforcement of traffic and parking regulations to ensure pedestrian safety, particularly on streets within the Citywide Pedestrian and Neighborhood Networks.
Transportation	Policy 26.3 Encourage pedestrian serving uses on the sidewalk.
Transportation	Objective 27. Ensure that bicycles can be used safely and conveniently as a primary means of transportation, as well as for recreational purposes.
Transportation	Policy 27.1 Expand and improve access for bicycles on city streets and develop a well-marked, comprehensive system of bike routes in San Francisco.
Transportation	Policy 27.2 Develop a rational classification system of bicycle preferential streets.
Transportation	Policy 27.4 Maintain a presumption against the use of demand-activated traffic signals on designated bicycle routes.
Transportation	Policy 27.5 Make available bicycle route and commuter information and encourage increased use of bicycle transportation.
Transportation	Policy 27.6 Accommodate bicycles on regional transit facilities and important regional transportation links wherever feasible.
Transportation	Policy 27.7 Include bicycle facility funding in all appropriate requests.
Transportation	Policy 27.8 Prevent bicycle accidents though bicycle safety education and improved traffic law enforcement.
Transportation	Policy 27.10 Accommodate bicycles in the design and selection of traffic control facilities.
Transportation	Objective 28. Provide secure and convenient parking facilities for bicycles.
Transportation	Policy 28.1 Provide secure bicycle parking in new governmental, commercial, and residential developments.
Transportation	Policy 28.2 Provide secure bicycle parking at existing city buildings and facilities and encourage it in existing commercial and residential buildings.
Transportation	Policy 28.3 Provide parking facilities which are safe, secure, and convenient.
Transportation	Policy 28.4 Provide bicycle parking at all transit terminals.
Transportation	Objective 29. City government should play a leadership role in increasing bicycle use.
Transportation	Policy 29.1 Consider the needs of bicycling and the improvement of bicycle accommodations in all city decisions and improve accommodations as much as possible.
Transportation	Policy 29.2 Integrate bicycle planning into regular short-range and long-range planning activities for all city departments.
Transportation	Policy 29.4 Encourage non-cyclists to become cyclists and encourage cyclists to ride more often.
Transportation	Policy 30.2 Discourage the proliferation of surface parking as an interim land use, particularly where sound residential, commercial or industrial buildings would be demolished pending other development.

Transportation	Policy 30.4 Restrict long term automobile parking at rapid transit stations in the city in favor of development of effective feeder transit service
Transportation	Policy 30.5 In any large development, allocate a portion of the provided off-street parking spaces for compact automobiles, vanpools, bicycles and motorcycles commensurate with standards that are, at a minimum, representative of their proportion of the city's vehicle population.
Transportation	Objective 31. Establish parking rates and off-street parking fare structures to reflect the full cost, monetary and environmental, of parking in the City.
Transportation	Policy 31.2 Where off-street parking near institutions and in commercial areas outside downtown is in short supply, set parking rates to encourage higher turnover and more efficient use of the parking supply.
Transportation	Policy 31.3 Encourage equity between drivers and non-drivers by offering transit fare validations and/or cash-out parking programs where off-street parking is validated or subsidized.
Transportation	Objective 32. Limit parking in Downtown to help ensure that the number of auto trips to and from Downtown will not be detrimental to the growth or amenity of Downtown.
Transportation	Policy 32.1 Discourage new long-term commuter parking spaces for single-occupant automobiles in and around downtown. Limit the long-term parking spaces to the number that already exists.
Transportation	Policy 32.2 When it must be provided, locate any new long-term parking structures in the areas peripheral to downtown. Any new peripheral parking structures should be concentrated to make transit service convenient and efficient, connected to transit shuttle service to downtown, and provide preferred space and rates for van and car pool vehicles, bicycles and motorcycles.
Transportation	Policy 32.3 Encourage short-term use of existing parking spaces within and adjacent to downtown by converting all-day commuter parking to short-term parking in areas of high demand.
Transportation	Policy 33.1 Limit the provision of long-term automobile parking facilities at institutions and encourage such institutions to regulate existing facilities to assure use by short-term clients and visitors.
Transportation	Objective 34. Relate the amount of parking in residential areas and neighborhood commercial districts to the capacity of the City's street system and land use patterns.
Transportation	Policy 34.1 Regulate off-street parking in new housing so as to guarantee needed spaces without requiring excesses and to encourage low auto ownership in neighborhoods that are well served by transit and are convenient to neighborhood shopping.
Transportation	Policy 34.3 Permit minimal or reduced off-street parking supply for new buildings in residential and commercial areas adjacent to transit centers and along transit preferential streets.
Transportation	Policy 34.4 Where parking demand is greatest in city neighborhoods, consider wide-scale transit improvements as an alternative to additional parking garages as part of a balanced solution.
Transportation	Policy 36.3 Encourage and facilitate the bicycle as a courier vehicle in congested areas, especially in the downtown area.

Transportation	Objective 38. Develop and maintain selected major and secondary arterials to provide efficient and direct routes for trucks/service vehicles into and through San Francisco without disturbing neighborhood areas and inhibiting the sage movement of transit vehicles, bicycles and pedestrians.
Transportation	Policy 40.2 Discourage access to off-street freight loading and service vehicle facilities from transit preferential streets, or pedestrian-oriented streets and alleys by providing alternative access routes to facilities.
Transportation	Policy 40.3. Off-street loading facilities and spaces in the downtown area should be enclosed and accessible by private driveways designed to minimize conflicts with pedestrian, transit, and automobile traffic.
Urban Design	Policy 2.4. Preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development.
Urban Design	Objective 3. Moderation of major new development to complement the City pattern, the resources to be conserved, and the neighborhood environment.
Urban Design	Objective 4. Improvement of the neighborhood environment to increase personal safety, comfort, pride and opportunity.
Urban Design	Policy 4.1. Protect residential areas from the noise, pollution and physical danger of excessive traffic.
Urban Design	Policy 4.4. Design walkways and parking facilities to minimize danger to pedestrians.
Urban Design	Policy 4.13. Improve pedestrian areas by providing human scale and interest.

TABLE 12. SAN FRANCISCO AREA PLAN GOALS RELATED TO TRANSPORTATION & LAND USE

Area Plan	Objective/Policy
Balboa	Objective 1.1 Integrate the diverse uses in the Plan Area around the commercial spine and transit node.
Balboa	Policy 1.1.1 Strengthen the link between transportation and land use.
Balboa	Policy 1.2.1. Improve access to and from the commercial district.
Balboa	Policy 1.2.2. Encourage mixed-use residential and commercial infill within the commercial district.
Balboa	Objective 1.3. Establish an active, mixed-use neighborhood around the transit station.
Balboa	Policy 1.3.1. Mixed-use housing and retail should be the principal land use in the Transit Station Neighborhood.
Balboa	Policy 1.3.2. Encourage centers for cultural enrichment in the Transit Station Neighborhood.
Balboa	Objective 1.4 Develop the reservoirs in a manner that will best benefit the neighborhood, the City, and the region as a whole.
Balboa	Policy 1.4.1 The existing college campus, and future expansions, should be better integrated with the surrounding neighborhood and the transit station.
Balboa	Objective 2.1 Emphasize transit improvements that support the neighborhood.

Balboa	Policy 2.1.1 Redesign the Balboa Park BART Station as a regional transit hub that efficiently accommodates BART, light rail, buses, bicycles, pedestrians, taxis and automobile drop-off and pick-up.
Balboa	Policy 2.1.2 Reconfigure the Phelan Bus Loop to encourage public transit use and strengthen the connection between transit and land use.
Balboa	Objective 2.2 Reconstruct and reconfigure major streets in the Plan Area to encourage travel by non-auto modes.
Balboa	Policy 2.2.1 Re-design Geneva Avenue as a new front door to the BART station.
Balboa	Policy 2.2.2 Re-design San Jose Avenue between Ocean and Geneva Avenues to better accommodate public transit while maintaining its character as a residential street.
Balboa	Policy 2.2.3 Re-design Ocean Avenue as a transit and pedestrian boulevard.
Balboa	Objective 2.3 Reconnect the neighborhoods bisected by the Interstate 280.
Balboa	Policy 2.3.1 Minimize the prominent physical barrier of Interstate 280.
Balboa	Objective 2.4 Encourage walking, biking, public transit as the primary means of transportation.
Balboa	Policy 2.4.1 Main streets in the plan area should be civic spaces as well as movement corridors.
Balboa	Policy 2.4.2 Improve and expand bicycle connections throughout the plan area.
Balboa	Policy 2.4.3 Improve travel time, transit reliability, and comfort level on all modes of public transportation.
Balboa	Objective 3.1 Establish parking standards and controls that promote quality of place, affordable housing, and transit-oriented development.
Balboa	Policy 3.1.1 Provide flexibility for new residential development by eliminating minimum off-street parking requirements and establishing reasonable parking caps.
Balboa	Policy 3.1.2 Provide flexibility for non-residential development by eliminating minimum off-street parking requirements and establishing parking caps generally equal to the previous minimum requirements.
Balboa	Policy 3.1.3 Make parking costs visible to users by requiring parking to be rented, leased or sold separately from residential and commercial space for all new major development.
Balboa	Objective 3.2 Ensure that new development does not adversely affect parking availability for residents.
Balboa	Policy 3.2.1 Consider revisions to the residential permit parking program (RPP) that make more efficient use of the on-street parking supply.
Balboa	Policy 3.2.2 Manage the existing supply of on-street parking in the plan area to prioritize spaces for residents, shoppers and non-commute transit trips.
Balboa	Policy 3.2.3 Promote car-sharing programs as an important way to reduce parking needs while still providing residents with access to an automobile when needed.
Balboa	Policy 3.2.5 Carefully manage parking in the Phelan Loop Area.
Balboa	Objective 3.3 Ensure that new off-street parking does not adversely affect neighborhood character or the pedestrian friendliness of streets in Pan Area.

Balboa	Objective 3.5 Establish parking policies to support the new Transit Station Neighborhood.
Balboa	Policy 3.5.3 Explore the extension of the validity of the Fast Pass on BART to the Daly City station.
Balboa	Objective 4.1 Maximize opportunities for residential infill throughout the Plan Area.
Balboa	Policy 4.1.1 Housing, supported by a modest amount of neighborhood-oriented commercial establishments, should form the backbone of all new development in the plan area.
Balboa	Policy 4.1.2 Eliminate dwelling unit density maximums.
Balboa	Policy 4.2.1 Encourage mixed-use commercial and residential infill within the commercial district while maintaining the district's existing fine-grained character.
Balboa	Policy 4.2.2 Redevelop the parcels in the Phelan Loop Area with new mixed-use development.
Balboa	Objective 4.3 Establish an active, mixed-use neighborhood around the Transit State that emphasizes the development of housing.
Balboa	Objective 4.4 Consider housing as a primary component to any development on the reservoir.
Balboa	Policy 4.7.1 New development should meet minimum levels of green construction.
Balboa	Policy 5.1.3 Ensure that new open spaces are linked to and serve as an extension of the street system
Balboa	Objective 5.3 Promote an urban form and architectural character that supports walking and sustains a diverse, active and safe public realm.
Balboa	Policy 5.3.2 Redesign the main streets -- Phelan, Ocean, Geneva, and San Jose Avenues -- to encourage walking and biking to and from the Transit Station Neighborhood, City College, and the Ocean Avenue Neighborhood Commercial District.
Balboa	Policy 5.3.3 Pedestrian routes, especially in commercial areas, should not be interrupted or disrupted by auto access and garage doors.
Balboa	Objective 6.1 Create strong physical and visual links between the Transit Station Neighborhood, City College, and the Ocean Avenue Neighborhood Commercial District.
Balboa	Policy 6.1.2 Establish an east/west pedestrian pathway connection to link the BART Station to the Ocean Avenue Neighborhood Commercial District and City College.
Balboa	Objective 6.3 Develop the Transit Station Neighborhood to emphasize its importance as a transit hub and local landmark.
Balboa	Policy 6.3.1 Create a deck over the I-280 between Ocean and Geneva Avenues to integrate the Transit Station Neighborhood with City College and the Ocean Avenue Neighborhood Commercial District.
Balboa	Policy 6.3.2 The Balboa Park BART Station should be reconstructed to reinforce its role as a regional and local transit node and important neighborhood landmark
Balboa	Objective 7.1 Protect, preserve, and reuse historic resources within the Balboa Park Station Plan Area.

Balboa	Policy 7.1.2 The rehabilitation and adaptive reuse of historic buildings in the Balboa Park Station plan area should be promoted.
Balboa	Policy 7.1.3 Individually significant resources in the Balboa Park Station plan area should be protected from demolition or adverse alteration.
Balboa	Objective 7.2 Integrate historic preservation with the land-use planning process for the Balboa Part Station Plan Area.
Central Waterfront	Objective 1.1 Encourage the transition of portions of the Central Waterfront to a more mixed-use character, while protecting the neighborhood's core of PDR uses as well was the Historic Dogpatch Neighborhood.
Central Waterfront	Policy 1.1.9 Permit and encourage greater retail uses on the ground floor on parcels that front 3rd Street to take advantage of transit service and encourage more mixed uses, while protecting against the wholesale displacement of PDR uses.
Central Waterfront	Policy 1.2.4 Identify portions of Central Waterfront where it would be appropriate to increase maximum heights for residential development.
Central Waterfront	Policy 2.2.1 Adopt citywide demolition policies that discourage demolition of sound housing, and encourage replacement of affordable units.
Central Waterfront	Policy 2.3.2 Prioritize the development of affordable family housing, both rental and ownership, particularly along transit corridors and adjacent to community amenities.
Central Waterfront	Policy 2.3.6 Establish an impact fee to be allocated towards an Eastern Neighborhoods Public Benefit Fund to mitigate the impacts of new development on transit, pedestrian, bicycle, and street improvements, park and recreational facilities, and community facilities such as libraries, child care and other neighborhood services in the area.
Central Waterfront	Policy 2.4.1 Require developers to separate the cost of parking from the cost of housing in both for sale and rental developments.
Central Waterfront	Policy 2.4.2 Revise residential parking requirements so that structured or off-street parking is permitted up to specified maximum amounts in certain districts, but is not required.
Central Waterfront	Objective 2.5 Promote health through residential development design and location
Central Waterfront	Policy 2.5.2 Develop affordable family housing in areas where families can safely walk to schools, parks, retail, and other services.
Central Waterfront	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Central Waterfront	Objective 3.2 Promote an urban form and architectural character that supports walking and sustains a diverse, active, and safe public realm.
Central Waterfront	Policy 3.2.7 Strengthen the pedestrian network by extending alleyways to adjacent streets or alleyways wherever possible, or by providing new publicly accessible mid-block rights of way.
Central Waterfront	Objective 4.1 Improve public transit to better serve existing and new development in Central Waterfront.
Central Waterfront	Policy 4.1.1 Commit resources to an analysis of the transportation impacts of new zoning and mobility needs in the Central Waterfront to develop a plan that prioritizes transit while addressing needs of all modes (auto circulation, freeway traffic, bicyclists, pedestrians).

Central Waterfront	Policy 4.1.2 Decrease transit travel time and improve reliability through a variety of means, such as transit-only lanes, transit signal priority, transit queue jumps, lengthening of spacing between stops, and establishment of limited or express service.
Central Waterfront	Policy 4.1.3 Implement the service recommendations of the Transit Effectiveness Project (TEP).
Central Waterfront	Policy 4.1.4 Reduce existing curb cuts where possible and restrict new curb cuts to prevent vehicular conflicts with transit on important transit and neighborhood commercial streets.
Central Waterfront	Policy 4.1.5 Ensure Muni's storage and maintenance facility needs are met to serve increased transit demand and provide enhanced service.
Central Waterfront	Policy 4.1.6 Improve public transit in the Central Waterfront including cross-town routes and connections the 22nd Street Caltrain Station and Third Street Light Rail.
Central Waterfront	Objective 4.2 Increase transit ridership by making it more comfortable and easier to use.
Central Waterfront	Policy 4.2.1 Improve the safety and quality of streets, stops and stations used by transit passengers.
Central Waterfront	Policy 4.2.2 Provide comprehensive and real-time passenger information, both on vehicles and at stops and stations.
Central Waterfront	Objective 4.3 Establish parking policies that improve the quality of neighborhoods and reduce congestion and private vehicle trips by encouraging travel by non-auto modes.
Central Waterfront	Policy 4.3.1 For new residential development, provide flexibility by eliminating minimum off-street parking requirements and establishing reasonable parking caps.
Central Waterfront	Policy 4.3.2 For new non-residential development, provide flexibility by eliminating minimum off-street parking requirements and establishing caps generally equal to the previous minimum requirements. For office uses limit parking relative to transit accessibility.
Central Waterfront	Policy 4.3.3 Make the cost of parking visible to users, by requiring parking to be rented, leased or sold separately from residential and commercial space for all new major development.
Central Waterfront	Policy 4.3.4 Encourage, or require where appropriate, innovative parking arrangements that make efficient use of space, particularly where cars will not be used on a daily basis.
Central Waterfront	Policy 4.3.5 Permit construction of public parking garages in Mixed Use districts only if they are part of shared parking arrangements that efficiently use space, are appropriately designed, and reduce the overall need for off-street parking in the area.
Central Waterfront	Policy 4.3.6 Reconsider and revise the way that on-street parking is managed in both commercial and residential districts in order to more efficiently use street parking space and increase turnover and parking availability.
Central Waterfront	Policy 4.4.3 In areas with a significant number of PDR establishments and particularly along Illinois Street, design streets to serve the needs and access requirements of trucks while maintaining a safe pedestrian and bicycle environment.
Central Waterfront	Policy 4.4.5 Maintain and enhance rail access to maritime facilities.

Central Waterfront	Objective 4.5 Consider the street network in Central Waterfront as a city resource essential to multi-modal movement and public open space.
Central Waterfront	Policy 4.5.1 Maintain a strong presumption against the vacation or sale of streets or alleys except in cases where significant public benefits can be achieved.
Central Waterfront	Policy 4.5.2 As part of a development project's open space requirement, require publicly-accessible alleys that break up the scale of large developments and allow additional access to buildings in the project.
Central Waterfront	Policy 4.5.3 Redesign underutilized streets not needed for PDR business circulation needs in the Central Waterfront for creation of Living Streets and other usable public space.
Central Waterfront	Policy 4.5.4 Extend and rebuild the street grid, especially in the direction of the Bay.
Central Waterfront	Policy 4.5.5 Reclaim public rights-of-way that have been vacated or incorporated into private parcels.
Central Waterfront	Objective 4.6 Support walking as a key transportation mode by moving pedestrian circulation within Central Waterfront and to other parts of the city.
Central Waterfront	Policy 4.6.1 Use established street design standards to make the pedestrian environment safer and more comfortable for walk trips.
Central Waterfront	Policy 4.6.2 Prioritize pedestrian safety improvements at intersections and in areas with historically high frequencies of pedestrian injury collisions.
Central Waterfront	Policy 4.6.3 Improve pedestrian access to transit stops including Third Street light rail and the 22nd Street Caltrain Station.
Central Waterfront	Policy 4.6.4 Facilitate improved pedestrian crossings at several locations to better connect the Central Waterfront and surrounding areas – Potrero Hill, Mission Bay, and Showplace Square.
Central Waterfront	Objective 4.7 Improve and expand infrastructure for bicycling as an important mode of transportation.
Central Waterfront	Policy 4.7.1 Provide a continuous network of safe, convenient and attractive bicycle facilities connecting Central Waterfront to the citywide bicycle network and conforming to the San Francisco Bicycle Plan.
Central Waterfront	Policy 4.7.2 Provide secure, accessible and abundant bicycle parking, particularly at transit stations, within shopping areas and at concentrations of employment.
Central Waterfront	Policy 4.7.3 Support the establishment of the Blue-Greenway by including safe, quality pedestrian and bicycle connections from Central Waterfront.
Central Waterfront	Objective 4.8 Encourage alternatives to car ownership and the reduction of private vehicle trips.
Central Waterfront	Policy 4.8.1 Continue to require car-sharing arrangements in new residential and commercial developments, as well as any new parking garages.
Central Waterfront	Policy 4.8.2 Require large retail establishments, particularly supermarkets, to provide shuttle and delivery services to customers.
Central Waterfront	Policy 4.8.3 Develop a Transportation Demand Management (TDM) program for the Eastern Neighborhoods that provides information and incentives for employees, visitors and residents to use alternative transportation modes and travel times.

Central Waterfront	Objective 4.9 Facilitate movement of automobiles while striving to reduce negative impacts of vehicle travel.
Central Waterfront	Policy 4.9.1 Introduce traffic calming measures where warranted to improve pedestrian safety and comfort, reduce speeding and traffic spillover from arterial streets onto residential streets and alleyways.
Central Waterfront	Policy 4.9.2 Decrease auto congestion through implementation of Intelligent Traffic Management Systems (ITMS) strategies such as smart parking technology, progressive metering of traffic signals and the SFMTA SFGO program.
Central Waterfront	Objective 4.10 Develop a comprehensive funding plan for transportation improvements.
Central Waterfront	Policy 4.10.1 As part of the Eastern Neighborhoods Public Benefits Program, pursue funding for transit, pedestrian, bicycle and auto improvements through developer impact fees, in-kind contributions, community facilities districts, dedication of tax revenues, and state or federal grant sources.
Central Waterfront	Objective 5.3 Create a network of green streets that connects open spaces and improves the walkability, aesthetics, and ecological sustainability of the neighborhood.
Central Waterfront	Policy 5.3.1 Redesign underutilized portions of streets as public open spaces, including widened sidewalks or medians, curb bulb-outs, living streets or green connector streets.
Central Waterfront	Policy 5.3.3 Design the intersections of major streets to reflect their prominence as public spaces.
Central Waterfront	Policy 5.3.5 Significant above grade infrastructure, such as freeways, should be retrofitted with architectural lighting to foster pedestrian connections beneath.
Central Waterfront	Policy 5.3.8 Pursue acquisition or conversion of the Tubbs Cordage Factory alignment to public access. Should it be infeasible to purchase the necessary property, future development should include the following improvements: -Good night-time lighting for pedestrian safety and comfort. -Limit ground cover to maximize visibility. -If benches are provided, they should be placed only at the street.
Central Waterfront	Policy 5.3.9 Explore opportunities to identify and expand waterfront recreational trails and opportunities including the Bay Trail and Blue-Greenway.
Central Waterfront	Policy 7.1.3 Ensure child care services are located where they will best serve neighborhood workers and residents.
Central Waterfront	Objective 8.1 Identify and evaluate historic and cultural resources within the Central Waterfront Area Plan.
Central Waterfront	Objective 8.2 Protect, preserve, and reuse historic resources within the Central Waterfront Area Plan.
Central Waterfront	Policy 8.2.1 Protect individually significant historic and cultural resources and historic districts in the Central Waterfront area plan from demolition or adverse alteration, particularly those elements of the Maritime and Industrial Area east of Illinois Street.
Central Waterfront	Policy 8.2.3 Promote and offer incentives for the rehabilitation and adaptive reuse of historic buildings in the Central Waterfront area plan.
Central Waterfront	Objective 8.3 Ensure that historic preservation concerns continue to be an integral part of the ongoing planning processes for the Central Waterfront Area Plan.

Central Waterfront	Policy 8.3.4 Consider the Central Waterfront's historic and cultural resources in emergency preparedness and response efforts.
Central Waterfront	Objective 8.4 Promote the principles of sustainability for the built environment through the inherently green strategy of historic preservation.
Central Waterfront	Policy 8.4.1 Encourage the retention and rehabilitation of historic and cultural resources as an option for increased sustainability and consistency with the goals and objectives of the Sustainability Plan for the City and County of San Francisco.
Central Waterfront	Policy 8.5.3 Demonstrate preservation leadership and good stewardship by the City of publicly owned historic and cultural resources.
East SoMa	Objective 1.1 Encourage production of housing and other mixed-use development in East SoMa while maintaining its existing special mixed-use character.
East SoMa	Policy 2.2.1 Adopt citywide demolition policies that discourage demolition of sound housing, and encourage replacement of affordable units.
East SoMa	Policy 2.3.2 Prioritize the development of affordable family housing, both rental and ownership, particularly along transit corridors and adjacent to community amenities.
East SoMa	Policy 2.3.6 Establish an Eastern Neighborhoods Public Benefit Fund to mitigate the impacts of new development on transit, pedestrian, bicycle, and street improvements, park and recreational facilities, and community facilities such as libraries, child care and other neighborhood services in the area.
East SoMa	Policy 2.4.1 Require developers to separate the cost of parking from the cost of housing in both for sale and rental developments.
East SoMa	Policy 2.5.2 Develop affordable family housing in areas where families can safely walk to schools, parks, retail, and other services.
East SoMa	Policy 2.5.3 Require new development to meet minimum levels of green construction.
East SoMa	Objective 3.2 Promote an urban form and architectural character that supports walking and sustains a diverse, active and safe public realm.
East SoMa	Policy 3.2.7 Strengthen the pedestrian network by extending alleyways to adjacent streets or alleyways wherever possible, or by providing new publicly accessible mid-block rights of way.
East SoMa	Objective 4.1 Improve public transit to better serve existing and new development in the South of Market.
East SoMa	Policy 4.1.1 Commit resources to an analysis of the street grid, the transportation impacts of new zoning, and mobility needs in the South of Market / Eastern Neighborhoods to develop a plan that prioritizes transit while addressing needs of all modes (transit, vehicle traffic, bicyclists, pedestrians).
East SoMa	Policy 4.1.2 Decrease transit travel time and improve reliability through a variety of means, such as transit-only lanes, transit signal priority, transit queue jumps, lengthening of spacing between stops, and establishment of limited or express service.
East SoMa	Policy 4.1.3 Implement the service recommendations of the Transit Effectiveness Project (TEP).
East SoMa	Policy 4.1.4 Reduce existing curb cuts where possible and restrict new curb cuts to prevent vehicular conflicts with transit on important transit and neighborhood commercial streets.

East SoMa	Policy 4.1.5 Ensure Muni's storage and maintenance facility needs are met to serve increased transit demand and provide enhanced service.
East SoMa	Policy 4.1.6 Improve public transit linking the eastern and western portions of the South of Market and strengthen SoMa's overall transit connections to the Market Street corridor, BART stations, and 4th & King Caltrain station.
East SoMa	Objective 4.2 Increase transit ridership by making it more comfortable and easier to use.
East SoMa	Policy 4.2.1 Improve the safety and quality of streets, stops and stations used by transit passengers.
East SoMa	Policy 4.2.2 Provide comprehensive and real-time passenger information, both on vehicles and at stops and stations.
East SoMa	Objective 4.3 Establish parking policies that improve the quality of neighborhoods and reduce congestion and private vehicle trips by encouraging travel by non-auto modes.
East SoMa	Policy 4.3.1 For new residential development, provide flexibility by eliminating minimum off-street parking requirements and establishing reasonable parking caps.
East SoMa	Policy 4.3.2 For new non-residential development, provide flexibility by eliminating minimum off-street parking requirements and establishing caps generally equal to the previous minimum requirements. For office uses in East SoMa, parking requirements should be commensurate with general downtown parking standards.
East SoMa	Policy 4.3.3 Make the cost of parking visible to users, by requiring parking to be rented, leased or sold separately from residential and commercial space for all new major development.
East SoMa	Policy 4.3.4 Encourage, or require where appropriate, innovative parking arrangements that make efficient use of space, particularly where cars will not be used on a daily basis.
East SoMa	Policy 4.3.5 Permit construction of new parking garages in Mixed Use districts only if they are part of shared parking arrangements that efficiently use space, are appropriately designed, and reduce the overall need for off-street parking in the area.
East SoMa	Policy 4.3.6 Reconsider and revise the way that on-street parking is managed in both commercial and residential districts in order to more efficiently use street parking space and increase turnover and parking availability.
East SoMa	Policy 4.4.1 Provide an adequate amount of short-term, on-street curbside freight loading spaces throughout East SoMa.
East SoMa	Policy 4.4.2 Continue to require off-street facilities for freight loading and service vehicles in new large non-residential developments.
East SoMa	Policy 4.4.3 In areas with a significant number of PDR establishments, design streets to serve the needs and access requirements of trucks while maintaining a safe pedestrian environment.
East SoMa	Objective 4.5 Consider the street network in the East SoMa as a city resource essential to multi-modal movement and public open space.
East SoMa	Policy 4.5.1 Maintain a strong presumption against the vacation or sale of streets or alleys except in cases where significant public benefits can be achieved.

East SoMa	Objective 4.6 Support walking as a key transportation mode by improving pedestrian circulation within East SoMa and to other parts of the city.
East SoMa	Policy 4.6.1 Use established street design standards and guidelines to make the pedestrian environment safer and more comfortable for walk trips.
East SoMa	Policy 4.6.2 Prioritize pedestrian safety improvements in areas and at intersections with historically high frequencies of pedestrian injury collisions.
East SoMa	Policy 4.6.3 Consider improvements that target barriers to walking in SoMa such as long blocks and closed crosswalks, particularly at freeway on and off-ramps.
East SoMa	Policy 4.6.4 Consider pedestrian and streetscape improvements to major pedestrian streets and commercial corridors connecting downtown to Mission Bay, especially Pedestrian Streets identified in the General Plan.
East SoMa	Policy 4.6.5 Facilitate completion of the sidewalk network in East SoMa, especially where new development is planned to occur.
East SoMa	Objective 4.7 Improve and expand infrastructure for bicycling as an important mode of transportation.
East SoMa	Policy 4.7.1 Provide a continuous network of safe, convenient and attractive bicycle facilities connecting SoMa to the citywide bicycle network and conforming to the San Francisco Bicycle Plan.
East SoMa	Policy 4.7.2 Provide secure, accessible and abundant bicycle parking, particularly at transit stations, within shopping areas and at concentrations of employment.
East SoMa	Objective 4.8 Encourage alternatives to car ownership and the reduction of private vehicle trips.
East SoMa	Policy 4.8.1 Continue to require car-sharing arrangements in new residential and commercial developments, as well as any new parking garages.
East SoMa	Policy 4.8.2 Require large retail establishments, particularly supermarkets, to provide shuttle and delivery services to customers.
East SoMa	Policy 4.8.3 Develop a Transportation Demand Management (TDM) program for the Eastern Neighborhoods that provides information and incentives for employees, visitors and residents to use alternative transportation modes and travel times.
East SoMa	Objective 4.9 Facilitate movement of automobiles by managing congestion and other negative impacts of vehicle traffic.
East SoMa	Policy 4.9.1 Introduce traffic calming measures where warranted to improve pedestrian safety and comfort, reduce speeding and traffic spillover from arterial streets onto residential streets and alleyways
East SoMa	Policy 4.9.2 Decrease auto congestion through implementation of Intelligent Traffic Management Systems (ITMS) strategies such as smart parking technology, progressive metering of traffic signals and the SFMTA SFGO program.
East SoMa	Objective 4.10 Develop a comprehensive funding plan for transportation improvements.
East SoMa	Policy 4.10.1 As part of the Eastern Neighborhoods Public Benefits Program, pursue funding for transit, pedestrian, bicycle and auto improvements through developer impact fees, in-kind contributions, community facilities districts, dedication of tax revenues, and state or federal grant sources.

East SoMa	Objective 5.3 Create a network of green streets that connect open spaces and improves the walkability, aesthetics and ecological sustainability of the neighborhood.
East SoMa	Policy 5.3.1 Redesign underutilized portions of streets as public open spaces, including widened sidewalks or medians, curb bulb-outs, living streets or green connector streets.
East SoMa	Policy 5.3.4 Enhance the pedestrian environment by requiring new development to plant street trees along abutting sidewalks. When this is not feasible, plant trees on development sites or elsewhere in the plan area.
East SoMa	Policy 5.3.5 Significant above grade infrastructure, such as freeways, should be retrofitted with architectural lighting to foster pedestrian connections beneath.
East SoMa	Policy 5.3.6 Where possible, transform unused freeway and rail rights-of-way into landscaped features that provide a pleasant and comforting route for pedestrians.
East SoMa	Policy 5.3.7 Develop a comprehensive public realm plan for East SoMa that reflects the differing needs of streets based upon their predominant land use, role in the transportation network, and building scale.
East SoMa	Policy 5.3.8 Consider transforming a major east-west street in the South of Market into a civic boulevard, connecting the Bay to the Mission District.
East SoMa	Policy 5.3.9 Explore opportunities to identify and expand connections to the Bay Trail.
East SoMa	Objective 8.2 Protect, preserve, and reuse historic resources within the East SoMa Area Plan.
East SoMa	Policy 8.2.1 Protect individually significant historic and cultural resources and historic districts in the East SoMa area plan from demolition or adverse alteration.
East SoMa	Policy 8.2.3 Promote and offer incentives for the rehabilitation and adaptive reuse of historic buildings in the East SoMa area plan.
East SoMa	Objective 8.3 Ensure that historic preservation concerns continue to be an integral part of the ongoing planning processes for the East SoMa Plan Area as they evolve over time.
East SoMa	Policy 8.3.6 Adopt and revise land use, design and other relevant policies, guidelines, and standards, as needed to further preservation objectives.
East SoMa	Objective 8.4 Promote the principles of sustainability for the built environment through the inherently green strategy of historic preservation.
East SoMa	Policy 8.4.1 Encourage the retention and rehabilitation of historic and cultural resources as an option for increased sustainability and consistency with the goals and objectives of the Sustainability Plan for the City and County of San Francisco.
East SoMa	Objective 8.5 Provide preservation incentives, guidance, and leadership within the East SoMa Plan Area.
East SoMa	Policy 8.5.3 Demonstrate preservation leadership and good stewardship of publicly owned historic and cultural resources.
Glen Park	Objective 1 Protect and strengthen the qualities that make downtown Glen Park special.
Glen Park	Policy 1.2 Update existing neighborhood zoning to strengthen Glen Park's commercial district and reinforce the area's pedestrian and transit-oriented character.

Glen Park	Policy 1.3 Recognize the historical commercial pattern of the neighborhood by including existing Limited Commercial Uses (LCUs) into the neighborhood commercial district.
Glen Park	Policy 1.4 Improve the streetscape in the commercial core to make the area safer and more comfortable for pedestrians and shoppers.
Glen Park	Policy 2.3 Consider other possible uses for the BART parking lot.
Glen Park	Objective 3 Recognize the contribution of historic buildings to neighborhood identity.
Glen Park	Policy 3.3 Protect historic buildings in Glen Park from demolition or adverse alteration.
Glen Park	Objective 4 Establish Glen Park's streets as comfortable and attractive places for walking and public life.
Glen Park	Policy 4.1 Pursue pedestrian and streetscape improvements that enhance safety and comfort for pedestrians.
Glen Park	Policy 4.2 Prohibit new curbcuts or driveways on key commercial and pedestrian streets such as Diamond and Chenery Streets.
Glen Park	Objective 5 Improve access for bicyclists to Glen Park and the BART station.
Glen Park	Policy 5.1 Implement bicycle network improvements identified in the San Francisco Bicycle Plan.
Glen Park	Policy 5.2 Consider increased opportunities for bicycle parking in Glen Park.
Glen Park	Objective 6 Sustain Glen Park's role as an important intermodal transit center for the City and region.
Glen Park	Policy 6.1 Implement recommendations of the San Francisco Municipal Transportation Agency's Transit Effectiveness Project (TEP) for the Glen Park neighborhood.
Glen Park	Policy 6.2 Manage curb space around the Glen Park BART station to improve the function of transit.
Glen Park	Policy 6.3 SFMTA and BART should determine which future capital investments may be appropriate for transit.
Glen Park	Policy 7.1 Make transit more accessible.
Glen Park	Objective 8 Seek improvements that relieve traffic congestion while minimizing impacts on other transportation modes.
Glen Park	Policy 8.1 Improve the function of major intersections in Glen Park without further degrading the pedestrian environment or neighborhood character.
Glen Park	Objective 9 Restore the local importance of streets in the area.
Glen Park	Policy 9.1 Calm traffic throughout Glen Park, especially through-traffic and freeway-oriented traffic.
Glen Park	Policy 9.2 Conduct further analysis to determine the feasibility of near and long-term improvements for San Jose Avenue including redesign of the street as a boulevard to improve safety, livability and better connect surrounding neighborhoods.
Glen Park	Objective 10 Optimize use of existing on-street parking spaces in Glen Park.
Glen Park	Policy 10.1 Pursue strategies to increase the availability of on-street parking.

Glen Park	Policy 10.2 Improve neighborhood walkability, comfort and safety to alleviate the need for some local vehicle trips.
Glen Park	Policy 10.3 Support carsharing in Glen Park as a way to reduce private vehicle demand and parking.
Glen Park	Policy 11.1 Sustain and improve the informal greenway and pedestrian path connecting downtown Glen Park to Glen Canyon Park.
Glen Park	Policy 11.2 Recognize Kern Sreet and the BART plazas as important public space opportunities.
Market and Octavia	Objective 1.1 Create a land use plan that embraces the Market and Octavia Neighborhood's potential as a mixed-use urban neighborhood.
Market and Octavia	Policy 1.1.1 Repair the damage caused by the Central Freeway by encouraging mixed-use infill on the former freeway lands.
Market and Octavia	Policy 1.1.2 Concentrate more intense uses and activities in those areas best served by transit and most accessible on foot.
Market and Octavia	Policy 1.1.8 Reinforce continuous retail activities on Market, Church, and Hayes Streets, as well as on Van Ness Avenue.
Market and Octavia	Objective 2.1 Require development of mixed-use residential infill on the former freeway parcels.
Market and Octavia	Policy 2.1.1 Develop the Central Freeway parcels with mixed-use, mixed- income (especially low income) housing.
Market and Octavia	Policy 2.2.1 Eliminate housing density maximums close to transit and services.
Market and Octavia	Policy 2.2.3 Eliminate residential parking requirements and introduce a maximum parking cap.
Market and Octavia	Policy 2.4.1 Disaggregate the cost of parking from the cost of housing.
Market and Octavia	Policy 2.4.2 Encourage lending institutions to expand the existing location efficient mortgage (LEM) program and allow residents to leverage the plan area's advantages as a walkable, transit-accessible neighborhood.
Market and Octavia	Policy 3.2.6 Encourage rehabilitation and adaptive reuse of historic buildings and resources.
Market and Octavia	Policy 3.2.7 The addition of garages to historic buildings should be strongly discouraged.
Market and Octavia	Policy 3.2.8 Protect and preserve groupings of cultural resources that have integrity, convey a period of significance, and are given recognition as groupings through the creation of historic or conservation districts.
Market and Octavia	Policy 3.2.9 Preserve resources in identified historic districts.
Market and Octavia	Policy 3.2.11 Ensure that changes in the built environment respect the historic character and cultural heritage of the area, and that resource sustainability is supported.
Market and Octavia	Policy 3.2.13 Promote preservation incentives that encourage reusing older buildings.
Market and Octavia	Objective 4.1 Provide safe and comfortable public rights-of-way for pedestrian use and improve the public life of the neighborhood.

Market and Octavia	Policy 4.1.1 Widen sidewalks and shorten pedestrian crossings with corner plazas and boldly marked crosswalks where possible without affecting traffic lanes. Where such improvements may reduce lanes, the improvements should first be studied.
Market and Octavia	Policy 4.1.2 Enhance the pedestrian environment by planting trees along sidewalks, closely planted between pedestrians and vehicles.
Market and Octavia	Policy 4.1.3 Establish and maintain a seamless pedestrian right-of-way throughout the plan area.
Market and Octavia	Policy 4.1.5 Prohibit the vacation of public rights-of-way, especially alleys; where new development creates the opportunity, extend the area's alley network.
Market and Octavia	Policy 4.1.6 Pursue the extension of alleys where it would enhance the existing network.
Market and Octavia	Policy 4.1.7 Introduce traffic-calming measures on residential alleys and consider making improvements to alleys with a residential character to create shared, multipurpose public space for the use of residents.
Market and Octavia	Policy 4.1.8 Consider making improvements to non-residential alleys that foster the creation of a dynamic, mixed-use place.
Market and Octavia	Objective 4.2 Accommodate regional through traffic on surface streets that also serve local needs, thereby repairing areas disrupted by large infrastructure projects of the past.
Market and Octavia	Policy 4.2.2 Improve the pedestrian character of Hayes Street, between Franklin and Laguna Streets, by creating an unobstructed, linear pedestrian thoroughfare linking commercial activities along Hayes Street to the new Octavia Boulevard.
Market and Octavia	Policy 4.2.3 Re-introduce a public right-of-way along the former line of Octavia Street, between Fulton Street and Golden Gate Avenue for use by pedestrians and bicycles.
Market and Octavia	Policy 4.2.4 Study further dismantling of the Central Freeway, similar to removal of the freeway ramps between Market and Hayes Streets.
Market and Octavia	Policy 4.3.2 Improve the visual appearance and integrity of Market Street within the plan area through more consistent tree planting, better tree maintenance, de-cluttering sidewalks, and installing new pedestrian amenities.
Market and Octavia	Policy 4.3.4 Enhance the transit hub at Market and Church Street.
Market and Octavia	Policy 4.3.6 Improve BART and Muni entrances and exits to give them a sense of identity and make them less intrusive on sidewalk space.
Market and Octavia	Objective 5.1 Improve public transit to make it more reliable, attractive, convenient, and responsive to increasing demand.
Market and Octavia	Policy 5.1.1 Implement transit improvements on streets designated as Transit Preferential Streets in this plan.
Market and Octavia	Policy 5.1.3 Establish a Market Octavia neighborhood improvement fund to subsidize transit, pedestrian, bicycle, and other priority improvements in the area.
Market and Octavia	Policy 5.1.4 Support innovative transit solutions that improve service, reliability, and overall quality of the transit rider's experience.
Market and Octavia	Policy 5.1.5 Monitor transit service in the plan area as part of the one and five year monitoring reports.

Market and Octavia	Objective 5.2 Develop and implement parking policies for areas well served by public transit that encourage travel by pubic transit and alternative transportation and reduce traffic congestion.
Market and Octavia	Policy 5.2.1 Eliminate minimum off-street parking requirements and establish parking caps for residential and commercial parking.
Market and Octavia	Policy 5.2.2 Encourage the efficient use of space designated for parking.
Market and Octavia	Policy 5.2.3 Minimize the negative impacts of parking on neighborhood quality.
Market and Octavia	Policy 5.2.4 Support the choice to live without a car.
Market and Octavia	Policy 5.2.5 Retire minimum off-street loading requirements for residential uses and establish maximums based on the existing minimums.
Market and Octavia	Policy 5.2.6 Make parking cost transparent to users.
Market and Octavia	Policy 5.2.7 Establish parking pricing in city-owned facilities that supports short-term use.
Market and Octavia	Policy 5.2.8 Strongly discourage construction of new public parking facilities.
Market and Octavia	Objective 5.3 Eliminate or reduce the negative impact of parking on the physical character and quality of the neighborhood.
Market and Octavia	Policy 5.4.1 Consider revisions to the Residential Parking Permit (RPP) program that make more efficient use of the on-street parking supply.
Market and Octavia	Policy 5.4.4 Consider recovering the full costs of new parking to the neighborhood and using the proceeds to improve transit.
Market and Octavia	Policy 5.4.7 Support innovative mechanisms for local residents and businesses to share automobiles.
Market and Octavia	Policy 5.4.8 Monitor parking supply in Time Series Monitoring reports.
Market and Octavia	Objective 5.5 Establish a bicycle network that provides a safe and attractive alternative to driving for both local and citywide travel needs.
Market and Octavia	Policy 5.5.1 Improve bicycle connections, accessibility, safety, and convenience throughout the neighborhood, concentrating on streets most safely and easily traveled by bicyclists.
Market and Octavia	Policy 5.5.2 Provide secure and convenient bicycle parking throughout the area.
Market and Octavia	Policy 5.5.3 Support and expand opportunities for bicycle commuting throughout the City and the region.
Market and Octavia	Objective 5.6 Improve vehicular circulation through the area.
Market and Octavia	Policy 5.6.1 Re-evaluate the larger street network in Hayes Valley.
Market and Octavia	Policy 6.2.2 Encourage the redesign of the Church and Market Street Safeway site with a mix of housing and commercial uses, supportive of Church Street's importance as one of the City's most well-served and important transit centers and integrated into the urban character of the area.
Market and Octavia	Objective 7.1 Create a vibrant new mixed-use neighborhood in SoMa West.
Market and Octavia	Objective 7.2 Establish a functional, attractive and well-integrated system of public streets and open spaces in the SoMa West Area to improve the public realm.

Market and Octavia	Policy 7.2.1 Study a redesign of South Van Ness Avenue from Mission Street to Division Street as a surface boulevard serving regional as well as local traffic.
Market and Octavia	Policy 7.2.2 Embark on a study to redesign Mission and Otis Streets from South Van Ness Avenue to Duboce Avenue.
Market and Octavia	Policy 7.2.3 Redesign Gough Street between Otis and Market Streets with widened sidewalks and a community gathering space or garden at the northeastern side of the Gough, Otis and McCoppin Streets intersection.
Market and Octavia	Policy 7.2.4 Redesign McCoppin Street as a linear green street with a new open space west of Valencia Street.
Market and Octavia	Policy 7.2.5 Make pedestrian improvements within the block bounded by Market, Twelfth, Otis, and Gough Streets and redesign Twelfth Street between Market and Mission Streets, creating a new park and street spaces for public use, and new housing opportunities.
Market and Octavia	Policy 7.2.6 Embark on a study to redesign 12th Street between Market and Mission to recapture space for pedestrian use.
Market and Octavia	Policy 7.2.7 Embark on a study to reconfigure major intersections to make them safer for vehicles and pedestrians alike, to facilitate traffic movement, and to take advantage of opportunities to create public spaces.
Mission Area	Objective 1.1 Strengthen the Mission's existing mixed use character, while maintaining the neighborhood as a place to live and work.
Mission Area	Policy 1.1.3 Maintain the successful Mission Street, 24th Street, and Valencia Street Neighborhood Commercial districts; recognize the proximity to good transit service by eliminating residential density limits and minimum parking requirements.
Mission Area	Policy 1.1.4 In higher density residential areas of the Mission, recognize proximity to good transit service by eliminating density limits and minimum parking requirements; permit small neighborhood-serving retail.
Mission Area	Policy 1.1.7 Permit and encourage greater retail uses on the ground floor on parcels that front 16th Street to take advantage of transit service and encourage more mixed uses, while protecting against the wholesale displacement of PDR uses.
Mission Area	Objective 1.3 Institute flexible legal nonconforming use provisions to ensure a continue mix of uses in the Mission.
Mission Area	Policy 1.8.1 Direct new mixed-use residential development to the Mission's neighborhood commercial districts to take advantage of the transit and services available in those areas.
Mission Area	Policy 2.2.1 Adopt citywide demolition policies that discourage demolition of sound housing, and encourage replacement of affordable units.
Mission Area	Policy 2.3.2 Prioritize the development of affordable family housing, both rental and ownership, particularly along transit corridors and adjacent to community amenities.
Mission Area	Policy 2.3.6 Establish an impact fee to be allocated towards an Eastern Neighborhoods Public Benefit Fund to mitigate the impacts of new development on transit, pedestrian, bicycle, and street improvements, park and recreational facilities, and community facilities such as libraries, child care and other neighborhood services in the area.
Mission Area	Policy 2.4.1 Require developers to separate the cost of parking from the cost of housing in both for sale and rental developments.

Mission Area	Policy 2.4.2 Revise residential parking requirements so that structured or off-street parking is permitted up to specified maximum amounts in certain districts, but it is not required.
Mission Area	Policy 2.5.2 Develop affordable family housing in areas where families can safely walk to schools, parks, retail, and other services.
Mission Area	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Mission Area	Objective 3.1 Promote an urban form that reinforces the Mission's distinctive place in the City's larger form and strengthens its physical fabric and character.
Mission Area	Objective 3.2 Promote an urban form and architectural character that supports walking and sustains a diverse, active and safe public realm.
Mission Area	Policy 3.2.7 Strengthen the pedestrian network by extending alleyways to adjacent streets or alleyways wherever possible, or by providing new publicly accessible mid-block rights of way.
Mission Area	Policy 3.3.3 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
Mission Area	Policy 3.3.5 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
Mission Area	Objective 4.1 Improve public transit to better serve existing and new development in the Mission.
Mission Area	Policy 4.1.1 Commit resources to an analysis of the street grid, the transportation impacts of new zoning, and mobility needs in the Mission / Eastern Neighborhoods to develop a plan that prioritizes transit while addressing needs of all modes (transit, vehicle traffic, bicyclists, pedestrians).
Mission Area	Policy 4.1.2 Decrease transit travel time and improve reliability through a variety of means, such as transit-only lanes, transit signal priority, transit queue jumps, lengthening of spacing between stops, and establishment of limited or express service.
Mission Area	Policy 4.1.3 Implement the service recommendations of the Transit Effectiveness Project (TEP).
Mission Area	Policy 4.1.4 Reduce existing curb cuts where possible and restrict new curb cuts to prevent vehicular conflicts with transit on important transit and neighborhood commercial streets.
Mission Area	Policy 4.1.5 Ensure Muni's storage and maintenance facility needs are met to serve increased transit demand and provide enhanced service.
Mission Area	Policy 4.1.6 Enhance existing public transit service linking the Mission to downtown and BART.
Mission Area	Policy 4.1.7 Balance competing land use and transportation-related priorities for 16th Street in the Mission to improve transit speed and reliability.
Mission Area	Policy 4.1.8 Study the possibility of creating a premium transit service such as Bus Rapid Transit or implementing high-level transit preferential treatments for segments of Mission Street, 16th Street and Potrero Avenue.
Mission Area	Objective 4.2 Increase transit ridership by making it more comfortable and easy to use.

Mission Area	Policy 4.2.1 Improve the safety and quality of streets, stops and stations used by transit passengers.
Mission Area	Policy 4.2.2 Provide comprehensive and real-time passenger information, both on vehicles and at stops and stations.
Mission Area	Objective 4.3 Establish parking policies that improve the quality of neighborhoods and reduce congestion and private vehicle trips by encouraging travel by non-auto modes.
Mission Area	Policy 4.3.1 For new residential development, provide flexibility by eliminating minimum off-street parking requirements and establishing reasonable parking caps.
Mission Area	Policy 4.3.2 For new non-residential development, provide flexibility by eliminating minimum off-street parking requirements and establishing caps generally equal to the previous minimum requirements. For office uses, parking should be limited relative to transit accessibility.
Mission Area	Policy 4.3.3 Make the cost of parking visible to users, by requiring parking to be rented, leased or sold separately from residential and commercial space for all new major development.
Mission Area	Policy 4.3.4 Encourage, or require where appropriate, innovative parking arrangements that make efficient use of space, particularly where cars will not be used on a daily basis.
Mission Area	Policy 4.3.5 Permit construction of new parking garages in Mixed Use districts only if they are part of shared parking arrangements that efficiently use space, are appropriately designed, and reduce the overall need for off-street parking in the area.
Mission Area	Policy 4.3.6 Reconsider and revise the way that on-street parking is managed in both commercial and residential districts in order to more efficiently use street parking space and increase turnover and parking availability.
Mission Area	Policy 4.4.1 Provide an adequate amount of short-term, on-street curbside freight loading spaces in PDR areas of the Mission.
Mission Area	Policy 4.4.2 Continue to require off-street facilities for freight loading and service vehicles in new large non-residential developments.
Mission Area	Objective 4.5 Consider the street network in the Mission as a city resource essential to multi-modal movement and public open space.
Mission Area	Policy 4.5.1 Maintain a strong presumption against the vacation or sale of streets or alleys except in cases where significant public benefits can be achieved.
Mission Area	Objective 4.6 Support walking as a key transportation mode by improving pedestrian circulation within the Mission and to other parts of the City.
Mission Area	Policy 4.6.1 Implement recommendations from the Mission Public Realm Plan, Southeast Mission Pedestrian Safety Plan and established street design standards and guidelines to make the pedestrian environment safer and more comfortable for walk trips.
Mission Area	Policy 4.6.2 Prioritize pedestrian safety improvements at intersections and in areas with historically high frequencies of pedestrian injury collisions.
Mission Area	Policy 4.6.3 Improve pedestrian access to major transit stops and stations such as the 16th and 24th Street BART Stations.
Mission Area	Objective 4.7 Improve and expand infrastructure for bicycling as an important mode of transportation.

Mission Area	Policy 4.7.1 Provide a continuous network of safe, convenient and attractive bicycle facilities connecting the Mission to the citywide bicycle network and conforming to the San Francisco Bicycle Plan.
Mission Area	Policy 4.7.2 Provide secure, accessible and abundant bicycle parking, particularly at transit stations, within shopping areas and at concentrations of employment.
Mission Area	Policy 4.7.3 Explore feasibility of the Mission Creek Bikeway project.
Mission Area	Objective 4.8 Encourage alternatives to car ownership and the reduction of private vehicle trips.
Mission Area	Policy 4.8.1 Continue to require car-sharing arrangements in new residential and commercial developments, as well as any new parking garages.
Mission Area	Policy 4.8.2 Require large retail establishments, particularly supermarkets, to provide shuttle and delivery services to customers.
Mission Area	Policy 4.8.3 Develop a Transportation Demand Management (TDM) program for the Eastern Neighborhoods that provides information and incentives for employees, visitors and residents to use alternative transportation modes and travel times.
Mission Area	Objective 4.9 Facilitate movement of automobiles by managing congestion and other negative impacts of vehicle travel.
Mission Area	Policy 4.9.1 Introduce traffic calming measures where warranted to improve pedestrian safety and comfort, reduce speeding and traffic spillover from arterial streets onto residential streets and alleyways.
Mission Area	Policy 4.9.2 Decrease auto congestion through implementation of Intelligent Traffic Management Systems (ITMS) strategies such as progressive metering of traffic signals and the SFMTA SFGO program.
Mission Area	Objective 4.10 Develop a comprehensive funding plan for transportation improvements.
Mission Area	Policy 4.10.1 As part of the Eastern Neighborhoods Public Benefits Program, pursue funding for transit, pedestrian, bicycle and auto improvements through developer impact fees, in-kind contributions, community facilities districts, dedication of tax revenues, and state or federal grant sources.
Mission Area	Objective 5.3 Create a network of green streets that connect open spaces and improves the walkability, aesthetics and ecological sustainability of the neighborhood.
Mission Area	Policy 5.3.1 Redesign underutilized portions of streets as public open spaces, including widened sidewalks or medians, curb bulb-outs, living streets or green connector streets.
Mission Area	Policy 5.3.3 Design the intersections of major streets to reflect their prominence as public spaces.
Mission Area	Policy 5.3.4 Enhance the pedestrian environment by requiring new development to plant street trees along abutting sidewalks. When this is not feasible, plant trees on development sites or elsewhere in the Plan Area.
Mission Area	Policy 5.3.5 Significant above grade infrastructure, such as freeways should be retrofitted with architectural lighting to foster pedestrian connections beneath.
Mission Area	Policy 5.3.6 Where possible, transform unused freeway and rail rights-of-way into landscaped features that provide a pleasant and comforting route for pedestrians.

Mission Area	Policy 5.3.7 Develop a comprehensive public realm plan for the Mission that reflects the differing needs of streets based upon their predominant land use, role in the transportation network, and building scale.
Mission Area	Objective 8.2 Protect, preserve and reuse historic resources within the Mission Plan Area.
Mission Area	Policy 8.2.1 Protect individually significant historic and cultural resources and historic districts in the Mission plan area from demolition or adverse alteration.
Mission Area	Policy 8.2.3 Promote and offer incentives for the rehabilitation and adaptive reuse of historic buildings in the Mission plan area.
Mission Area	Objective 8.4 Promote the principles of sustainability for the built environment through the inherently green strategy of historic preservation.
Mission Area	Policy 8.4.1 Encourage the retention and rehabilitation of historic and cultural resources as an option for increased sustainability and consistency with the goals and objectives of the Sustainability Plan for the City and County of San Francisco.
Mission Area	Policy 8.5.3 Demonstrate preservation leadership and good stewardship of publicly owned historic and cultural resources.
Rincon Hill	Objective 1.2 Maximize housing in Rincon Hill to capitalize on Rincon Hill's central location adjacent to downtown employment and transit service, while still retaining the district's livability.
Rincon Hill	Objective 1.3 Create space for additional uses to provide needed services for the resident population by transforming Folsom Street into a walkable neighborhood center to serve the Rincon Hill and Transbay neighborhoods.
Rincon Hill	Policy 1.3 Eliminate the residential density limit to encourage the maximum amount of housing possible within the allowable building envelope.
Rincon Hill	Objective 4.3 Link the area via pedestrian improvements to other public open spaces such as the waterfront promenade at the foot of the hill and planned open spaces in the Transbay district.
Rincon Hill	Objective 4.5 Use excess street space on Spear, Main, and Beale Streets for sidewalk widenings that provide usable open spaces and recreational amenities.
Rincon Hill	Objective 4.6 Create an inviting and pleasant mid-block pedestrian corridor to the waterfront.
Rincon Hill	Policy 4.2 Significantly widen sidewalks by removing a lane of traffic on Spear, Main, and Beale Streets between Folsom and Bryant Streets per the Rincon Hill Streetscape Plan in order to create new "Living Streets," with pocket park and plaza spaces for active and passive recreational use, decorative paving, lighting, seating, trees and other landscaping.
Rincon Hill	Objective 5.1 Create safe and pleasant pedestrian networks within the Rincon Hill area, to downtown, and to the Bay.
Rincon Hill	Objective 5.2 Widen sidewalks, reduce street widths, and make other pedestrian and street improvements, while retaining the necessary space for traffic movements, per the Rincon Hill Streetscape Plan.
Rincon Hill	Objective 5.3 Prioritize pedestrian safety through street and intersection improvements, especially at intersections adjacent to freeway ramps, and intersections with a history of vehicle/pedestrian collisions.
Rincon Hill	Objective 5.4 Improve transit service to and from Rincon Hill.

Rincon Hill	Objective 5.5 Manage parking supply and pricing to encourage travel by foot, public transportation, and bicycle.
Rincon Hill	Objective 5.6 Improve local and regional traffic flows and transit movements by separating bridge-bound traffic from local lanes in appropriate locations.
Rincon Hill	Objective 5.7 Maintain the potential for a Bay Bridge bicycle/pedestrian/maintenance path, and ensure that all options for the path touchdown and alignment are kept open.
Rincon Hill	Objective 5.9 Require private development to contribute to the creation and on-going maintenance and operations of special streetscapes through in-kind contribution, a community facilities district, and/or developer fees.
Rincon Hill	Policy 5.1 Implement the Rincon Hill Streetscape Plan.
Rincon Hill	Policy 5.2 Significantly widen sidewalks by removing a lane of traffic on Spear, Main and Beale Streets between Folsom and Bryant Streets per the Rincon Hill Streetscape Plan in order to create new "Living Streets," with pocket park and plaza spaces for active and passive recreational use, decorative paving, lighting, seating, trees and other landscaping. See Figure 6.
Rincon Hill	Policy 5.3 Transform Folsom Street into a grand civic boulevard, per this plan and the Transbay Redevelopment Plan.
Rincon Hill	Policy 5.4 Widen sidewalks, narrow lanes and remove lanes, where feasible, on Harrison, First and Fremont Streets.
Rincon Hill	Policy 5.5 Separate bridge-bound traffic from local traffic and transit through physical design strategies such as planted medians.
Rincon Hill	Policy 5.6 Implement streetscape improvements on Guy Place and Lansing Street that prioritize pedestrian use for the entire right-of-way.
Rincon Hill	Policy 5.7 Ensure the creation of a safe, inviting, and pleasant publicly accessible pedestrian/open space mid-block pathway through Assessors Blocks 3744-3748 from First Street to the Embarcadero by requiring new developments along the alignment of the proposed path to provide a publicly-accessible easement through their property.
Rincon Hill	Policy 5.8 Explore the feasibility of and implement if feasible the following transit improvements for Rincon Hill.
Rincon Hill	Policy 5.9 Eliminate the minimum off-street parking requirement for all uses.
Rincon Hill	Policy 5.12 Require that parking be sold or rented separately from residential units and commercial spaces in perpetuity.
Rincon Hill	Policy 5.14 Prohibit parking as a principal use.
Rincon Hill	Policy 5.15 Require new development over 50 units to offer at least one parking space to a car-sharing organization for the right of first refusal
Rincon Hill	Policy 5.16 Require parking for bicycles at a ratio of one space per two units for buildings with 50 units or fewer, and one space per four units for buildings with greater than 50 units.
Rincon Hill	Policy 7.1 Require new development to implement portions of the streetscape plan adjacent to their development, and additional relevant in-kind contributions, as a condition of approval.

Rincon Hill	Policy 7.2 Create a community facilities district to fund capital improvements, operation and maintenance of new public spaces, including the Living Streets, the Harrison/Fremont park, and community spaces in the Sailor's Union of the Pacific building.
Rincon Hill	Policy 7.3 Require new development fee to pay an additional per square foot fee to cover features of the public realm plan, based on the need for the public improvements created by new development, that cannot be paid for through the community facilities district.
Rincon Hill	Policy 7.4 The Rincon Hill Streetscape Master Plan serves as the guiding framekwork for the design of streets within the RIncon Hill Plan Area. The City shall seek to implement the plan to the maximum extent feasible, both through its oversight and permitting of privately sponsored street improvements as well as City-sponsored improvements.
Showplace/Potrero	Objective 1.1 Encourage the transition of portions of Showplace/ Potrero to a more mixed use and neighborhood-serving character, while protecting the core of design-related PDR uses.
Showplace/Potrero	Policy 1.1.4 Permit and encourage greater retail use on the ground floor on parcels that front 16th Street to take advantage of transit service and encourage more mixed uses, while protecting against the wholesale displacement of PDR uses.
Showplace/Potrero	Policy 1.2.3 Identify parts of Showplace Square where it would be appropriate to increase maximum heights for residential development.
Showplace/Potrero	Policy 2.2.1 Adopt citywide demolition policies that discourage demolition of sound housing, and encourage replacement of affordable units.
Showplace/Potrero	Policy 2.3.2 Prioritize the development of affordable family housing, both rental and ownership, particularly along transit corridors and adjacent to community amenities.
Showplace/Potrero	Policy 2.3.6 Establish an impact fee to be allocated towards an Eastern Neighborhoods Public Benefit Fund to mitigate the impacts of new development on transit, pedestrian, bicycle, and street improvements, park and recreational facilities, and community facilities such as libraries, child care and other neighborhood services in the area.
Showplace/Potrero	Policy 2.4.1 Require developers to separate the cost of parking from the cost of housing in both for sale and rental developments.
Showplace/Potrero	Policy 2.4.2 Revise residential parking requirements so that structured or off-street parking is permitted up to specified maximum amounts in certain districts, but is not required.
Showplace/Potrero	Policy 2.5.2 Develop affordable family housing in areas where families can safely walk to schools, parks, retail, and other services.
Showplace/Potrero	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Showplace/Potrero	Objective 3.2 Promote an urban form and architectural character that supports walking and sustains a diverse, active, and safe public realm.
Showplace/Potrero	Policy 3.2.7 Strengthen the pedestrian network by extending alleyways to adjacent streets or alleyways wherever possible, or by providing new publicly accessible mid-block rights of way.
Showplace/Potrero	Objective 4.1 Improve the public transit to better serve existing and new development in the Showplace Square / Potrero Hill.

Showplace/Potrero	Policy 4.1.1 Commit resources to an analysis of the street grid, the transportation impacts of new zoning, and mobility needs in Showplace Square Potrero /Eastern Neighborhoods to develop a plan that prioritizes transit while addressing needs of all modes (auto circulation, freeway traffic, bicyclists, pedestrians).
Showplace/Potrero	Policy 4.1.2 Decrease transit travel time and improve reliability through a variety of means, such as transit-only lanes, transit signal priority, transit queue jumps, lengthening of spacing between stops, and establishment of limited or express service.
Showplace/Potrero	Policy 4.1.3 Implement the service recommendations of the Transit Effectiveness Project (TEP).
Showplace/Potrero	Policy 4.1.4 Reduce existing curb cuts where possible and restrict new curb cuts to prevent vehicular conflicts with transit on important transit and commercial streets.
Showplace/Potrero	Policy 4.1.5 Ensure Muni's storage and maintenance facility needs are met to serve increased transit demand and provide enhanced service.
Showplace/Potrero	Policy 4.1.6 Improve public transit service linking Showplace / Potrero to the downtown core and regional transit hubs including Market Street, 4th and King Caltrain station, Civic Center BART station, 16th Street BART station, and the Transbay Terminal.
Showplace/Potrero	Policy 4.1.7 Improve direct transit connectivity from downtown and Mission Bay to Potrero Hill.
Showplace/Potrero	Policy 4.1.8 To the extent possible, balance competing land use and transportation-related priorities for 16th Street in Showplace Square to improve transit speed and reliability.
Showplace/Potrero	Policy 4.1.9 Study the possibility of creating a premium transit service such as Bus Rapid Transit or implementing high-level transit preferential treatments for segments of Mission Street, 16th Street and Potrero Avenue.
Showplace/Potrero	Policy 4.1.10 Consider grade separation of the Caltrain tracks at 16th Street as part of a future high speed rail project.
Showplace/Potrero	Objective 4.2 Increase transit ridership by making it more comfortable and easier to use.
Showplace/Potrero	Policy 4.2.1 Improve the safety and quality of streets, stops and stations used by transit passengers.
Showplace/Potrero	Policy 4.2.2 Provide comprehensive and real-time passenger information, both on vehicles and at stops and stations.
Showplace/Potrero	Objective 4.3 Establish parking policies that improve the quality to neighborhoods and reduce congestion and private vehicle trips by encouraging travel by non-auto modes.
Showplace/Potrero	Policy 4.3.1 For new residential development, provide flexibility by eliminating minimum off-street parking requirements and establishing reasonable parking caps.
Showplace/Potrero	Policy 4.3.2 For new non-residential development, provide flexibility by eliminating minimum off-street parking requirements and establishing caps generally equal to the previous minimum requirements. For office uses, parking should be limited relative to transit accessibility.
Showplace/Potrero	Policy 4.3.3 Make the cost of parking visible to users, by requiring parking to be rented, leased or sold separately from residential and commercial space for all new major development

Showplace/Potrero	Policy 4.3.4 Encourage, or require where appropriate, innovative parking arrangements that make efficient use of space, particularly where cars will not be used on a daily basis.
Showplace/Potrero	Policy 4.3.5 Permit construction of new parking garages only if they are part of shared parking arrangements that efficiently use space, are appropriately designed, and reduce the overall need for off-street parking in the area.
Showplace/Potrero	Policy 4.3.6 Reconsider and revise the way that on-street parking is managed in both commercial and residential districts in order to more efficiently use street parking space and increase turnover and parking availability.
Showplace/Potrero	Objective 4.4 Support the circulation needs of existing and new PDR uses in Showplace Square/ Potrero Hill.
Showplace/Potrero	Policy 4.4.1 Provide an adequate amount of short-term, on-street curbside freight loading spaces throughout Showplace Square.
Showplace/Potrero	Policy 4.4.2 Continue to require off-street facilities for freight loading and service vehicles in new large non-residential developments.
Showplace/Potrero	Policy 4.4.3 In areas with a significant number of PDR establishments, design streets and sidewalks to serve the needs and access requirements of trucks while maintaining a safe pedestrian environment.
Showplace/Potrero	Objective 4.5 Consider the street network in Showplace Square/ Potrero Hill as a city resource essential to multi-modal movement and public open space.
Showplace/Potrero	Policy 4.5.1 Maintain a strong presumption against the vacation or sale of streets or alleys except in cases where significant public benefits can be achieved.
Showplace/Potrero	Policy 4.5.2 As part of a development project's open space requirement, require publicly-accessible alleys that break up the scale of large developments and allow additional access to buildings in the project.
Showplace/Potrero	Policy 4.5.3 Redesign underutilized streets in the Showplace Square area for creation of Living Streets and other usable public space or to facilitate transit movement..
Showplace/Potrero	Objective 4.6 Support walking as a key transportation mode by improving pedestrian circulation within Showplace Square/ Potrero Hill and to other parts of the City.
Showplace/Potrero	Policy 4.6.1 Use established street design standards and guidelines to make the pedestrian environment safer and more comfortable for walk trips.
Showplace/Potrero	Policy 4.6.2 Prioritize pedestrian safety improvements at intersections and in areas with historically high frequencies of pedestrian injury collisions.
Showplace/Potrero	Policy 4.6.3 Improve pedestrian connections between Showplace Square / Potrero Hill and Mission Bay.
Showplace/Potrero	Policy 4.6.4 Facilitate improved pedestrian crossings at several locations along 16th Street to better connect Potrero Hill to the Showplace Square area.
Showplace/Potrero	Policy 4.6.5 Facilitate completion of the sidewalk network in Showplace Square / Potrero Hill, especially where new development is planned to occur.
Showplace/Potrero	Objective 4.7 Improve and expand infrastructure for bicycling as an important mode of transportation.
Showplace/Potrero	Policy 4.7.1 Provide a continuous network of safe, convenient and attractive bicycle facilities connecting Showplace Square / Potrero Hill to the citywide bicycle network and conforming to the San Francisco Bicycle Plan.

Showplace/Potrero	Policy 4.7.2 Provide secure, accessible and abundant bicycle parking, particularly at transit stations, within shopping areas and at concentrations of employment.
Showplace/Potrero	Policy 4.7.3 Explore feasibility of the Mission Creek Bikeway project.
Showplace/Potrero	Objective 4.8 Encourage alternatives to car ownership and the reduction of private vehicle trips.
Showplace/Potrero	Policy 4.8.1 Continue to require car-sharing arrangements in new residential and commercial developments, as well as any new parking garages.
Showplace/Potrero	Policy 4.8.2 Require large retail establishments, particularly supermarkets, to provide shuttle and delivery services to customers.
Showplace/Potrero	Policy 4.8.3 Develop a Transportation Demand Management (TDM) program for the Eastern Neighborhoods that provides information and incentives for employees, visitors and residents to use alternative transportation modes and travel times.
Showplace/Potrero	Objective 4.9 Facilitate movement of automobiles by managing congestion and other negative impacts of vehicle traffic.
Showplace/Potrero	Policy 4.9.1 Introduce traffic calming measures where warranted to improve pedestrian safety and comfort, reduce speeding and traffic spillover from arterial streets onto residential streets and alleyways.
Showplace/Potrero	Policy 4.9.2 Decrease auto congestion through implementation of Intelligent Traffic Management Systems (ITMS) strategies such as smart parking technology, progressive metering of traffic signals and the SFMTA SFGO program.
Showplace/Potrero	Objective 4.10 Develop a comprehensive funding plan for transportation improvements.
Showplace/Potrero	Policy 4.10.1 As part of the Eastern Neighborhoods Public Benefits Program, support funding for transit, pedestrian, bicycle and auto improvements through developer impact fees, in-kind contributions, community facilities districts, dedication of tax revenues, and state or federal grant sources.
Showplace/Potrero	Objective 5.3 Create a network of green streets that connects open spaces and improves the walkability, aesthetics, and ecological sustainability of the neighborhood.
Showplace/Potrero	Policy 5.3.1 Redesign underutilized portions of streets as public open spaces, including widened sidewalks or medians, curb bulb-outs, living streets or green connector streets.
Showplace/Potrero	Policy 5.3.2 Maximize sidewalk landscaping, street trees and pedestrian scale street furnishing to the greatest extent feasible.
Showplace/Potrero	Policy 5.3.3 Design the intersections of major streets to reflect their prominence as public spaces.
Showplace/Potrero	Policy 5.3.4 Enhance the pedestrian environment by requiring new development to plant street trees along abutting sidewalks. When this is not feasible, plant trees on development sites or elsewhere in the plan area.
Showplace/Potrero	Policy 5.3.5 Significant above grade infrastructure, such as freeways, should be retrofitted with architectural lighting to foster pedestrian connections beneath.
Showplace/Potrero	Policy 5.3.6 Where possible, transform unused freeway and rail rights-of-way into landscaped features that provide a pleasant and comforting route for pedestrians.

Showplace/Potrero	Policy 5.3.7 Develop a comprehensive public realm plan for Showplace Square that reflects the differing needs of streets based upon their predominant land use, role in the transportation network, and building scale.
Showplace/Potrero	Objective 8.2 Protect, preserve, and reuse historic resources within the Showplace Square Area Plan.
Showplace/Potrero	Policy 8.2.1 Protect individually significant historic and cultural resources and historic districts in the Showplace Square Area Plan from demolition or adverse alteration.
Showplace/Potrero	Policy 8.2.3 Promote and offer incentives for the rehabilitation and adaptive reuse of historic buildings in the Showplace Square plan area.
Showplace/Potrero	Objective 8.3 Ensure that historic preservation concerns continue to be an integral part of the ongoing planning processes for the Showplace Square Plan Area as they evolve over time.
Showplace/Potrero	Policy 8.3.6 Adopt and revise land use, design and other relevant policies, guidelines, and standards, as needed to further preservation objectives.
Showplace/Potrero	Objective 8.4 Promote the principles of sustainability for the built environment through the inherently green strategy of historic preservation.
Showplace/Potrero	Policy 8.4.1 Encourage the retention and rehabilitation of historic and cultural resources as an option for increased sustainability and consistency with the goals and objectives of the Sustainability Plan for the City and County of San Francisco.
Showplace/Potrero	Policy 8.5.3 Demonstrate preservation leadership and good stewardship of publicly owned historic and cultural resources.
Transit Center	Objective 1.1 Maintain downtown San Francisco as the region's premier location for transit-oriented job growth within the Bay Area.
Transit Center	Objective 1.2 Reinforce the role of downtown within the City as its major job center by protecting and enhancing the central district's remaining capacity, principally for employment growth.
Transit Center	Objective 1.3 Continue to foster a mix of land uses to reinforce the 24-hour character of the area.
Transit Center	Policy 1.1 Increase the overall capacity of the Transit Center District for additional growth.
Transit Center	Policy 1.2 Revise height and bulk limits in the Plan Area consistent with other Plan objectives and considerations.
Transit Center	Policy 1.3 Reserve the bulk of remaining space in the core Transit Center District for job growth, by limiting the amount of non-commercial uses on major opportunity sites.
Transit Center	Policy 1.4 Prevent long-term under-building in the area by requiring minimum building intensities for new development on major sites.
Transit Center	Objective 1.4 Ensure the district maintains areas that contain concentrations of ground-level public-serving retail and convenience uses for workers and visitors.
Transit Center	Objective 1.5 Activate alleys and mid-block pedestrian walkways with active uses in adjacent buildings to make these spaces attractive and enjoyable.
Transit Center	Policy 1.6 Designate certain select street frontages as active retail areas and limit non-retail commercial uses, such as office lobbies, real estate offices, brokerages, and medical offices, from dominating the street level spaces.

Transit Center	Objective 2.1 Maximize building envelope and density in the plan area within the bounds of urban form and livability objectives of the San Francisco general plan.
Transit Center	Objective 2.11 Pursue building setbacks to augment a sidewalk widening program on street frontages where significant contiguous stretches of parcels are likely to be redeveloped.
Transit Center	Objective 2.12 Ensure that development is pedestrian-oriented, fostering a vital and active street life.
Transit Center	Objective 2.13 Enact urban design controls to ensure that the ground-level interface of buildings is active and engaging for pedestrians, in addition to providing adequate supporting retail and public services for the district.
Transit Center	Objective 2.15 Encourage articulation of the building façade to help define the pedestrian realm.
Transit Center	Objective 2.16 Minimize and prohibit blank walls and access to off-street parking and loading at the ground floor on primary streets to help preserve a safe and active pedestrian environment.
Transit Center	Policy 2.15 Establish a pedestrian zone below a building height of 20 to 25 feet through the use of façade treatments, such as building projections, changes in materials, setbacks, or other such architectural articulation.
Transit Center	Policy 2.22 Prohibit access to off-street parking and loading on key street frontages. Whenever possible, all loading areas should be accessed from alleys.
Transit Center	Objective 3.1 Make walking a safe, pleasant, and convenient means of moving about throughout the district.
Transit Center	Objective 3.2 Create a high-quality pedestrian environment in the district consistent with the vision for the central district of a world-class city.
Transit Center	Objective 3.3 Graciously accommodate increases in pedestrian volumes in the district.
Transit Center	Objective 3.4 Emphasize the importance of streets and sidewalks as the largest component of public open space in the Transit Center District.
Transit Center	Policy 3.1 Create and implement a district streetscape plan to ensure consistent corridor-length streetscape treatments.
Transit Center	Policy 3.2 Widen sidewalks to improve the pedestrian environment by providing space for necessary infrastructure, amenities and streetscape improvements.
Transit Center	Policy 3.3 Facilitate pedestrian circulation by providing sidewalk widths that meet the needs of projected pedestrian volumes and provide a comfortable and safe walking environment.
Transit Center	Policy 3.5 Continue the Living Streets treatment to create linear plazas along Beale, Main, and Spear streets.
Transit Center	Policy 3.6 Create additional pedestrian capacity and shorten pedestrian crossing distances by narrowing roadways and creating corner curb bulbouts.
Transit Center	Policy 3.7 Enhance pedestrian crossings with special treatments (e.g. paving, lighting, raised crossings) to enhance pedestrian safety and comfort, especially where bulb-outs cannot be installed.
Transit Center	Policy 3.8 Develop "quality of place" and "quality of service" indicators and benchmarks for the pedestrian realm in the district, and measure progress in achieving benchmarks on a regular basis.

Transit Center	Objective 3.5 Restrict curb cuts on key streets to increase pedestrian comfort and safety, to provide a continuous building edge of ground floor uses, to provide a continuous sidewalk for streetscape improvements and amenities, and to eliminate conflicts with transit.
Transit Center	Policy 3.9 Designate plan area streets where no curb cuts are allowed or are discouraged. Where curb cuts are necessary, they should be limited in number and designed to avoid maneuvering on sidewalks or in street traffic. When crossing sidewalks, driveways should be only as wide as necessary to accomplish this function.
Transit Center	Objective 3.6 Enhance the pedestrian network with new linkages to provide direct and varied pathways, to shorten walking distances, and to relieve congestion at major street corners.
Transit Center	Objective 3.7 Encourage pedestrians arriving at or leaving the Transit Center to use all entrances along the full length of the Transit Center by maximizing access via mid-block passageways and crosswalks.
Transit Center	Objective 3.8 Ensure that new development enhances the pedestrian network and reduces the scale of long blocks by maintaining and improving public access along existing alleys and creating new through-block pedestrian connections where none exist.
Transit Center	Objective 3.9 Ensure that mid-block crosswalks and through-block passageways are convenient, safe, and inviting.
Transit Center	Policy 3.10 Create convenient pedestrian access by providing signalized mid-block crosswalks, especially on blocks longer than 300 feet.
Transit Center	Policy 3.11 Prohibit the elimination of existing alleys within the District. Consider the benefits of shifting or re-configuring alley alignments if the proposal provides an equivalent or greater degree of public circulation.
Transit Center	Policy 3.12 Design new and improved through-block pedestrian passages to make them attractive and functional parts of the public pedestrian network.
Transit Center	Policy 3.13 Require a new public mid-block pedestrian pathway on Block 3721, connecting Howard and Natoma Streets between First and Second streets.
Transit Center	Policy 3.14 Close Shaw Alley permanently to vehicles and design it as a pedestrian-only open space for thru-connection to the Transit Center.
Transit Center	Policy 3.15 Convert the western portion of Natoma Street between First and Second streets on the south side of the Transit Center to a primarily pedestrian-only street.
Transit Center	Policy 3.20 Consider extending the Transit Center rooftop park along the new bus ramp, so that it connects to a possible future bay bridge multiuse pathway.
Transit Center	Objective 4.1 The district's transportation system will prioritize and incentivize the use of transit. Public transportation will be the main, non-pedestrian mode for moving into and between destinations in the Transit Center District.
Transit Center	Objective 4.2 The district’s transportation system will implement and require transportation demand management strategies to minimize growth in auto trips and reduce volumes as necessary. Actively manage the transportation system to optimize person-carrying capacity.
Transit Center	Objective 4.3 The district's transportation system will meet changing transit needs, particularly to support the new Transbay Transit Center and accommodate increased densities. Make changes in the circulation network that ensure delivery of reliable and convenient transit service to the Transbay Transit Center and for district residents, employees, and visitors.

Transit Center	Objective 4.4 The district's transportation system will prioritize pedestrian amenity and safety. Invest in circulation modifications and urban design measures that support the creation of an attractive and memorable public realm.
Transit Center	Objective 4.5 The district's transportation system will build on successful traffic and parking management programs and policies that are in place. Expand and strengthen existing adopted policies (e.g. Downtown Plan, C-3 parking controls) and current planning initiatives (e.g. Transit Effectiveness Project, SFPark).
Transit Center	Objective 4.6 The district's transportation system will require management of Bay Bridge queues to reduce and mitigate impacts of regional traffic on transit circulation and the public realm in the district.
Transit Center	Objective 4.7 The district's transportation system will further sustainability goals. Advance the goals of the City's climate action plan, by reducing greenhouse gas emissions generated by vehicular transportation.
Transit Center	Objective 4.8 Design the circulation system and transit facilities to accommodate anticipated growth in travel to and through the district in 2030 and beyond.
Transit Center	Objective 4.9 Prioritize transit movements through and within the district over all other transportation modes.
Transit Center	Objective 4.10 Design transit facilities to improve the reliability and function of transit movements and to enhance the rider experience.
Transit Center	Objective 4.11 Ensure that changes to the circulation network, including pedestrian and streetscape improvements, are designed to support and enhance the operation of transit.
Transit Center	Policy 4.1 Extend self-enforcing, dedicated transit lanes throughout the district.
Transit Center	Policy 4.2 Design all transit lanes to be self-enforcing and to heighten awareness of transit facilities.
Transit Center	Policy 4.3 Evaluate the concept for a transit-only zone on Mission between First and Fremont streets.
Transit Center	Objective 4.12 Provide high-quality facilities and experience for transit passengers.
Transit Center	Policy 4.4 Provide sidewalk space and facilities for enhanced transit stops with passenger amenities on Mission Street and other primary transit streets.
Transit Center	Objective 4.13 Support enhanced funding and capacity for regional transit service to support increases in population and employment growth as well as shifts from auto to public transit travel.
Transit Center	Policy 4.5 Support funding and construction of the Transbay Transit Center project to further goals of the District Plan, including completion of the Downtown Extension for Caltrain and High Speed Rail.
Transit Center	Policy 4.6 Ensure that regional transit carriers operating on city streets are prioritized along with local transit by implementing the surface transit priority improvements proposed in this plan.
Transit Center	Policy 4.7 Work with BART to identify and fund measures to increase capacity as necessary to serve the District, particularly at the Montgomery and Embarcadero stations.
Transit Center	Objective 4.14 Support enhanced funding and capacity for local transit service to support increases in population and employment growth as well as shifts from auto to public transit travel.

Transit Center	Policy 4.8 Support revenue measures and investments essential to enhancing Muni's capacity, reliability and operational efficiency in providing service to and within the District.
Transit Center	Objective 4.15 Use demand management strategies to reduce overall levels of auto traffic in the plan area and downtown, particularly in the peak hours, in order to reduce auto impacts on other transportation modes and enable the creation of a high quality public realm.
Transit Center	Policy 4.9 Complete a detailed traffic analysis for the downtown and the District specifically to determine which TDM measures will be most effective and necessary to reduce traffic volumes and traffic impacts on the District.
Transit Center	Policy 4.10 Update the goals of the Downtown Plan and establish specific targets for cumulative traffic volumes and non-auto travel that are necessary to achieve the conditions that enable the flow of transit, the flow of local circulation, and the creation of the public realm infrastructure as proposed by the Plan.
Transit Center	Policy 4.11 Study the feasibility of and implement, as feasibility and necessity determines, congestion pricing of roadways as a primary tool to reduce overall traffic levels in the Plan area, particularly peak-hour bridge and freeway queues.
Transit Center	Objective 4.16 Create a parking plan that encourages the use of public transit and other modes of transportation that are alternatives to single-occupant vehicles.
Transit Center	Objective 4.17 Create and ensure compliance with mechanisms that provide workers and residents with incentives to take transit and use modes of transportation other than single-occupant autos.
Transit Center	Policy 4.12 Ensure compliance with the Commuter Benefits Ordinance.
Transit Center	Policy 4.13 Pursue creation of requirements for transportation incentives and brokerage services for large residential properties in the District.
Transit Center	Objective 4.18 Encourage the use of non-auto modes of transportation by requiring participation in a transportation demand management program in new buildings throughout the district.
Transit Center	Objective 4.19 Ensure that brokerage and TDM requirements are appropriate for current and future travel patterns for the district and downtown, are designed for greatest effectiveness while maintaining flexibility, include all modes of transportation, and provide a toolkit of financial incentives to reduce auto trips.
Transit Center	Policy 4.14 Reduce the size threshold for new and renovated buildings to trigger the requirement for transportation demand management and participation in the Transportation Management Association (TMA).
Transit Center	Policy 4.15 Expand the TMA requirement to include non-office uses, including hotels, large retail, cultural, and institutional uses.
Transit Center	Policy 4.16 Require commercial property managers or owners to monitor and report yearly mode split or peak-hour vehicle trips of their employees and to increase or modify TDM programs if targets are not being met.
Transit Center	Policy 4.17 Fund a comprehensive study to develop recommendations on the structure, operations, and authority of the existing downtown Transportation Management Association (TMA), update the goals and tools available to the TMA, and evaluate whether a district-specific TMA is needed.
Transit Center	Policy 4.18 Expand the purview and funding of the existing downtown transportation management association (TMA) or create a district-specific TMA.

Transit Center	Policy 4.19 Require that the downtown transportation management association (TMA) duties, programs, and funding be reviewed and updated every 5 years and updated if necessary.
Transit Center	Policy 4.20 Develop a transportation monitoring and enforcement plan for the district based on adopted performance measures; to be implemented by the TMA with annual reports submitted to planning and San Francisco municipal transportation agency.
Transit Center	Objective 4.20 Make walking a safe, pleasant, and convenient means of moving to and throughout the district.
Transit Center	Objective 4.21 Create a high-quality pedestrian environment in the district consistent with the vision for the central district of a world-class central city.
Transit Center	Objective 4.22 Graciously accommodate increases in pedestrian volumes in the district.
Transit Center	Objective 4.23 Emphasize the importance of streets and sidewalks as the largest component of public open space in the Transit Center District.
Transit Center	Policy 4.21 Facilitate pedestrian circulation by providing sidewalk widths that meet the needs of projected pedestrian volumes and provide a comfortable and safe walking environment.
Transit Center	Policy 4.22 Create and implement a district streetscape plan to ensure consistent corridor-length streetscape treatments.
Transit Center	Policy 4.23 Widen sidewalks to improve the pedestrian environment by providing space for necessary infrastructure, amenities and streetscape improvements.
Transit Center	Policy 4.24 Facilitate pedestrian circulation by providing sidewalk widths that meet the needs of projected pedestrian volumes and provide a comfortable and safe walking environment.
Transit Center	Policy 4.26 Create additional pedestrian capacity and shorten pedestrian crossing distances by narrowing roadways, and creating corner curb bulbouts.
Transit Center	Policy 4.27 Enhance crosswalks with special treatments (e.g. paving, lighting, raised crossings) to enhance pedestrian safety and comfort especially at potential conflict locations, such as at new mid-block crosswalks or where bulbouts cannot be installed.
Transit Center	Policy 4.28 Develop “quality of service” indicators and benchmarks for pedestrian travel to and through the district, and measure progress in achieving benchmarks on a regular basis.
Transit Center	Objective 4.24 Restrict curb cuts on key streets to increase pedestrian comfort and safety, to provide a continuous building edge of ground floor uses, to provide a continuous sidewalk for streetscape improvements and amenities, and to eliminate conflicts with transit.
Transit Center	Policy 4.29 Designate plan area streets where no curb cuts are allowed or are discouraged. Where curb cuts are necessary, they should be limited in number and designed to avoid maneuvering on sidewalks or in street traffic.
Transit Center	Objective 4.25 Enhance the pedestrian network with new linkages to provide direct and varied pathways, to shorten walking distances, and to relieve congestion at major street corners.
Transit Center	Objective 4.26 Encourage pedestrians arriving at or leaving the Transit Center to use all entrances along the full length of the Transit Center by maximizing access via mid-block passageways and crosswalks.

Transit Center	Objective 4.27 Ensure that new development enhances the pedestrian network and reduces the scale of long blocks by maintaining and improving public access along existing alleys and by creating new through-block pedestrian connections where none exist.
Transit Center	Objective 4.28 Ensure that mid-block crosswalks and through-block passageways are convenient, safe, and inviting.
Transit Center	Policy 4.30 Create convenient pedestrian access by providing signalized mid-block crosswalks, especially on blocks longer than 300 feet.
Transit Center	Policy 4.31 Prohibit the elimination of existing alleys within the district. Consider the benefits of shifting or re-configuring alley alignments if the proposal provides an equivalent or greater degree of public circulation.
Transit Center	Policy 4.32 Design new and improved through-block pedestrian passages to make them attractive and functional parts of the public pedestrian network.
Transit Center	Policy 4.33 Require a new public mid-block pedestrian pathway on block 3721, connecting Howard and Natoma streets between First and Second streets.
Transit Center	Policy 4.34 Close Shaw Alley permanently to vehicles and design it as a pedestrian-only open space for thru-connection to the Transit Center.
Transit Center	Policy 4.35 Convert the western portion of Natoma Street between First and Second streets on the south side of the Transit Center to a primarily pedestrian-only street.
Transit Center	Objective 4.29 Make cycling a safe, pleasant, and convenient means of transportation throughout the district.
Transit Center	Objective 4.30 Ensure high-quality on-street bicycle connections to the Transbay Transit Center.
Transit Center	Objective 4.31 Enhance facilities for intra-district bicycle travel.
Transit Center	Objective 4.32 Ensure local connections to regional bicycle facilities.
Transit Center	Policy 4.36 Expand the bicycle network in the area.
Transit Center	Policy 4.37 Provide the necessary connections to the future bicycle ramp on Howard Street between First and Second streets, which will be the primary access point for bicycles to the Transit Center, including a bicycle station at the train concourse level.
Transit Center	Policy 4.38 Do not preclude future connections to a potential bay bridge multi-use pathway.
Transit Center	Objective 4.33 Ensure the provision of adequate secure, on- and off-street bicycle parking facilities to accommodate and encourage employees to cycle for commuting and daily needs.
Transit Center	Policy 4.39 Increase the requirement for secure bicycle parking in new and renovated non-residential buildings to a minimum of five percent of peak on-site employees and visitors.
Transit Center	Policy 4.40 Develop a plan to identify demand and locations for installation of on-street bicycle parking in the plan area to supplement current process of bicycle racks being installed at the request of building owners.
Transit Center	Policy 4.41 Pursue legislation to require existing commercial and industrial development to provide secure bicycle parking in conformance with current requirements or to allow employees to bring bicycles into the building if parking is not provided.

Transit Center	Policy 4.42 Support and implement a public bicycle sharing program in the district.
Transit Center	Policy 4.43 Update and publish an improved bicycle parking design guidelines document to establish appropriate parameters for off-street bicycle parking in new residential, commercial, and industrial development, consistent with the requirements in the planning code.
Transit Center	Objective 4.34 Facilitate traffic flow to and through the district at levels that are consistent with envisioned improvements for transit, pedestrians and bicycles.
Transit Center	Objective 4.35 Mitigate the impacts of regional auto traffic within the district.
Transit Center	Objective 4.36 Design streets to slow and calm traffic, to improve safety and attractiveness for all road users, commerce and for social interaction.
Transit Center	Objective 4.37 Facilitate improved circulation within the district for local destinations.
Transit Center	Policy 4.44 Do not compromise pedestrian, bicycle, or transit amenity or service within the district to accommodate or maintain levels of service for regional auto trips.
Transit Center	Policy 4.45 Pursue measures to actively manage traffic volumes and bridge and freeway vehicle queues in order to achieve appropriate levels of traffic necessary to allow for the creation of the public realm and circulation system envisioned and necessary for the district.
Transit Center	Policy 4.46 Prioritize vehicle trips that increase the efficiency and person-carrying capacity of the transportation system (e.g. Carpools, taxis) and that are “high-value” (e.g. Goods movement, emergency response).
Transit Center	Policy 4.47 Consider rerouting bridge and freeway vehicle queues onto other streets outside the core of the district, avoiding primary transit, bicycle, and pedestrian streets.
Transit Center	Policy 4.48 Consider converting some one-way streets to two-way in order to improve local circulation.
Transit Center	Policy 4.49 Support taxi use and circulation in the district but manage their circulation to prevent conflicts with other transportation modes, particularly transit and bicycles.
Transit Center	Objective 4.38 Create a parking supply and demand management plan that encourages the use of public transit and other non-single occupant vehicle modes of transportation.
Transit Center	Objective 4.39 Limit growth in auto trips to the district and congestion through strict limits on the supply of parking.
Transit Center	Objective 4.40 Establish a parking pricing structure as a primary strategy to manage parking demand and achieve goals for parking turnover and availability.
Transit Center	Objective 4.41 Implement parking management strategies and technologies that facilitate the dynamic management of parking supply and demand.
Transit Center	Objective 4.42 Minimize the impacts of parking facilities on transit, pedestrians, and building design by regulating the location and design of parking facilities, including entrance and egress locations.
Transit Center	Policy 4.50 Establish an absolute maximum cap on number of parking spaces in the district and adjacent areas based on the established targets for traffic reduction and goals for transit usage.

Transit Center	Policy 4.51 Scrutinize and restrict new accessory and non-accessory parking in the plan area until a comprehensive cap on new parking is adopted.
Transit Center	Policy 4.52 Increase and expand active management of on- and off-street parking, such as SFPark.
Transit Center	Policy 4.53 Prohibit parking and loading curb cuts on key transit and pedestrian streets, including Mission, Second, and Folsom streets.
Transit Center	Policy 4.54 Do not permit any new surface parking lots in the district, including as temporary uses.
Transit Center	Policy 4.56 Require that temporary surface parking lots, as a condition of any re-authorization, include facilities for other non-private auto modes, including parking for car sharing vehicles and bicycles.
Transit Center	Policy 4.57 Develop an administrative enforcement mechanism and authority to levy administrative fines for the existing planning code requirement for short-term parking pricing and prohibitions on discount rates for long-term parking.
Transit Center	Policy 4.58 Consider making all non-residential parking, including accessory parking, subject to the City's parking tax, regardless of whether such parking is made available to the public for a fee.
Transit Center	Policy 4.59 Develop a local enforcement mechanism for the existing state of California "parking cash-out" law for parking accessory to commercial development.
Transit Center	Policy 4.60 Develop a local parking cash-out ordinance to apply to all parking accessory to commercial development.
Transit Center	Policy 4.61 Support the establishment of a citywide multimodal transportation fee for new development that reflects the number of parking spaces and auto trips generated and invests the revenue in projects and programs that reduce or mitigate vehicle trips.
Transit Center	Objective 4.45 Minimize conflicts of loading activity with pedestrians, transit, bicycles, and automobile traffic through siting, design, and operational regulation of loading.
Transit Center	Policy 4.63 Require loading docks to be located only on alleys and on streets where curb cuts are not restricted.
Transit Center	Policy 4.64 Restrict commercial loading and deliveries to non-peak periods.
Transit Center	Policy 4.65 Where sidewalks are widened through the elimination of on-street parking, consider the creation of on-street loading "pull-outs" where sufficient sidewalk space exists without compromising pedestrian space and infrastructure.
Transit Center	Policy 4.67 Explore the feasibility of using the TMA to facilitate coordination of deliveries for member buildings.
Transit Center	Policy 4.68 Explore the feasibility of creating centralized distribution centers in or near the district for commercial deliveries, enabling the use of smaller and non-motorized vehicles for deliveries within the district.
Transit Center	Policy 4.69 Develop and adopt an enforcement mechanism to effectively impose loading and truck limitations.
Transit Center	Objective 4.47 Ensure that adequate space is provided for car sharing services throughout the district accessible to residents, employees, and visitors.

Transit Center	Policy 4.70 Pursue the dedication of on-street parking spaces for car sharing vehicles. Work with the MTA to identify appropriate locations for dedicated on-street parking spaces for car sharing vehicles.
Transit Center	Objective 4.48 Support the casual carpool system by enhancing existing facilities and amenities. If necessary, the carpool facilities should be reconfigured or relocated to equally convenient locations.
Transit Center	Objective 4.49 Encourage the creation of new and extended alleys wherever feasible to enhance the pedestrian and bicycle network, provide off-street loading opportunities, and enhance access for service and emergency response vehicles.
Transit Center	Policy 4.74 Create new public alleys on long blocks, including at the following locations: Natoma Street (1 block between Beale and Main streets) Tehama Street (1 block between Beale and Main streets) Clementina Street (2 blocks between 1st and Beale streets) Clementina Street (2 blocks between Beale and Spear streets)
Transit Center	Policy 5.1 Protect individually significant historic and cultural resources and historic districts in the Transit Center district plan from demolition or adverse alteration.
Transit Center	Objective 5.2 Provide preservation incentives, guidance, and leadership within the Transit Center District plan area.
Transit Center	Policy 5.5 Develop incentives that promote the retention and rehabilitation of significant resources within the Transit Center district plan area.
Transit Center	Objective 5.4 Promote well-designed, contemporary infill development within the historic core of the Transit Center District plan area.
Transit Center	Objective 6.2 Capitalize on the balanced, dense, mixed-use development in the Transit Center district and Transbay redevelopment areas to enact district-scale energy measures.
Transit Center	Objective 6.4 Ensure that new buildings constructed in the plan area represent leading edge design in terms of sustainability, both high performance for their inhabitants and low impact on the environment.
Transit Center	Policy 6.12 Consider requiring all major buildings in the plan area to achieve the minimum LEED levels established in the SF Green Building Ordinance excluding credits for the given inherent factors of location, density, and existing city parking controls, in order to achieve high-performance buildings.
Western SoMa	Objective 1.1 Build on an existing mixed-used character that encourages production of residential uses in areas most appropriate for new housing with a proximate mix of uses and services serving local needs and thereby developing a complete neighborhood.
Western SoMa	Policy 1.1.2 Western SoMa land uses should progress from non-residential uses south of Harrison Street northward to an increasingly residential neighborhood with retention of a mix of uses and new mixed-use developments where appropriate.
Western SoMa	Policy 1.1.4 Encourage increased height and density in the "Downtown Folsom" neighborhood serving commercial corridor between 7th and 10th Streets.
Western SoMa	Policy 1.1.7 Establish vertical zoning standards in locations encouraging new mixed-use development and preserving a mix of uses.
Western SoMa	Policy 1.4.1 Minimize exposure to air pollutants from existing traffic sources for new residential developments, schools, daycare and medical facilities.

Western SoMa	Objective 1.5 Support continued evaluation of land uses near major transit infrastructure in recognition of citywide and regional sustainable growth needs.
Western SoMa	Objective 2.1 Retain and encourage growth opportunities for existing neighborhood businesses.
Western SoMa	Policy 2.1.4 Create incentives for adaptive re-use of existing commercial buildings throughout the western SoMa SUD.
Western SoMa	Policy 2.1.6 Retain to the greatest extent possible neighborhood-serving commercial uses in walking proximity to existing and new additions to the neighborhood housing stock.
Western SoMa	Policy 2.1.7 Encourage innovation, creativity and start-up business opportunities through adaptive re-use programs that encourage building rehabilitation over demolition and new construction proposals.
Western SoMa	Policy 2.2.13 Clearly designate and differentiate streets and their associated zoning for functional goods and services movement from streets with pedestrian and bicycle orientations.
Western SoMa	Policy 2.2.14 Provide adequate customer parking and goods loading areas in a manner that minimizes negative impacts on transit, bike and pedestrian movements on neighborhood commercial streets.
Western SoMa	Objective 3.1 Preserve existing neighborhood housing resources.
Western SoMa	Policy 3.1.1 Restrict residential demolitions and residential conversions of rent-controlled units per planning code section 317.
Western SoMa	Policy 3.1.2 Support the identification and preservation of historic housing resources in a new SoMa historic preservation districts.
Western SoMa	Policy 3.1.4 Provide residential zoning protections including but not limited to codified “western SoMa design standards,” notification and demolition controls in all western SoMa SUD zoning districts.
Western SoMa	Objective 3.2 Encourage new neighborhood residential uses in locations that provide the greatest opportunities to build on the existing neighborhood patterns
Western SoMa	Policy 3.2.12 Discourage any and all proposed housing proposals on arterial streets and highways that do not providing a physical buffer from existing traffic noise and pollution.
Western SoMa	Policy 3.3.2 Where new zoning has conferred increased development potential; ensure that mechanisms are in place for developers to contribute towards community benefits programs that include open space, transit, community facilities/services, historic/social heritage preservation and affordable housing, above and beyond citywide inclusionary requirements.
Western SoMa	Policy 3.5.2 Prioritize the development of affordable family housing, both rental and ownership, particularly along transit corridors and adjacent to community amenities.
Western SoMa	Policy 3.5.6 Establish an impact fee to be allocated towards a public benefit fund to subsidize transit, pedestrian, bicycle, and street improvements; park and recreational facilities; and community facilities such as libraries, child care and other neighborhood services in the area.
Western SoMa	Objective 3.6 Lower housing production costs.
Western SoMa	Policy 3.6.1 Require developers to separate the cost of parking from the cost of housing in both for sale and rental developments.

Western SoMa	Policy 3.6.2 Allow for the unbundling and off-site provision of residential parking.
Western SoMa	Policy 3.6.3 Revise residential parking requirements in a way that permits structured or off-street parking up to specified maximum amounts in certain districts, but is not required.
Western SoMa	Objective 3.7 Promote health through residential development design and location.
Western SoMa	Policy 3.7.1 Consider housing production a priority in environmentally and socially healthy locations.
Western SoMa	Policy 3.7.2 Develop affordable family housing in areas where families can safely walk to schools, parks, retail, and other services.
Western SoMa	Objective 4.1 Facilitate the movement of pedestrians and bicycles in the alleys.
Western SoMa	Policy 4.1.1 Introduce treatments that effectively improve the pedestrian experience in alleys.
Western SoMa	Policy 4.1.2 Limit the supply of on-street parking in some alleys, in order to accommodate pedestrian and bicycle movement.
Western SoMa	Policy 4.1.3 Improve street lighting in alleys.
Western SoMa	Policy 4.1.4 Provide pedestrian crossings that unite alleys on both sides of a neighborhood- serving street.
Western SoMa	Objective 4.2 Limit the speed and volume of motor vehicles in alleys.
Western SoMa	Policy 4.2.1 Restrict the entry of motor vehicles in alleys.
Western SoMa	Policy 4.2.3 Employ traffic calming measures on alleys.
Western SoMa	Policy 4.2.4 Prohibit the circulation of freight and service vehicles on residential alleys.
Western SoMa	Objective 4.3 Reduce the impacts of commercial development on neighborhood-serving streets by promoting alternative transportation modes.
Western SoMa	Policy 4.3.1 Develop commercial uses on specific streets, making them easily accessed by transit and non-motorized transportation.
Western SoMa	Policy 4.3.2 Reduce the supply of on-street parking on some neighborhood-serving streets, in order to accommodate transit and bicycle lanes.
Western SoMa	Policy 4.3.3 Promote walking and bicycling to/from the designated neighborhood commercial (nc) districts by introducing pedestrian and environmental improvements.
Western SoMa	Policy 4.3.4 Reduce auto-oriented facilities on neighborhood-serving streets.
Western SoMa	Policy 4.3.5 Develop transportation system improvements, based on an analysis of existing and future conditions.
Western SoMa	Policy 4.3.6 Collaborate with the MTA to study the feasibility of developing parking pricing policies.
Western SoMa	Objective 4.4 Ensure a minimum level of safety on neighborhood- serving streets.
Western SoMa	Policy 4.4.1 Provide a basic level of common services at major transit nodes, preventing these areas from being perceived to be isolated.
Western SoMa	Policy 4.4.2 Introduce traffic calming measures that promote pedestrian and bicycle transportation and safety.

Western SoMa	Policy 4.4.3 Provide mid-block crossings for better access to major activities and facilities.
Western SoMa	Policy 4.4.4Improve transit facilities and services on streets with existing transit service, providing passengers with better access to nearby destinations.
Western SoMa	Policy 4.4.5 Reduce posted speeds along neighborhood-serving streets to 20 mph.
Western SoMa	Policy 4.4.6 Coordinate with MTA to develop an ongoing set of pedestrian and bicycle safety improvements for neighborhood-serving streets.
Western SoMa	Objective 4.5 Design neighborhood-serving streets according to local needs and desires.
Western SoMa	Policy 4.5.1 Improve connections to regional transit services.
Western SoMa	Objective 4.6 Integrate neighborhood-serving street policies with other planning efforts.
Western SoMa	Policy 4.6.1 Promote cooperation between agencies and programs involved in planning SoMa.
Western SoMa	Policy 4.6.2 Work with the MTA to identify new transit needs on neighborhood-serving streets.
Western SoMa	Objective 4.7 Reduce the impacts of increased neighborhood commercial development on Folsom Street by encouraging the use of alternative modes of transportation.
Western SoMa	Policy 4.7.1 Develop commercial uses on Folsom Street that are easily accessed by transit and non-motorized transportation.
Western SoMa	Policy 4.7.2 Design and implement an on-street parking scheme for Folsom street.
Western SoMa	Policy 4.7.3 Promote walking and other non-motorized travel modes to/from neighborhood commercial segments of Folsom street by introducing pedestrian and environmental improvements.
Western SoMa	Policy 4.7.4 Reduce or prohibit auto-oriented facilities on Folsom Street.
Western SoMa	Policy 4.7.5 Develop transportation system improvements on Folsom Street, based on an analysis of existing and future conditions.
Western SoMa	Policy 4.7.6 Collaborate with the MTA to develop parking pricing policies.
Western SoMa	Policy 4.7.7 Require large commercial developments to provide on-site travel demand management (TDM) programs incorporating a variety of measures, to ensure vehicle trip reduction.
Western SoMa	Policy 4.7.8 Encourage large residential developments to provide TDM benefits to individual tenants.
Western SoMa	Objective 4.8 Ensure safety on Folsom street, particularly for residents and other users of the system.
Western SoMa	Policy 4.8.1 Provide a basic level of common services at major transit nodes, preventing these areas from being perceived as isolated.
Western SoMa	Policy 4.8.2 Introduce traffic calming measures that will promote pedestrian and bicycle transportation and safety in the area.

Western SoMa	Policy 4.8.3 Provide mid-block crossings on Folsom street (between 6th and 9th streets) that provide pedestrians with better access to major activities and local alley networks in the vicinity.
Western SoMa	Policy 4.8.4 Improve on-street transit facilities and services, providing passengers with better access to major destinations along Folsom street.
Western SoMa	Policy 4.8.5 Reduce roadway conflicts between transit vehicles, bicyclists and pedestrians.
Western SoMa	Policy 4.8.6 Coordinate with MTA to develop a minimum set of required pedestrian and bicycle safety improvements.
Western SoMa	Objective 4.9 Design Folsom street consistent with local needs and desires.
Western SoMa	Policy 4.9.1 Identify Folsom street as a corridor providing connections to regional transit.
Western SoMa	Objective 4.10 Integrate Folsom street policies with other planning efforts.
Western SoMa	Policy 4.10.1 Promote cooperation between agencies and programs involved in planning SoMa, consistent with the provisions of the administrative code.
Western SoMa	Policy 4.10.2 Work with the MTA to identify new transit needs on Folsom street, including routes, frequencies, and amenities.
Western SoMa	Objective 4.11 Restrict regional traffic to a north-south and east-west couplet of streets that directly connect to the central freeway.
Western SoMa	Policy 4.11.1 Provide adequate motor vehicle capacity along regional streets.
Western SoMa	Policy 4.11.2 Restrict all freight and service traffic to regional streets.
Western SoMa	Objective 4.12 Ensure a minimum level of safety on regional streets, particularly for residents and other users of the system.
Western SoMa	Policy 4.12.1 Enhance the walking experience by introducing pedestrian and environmental improvements.
Western SoMa	Policy 4.12.2 Develop transportation system improvements on regional streets, based on an analysis of existing and future conditions.
Western SoMa	Policy 4.12.3 Coordinate with MTA to develop a minimum set of required pedestrian and bicycle safety improvements.
Western SoMa	Objective 4.13 Integrate regional street policies with other planning efforts.
Western SoMa	Policy 4.13.1 Promote cooperation between agencies and programs involved in planning SoMa.
Western SoMa	Objective 4.14 Reduce the negative impacts of goods movement on local neighborhoods.
Western SoMa	Policy 4.14.1 Introduce roadside signage indicating commercial vehicle limitations within the western SoMa SUD.
Western SoMa	Policy 4.14.2 Mitigate the undesirable effects of goods movement by limiting freight loading and unloading to designated streets at specific times of the day.
Western SoMa	Policy 4.14.3 Strictly enforce yellow and special vehicle loading zones to facilitate deliveries and pickups at appropriate locations, and to reduce double-parking.
Western SoMa	Policy 4.14.4 Provide an adequate number of curbside freight loading spaces in the western SoMa SUD.

Western SoMa	Policy 4.14.5 Conduct exposure assessments in sensitive areas where vehicle volumes are above acceptable levels.
Western SoMa	Policy 4.14.6 Work with the departments of public health and building inspection to develop new building code requirements to mitigate ambient air pollution hazards.
Western SoMa	Objective 4.15 Improve safety for local residents and merchants by restricting commercial vehicle traffic in the western SoMa SUD.
Western SoMa	Policy 4.15.1 Prohibit service vehicles and commercial traffic from operating in areas not designated as arterial freight routes.
Western SoMa	Policy 4.15.2 Employ traffic calming measures, in order to mitigate the impacts of freight traffic.
Western SoMa	Policy 4.15.3 Prioritize commercial vehicle intersections for traffic calming.
Western SoMa	Policy 4.15.4 Reduce speeds on regional freight routes in the western SoMa.
Western SoMa	Policy 4.15.5 Limit pin-to-axle lengths for trucks entering two-way streets.
Western SoMa	Objective 4.16 Utilize the public benefit fee package to generate revenues for financing improvements to streets damaged by truck traffic.
Western SoMa	Policy 4.16.1 Develop a nexus study for evaluating the magnitude of truck impacts on street surfaces in the SoMa.
Western SoMa	Objective 4.17 Integrate goods movement policies with other planning efforts.
Western SoMa	Policy 4.17.1 Collaborate with the MTA, SFCTA, DPW and other agencies to develop a strategy for improving the distribution of commercial vehicles in western SoMa.
Western SoMa	Policy 4.17.2 Study ways of implementing a set of restrictions on freight traffic passing through the western SoMa SUD.
Western SoMa	Policy 4.17.3 Work with the MTA on revising the loading zone system in western SoMa.
Western SoMa	Objective 4.18 Promote non-polluting public transit.
Western SoMa	Policy 4.18.1 Develop Folsom street as a priority public transit corridor.
Western SoMa	Policy 4.18.2 Improve transit reliability.
Western SoMa	Policy 4.18.3 Develop on-site TDM programs, with the support of a nexus study, incorporating a variety of measures, to ensure vehicle trip reduction.
Western SoMa	Policy 4.18.4 Develop programs that provide TDM benefits to residential tenants.
Western SoMa	Policy 4.18.5 Implement public transit improvements that reduce conflicts between transit vehicles, bicyclists and pedestrians on “transit preferential streets.”
Western SoMa	Policy 4.18.6 Encourage transit to be modified in response to land use change.
Western SoMa	Policy 4.18.7 Apply priority treatment to streets where transit is available.
Western SoMa	Policy 4.18.8 Encourage transit vehicles to be non-polluting.
Western SoMa	Objective 4.19 Utilize the existing western SoMa proximity to public transit.
Western SoMa	Policy 4.19.1 Provide links to local and regional transit services.

Western SoMa	Policy 4.19.2 Improve east-west transit connectivity in the area.
Western SoMa	Policy 4.19.3 Improve north-south transit connectivity in the area.
Western SoMa	Objective 4.20 Integrate transit policies with other planning efforts.
Western SoMa	Policy 4.20.1 Coordinate transit improvements in the western SoMa SUD so that they are consistent with larger transit efforts.
Western SoMa	Objective 4.21 Provide safe, efficient and pleasant pedestrian circulation in western SoMa.
Western SoMa	Policy 4.21.1 Ensure convenient and safe pedestrian crossings.
Western SoMa	Policy 4.21.2 Improve sidewalk lighting to ensure safety and security.
Western SoMa	Policy 4.21.3 Create safe pedestrian and bicycle routes to community facilities.
Western SoMa	Policy 4.21.4 Maintain the physical state of streets and sidewalks.
Western SoMa	Policy 4.21.5 Slow traffic on streets adjacent to the freeway.
Western SoMa	Policy 4.21. Prohibit the provision of multiple left-turn lanes at all intersections.
Western SoMa	Policy 4.21.7 Prohibit free right turns off of freeways onto adjoining streets.
Western SoMa	Policy 4.21.8 Designate mid-block crossings in areas of high pedestrian traffic.
Western SoMa	Policy 4.21. Improve pedestrian safety at freeway underpasses and ramps.
Western SoMa	Objective 4.22 Integrate pedestrian policies with other planning efforts.
Western SoMa	Policy 4.22.1 Coordinate pedestrian improvements so that they are carefully integrated with other transportation projects in the area.
Western SoMa	Objective 4.23 Improve the ambience of the pedestrian environment.
Western SoMa	Policy 4.23.1 Integrate pedestrian space with compatible land uses.
Western SoMa	Policy 4.23.2 Create a visible pedestrian network that connects to other areas.
Western SoMa	Policy 4.23.3 Develop Folsom street as a pedestrian-oriented transit corridor.
Western SoMa	Policy 4.23.4 Require context-specific pedestrian environmental analysis and countermeasure plans for all development projects.
Western SoMa	Objective 4.24Ensure that bicycles can be used safely and conveniently as a primary transportation mode and for recreational purposes.
Western SoMa	Policy 4.24.1 Improve bicycle access in the western SoMa.
Western SoMa	Policy 4.24.2 On specific streets, implement physical roadway treatments that will improve overall bicycle safety.
Western SoMa	Policy 4.24.3 Prohibit multiple left turn lanes and free right-turn lanes.
Western SoMa	Objective 4.25 Improve bicycle access to other areas of the City and the region.
Western SoMa	Policy 4.25.1 Improve direct routes between western SoMa and other parts of the City.
Western SoMa	Policy 4.25.2 Accommodate bicycles on streets parallel to the freeway.
Western SoMa	Objective 4.26 Integrate bicycle policies with other planning efforts.

Western SoMa	Policy 4.26.1 Coordinate bicycle plans in western SoMa to be consistent with the recommendations coming out of the City bicycle plan.
Western SoMa	Objective 4.27 Establish parking policies that improve neighborhood livability, vitality, and environmental quality by reducing private vehicle trips and supporting walking, cycling and public transit use.
Western SoMa	Policy 4.27.1 Adopt the same parking maximum policies that were applied in the eastern neighborhood plan.
Western SoMa	Policy 4.27.2 Discourage commuter parking in the western SoMa.
Western SoMa	Policy 4.27.3 Retain on-street parking whenever possible, except where necessary to improve pedestrian, bicycle, and transit access and safety.
Western SoMa	Policy 4.27.4 Price on-street parking on regional and neighborhood-serving streets to create available spaces at most times, encourage parking turnover, and reduce the number of vehicles circulating in the neighborhood.
Western SoMa	Policy 4.27.5 Establish residential permit zones on residential enclave streets to prioritize parking for residents.
Western SoMa	Policy 4.27.6 Promote a charter amendment and changes to state law that would enable the City to dedicate some portion of parking meter and permit zone revenues to fund pedestrian, bicycle, transit and streetscape improvements in western SoMa and the other eastern neighborhoods.
Western SoMa	Policy 4.27.7 Make western SoMa consistent with eastern neighborhoods parking standards.
Western SoMa	Policy 4.27.8 Promote the unbundling of parking from new housing.
Western SoMa	Objective 4.28 Reduce the negative impacts of vehicle trips on western SoMa SUD by encouraging the use of alternative modes of transportation.
Western SoMa	Policy 4.28.1 Contain and lessen the local traffic and parking impacts of businesses by implementing a set of employer-based TDM measures.
Western SoMa	Policy 4.28.2 Promote walking and other non-motorized modes to and from designated neighborhood commercial districts and other major destinations in the western SoMa SUD.
Western SoMa	Policy 4.28.3 Reduce, relocate or prohibit auto-oriented facilities situated on streets served by local transit services.
Western SoMa	Objective 4.29 Maintain San Francisco as a principal regional destination without jeopardizing the livability of the SoMa.
Western SoMa	Policy 4.29.1 Reduce speeds on arterials leading to/from the freeway.
Western SoMa	Policy 4.29.2 On specific streets, implement intersection treatments that improve pedestrian and bicycle safety.
Western SoMa	Policy 4.29.3 Develop a set of traffic-calmed zones.
Western SoMa	Policy 4.29.4 Prohibit intersection turn movements that endanger pedestrians and bicyclists.
Western SoMa	Policy 4.29.5 Regularly monitor changes in the level of safety on local streets.
Western SoMa	Objective 4.30 Develop a public benefit package that will generate revenues for financing transit, bicycle and pedestrian improvements over the long-term.
Western SoMa	Policy 4.30.1 Develop a fee that is based on the amount of parking provided.

Western SoMa	Objective 5.1 Reinforce the diversity of the existing built form and the warehouse, industrial and alley character.
Western SoMa	Policy 5.1.1 Promote, preserve and maintain the mixed use character of western SoMa's small scale commercial and residential uses.
Western SoMa	Policy 5.1.3 Encourage and support the preservation and adaptive re-use of historic and social heritage neighborhood resources.
Western SoMa	Objective 5.2 Promote environmental sustainability.
Western SoMa	Policy 5.2.1 Fully support and integrate into the western SoMa SUD the environmental policies embodied in green building legislation.
Western SoMa	Policy 5.2.2 Require new development to meet minimum levels of "green" construction.
Western SoMa	Policy 5.2.9 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
Western SoMa	Objective 5.3 Promote walking, biking and an active urban public realm.
Western SoMa	Policy 5.3.5 Strengthen the pedestrian and bicycle network by extending alleyways to adjacent streets or alleyways wherever possible, or by providing new publicly accessible mid-block rights of way.
Western SoMa	Policy 5.3.8 Establish and require height limits and upper story setbacks to maintain adequate light and air to sidewalks, parks, plazas and frontages along alleys.
Western SoMa	Objective 5.4 Encourage appropriate new development that is responsive to the existing and built environment.
Western SoMa	Objective 6.1 Identify and evaluate historic and cultural resources.
Western SoMa	Policy 6.1.5 Identify traditional historical events as part of the neighborhood's social heritage.
Western SoMa	Objective 6.2 Protect historic and cultural resources.
Western SoMa	Policy 6.2.1 Protect individually significant historic and cultural resources and historic districts in the western SoMa area plan from demolition or adverse alteration.
Western SoMa	Objective 6.3 Demonstrate leadership through preservation, rehabilitation and adaptive re-use.
Western SoMa	Policy 6.3.3 Prevent historic resource demolitions, without extending or delaying demolition process already established.
Western SoMa	Policy 6.3.8 Incorporate preservation goals and policies into land use decision-making process.
Western SoMa	Objective 6.5 Provide preservation incentives and guidance.
Western SoMa	Policy 6.5.1 Encourage historic preservation through development of financial incentive programs.
Western SoMa	Policy 6.5.2 Encourage the use of grants for preservation, restoration, rehabilitation and adaptive re-use.
Western SoMa	Policy 6.5.4 Encourage historic preservation through adaptive re-use analysis and programs in western SoMa.

Western SoMa	Policy 6.5.5 Follow up recommendations on adaptive re-use for a more sustainable neighborhood.
Western SoMa	Objective 6.7 Promote principles of sustainability using "green" strategies on preservation.
Western SoMa	Policy 6.7.1 Encourage the use of recycled materials in all new restoration, preservation, adaptive re-use and rehabilitation development in Western SoMa.
Western SoMa	Policy 6.7.2 Promote sustainability of historic resources in the plan area consistent with the goals and objectives of the sustainability plan for the City and County of San Francisco.
Western SoMa	Policy 6.7.3 Use approved healthy methodologies in the recycled materials, restoration, and preservation in adaptive re-use and rehabilitation projects.
Western SoMa	Objective 6.8 Formulate an explicit adaptive re-use program.
Western SoMa	Policy 6.8.2 Research and apply "best practices" for potential re-use opportunities and constraints applicable to those various building typologies.
Western SoMa	Policy 7.2.3Continue working with the department of public works great streets and south of market alley improvements programs for new development contributions to design and improved streets following standards that are inclusive, especially improvements that equally support the use of spaces by persons with disabilities, children and the elderly.
Western SoMa	Policy 7.2.4 Continue working with the department of public works great streets and south of market alley improvements programs so new development can contribute to planting new trees, coordinate with urban forestry for planting and maintaining urban trees.
Western SoMa	Policy 7.3.1 Develop an accessible pedestrian network, providing safe, efficient and pleasant pedestrian circulation in western SoMa.
Western SoMa	Policy 7.3.2 Redesign underutilized portions of streets as public open spaces, including widened sidewalks or medians, curb bulb-outs, "living streets" or green connector streets.
Western SoMa	Policy 7.3.3 Develop a comprehensive public realm plan for the plan area that reflects the differing needs of streets based upon their predominant land use, role in the transportation network, and building scale.
Western SoMa	Policy 7.3.6 Promote street traffic calming methods to assure greater pedestrian safety.
Western SoMa	Policy 7.3.7 Provide more pedestrian scale lighting on alleys and streets.
Western SoMa	Policy 7.3.9 Maximize pedestrian and bicycle access to the shoreline and all nearby major open space areas such as the waterfront and Yerba Buena gardens.
Western SoMa	Policy 7.3.10 Provide public amenities and infrastructure that support the use of open space such as public toilets, park benches, pedestrian scale lighting, and minimal gates/barriers to access.
Western SoMa	Objective 7.4 Create a network of streets that connects open spaces and improves the pedestrian experience and aesthetics of the neighborhood.
Western SoMa	Policy 7.4.1 Design the intersections of major streets to reflect their prominence as public spaces.
Western SoMa	Policy 7.4.2 Significant above grade infrastructure, such as freeways, should be retrofitted with architectural lighting to foster pedestrian connections beneath.

Western SoMa	Policy 7.4.3 Where possible, transform unused freeway and rail rights-of-way into landscaped features that provide a pleasant and comforting route for pedestrians and bicyclists.
Western SoMa	Policy 7.4.5 Enhance the pedestrian environment by requiring new tree planting abutting sidewalks.
Western SoMa	Objective 8.1 Reinforce the importance of the arts by preserving and enhancing existing arts uses.
Western SoMa	Policy 8.1.6 Promote public transportation to libraries, community centers, and other art and cultural facilities.
Western SoMa	Objective 9.1 Provide essential community services and facilities.
Western SoMa	Policy 9.1.2 Encourage appropriate location and expansion of essential neighborhood-serving community and human services activities throughout western SoMa, exclusive of the residential enclave districts.
Western SoMa	Policy 9.1.3 Recognize the value of existing facilities and support their expansion and continued use.
Western SoMa	Policy 9.1.9 Identify a potential area in western SoMa that could be appropriate for a neighborhood middle school, taking into consideration a number of factors, including pedestrian safety, noise and air quality conditions, and the feasibility of being co-located with another public works project (e.g., park, historic/cultural center, or City-sponsored childcare).
Western SoMa	Policy 9.2.2 Locate childcare near residential areas, on-site in new residential complexes, near transit facilities, or near employment centers to support families by reducing the time spent going to and from daycare, and to support other plan goals of traffic reduction and increased transit ridership.
Western SoMa	Policy 9.6.5 Consider using a portion of public benefits funding to support the transport of low-income residents to local farmers markets.
Western SoMa	Objective 10.1 Build “crime prevention through environmental design” (CPTED) standards into new zoning classifications.
Western SoMa	Policy 10.1.1 Encourage a mix of uses that promote public participation and provide “eyes on the street.”
Western SoMa	Policy 10.1.3 Require adequate exterior lighting on all new developments.
Western SoMa	Objective 10.3 Increase social cohesion among residents and local business owners.
Western SoMa	Policy 10.3.1 Provide a basic level of common services, especially at major transit nodes, to prevent the perception of isolation.
Western SoMa	Policy 10.3.2 Increase mid-block crossings throughout the western SoMa SUD.
Western SoMa	Objective 10.4 Ensure a high quality of life for existing and new residents and workers.
Western SoMa	Policy 10.4.1 Significantly enhance pedestrian safety throughout western SoMa.
Western SoMa	Objective 10.5 Promote community participation in the western SoMa plan implementation process.
Western SoMa	Policy 10.5.3 Promote public transportation to planning and implementation meetings to help increase community investment/engagement in neighborhood.

Western SoMa	Objective 10.6 Build "safe and accessible places" through "universal design" (design that includes people with disabilities or impairments).
Western SoMa	Policy 10.6.1 Support building access to all public spaces, streets and public right of ways, as well as access to public spaces within private development in the neighborhood that is safe and accessible from the perspective of all local and federal regulations without contradictions regarding "safety" and "accessibility".

III.4 STATE STRATEGIES FOR TRANSPORTATION & LAND USE

The transportation sector is the largest emitting sector of the State's greenhouse gas inventory, comprising 37 percent of the greenhouse gas emissions in 2012.[144] There are several key transportation-related GHG emissions targets for the State.

- Reduce petroleum use 50 percent by 2030 (outlined by Governor Brown in his inaugural address)
- 80 percent reduction of transportation emissions by 2050 from 1990 levels (Executive order B-16-2012)
- Place 1 million zero-emission vehicles on the roads by 2023 (SB1275)
- Emission and fuel economy standards (detailed below)

The plan to achieve these targets is multi-faceted and centers on fuel efficiency improvements, land use and transportation coordination to reduce VMT, designing for Complete Streets, the California High Speed Rail, and increasing accessibility to more efficient modes of transportation. California has been a leader in legislation related to reducing emissions from transportation and many federal policies are influenced by the State's standards.

State Transportation Plans

The State has a range of transportation plans that envision long-range strategies to reduce GHG emissions from the sector. The key transportation plans include: the 2040 California Transportation Plan, the Interregional Transportation Strategic Plan, the 2014 Sustainable Freight Strategy, the 2013 ZEV Action Plan (currently undergoing revisions), the 2014 California Freight Mobility Plan, the California State Rail Plan, the California Aviation System Plan, the Statewide Transit Strategic Plan, the California Infrastructure State Implementation Plan, the Goods Movement Emission Reduction Program (a $1 billion fund established by Proposition 1B and codified by SB88 and AB201), the Complete Streets Implementation Plan, and the upcoming Bicycle and Pedestrian Plan (expected 2017).

According to the 2016 Mobile Source Strategy compiled by the Air Resources Board:

The existing suite of clean vehicle, fuel and transportation policies that comprise current control programs are also anticipated to put California on track to meet the 2020 GHG target, with a further 20 percent reduction in on-road mobile source GHG emissions between 2020 and 2030…However, further reductions are needed to meet the 2030 GHG reduction target. In addition, beyond 2035, on-road GHG emissions begin to increase without adoption of additional policies as growth in VMT outpaces vehicle fuel efficiency improvements.[145]

The document identifies a number of proposed actions and strategies to achieve further reductions in the future and also relies on the existing plans that have been put together for achieving GHG emission reductions between now and 2030.

[144] California Environmental Protection Agency, Air Resources Board, California Greenhouse Gas Emission Inventory: 2000-2012, May 2014. Accessed August 4, 2016.

[145] California Environmental Protection Agency, Air Resources Board, Mobile Source Strategy, May 2016. Accessed August 4, 2016.

SB375 (2008) & SB743 (2013)

In 2008, the California State Senate passed the Sustainable Communities and Climate Protection Act (SB375), which requires metropolitan planning organizations to adopt a Sustainable Communities Strategy in line with the statewide greenhouse gas reduction targets as part of its regional transportation plan. As noted in Section 1(c) of the legislation:

Greenhouse gas emissions from automobiles and light trucks can be substantially reduced by new vehicle technology and by the increased use of low carbon fuel. However, even taking these measures into account, it will be necessary to achieve significant additional greenhouse gas reductions from changed land use patterns and improved transportation. Without improved land use and transportation policy, California will not be able to achieve the goals of AB32.[146]

Under SB375, projects identified as "transit priority projects" are exempt from California Environmental Quality Act (CEQA) procedures if it is consistent with the Sustainable Communities Strategy. Transit oriented infill projects were given further judicial review streamlining through SB743.

Under CEQA, automobile delay was considered a negative impact on the environment through a calculation called Level of Service. This determination prioritized travel by personal motor vehicle over other modes of transportation and resulted in project priorities that were inconsistent with greenhouse gas reduction targets. SB743 calls for the adoption of revised guidelines for projects in transit priority areas with criteria that instead "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses."[147]

State Transportation GHG Emission Reduction Programs

In 2012, the ARB established the Advanced Clean Cars program. The program has three main components: zero-emission vehicle (ZEV) regulation, particular matter (PM) standards, and greenhouse gas emissions standards for light-duty vehicles.[148] The zero-emission program has been the focus of several statewide efforts, including Governor Brown's goal of placing 1.5 million zero-emission vehicles on the roads by 2025 (Executive Order B-16-12). This was codified by SB1275 in 2014, which outlined a goal of 1 million ZEVs by 2023 and also highlighted strategies to ensure that low-income Californians have access to the benefits of the clean transportation sector. The Zero Emission Vehicle Regulation outlined in the Advanced Clean Cars program requires that 15 percent of new vehicles sold in California are plug-in hybrid, electric or fuel cell vehicles by 2025.[149] Electrification of the transportation industry is a core focus of the State's strategies and was incorporated into the Public Utilities Code through SB350.[150] According to ARB's 2014 update to the Climate Change Scoping Plan, California has 60,000 ZEVs on its roadways.[151]

In 2002, the State of California passed AB 1493 (the Pavley Bill) to regulate emissions associated with passenger vehicles. In 2006, AB32 introduced additional measures to decrease the carbon intensity of the State's fuel, including the Low Carbon Fuel Standard (LCFS). AB118 (later amended by AB109 and AB8) established the California Energy Commission's Alternative and Renewable Fuel and Vehicle Technology Program in 2007; the same year, the Governor signed Executive Order S-1-07 outlining a LCFS goal to reduce transportation fuel carbon

[146] State Senate, Senate Bill 375, 2008. Accessed August 4, 2016.
[147] State Senate, Senate Bill 743, 2013. Accessed August 4, 2016.
[148] California Environmental Protection Agency, Air Resources Board, Advanced Clean Cars Midterm Review. Accessed August 4, 2016.
[149] California Environmental Protection Agency, Air Resources Board, First Update to the Climate Change Scoping Plan, May 2014. Accessed August 4, 2016.
[150] State Senate, SB350, 2015. Accessed August 4, 2016.
[151] California Environmental Protection Agency, Air Resources Board, First Update to the Climate Change Scoping Plan, May 2014. Accessed August 4, 2016.

intensity 10percent by 2020.[152] Due to litigation between California, the auto industry and the EPA the "Pavley" standards were first legalized and implemented in 2009. In 2010, the President requested that the Environmental Protection Agency (EPA) and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) work together to establish emission and fuel economy standards. The preliminary standards, largely influenced by California's program, were for model years 2012 through 2016.[153] In 2012, the ARB proposed to accept the Federal GHG vehicle standards for the state of California.[154] The Federal Corporate Average Fuel Economy (CAFE) standards are for model years 2017 through 2025 and are an industry fleet wide average for all passenger cars, light-duty trucks and medium duty passenger vehicles. The standard requires vehicles to achieve emissions of no more than 163 grams/mile of carbon dioxide by model year 2025, the equivalent of 54.5 miles per gallon.[155] According to the 2011 Regulatory Announcement by the EPA, the program is expected to save 2 billion metric tons of GHG emissions over the course of the lifetime for the light duty vehicles manufactured between 2017 and 2025.[156] A 2016 news release by the EPA noted that significance progress has been made towards these standards and that there are already over 100 vehicle options that meet the standards for 2020 or beyond.[157]

While California's transportation GHG emission reduction targets focus on managing petroleum consumption and expanding the low-emitting and zero-emitting fleet, the State has simultaneously increased dedicated funding and resources to alternative modes of transportation. In 2008, the assembly passed AB1358 to require local governments' general plans to accommodate and incorporate the needs of pedestrians, public transportation, bicyclists, children, persons with disabilities and seniors in addition to motorists and freight movers.[158] In 2012, AB1532 directed the Greenhouse Gas Reduction Fund revenues generated from Cap and Trade to fund specified purposes. The same year, SB535 mandated that a minimum of 25 percent of this fund is invested into programs that would benefit disadvantaged communities.[159] SB862 (2014) established the Low Carbon Transit Operations Program and specifically dedicated funds to be spent towards capital improvements for the state's rail, bus and ferry transit systems, with a priority towards serving disadvantaged communities.[160] Beginning in 2015, the statewide cap and trade program was expanded to include transportation fuel distributors (California Code of Regulations). In 2017, Governor Brown signed legislation to extend the cap and trade program until 2030.

For a complete list of policies and programs related to vehicles and alternative fuels for California, visit the U.S. Department of Energy Alternative Fuels Data Center California Laws and Incentives page: http://www.afdc.energy.gov/laws/state_summary?state=CA.

TABLE 13. STATE ASSEMBLY BILLS RELATED TO TRANSPORTATION & LAND USE

Bill	Year	Description
AB1493 Vehicular Emissions	2002	Pavley Auto Fuel Economy Standards for years 2009-2016

[152] California Environmental Protection Agency, Air Resources Board, Low Carbon Fuel Standard. Accessed August 4, 2016.
[153] Environmental Protection Agency Office of Transportation and Air Quality, EPA and NHTSA Propose to Extend the National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks, November 2011. Accessed August 4, 2016.
[154] California Environmental Protection Agency, Air Resources Board, ARB Proposes Regulations to Accept Federal GHG Vehicle Standards. Accessed August 4, 2016.
[155] Environmental Protection Agency Office of Transportation and Air Quality, EPA and NHTSA Propose to Extend the National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks, November 2011. Accessed August 4, 2016.
[156] Ibid.
[157] Julia Valentine, US EPA, US DOT, California's Air Resources Board Issue Draft Technical Assessment Report of Greenhouse Gas Emissions and Fuel Economy Standards for Model Year 2022-2025 Cars and Light Trucks, July 2016. Accessed August 4, 2016.
[158] State Assembly, AB1358, 2008. Accessed August 4, 2016.
[159] State Senate, SB353, 2012. Accessed August 4, 2016.
[160] State Senate, SB862, 2014. Accessed August 4, 2016.

AB118 & AB8 Alternative Fuels and Vehicle Technologies: Funding Programs	2007, 2013	AB118 first established the Alternative and Renewable Fuel and Vehicle Technology Program. The specifics of the fund were updated and extended with AB8.
Executive Order S-01-07	2007	Establishment of Low Carbon Fuel Standard (LCFS); Requires transportation fuel providers to procure clean fuels to reduce the carbon intensity of California's fuel mix; target to reduce carbon intensity of California's fuel by 10 percent by 2020
Proposition 1B, SB88 & AB201; Goods Movement Emission Reduction Program	2006/2007	In 2006, the state passed Proposition 1B to approve a $20 billion bond towards transportation projects. Within this, $1 billion was committed to the Goods Movement Emission Reduction Program.
Proposition 1A Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century	2008	To begin implementation of the CA high speed rail with a $9.95B bond
SB375 Sustainable Communities and Climate Protection Act	2008	Coordinated transportation and land use planning; requires Sustainable Communities Strategy for all Regional Transportation Plans.
Executive order B-16-2012	2012	10 percent of fleet purchases of light-duty vehicles be zero-emission by 2015; at least 25 percent of fleet purchases of light-duty vehicles by zero-emission by 2020; Goal of placing 1.5 million zero-emission vehicles to California by 2025 & 80 percent reduction of transportation emissions by 2050 from 1990 levels
AB1532 Greenhouse Gas Reduction Fund	2012	Established the framework for the Greenhouse Gas Reduction Fund
SB535 Greenhouse Gas Reduction Fund	2012	Focused investment in communities disproportionately impacted by pollution; requires 25 percent of Greenhouse Gas Reduction Fund to go to projects that benefit disadvantaged communities with at least 10 percent going to projects that are locating within these communities
SB743 Environmental Quality	2013	Streamlining for transit oriented infill projects; led to process for LOS reform to be replaced with VMT
SB1275 Vehicle Retirement and Replacement	2014	Goal of placing one million zero-emission or near-zero emission vehicles by 2023; increase access to these vehicles for disadvantaged communities (California Charge Ahead Initiative)
SB1204 California Clean Truck, Bus, and Off-Road Vehicle and Equipment Technology Program	2014	California Clean Truck, Bus, and Off-Road Vehicle and Equipment Tech Program - funded with cap and trade revenue - to fund zero and near-zero emission truck, bus, and equipment technologies
SB862 Greenhouse gases: emissions reduction & SB9 Transit and Intercity Rail Capital Program	2014/2015	Provide grants from GHG Cap and trade fund for investment into transit and specifically, high speed rail
Executive Order B-32-15	2015	Directs development of integrated sustainable freight action plan
SB502 Bay Area Rapid Transit District	2015	Enables BART to purchase wholesale electric produced via renewable sources

AB 398 California Global Warming Solutions Act: Market-Based Compliance Mechanisms	2017	Extend the California Cap and Trade Program until 2030, instead of allowing it to expire in 2020.

IV. ZERO WASTE

IV.1 TARGETS

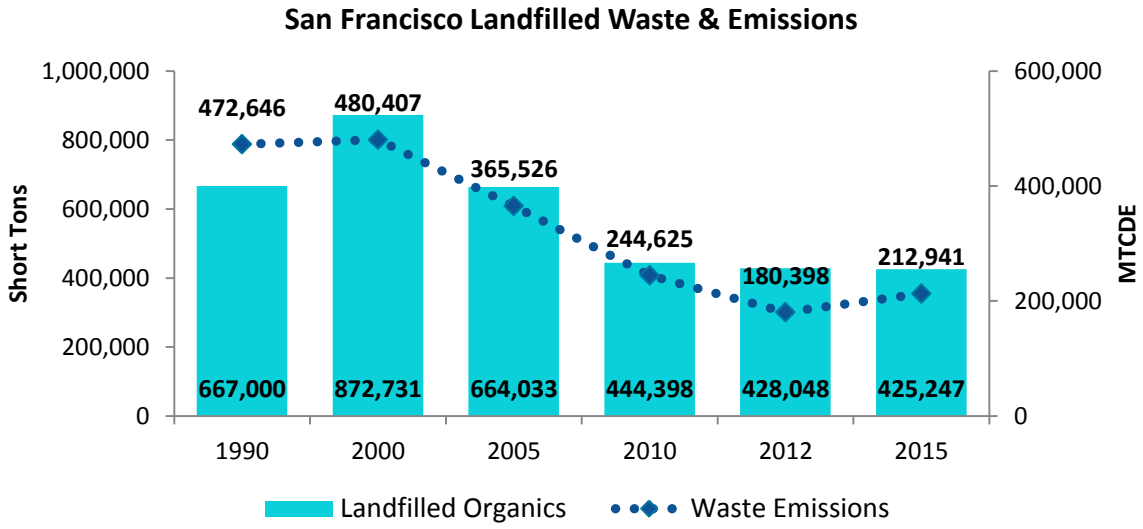
City and County of San Francisco Targets: *Resolution 007-02-COE*

- 2010: Divert 75 percent of waste from landfill
- 2020: Divert 100 percent of waste from landfill

IV.2 PROGRESS TO DATE

In 2003, the Mayor and Board of Supervisors adopted Resolution 007-02-COE, setting a target of 100 percent waste diversion for the City and County of San Francisco by 2020. Significant progress has been made toward that goal. **In 2012, the Mayor's office announced that the City had achieved an 80 percent landfill diversion rate.**[161] Between 1990 and 2010, the amount of waste landfilled decreased 33 percent and the amount diverted increased nearly 34 percent.[162] The City's greenhouse gas emissions report from 2015 outlines emissions from landfilled organics for 1990, 2000, 2005, 2010, 2012, and 2015 (see Chart 5).[163] In 2015, waste emissions comprised 4.7 percent of the City's emissions profile, or 212,941 Metric Tons of Carbon Dioxide Equivalent (MTCDE).[164] Achieving zero waste would result in 292,957 MTCDE in emissions savings in 2030, helping to reduce the City's overall emissions by an estimated 52 percent reduction from 1990 levels.[165]

CHART 5. LANDFILLED ORGANICS AND WASTE EMISSIONS



[161] Office of the Mayor, Mayor Lee Announces San Francisco Reaches 80 Percent Landfill Waste Diversion, October 2012. Accessed August 4, 2016.
[162] San Francisco Department of the Environment, San Francisco Climate Action Strategy, 2013. Accessed August 4, 2016.
[163] ICF International, Memorandum: Technical Review of the 2012 Community-wide GHG Inventory for the City and County of San Francisco,
January 2015. Accessed August 4, 2016.
[164] Ibid.
[165] San Francisco Department of the Environment, San Francisco Climate Action Strategy, 2013. Accessed August 4, 2016.

TABLE 14. LANDFILLED ORGANICS AND WASTE EMISSIONS

Year	Landfilled Organics (Short Tons)	Waste Emissions (MTCDE)
1990	667,000	472,646
2000	872,731	480,407
2005	664,033	365,526
2010	444,398	244,625
2012	428,048	180,398
2015	425,247	212,941

** From the 2015 Emissions Inventory*

IV.3 IMPLEMENTATION ACTIONS

The 2013 Climate Action Strategy noted that half of the landfilled material in 2010 was recyclable or compostable. The main methods for the City, County, and State to achieve increased landfill diversion rates include: recycling, composting, and reduction of upstream waste through material management. The City is working to address its ambitious targets through a number of ordinances and programs, highlighted below.

Mandatory Recycling and Composting Ordinance

The Mandatory Recycling and Composting Ordinance (Chapter 19 of the San Francisco Environment Code) requires that all persons in Francisco "source separate their refuse into recyclables, compostables and trash, and place each type of refuse in a separate container designated for disposal of that type of refuse."[166] City Departments are also subject to stricter waste management practices, outlined below (see Resource Conservation for Municipal Operations). Event organizers are also subject to specific requirements and event producers must attend a free zero waste event training prior to a scheduled event to learn about the Mandatory Recycling and Compositing requirements, how to run a bottle-free event, how to purchase food service ware that is compostable, and how to create a recycling plan and track waste diversion.[167]

Construction and Demolition Recovery Ordinance

The Construction and Demolition Recovery Ordinance (Chapters 4 and 14 of the San Francisco Environment Code) requires that projects proposing full demolition of a structure create a waste diversion plan for mixed construction and demolition debris. Construction and demolition debris must be transported off site by a registered transporter and taken to a registered facility that can process and divert from the landfill a minimum of 65 percent of the material generated from construction, demolition, or remodeling projects. In addition to complying with Construction and Demolition Debris Recovery Ordinance, new commercial buildings of ≥25,000 square feet and new residential buildings of 4 or more occupied floors must comply with requirements outlined in Chapters 4 and 5 of the San Francisco Green Building Code and develop a plan to divert a minimum of 75 percent of construction and demolition debris from landfill, and meet LEED Materials & Resources Credit 2. Chapter 7 of the Environment Code, which establishes green building requirements for existing municipal buildings and new construction, requires municipal projects proposing demolition to prepare a Construction and

[166] City of San Francisco, San Francisco Environment Code, chapter 19. Accessed on August 2, 2017.
[167] San Francisco Environment Code, chapter 19 & San Francisco Board of Supervisors, Ordinance 100-09. Information on Zero Waste Event Training.

Demolition Debris Management Plan designed to recycle construction and demolition materials to the maximum extent feasible, with a goal of 75 percent diversion.[168]

Resource Conservation for Municipal Operations

Chapters 2, 5 and 19 of the Environment Code specify requirements for the City to maximize purchases of recycled products and divert from disposal as much solid waste as possible to help achieve zero waste by 2020. The Resource Conservation Ordinance (Chapter 5) sets minimum recovered material content requirements for the purchase of various products and requires City departments to appoint a Recycling Coordinator, prepare a Departmental Waste Assessment, submit a Resource Conservation Plan, and submit an Annual Recycling Survey that reports the amount of solid waste diverted. In 2014, 727 City employees were trained, including 72 departmental Zero Waste Coordinators, on how to most effectively compost, recycle, prevent waste, and institute policies. City departments also subject to provisions established by Executive Directive 08-02: Enhancement of Recycling and Resource Conservation. The directive calls for departments to purchase 100 percent post-consumer content recycled paper and to purchase supplies that are approved under the "SF Approved" product list screened by SF Environment.[169] Environmentally Preferable Purchasing requirements are outlined in Chapter 2 of the San Francisco Environment Code. Visit www.SFapproved.org for a full list of products and services that meet the City's health and environmental standards.

In 2006, Mayor Newsom passed Executive Directive 06-05 Recycling and Resource Conservation. In addition to requiring specific diversion and waste management targets, the directive called for City departments to reuse office furniture, computers and supplies through the Virtual Warehouse. The Virtual Warehouse is an exchange system for surplus office furniture, computers, equipment, and supplies. The mission of the program is to facilitate the reuse, recycling, and disposal for surplus City materials.[170] Many City departments also offer receptacles for recycling batteries, light-bulbs, cleaners, paints, pesticides, and electronic waste, including cell phones, cameras, and iPods. SF Environment maintains a webpage dedicated to providing departments with recycling and composting information and resources.[171]

Section 6.4 of the Administrative Code requires public projects to use recycled content materials to the maximum extent feasible. The ordinance gives preference to local manufacturers and industry. The ordinance is intended to reduce the use of raw virgin materials by increasing the amount of recycled materials used on public works projects.

Food Service Waste Reduction Ordinance

The Food Service Waste Reduction Ordinance (Chapter 16 of the San Francisco Environment Code), effective June 1, 2007, requires that all disposable food ware and take-out containers used in the City be either biodegradable/compostable or recyclable. On July 29, 2016, the Board of Supervisors passed Ordinance 140-16 (operative in 2017) to amend this chapter including renaming it to the Food Service and Packaging Waste Reduction Ordinance. The ordinance bans the sale or distribution of non-compliant food service ware, including products made with Polystyrene Foam.[172]

Plastic Bag Reduction Ordinance

The Plastic Bag Reduction Ordinance (Chapter 17 of the Environment Code) prohibits Stores (retail and food establishments) from distributing plastic checkout bags. Instead they may distribute specified compostable bags,

[168] San Francisco Environment Code, Sections 706, 708 & Chapter 14; San Francisco Green Building Code, Sections 5.103.1.3 and 4.103.2.3

[169] Office of the Mayor, Executive Directive 08-02: Enhancement of Recycling and Resource Conservation, March 2008. Accessed August 4, 2016.

[170] Virtual Warehouse

[171] City Government Zero Waste

[172] San Francisco Environment Code, Chapter 16 & San Francisco Board of Supervisors, Ordinance 140-16. Accessed August 4, 2016.

paper bags made with a minimum 40 percent post-consumer recycled content, or reusable bags. In 2012, the City began to impose a checkout bag charge for recyclable paper and reusable bags, and beginning in 2013, a ten cent fee was charged for compostable plastic bags.[173]

Extended Producer Responsibility

In 2006, the San Francisco Board of Supervisors passed the Extended Producer Responsibility (EPR) Resolution urging representatives to pursue extended producer responsibility legislation targeted as universal waste (hazardous waste) that will give incentives for the redesign of products to make them less toxic and shift the cost for recycling and proper disposal of products from local governments to the producer and distributer of the product.[174] In 2008, CalRecycle adopted a framework for an Extended Producer Responsibility.[175] Two years later, the San Francisco Board of Supervisors renewed its support of EPR legislation and urged the California legislature to implement CalRecycle's framework.[176] There is no comprehensive statewide legislation related to EPR but local governments have joined with associations and organizations to form the California Product Stewardship Council (CPSC), a non-profit that seeks to shift waste management to producer responsibility.[177] San Francisco has pledged support to CPSC.

Waste and Recycling Programs

Residents and businesses of San Francisco have access to an extensive array of resources for waste management. San Francisco works with Recology, a collection and processing service provider that operates similar to a regulated utility, to reduce the amount of material sent to landfill. Recology maintains an online database of San Francisco businesses that divert 75 percent or more of their waste.[178] For businesses that are looking to decrease their landfilled waste production and costs, Recology offers waste audits and consultations. For residents of the Inner Sunset and Excelsior, Recology is currently testing a Pay per Setout pilot program that offers discounts for each week participants do not put their black trash bin out for service.[179]

SF Environment and Recology both maintain informative websites dedicated to providing information on waste programs for bulky items, hazardous waste disposal, and waste from events.[180] The Bulky Item Collection and Recycling Program is available to everyone in San Francisco and are free for residents and fee-based for businesses. The programs pick up items such as electronics, appliances, scrap metal, mattresses, and motor oil. Gigantic 3 is a free program that delivers three large containers for recycling, composting, and bulky items to different supervisorial districts each month. Residents can bring their unwanted items to the site and Gigantic 3 staff will sort the products into the appropriate container. The program accepts used motor oil and oil filters as well as household batteries and fluorescent bulbs.[181]

Challenges in Quantifying Waste Emissions

There are several challenges in emissions accounting that are being addressed by local and state efforts. These include the following:

[173] San Francisco Environment Code, Chapter 17
[174] SF Board of Supervisors, Extended Producer Responsibility Resolution 94-06, 2006. Accessed August 4, 2016.
[175] CalRecycle, Overall Framework for an Extended Producer Responsibility System in California, January 2008. Accessed on August 3, 2017.
[176] SF Board of Supervisors, Supporting Establishment of Statewide Exended Producer Responsibility System and Framework, 2010. Accessed August 4, 2016.
[177] Ibid.
[178] Recology SF.
[179] Recology, Pay Per Setout. Accessed August 4, 2016.
[180] San Francisco Department of Environment, Recycling and Composting. Accessed August 3, 2017.
[181] Recology, Residential Bulky Item Collection. Accessed August 3, 2017.

Alternative daily cover

Alternative daily cover is a material other than earthen material that is placed on the surface of an active municipal solid water landfill at the end of each operating day to control odors, vectors, blowing litter, and scavenging.[182] Historically, the use of green material for alternative daily cover has counted as diversion through recycling rather than disposal for reporting purposes in San Francisco (under Public Resources Code Section 41781.3). Beginning in 2020, AB1594 will require the reclassification of this green material as disposal. This reclassification may result in a lower diversion rate for the City.

Life cycle assessment

Generally, for every pound of waste thrown away, approximately 70 pounds of waste is generated during the production process, including the extraction of resources (mining and logging industries), waste in the oil extraction process, manufacturing of the product and its packaging, and transportation of product. Measures that encourage waste reduction (by reuse and reducing product purchases), and measures that conserve the embodied energy of the project (through recycling) decrease the amount of waste generated and CO_2 emitted during the production process.[183] A life cycle assessment of the waste of the City was conducted and included in the 2013 Climate Action Strategy. It was determined that the City's overall carbon footprint from consumption is four times that of the traditional inventory, once emissions of production, transportation, sale, use and disposal are all considered.[184]

Methane capture rate

SF Environment used a 59 percent methane capture rate for the landfills used by the City. In the 2015 ICF report, it was found that some of the landfills reported significantly higher rates of methane recovery (such as Altamont Landfill, which reported a 76.3 percent capture rate to the EPA). While the lower recovery rate would result in higher emission calculations, future studies should incorporate updated estimates.[185] The gathering of this information should be assisted by ARB's Landfill Methane Control Measure (noted in Table 18) which requires the installation of gas monitoring control systems.

Site-based emissions from the City's four landfills

There are four closed landfills within the City boundaries. As noted in the 2015 ICF report, the site-based emissions from these landfills are not disclosed and the data was unable to be collected to estimate associated emissions from these sites.

[182] CalRecycle, Alternative Daily Cover. Accessed July 3, 2017.
[183] Planning Department, Strategies to Address Greenhouse Gas Emissions. Accessed August 4, 2016.
[184] San Francisco Department of the Environment, San Francisco Climate Action Strategy, 2013. Accessed August 4, 2016.
[185] ICF International, Memorandum: Technical Review of the 2012 Community-wide GHG Inventory for the City and County of San Francisco, January 2015. Accessed August 4, 2016.

TABLE 15. SAN FRANCISCO CODES RELATED TO ZERO WASTE

Code	Description
Construction and Demolition Debris Recovery Ordinance **[SF Environment Code, Sections 706, 708 & Chapter 14; SF Green Building Code, Sections 5.103.1.3 and 4.103.2.3]**	Projects on City-owned facilities must prepare a Construction and Demolition Debris Management Plan that demonstrates how a minimum of 75 percent of the material will be diverted from the landfill. Private projects that include full demolition of an existing structure must submit a waste diversion plan to the Director of the Department Environment and the plan must provide for a minimum of 65 percent diversion from landfill of construction and demolition debris, including materials separated for reuse or recycling. In addition to complying with Construction and Demolition Debris Recovery Ordinance, new commercial buildings of ≥25,000 square feet and new residential buildings of 4 or more occupied floors must develop a plan to divert a minimum of 75 percent of construction and demolition debris from landfill, and meet LEED Materials & Resources Credit 2.
Collection, Storage and Loading of Recyclable and Compostable Materials / Mandatory Recycling & Composting Ordinance **[SF Environment Code, Section 707 & Chapter 19; CALGreen Section 5.410.1]**	All persons in San Francisco are required to separate their refuse into recyclables, compostables and trash, and place each type of refuse in a separate container designated for disposal of that type of refuse. All new construction, renovation and alterations must provide for the storage, collection, and loading of recyclables, compost and solid waste in a manner that is convenient for all users of the building. All City departments must have adequate, accessible, and convenient recycling, composting and trash areas (interior and exterior) that are integrated into the design and provided within City-owned facilities and leaseholds. Recycling and composting must be equally convenient as trash. Collection containers must be as easily accessible by collection vehicles. In accordance with the City and County of San Francisco's solid-waste diversion goals, and the Mandatory Recycling and Composting Ordinance (Chapter 19 of the Environment Code), the departments shall provide sufficient space to allow the collection, storage and loading of 100 percent of the facility's recyclable, compostable and waste materials. All City departments are required to recycle used fluorescent and other mercury containing lamps, batteries, and universal waste as defined by California Code of Regulations Section 66261.9.
ADDITIONAL CODE FOR PUBLIC BUILDINGS	
Resource Conservation Ordinance / Professional Services Contracting **[SF Environment Code. Chapter 5 & SF Administrative Code, Section 6.4]**	Chapter 5 of the Environment Code establishes a goal for each City department to: Maximize purchases of recycled products and Divert from disposal as much solid waste as possible and appoint at least one person responsible for compliance with the chapter Each City department shall prepare a Waste Assessment annually. The ordinance requires janitorial contracts to consolidate recyclable materials for pick up. Lastly, the ordinance requires departments to specify the purchase of 30 percent post-consumer recycled content for all paper products except copier and bond paper. Pursuant to section 506 (a) (3), executive directive 08-02 increased the amount of post-consumer recycled content required for copier and bond paper from 30 percent to 100 percent. Furthermore, section 6.4 of the Administrative code requires the use of recycled content material in public works projects to the maximum extent feasible and gives preference to local manufacturers and industry.

Resource Conservation Ordinance / Non-PVC Plastics **[SF Environment Code, Section 509]**	This ordinance requires non-PVC plastics to be specified in City purchasing and construction projects.
Bottled and Package Free Water Ordinance [San Francisco Environment Code, Chapter 24, Section 5]	No City officer, department, or agency shall use City funds to purchase bottled water for its own general use. A department may use City funds to purchase bottled water for uses specifically exempted from or allowed under Chapter 24. It shall be City policy not to have drinking water systems in City offices or facilities that use plastic water bottles of any size where satisfactory alternatives exist and are feasible at the location under construction.
Food Service and Packing Waste Reduction Ordinance [San Francisco Environment Code, Chapter 16, Section 3]	City departments (city contractors, leases, and food providers) may not purchase, acquire, or use Food Service Ware for (1) where the food service ware is made in whole or in part, from polystyrene foam, or (2) where the food service ware is no compostable or recyclable.

TABLE 16. SAN FRANCISCO GENERAL PLAN GOALS RELATED TO ZERO WASTE

Element	Objective/Policy
Air Quality	Objective 6 Link the positive effects of energy conservation and waste management to emission reductions.
Air Quality	Policy 6.2 Encourage recycling to reduce emissions from manufacturing of new materials in San Francisco and the region.
Community Facilities	Objective 11 Locate solid waste facilities in a manner that will enhance the effective and efficient treatment of solid waste.
Environmental Protection	Policy 19.3 Encourage City agencies to act as role models by establishing a Waste Minimization Program.
Environmental Protection	Objective 20 Encourage development of facilities needed to recycle, treat, store, transfer and dispose of hazardous waste.
Environmental Protection	Objective 21 Control illegal disposal and eliminate land disposal of untreated waste.
Housing Element - 2014	Policy 10.4 Support state legislation and programs that promote environmentally favorable projects.
Housing Element - 2014	Policy 13.4 Promote the highest feasible level of “green” development in both private and municipally-supported housing.

TABLE 17. SAN FRANCISCO AREA PLAN GOALS RELATED TO ZERO WASTE

Area Plan	Objective/Policy
Balboa	Policy 4.7.1 New development should meet minimum levels of green construction.
Central Waterfront	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Central Waterfront	Policy 3.3.3 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
East SoMa	Policy 2.5.3 Require new development to meet minimum levels of green construction.

Mission Area	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Mission Area	Policy 3.3.3 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
Mission Area	Policy 3.3.5 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
Showplace/Potrero	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Transit Center	Objective 6.4 Ensure that new buildings constructed in the plan area represent leading edge design in terms of sustainability, both high performance for their inhabitants and low impact on the environment.
Transit Center	Policy 6.12 Consider requiring all major buildings in the plan area to achieve the minimum LEED levels established in the SF Green Building Ordinance excluding credits for the given inherent factors of location, density, and existing City parking controls, in order to achieve high-performance buildings.
Western SoMa	Policy 5.2.1 Fully support and integrate into the western SoMa SUD the environmental policies embodied in green building legislation.
Western SoMa	Policy 5.2.2 Require new development to meet minimum levels of "green" construction.
Western SoMa	Policy 5.2.3 Encourage mandatory targets for certain components of the rating systems, specifically, 5 percent to 10 percent of material re-use for development projects, 100 percent diversion of all non-hazardous construction and demolition debris for recycling and/or salvage, 10 to 25 percent onsite renewable generation, water efficient landscaping to reduce potable water consumption for irrigation by 50 percent, and maximize water efficiency within buildings to reduce waste water by 30 percent.
Western SoMa	Policy 5.2.9 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.

IV.4 STATE STRATEGIES FOR ZERO WASTE

State Target: *AB341*

2020 Divert 75 percent of waste from landfill

Landfills are responsible for roughly 20 percent of methane emissions in California.[186] California's Department of Resources Recycling and Recovery (CalRecycle) conducts extensive research on the State's waste management and maintains a website with links to waste-related legislation, information on nearby recycling facilities, and reports on the state's progress towards disposal and recycling goals. According to the 2016 CalRecycle report *State of Disposal in California*, half of the state's solid waste in 2014 was disposed of through landfill, waste to energy, and other disposal-related activities, while half was diverted through compost, recycling or source reduction.

[186] California Department of Resources Recycling and Recovery, State of Recycling in California Updated 2016, February 2016. Accessed August 4, 2016.

AB939 was passed in 1989, setting a target for cities and counties in the State to divert half of solid waste by 2000. Under AB939 definitions, California disposed of 35 percent of the total waste generation to landfills. In 2011, the State passed AB341 which supersedes AB939 and establishes a statewide goal of 75 percent waste diversion by 2020. Under AB341, specific activities that were considered diversion under AB939 are no longer included, thereby resulting in a higher landfill calculated rate for 2014 (AB341 does not count alternative daily cover, alternative intermediate cover, beneficial reuse, or transformation credit as activities that count towards the reduction target).[187] In order for the state to meet the target of 75 percent reduction by 2020 under the accounting requirements of AB341, per capita disposal will need to reach a rate of 2.7 pounds per day.[188] According to a 2013 update on progress towards AB341 goals, achieving the 75 percent diversion rate will result in an estimated 20 to 30 million MTCDE emission reduction in 2020 compared to business as usual.[189]

The State has implemented a number of policies and programs to achieve landfill reductions and to limit emissions from landfills. The AB32 Scoping Plan in 2008 called for controlling methane from landfills and instituting extended producer responsibility programs, mandatory commercial recycling, and environmentally preferable purchasing programs. ARB and CalRecycle have worked together to develop a Waste Sector Management Plan and are also working to achieve net-zero GHG emissions from waste by 2035 (referred to as the "mid-term goal") and a 25 percent further reduction in direct GHG emissions from mid-term levels by 2050.[190] California's Universal Waste Rule bans all hazardous waste from normal trash disposal, including fluorescent lamps, batteries and mercury-containing items.[191] In 2009, the Landfill Methane Control Measure was passed to require municipal solid waste landfill operators to install gas control systems and monitor methane emissions. AB341, in addition to mandating a 75 percent diversion rate by 2020, requires businesses that generate more than 4 cubic yards of commercial solid waste per week and multifamily residential dwellings of 5 units or more to arrange for recycling services. AB1826, passed in 2014, requires businesses generating specific amounts of organic waste to begin recycling services specific to organic waste and jurisdictions to implement organic waste recycling programs for the identified businesses. The same year, the Senate passed SB270, a bill to prohibit single-use carryout bags in specific types of stores and to charge $0.10 for the distribution of a recycled paper bag. In 2015, AB876, AB901 and AB1045 were passed, each of which specifies requirements for recycling and composting facilities to increase diversion efforts throughout the State.

TABLE 18. STATE SENATE & ASSEMBLY BILLS RELATED TO ZERO WASTE

Bill	Year	Description
AB939 Integrated Waste Management Act	1989	Cities & counties to divert 50 percent of solid waste by the year 2000
ARB Landfill Methane Control Measure	2009	Owners and operators of municipal solid waste landfills to install gas control systems and monitor methane emissions
AB341 **Mandatory Commercial Recycling**	2011	Statewide target to divert 75 percent of waste from landfills by 2020. Also requires recycling services for businesses that generate more than 4 cubic yards of commercial solid waste per week and multifamily residential dwellings of five units or more.
AB1594 **Waste Management**	2014, Effective 2020	Re-classifies use of green material for landfill "alternative daily cover" as disposal rather than as diversion through recycling

[187] Ibid.
[188] Ibid.
[189] CalRecycle, Update on AB34Legislative Report, October 2013. Accessed August 4, 2016.
[190] CalRecycle, Overview of the Waste Management Sector Plan (Draft), June 2013. Accessed August 4, 2016.
[191] California Code of Regulations Title 22, Chapter 23. Accessed August 3, 2017.

AB1826 **Solid Waste: Organic Waste**	2014, Effective 2016	Requires businesses generating specified amounts of organic waste to begin recycling services specifically for organic waste. Identifies a goal of removing 50 percent of organic materials from landfills by 2020.
AB876 **Compostable Organics**	2015, Effective 2017	Local governments to assess the amount of organic waste that will be produced over a 15-year time period Jurisdictions must identify locations for new / expanded recycling facilities
AB901 **Solid Waste Reporting Requirements / Enforcement**	2015	Requires reporting from recycling and composting facilities
AB1045 **Organic waste: composting**	2015	To promote composting statewide; Requires CalRecycle to coordinate with agencies to develop coordinated permitting for composting facilities

V. WATER EFFICIENCY

V.1 TARGETS

City and County of San Francisco Target

- City Departments must take actions to reduce their water consumption by 10 percent (Executive Directive 14-01, 2014)
- SFPUC formally requests voluntarily reductions of 10 percent by all customers as compared to 2013 levels (Original Press Release 3-14, Maintained in 2016 Memo)[192]

V.2 PROGRESS TO DATE

Water-related emissions comprised less than 0.5 percent of San Francisco's overall greenhouse gas inventory in 2012.[193] The Hetch Hetchy Water System delivers 85 percent of the City's water through gravity distribution sourced 167 miles away.[194] The water in the Hetch Hetchy Reservoir comes from spring snowmelt and is of such quality that it does not need to be filtered, resulting in significant energy savings.[195] While this sector currently has minimal impact on the City's overall emissions profile, the statewide drought (2012-2017) could have severe consequences on the City's potable water procurement. If the City does not conserve, it is possible that it would need to find more energy-intensive ways of procuring potable water. The San Francisco Public Utilities Commission (SFPUC) has also estimated that the warmer temperatures and altered rainfall patterns resulting from climate change can result in higher demands for cooling and irrigation purposes.[196] It is therefore critical to maximize conservation efforts and invest in alternative and sustainable sources of water.

In January of 2014, the SFPUC called for a voluntary water reduction of 10 percent by all customers.[197] In the summer of 2014, SFPUC mandated a 10 percent reduction on outdoor irrigation that was consistent with the State Water Resources Control Board's emergency regulations (SFPUC Resolution 14-0121). Additional regulations were implemented by SFPUC's Resolution 15-0102 and the SFPUC 2015-2016 Drought Program, including increasing the outdoor irrigation reduction from 10 percent to 25 percent. In May of 2015, Governor Brown issued the first ever statewide mandatory reduction target of 25 percent. The State Water Resources Control Board adopted the regulation and set standards for urban water suppliers (SWRCB 2015-0032). The SFPUC was assigned a conservation standard of 8 percent to the SFPUC.[198] Mayor Lee acknowledged the SFPUC resolution with a statement that highlighted the success of local conservation efforts. The Mayor then announced that in addition to City departments surpassing the 10 percent goal, SFPUC's retail and wholesale consumers achieved 14 percent reductions between 2005 and 2015. Overall, per capita residential water consumption decreased by over 20 percent during that time period.[199]

In May of 2016, with input from water suppliers, the State Water Resources Control Board changed how water conservation efforts were mandated. Previous targets were based on year over year percentage reductions; the

[192] Public Utilities Commission, Resolution 16-0127, June 2016. Accessed August 4, 2016.
[193] San Francisco Department of Environment, 2015 San Francisco Greenhouse Gas Inventory. Accessed August 11, 2017.
[194] SFPUC, Hetchy System Improvement Program. Accessed August 4, 2016. & SFPUC, Water Overview. Accessed August 4, 2016. & SFPUC, SFPUC Urban Water Management Plan, June 2016. Accessed August 4, 2016.
[195] SFPUC, Water Overview. Accessed August 4, 2016.
[196] SFPUC, SFPUC Urban Water Management Plan, June 2016. Accessed August 4, 2016.
[197] SFPUC, San Francisco Public Utilities Commission Formally Requests Customers Voluntarily Curtail Water Use, January 2014. Accessed August 4, 2016.
[198] SFPUC, Resolution 15-0119. Accessed August 4, 2016.
[199] Office of the Mayor, Mayor Lee's Statement on Governor Brown's First Ever Statewide Mandatory Water Restrictions, April 2015. Accessed August 4, 2016.

updated standard incorporates a "stress test" that requires providers to ensure that their area can service a three year supply of water in drought conditions.[200] The current mandatory conservation targets are based on the projected estimated shortfall. The SFPUC conducted a report finding that their reserves and projections are adequate and would not require a mandated reduction in consumer water use.[201] Furthermore, efforts to reduce consumption in the City have been successful: according to the SFPUC report from May 2016, consumption decreased over 15 percent since the 2013 baseline.[202] On average, San Francisco residents use roughly 50 gallons of water per capita daily.[203]

At the June 28, 2016 Commission meeting, the SFPUC adopted Resolution 16-0130 approving the continuation of a voluntary target of 10 percent water consumption reductions for all customers, and permitting the mandatory reduction of 25 percent for outdoor landscape watering to be lifted and wastewater flow factors to be reverted to original settings.[204] Resolution 16-0127, adopted in June of 2016, also sustained many of the water waste restrictions that were established by the State Resources Control Board and by the Governor – such as prohibiting the use of potable water to wash sidewalks or other outdoor hardscapes or serving drinking water to restaurant goers without specific request.[205]

The SFPUC estimated that City Departments' water use represented approximately 6 percent of the City's total water use.[206] In 2014, Mayor Lee issued Executive Directive 14-01 mandating that City Departments take action to reduce their water consumption by 10 percent and to develop a water conservation plan.[207] Between 2007 and 2014, water use by City Departments reduced by 22 percent.[208] In 2015, it was announced that the Departments saved 14 percent in water consumption over that year.[209]

V.3 IMPLEMENTATION ACTIONS

In 2008, the SFPUC approved the Phased Water System Improvement Program Variant under Resolution 08-0200. The program outlined a goal to develop 10 million gallons per day (mgd) in recycled water, groundwater, and conservation by 2018 in San Francisco.[210] Achieving this goal would increase access to local water sources and decrease dependency on the Hetch Hetchy system in case of an extended drought. The City's water conservation efforts and greenhouse gas emission reduction investments can be classified into the following categories, which are discussed further below:

- Increase local and sustainable sources of water
- Reduce consumption and increase efficiency through fixture and system upgrades
- Increase use of recycled water for non-potable uses
- Minimize water pollution

[200] California Government Operations Agency, California Drought. Accessed August 4, 2016.
[201] SFPUC, State Water Resources Control Board Self-Certification of Supply Reliability for Three Additional Years of Drought and Update to Final Water Supply Availability Estimate, June 2016. Accessed August 3, 2017.
[202] Southern California Public Radio, Where is California water use decreasing?, May 2016. Accessed August 4, 2016.
[203] SFPUC, Voluntary Water Conservation Efforts. Accessed August 4, 2016.
[204] SFPUC, Resolution 16-0130, June 28, 2016. & Steven Ritchie, Memo: State Water Resources Control Board Self-Certification of Supply Reliability for Three Additional Years of Drought and Update to Final Water Supply Availability Estimate, June 2016. Accessed August 4, 2016.
[205] SFPUC, Resolution 16-0127, June 2016. Accessed August 4, 2016.
[206] SFPUC, Water Use Restrictions Remain in Effect. Accessed August 4, 2016.
[207] Office of the Mayor, Executive Directive 14-01: Water Conservation – City Departments, February 2014. Accessed August 4, 2016.
[208] Ibid.
[209] Office of the Mayor, Mayor Lee's Statement on Governor Brown's First Ever Statewide Mandatory Water Restrictions, April 2015. Accessed August 4, 2016.
[210] Board of Supervisors, Resolution 102-16, March 2016. Accessed August 4, 2016.

Many of these investments are being carried out by the SFPUC through the City's Water System Improvement Program (WSIP), a $4.8 billion capital improvement program. The program includes 83 projects, 35 of which are located within San Francisco. The City's main projects for water management, many of which are highlighted below, can be found in SFPUC's 2015 Urban Water Management Plan.[211]

Increase local and sustainable sources of water

Groundwater supply is replenished through natural processes and would not need to travel through extensive pipelines for distribution.[212] The San Francisco Groundwater Supply Project would provide up to 4 million gallons per day of local water through utilization of six deep water wells installed in two phases. The first phase includes the installation of four new wells near West Sunset Playground, South Sunset Playground, Lake Merced Pump Station and Golden Gate Park. The second phase converts two of the irrigation wells located at Golden Gate Park to drinking water facilities.[213] In 2015, the SFPUC became the Groundwater Sustainability Agency for the seven groundwater basins in the City. The committee plans to conduct a Groundwater Sustainability Plan for the North Westside Basin.[214] Resolution 15-0071, passed on March 10, 2015, resolved SFPUC's intent to draft a groundwater sustainability plan. The Regional Groundwater Storage and Recovery project will result in the construction of 16 new recovery wells and facilities, 13 of which are already completed. The project is expected to be completed in 2017 and is projected to store up to 20 billion gallons of groundwater.[215] Groundwater storage permits the City to save water during years of heavy rainfall to use for periods of drought; it is projected that with the additional aquifers the Hetch Hetchy supply could sustain a 7.5 year drought.[216]

In addition to groundwater resources, the five largest water agencies in the Bay Area (SFPUC, the Contra Costa Water District, the East Bay Municipal Utility District, the Santa Clara Valley Water District and the Zone 7 Water Agency) are working together to explore the option of a regional desalination plant. Through studies and pilot projects, the agency has concluded that the Bay Area Regional Desalination project is technically feasible.[217] A regional reliability study and site-specific analysis were conducted between 2011 and 2014.[218] The dates for preliminary design are not yet announced.

Reduce consumption and increase efficiency through fixture and system upgrades

The Water System Improvement Program includes many projects that would maintain and update the system infrastructure. The Hetchy System Improvement Program is a $1 billion project to upgrade the water and power transmission lines and hydroelectric generation system. The expected completion date for the projects is 2025. The Sewer System Improvement Program (SSIP) is a 20-year, multi-billion dollar capital investment project to update the aging system. It includes the construction and evaluation of eight green infrastructure projects aimed at managing stormwater before it enters the sewer system. The projects involve installing rain gardens, permeable pavement, and green bulbouts in each of the City's eight urban watersheds.[219] The SSIP also has a gray infrastructure improvement component to reinvest into the pump stations and treatment plants and build a new biosolids digester facility at the Southeast Treatment Plant. The City's wastewater treatment plants already produce biosolids as a part of the treatment process and capture generated energy. The proposed facility would upgrade the biosolids treatment (from Class B to Class A), resulting in 100 percent of the produced biosolids to be

[211] SFPUC, 2015 Urban Water Management Plan, June 2016. Accessed August 3, 2017.
[212] SFPUC, San Francisco Groundwater Supply. Accessed August 4, 2016.
[213] Ibid.
[214] SFPUC, Groundwater Management Program. Accessed August 4, 2016.
[215] SFPUC, Regional Groundwater Storage & Recovery. Accessed August 4, 2016.
[216] SFPUC, Groundwater: A Natura Source of Water Supply. Accessed August 4, 2016.

[217] Contra Costa Water District, SFPUC, EBMUD, Santa Clara Valley Water District, Livermore-Amador Valley, Bay Area Regional Desalination Project. Accessed August 4, 2016.
[218] Contra Costa Water District, SFPUC, EBMUD, Santa Clara Valley Water District, Livermore-Amador Valley, Bay Area Regional Desalination Project. Accessed August 4, 2016.
[219] SFPUC, Green Infrastructure Projects. Accessed August 4, 2016.

used for agricultural or horticultural purposes. In addition, 100 percent of the biogas produced would be able to be converted to heat and energy.[220]

In addition to major system-wide capital projects, the SFPUC offers a number of programs for individual households to reduce their water consumption.[221]

- SFPUC residential customers are eligible for a free **Water-Wise Evaluation**. A water conservation technician would visit the site to conduct a comprehensive review of the property's water usage and provide water saving recommendations.
- The **High-Efficiency Toilet Rebate Program** offers cash rebates up to $125 per tank style toilet and up to $500 per flushometer valve toilet when residents or commercial businesses replace high-flow toilets (3.5 gallons per flush or more) with low-flow toilets (1.28 gpf or less). High-efficiency toilets can reduce water use by roughly 16 percent.[222] Commercial businesses can also apply for a cash rebate of up to $500 to replace high-flow urinals (1.5 gpf or more) with high-efficiency pint flush urinal models (0.125 gpf or less). Funding for the toilet and urinal rebate programs are on a first come, first served basis and the programs would run through the end of 2016.
- Clothes washers account for over 20 percent of indoor water use.[223] SFPUC commercial or multi-family account holders can apply for a rebate up to $500 per commercial **High-Efficiency Clothes Washer** that has a water factor of 4.5 or below. Residential single-family or multi-family account holders can also apply for a rebate up to $150 for Energy State Most Efficient models.
- SFPUC customers are also eligible for certain **Free Water Saving Devices** including kitchen/basin faucet aerators, water-efficient showerheads, toilet fill valves, toilet leak repair parts, and garden spray nozzles.
- The SFPUC is currently in the request for proposal phase to expand the **High-Efficiency Toilet Direct Install Program**, which has thus far replaced over 500 inefficient toilets with new high-efficiency models to non-profit affordable housing providers and participants of SFPUC's low-income rate discount program.[224]

In addition to these programs, households and commercial businesses must also comply with the applicable building and landscaping water conservation ordinances outlined in Table 19.

Increase use of recycled water for non-potable uses

Using non-potable water for uses that do not require high levels of purification can conserve both water and energy. Replacing toilet water with non-potable water can save 25 percent in residential buildings and up to 75 percent in commercial building water demand.[225] Up to 95 percent of the water demand in commercial buildings can be addressed with non-potable water.[226] The City has several ordinances, programs, and projects to increase the amount of water that is recycled. The Southeast Water Pollution Control Plant runs a 24/7 recycled water truck-fill station that dispenses water at 400 gallons per minute. The recycled water can be used for a number of non-potable uses such as sewer flushing, landscaping, and street cleaning.[227] In 2015, the truck dispensed 739,000 gallons of recycled water.[228] The Harding Park and Pacifica Recycled Water Projects provide recycled water to irrigate the parks' golf courses.[229] There are two main recycled water projects for the Westside and the Eastside.

[220] SFPUC, Biosolids Digester Facilities Project. Accessed August 4, 2016.
[221] SFPUC, Voluntary Water Conservation Efforts. Accessed August 3, 2017.
[222] SFPUC, Residential High-Efficiency Toilet Rebates. Accessed August 4, 2016.
[223] SFPUC, Residential Clothes Washer Rebates. Accessed August 4, 2016.
[224] SFPUC, Water Resources Division Annual Report Fiscal Year 2014-15. Accessed August 4, 2016.
[225] SFPUC, San Francisco's Non-potable Water Program, December 2015. Accessed August 4, 2016.
[226] Paula Kehoe, San Francisco's Non-potable Water Program, February 2016. Accessed August 4, 2016.
[227] SFPUC, Recycled Water Fill Station. Accessed August 4, 2016.
[228] SFPUC, SFPUC Urban Water Management Plan, June 2016. Accessed August 4, 2016.
[229] Ibid.

Both of the projects would involve the construction of a new recycled water treatment plant and have a goal to save up to 2 million gallons of drinking water daily. The water would be used for irrigation and other non-potable uses.[230] The Eastside project would most likely be located at the Southeast Wastewater Treatment Plant and is on hold to coordinate with the Sewer System Improvement program.[231]

The SFPUC manages several programs to increase recycled water use.

- The Graywater Permit Rebate Program offers up to $225 to help cover the costs to obtain permits for graywater projects. The SFPUC offers resources to assist people who are interested in using water from the clothes washer to irrigate their gardens.
- The Urban Farmer Store has partnered with the SFPUC to offer $125 discounts to a Laundry-to-Landscape (L2L) graywater kit. There are also L2L graywater workshops and a Graywater Design Manual for outdoor irrigation.[232]
- The Large Landscape Grant Program offers grants to projects that can implement water-saving techniques. There are also grants available for projects that manage stormwater through green infrastructure under the Urban Watershed Management Program.
- The Landscape Technical Assistant Program helps retail water service customers identify strategies to reduce water use on site. The program includes free system evaluation, recommendations, and irrigation water budgets.
- Lastly, the SFPUC offers a Rainwater Harvesting Program in partnership with the Urban Farmer Store. The program offers discounts to cisterns and rain barrels, as well as a permit rebate of up to $225. Rainwater harvesting can reduce energy and chemical consumption by not entering into the sewer and stormwater system, and can help reduce floods and polluting overflows.[233]
- In the past, the SFPUC has offered Grant Assistance for Alternate Water Source Projects to encourage retail water users to use rainwater, stormwater, graywater, foundation drainage, and blackwater for non-potable uses. The Commission has $1 million in annual funding for projects that replace at least 1 million gallons of potable water annually for 10 years (minimum) or that replace at least 3 million gallons for at least 10 years.[234]
- In 2014, the SFPUC published "San Francisco's Non-Potable Water System Projects", which highlighted a number of projects around the City that have installed rainwater harvesting programs and alternative water source designs. The new SFPUC headquarters, located at 525 Golden Gate Avenue is a noted project that uses blackwater and rainwater for toilet flushing and irrigation purposes. The building design has reduced potable water use by 65 percent and includes a rainwater harvesting system (a 25,000 gallon cistern) and a Living Machine©. The Living Machine© treats up to 5,000 gallons of wastewater per day to redistribute for toilet flushing. The rainwater harvesting system satisfies the requirements of the San Francisco Stormwater Management Ordinance, which requires projects that disturb over 5,000 square foot or more of ground surface to implement stormwater management practices that decrease runoff 25 percent for the 2-year 24-hour design storm.[235]

There are several ordinances that apply to non-potable water uses and recycling water (see Table 19). The Alternate Water Sources for Non-Potable Applications code (Article 12C of the Health Code) requires the installation of onsite water systems for larger developments and water budget calculators for smaller projects to assess the amount of rainwater, graywater and foundation drainage produced on site. There is an accompanying "Non-potable Water Program Guidebook" published online by SFPUC to support developers and engineers in implementing onsite water systems. Section 1203 of the Public Works Code requires the Water Department and

[230] Ibid.
[231] SFPUC, San Francisco Eastside Recycled Water Project. Accessed August 4, 2016.
[232] SFPUC, Graywater. Accessed August 4, 2016.
[233] SFPUC, Rainwater Harvesting. Accessed August 4, 2016.
[234] SFPUC, Grant Assistance for Large Alternate Water Source Projects Grant Guidelines and Terms. Accessed August 4, 2016.
[235] SFPUC, San Francisco's Non-potable Water System Projects, May 2014. Accessed August 4, 2016.

Department of Public Works to prepare a Nonpotable and Reclaimed Water Use Master Plan. This plan was approved as the San Francisco Recycled Water Mater Plan in 2006. Per the ordinance, the plan calls for projects within the plan area to use reclaimed water for irrigation purposes.

Minimize water pollution

San Francisco has a combined sewer system that treats both the sewage and stormwater for the City. Minimizing the pollution levels of the water that enters the system at the source can result in significant energy savings in purification processes and toxic clean-up. Outreach programs that ensure the use of effective but less toxic products as well as proper disposal techniques decreases the amount of pollutants entering the system. SFPUC and SF Environment maintain websites for residents to refer to for the proper recycling and managing of toxic products.[236] SFPUC's Our Water Our World program is a partnership with hardware and gardening stores to provide information about pesticides and water quality. Residents and restaurants can recycle their cooking oil through SFGreasecycle, which alleviates clogging of the pipes and subsequent overflows. Residents and other food service providers must install grease capturing equipment in order to comply with the FOG (fats, oils, grease) Ordinance adopted in 2011 (Public Works Code, Section 140). There are additional ordinances specific to runoff prevention and stormwater management (see Table 19).

Stormwater Management

Stormwater runoff pollutes the sewer system and nearby water bodies such as the San Francisco Bay and Pacific Ocean. Pollution from large storm events resulting in flooding and sewer discharges can be prevented through effective stormwater management techniques. As pursuant to the Stormwater Management Ordinance (SF Public Works Code, Article 4.2, Section 147), projects that disturb 5,000 square feet or more of the ground surface must comply with the Stormwater Design Guidelines and submit a Stormwater Control Plan to the SFPUC for review. The Stormwater Management Requirements and Design Guidelines were updated in 2016 and outline separate requirements for combined sewer areas and separate sewer areas.[237]

TABLE 19. SAN FRANCISCO CODES RELATED TO WATER EFFICIENCY

Code	Description
Stormwater Management Ordinance [SF Public Works Code, Article 4.2 (Section 147)]	All projects that disturb 5,000 square feet or more of impervious surface must manage stormwater on-site using low impact design and must apply for a Construction Site Runoff Control Permit prior to commencing a project. Comply with the Stormwater Management Ordinance, including SFPUC Stormwater Design Guidelines. Every Small Development Project (between 2,500 and 5,000 square feet of impervious surface) shall implement Post Construction Stormwater Controls and submit documentation of these measures as described in the Stormwater Management Requirements and Design Guidelines and in accordance with Article 4.2.

[236] San Francisco Department of Environment, Recycling and Managing Toxic Products for Residents. Accessed August 3, 2017.

[237] SFPUC, San Francisco Stormwater Management Requirements and Design Guidelines, 2016. Accessed August 4, 2016.

Requirements for water use reduction [SF Green Building Code, Sections 4.103.2.2 (residential), 5.103.1.2 (non-residential), CALGreen, Sections 4.303.1, 5.303]	City-owned facilities and leaseholds are subject to all of the requirements of the Commercial Water Conservation Ordinance (SF Building Code, Chapter 13A), including provisions requiring the replacement of non-compliant water closets and urinals on or before January 1, 2017 (Section 709). 1. All water closets with a rated flush volume exceeding 1.6 gallons per flush must be replaced with high-efficiency water closets that use no more than 1.28 gallons per flush. All wall-mounted urinals with a rated flush volume exceeding 1 gallon per flush shall be replaced with high-efficiency urinals that use no more than 0.5 gallons per flush.. Furthermore, City departments purchasing water closets and urinals may only purchase high-efficiency water closets and urinals listed by the General Manager of the SFPUC. 2. All showerheads in the facility having a maximum flow rate exceeding 2.5 gallons per minute must be replaced with showerheads that use no more than 1.5 gal/ min. 3. All faucets and faucet aerators in the facility with a maximum flow rate exceeding 2.2 gallons per minute must be replaced with fixtures having a maximum flow rate not to exceed 0.5 gallons per minute per appropriate site conditions.
Commercial Water Conservation Ordinance *[SF Building Code, Chapter 13A*]	Water conservation measures required for alterations to existing commercial buildings on or before January 1, 2017: 1. If showerheads have a maximum flow > 2.5 gallons per minute (gpm), replace with unit meeting California Code of Regulations, Title 20 requirements 2. All showers shall have no more than one showerhead per valve 3. If faucets and faucet aerators have a maximum flow rate > 2.2 gpm, replace with unit meeting California Code of Regulations, Title 20 requirements 4. If toilets have a rated water consumption >1.6 gallons per flush (gpf), replace with fixtures meeting San Francisco Plumbing Code, Chapter 4 requirements 5. If urinals have a maximum flow rate >1.0 gpf, replace with fixtures meeting San Francisco Plumbing Code, Chapter 4 requirements 6. Repair all water leaks
Residential Water Conservation Ordinance [SF Building Code - Housing Code, Chapter 12A]	Requires all residential properties (existing and new) prior to sale and during major improvement projects to upgrade to the following minimum standards: 1. If showerheads have a maximum flow > 2.5 gallons per minute (gpm), replace with unit meeting California Code of Regulations, Title 20 requirements 2. All showers shall have no more than one showerhead per valve 3. If faucets and faucet aerators have a maximum flow rate > 2.2 gpm, replace with unit meeting California Code of Regulations, Title 20 requirements 4. If toilets have a rated water consumption >1.6 gallons per flush (gpf), replace with fixtures meeting San Francisco Plumbing Code, Chapter 4 requirements 5. Repair all water leaks. Although these requirements apply to existing buildings, compliance must be completed through the Department of Building Inspection, for which a discretionary permit (subject to CEQA) would be issued.
Water Efficient Irrigation Ordinance *[SF Administrative Code, Chapter 63]*	Projects that include 500 square feet (sf) or more of new or modified landscape are subject to this ordinance, which requires that landscape projects be installed, constructed, operated, and maintained in accordance with rules adopted by the SFPUC that establish a water budget for outdoor water consumption. Tier 1: 1,000 sf <= project's modified landscape < 2,500 sf Tier 2: (A) New project landscape area is greater than or equal to 500 sf or; (B) the project's modified landscape area is greater than or equal to 2,500 sf. Note: Tier 2 compliance requires the services of landscape professionals. See the SFPUC web site for information regarding exemptions to this requirement: www.sfwater.org/landscape

Alternate Water Sources for Non-Potable Applications *[SF Health Code, Article 12C]*	Large development projects (equal to or greater than 250,000 SF) should meet toilet and urinal flushing and irrigation demands through the collection and reuse of available onsite Rainwater, Graywater, and Foundation Drainage, to the extent required by application of the Water Budget Documentation developed for each Development Project. Small development projects should use the Water Budget Calculator, as provided by the General Manager's rules, to prepare a Water Budget assessing the amount of Rainwater, Graywater and Foundation Drainage produced on site, and the planned toilet and urinal flushing and irrigation demands. Prior to initiating installation of any Alternate Water Source project, Project Applicants shall submit to the Director an application for permits to operate Alternate Water Source systems.
Construction Site Runoff Pollution Prevention for New Construction *[SF Public Works Code, Article 4.2 (Section 146.5)]*	Construction Site Runoff Pollution Prevention requirements depend upon project size, occupancy, and the location in areas served by combined or separate sewer systems. Any project disturbing ≥5,000 square feet of ground surface is required to submit and receive approval of an Erosion and Sediment Control Plan prior to commencing any construction-related activities. The plan must be site-specific, and details the use, location, and emplacement of the sediment and erosion control devices at the project site. All construction sites, regardless of size, must implement BMP's to prevent illicit discharge into the sewer system. For more information on San Francisco's requirements, see www.sfwater.org.
ADDITIONAL CODE FOR PUBLIC BUILDINGS	
Stormwater Management Ordinance [SF Environment Code, Section 706(a1)]	All projects disturbing more than 5,000 square feet of ground surface must manage stormwater on-site using low impact design. Comply with the Stormwater Management Ordinance, including SFPUC Stormwater Design Guidelines.
Indoor Water Use Reduction [SF Environment Code, Sections 704 & 706(a2)]	The LEED® Project Administrator shall submit documentation verifying a minimum 30 percent reduction in the use of indoor potable water, as calculated to meet and achieve LEED® credit WE3.
Requirements for water use reduction [SF Environment Code, Section 709 & SF Green Building Code, Chapter 13A]	Municipal construction projects subject to a LEED certification requirement shall demonstrate a minimum 30 percent reduction in the use of indoor potable water, as calculated to meet and achieve LEED credit Indoor Water Use Reduction.

TABLE 20. SAN FRANCISCO GENERAL PLAN GOALS RELATED TO WATER EFFICIENCY

General Plan Element	Objective/Policy
Community Facilities	Objective 10. Locate wastewater facilities in a manner that will enhance the effective and efficient treatment of storm and wastewater.
Community Safety	Policy 1.11 Continue to promote green stormwater management techniques.
Environmental Protection	Objective 6. Conserve and protect the fresh water resource.
Environmental Protection	Policy 6.1 Maintain a leak detection program to prevent the waste of fresh water.
Environmental Protection	Policy 6.2 Encourage and promote research on the necessity and feasibility of water reclamation.
Environmental Protection	Objective 7. Assure that the land resources in San Francisco are used in ways that both respect and preserve the natural values of the land and serve the best interest of all the City's citizens.

Housing Element - 2014	Policy 10.4 Support state legislation and programs that promote environmentally favorable projects.
Housing Element - 2014	Policy 13.4 Promote the highest feasible level of "green" development in both private and municipally-supported housing.

TABLE 21. SAN FRANCISCO AREA PLAN GOALS RELATED TO WATER EFFICIENCY

Area Plan	Objective/Policy
Balboa	Objective 1.4 Develop the reservoirs in a manner that will best benefit the neighborhood, the City, and the region as a whole.
Balboa	Policy 1.4.1 Develop the east basin of the reservoir to provide additional educational facilities while enhancing existing college and community services.
Balboa	Policy 1.3.2 Develop the west basin of the reservoir the greatest benefit of the City as a whole as well as for the surrounding neighborhoods.
Balboa	Policy 4.7.1 New development should meet minimum levels of green construction.
Central Waterfront	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Central Waterfront	Policy 3.3.2 Discourage new surface parking lots and explore ways to encourage retrofitting existing surface parking lots and off-street loading areas to minimize negative effects on microclimate and stormwater infiltration. The City's Stormwater Master Plan, upon completion, will provide guidance on how best to adhere to these guidelines.
Central Waterfront	Policy 3.3.3 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
Central Waterfront	Policy 5.4.2 Explore ways to retrofit existing parking and paved areas to minimize negative impacts on microclimate and allow for storm water infiltration.
East SoMa	Policy 2.5.3 Require new development to meet minimum levels of green construction.
East SoMa	Policy 3.3.2 Discourage new surface parking lots and explore ways to encourage retrofitting existing surface parking lots and off-street loading areas to minimize negative effects on microclimate and stormwater infiltration. The City's Stormwater Master Plan, upon completion, will provide guidance on how best to adhere to these guidelines.
East SoMa	Policy 3.3.3 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
East SoMa	Policy 3.3.4 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
East SoMa	Policy 5.4.2 Explore ways to retrofit existing parking and paved areas to minimize negative impacts on microclimate and allow for storm water infiltration.
Mission Area	Policy 2.5.3 Require new development to meet minimum levels of green construction.

Mission Area	Policy 3.3.2 Discourage new surface parking lots and explore ways to encourage retrofitting existing surface parking lots and off-street loading areas to minimize negative effects on microclimate and stormwater infiltration. The City's Stormwater Master Plan, upon completion, will provide guidance on how best to adhere to these guidelines.
Mission Area	Policy 3.3.3 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
Mission Area	Policy 3.3.5 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
Mission Area	Policy 5.4.2 Explore ways to retrofit existing parking and paved areas to minimize negative impacts on microclimate and allow for storm water infiltration.
Showplace/Potrero	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Showplace/Potrero	Policy 3.3.2 Discourage new surface parking lots and explore ways to encourage retrofitting existing surface parking lots and off-street loading areas to minimize negative effects on microclimate and stormwater infiltration. The City's Stormwater Master Plan, upon completion, will provide guidance on how best to adhere to these guidelines.
Showplace/Potrero	Policy 3.3.4 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
Showplace/Potrero	Policy 5.4.2 Explore ways to retrofit existing parking and paved areas to minimize negative impacts on microclimate and allow for storm water infiltration.
Transit Center	Objective 6.4 Ensure that new buildings constructed in the plan area represent leading edge design in terms of sustainability, both high performance for their inhabitants and low impact on the environment.
Transit Center	Policy 6.12 Consider requiring all major buildings in the plan area to achieve the minimum LEED levels established in the SF Green Building Ordinance excluding credits for the given inherent factors of location, density, and existing city parking controls, in order to achieve high-performance buildings.
Transit Center	Policy 6.13 All major buildings in the plan area should exceed the minimum credits required by the SF Green Building Ordinance under the Energy and Water categories of the LEED schemes.
Transit Center	Objective 6.5 Reduce the amount of potable water used in new development in the district.
Transit Center	Objective 6.6 Reduce stormwater runoff from the district into the sewer system to improve bay water quality and reduce strain on treatment plants during wet weather events.
Transit Center	Objective 6.7 Take advantage of significant concentrated development and infrastructure reconstruction in the district and adjacent areas to create district-scale water efficiency and reuse measures.
Transit Center	Policy 6.14 Create a reliable supply of non-potable water that can be used throughout the plan area to reduce potable water demand.
Transit Center	Policy 6.15 Pursue a variety of potential sources of non-potable water, including municipally-supplied recycled water and district-based graywater, black water, stormwater, and foundation drainage water.
Transit Center	Policy 6.16 Create infrastructure in the Transit Center District and immediately adjacent areas for non-potable water use, including treatment and distribution.

Transit Center	Policy 6.17 Include distribution pipes and other necessary infrastructure for non-potable water when undertaking any major streetscape or other infrastructure work in the right-of-ways in the Transit Center District and immediately vicinity.
Transit Center	Policy 6.18 Identify and protect suitable sites within the plan area or immediate vicinity for locating a treatment facility for creating a local nonpotable supply.
Transit Center	Policy 6.19 All new and large redevelopment projects in the City should adhere to the approach outlined in the Transit Center Area Plan to maximize resources and minimize use of potable water
Transit Center	Policy 6.20 Ensure projects use Low Impact Design (L.I.D.) techniques in all streetscape, public space, and development projects to reduce the quantity of stormwater runoff and slow its flow into the sewer system, and to harvest this water for on-site uses.
Western SoMa	Policy 5.2.1 Fully support and integrate into the western SoMa SUD the environmental policies embodied in green building legislation.
Western SoMa	Policy 5.2.2 Require new development to meet minimum levels of "green" construction.
Western SoMa	Policy 5.2.3 Encourage mandatory targets for certain components of the rating systems, specifically, 5 percent to 10 percent of material re-use for development projects, 100 percent diversion of all non-hazardous construction and demolition debris for recycling and/or salvage, 10 to 25 percent onsite renewable generation, water efficient landscaping to reduce potable water consumption for irrigation by 50 percent, and maximize water efficiency within buildings to reduce waste water by 30 percent.
Western SoMa	Policy 5.2.6 Existing surface parking lots and off-street loading areas should be retrofitted to minimize negative effects on microclimate and stormwater infiltration. The San Francisco stormwater master plan, upon completion, will provide guidance on how best to adhere to these guidelines.
Western SoMa	Policy 5.2.9 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
Western SoMa	Policy 7.3.12 Encourage new development to contribute to ecological and sustainable streetscape with permeable pavements and storm water collectors.
Western SoMa	Policy 7.10.3 Explore ways to retrofit existing parking and paved areas to minimize negative impacts on microclimate and allow for storm water infiltration.

V.4 STATE STRATEGIES FOR WATER EFFICIENCY

In January of 2014, Governor Jerry Brown declared a State of Emergency and called for a voluntary 20 percent reduction in water consumption due to the statewide drought.[238] In fall of 2014, voters passed Proposition 1, a $7.5 billion general obligation bond for water projects statewide including watershed protection and restoration, water storage, water management, treatment, recycling and procuring additional sources from groundwater and desalination.[239] In April of 2015, the Governor passed Executive Order B-29-15, the first statewide mandatory water restriction, which mandated a 25 percent reduction of water consumption from 2013 levels through February of 2016. In addition to the overall reduction, the order outlined specific requirements for drought

[238] SFPUC, 2015-2016 Drought Program, May 2015. Accessed August 4, 2016.

[239] Legislative Analyst's Office, Effectively Implementing the 2014 Water Bond, February 2015. Accessed August 4, 2016.

tolerant landscaping, state appliance rebate programs, drought management plans from large agricultural suppliers, and the implementation of a State Water Energy Technology program.[240]

In 2015 the State drought status was "exceptional drought". Due to the heavier winter rains and snow, the status has since been updated to "extreme drought" for 2016. Executive Order B-27-16 was announced in May of 2016. The order recognized that drought is a persistent problem that requires permanent conservation efforts and attention. The order called for the Department of Water Resources to work with the Water Board to develop new water use targets that would help the state to achieve a 20 percent reduction in use by 2020.[241] In May of 2016, the State Water Resources Control Board changed how they mandate water conservation efforts from one that is based on percentage reduction to one that incorporates a "stress test", requiring suppliers to ensure that their area can service a three year supply of water in drought conditions.[242] The mandatory conservation is now based on this projected estimated shortfall.

Water conservation results in significant energy savings and greenhouse gas emission reductions. The Center for Water-Energy Efficiency at UC Davis maintains a website that combines the annual monthly progress reports for over 400 public water agencies, pursuant to Executive Order B-37-16. Between June 2015 and February 2016, there was a 23.9 percent rate of water use savings compared to 2013 levels, which resulted in 219,653 MTCDE in GHG savings statewide.[243]

TABLE 22. STATE SENATE & ASSEMBLY BILLS RELATED TO WATER EFFICIENCY

Bill	Year	Description
Proclamation 1-17-2014	2014	Governor Brown declares drought State of Emergency
Proposition 1 Water Bond	2014	A $7.5 billion general obligation bond for water projects statewide including watershed protection and restoration, water storage, water management, treatment, recycling and procuring additional sources from groundwater and desalination
Executive Order B-29-15	2015	Mandatory water restrictions for the state: 25 percent reduction from 2013 levels (this has most recently been updated by Executive Order B-37-16)
Resolution 2015-0032	2015	Established protocol for State Water Board to work with water suppliers to implement pricing and conservation structures. SFPUC is assigned an 8 percent conservation standard from this.
Executive Order B-37-16	2016	State water reduction targets; requires monthly reporting by public suppliers; permanently prohibits practices that waste potable water
State Water Resources Control Board Adopted Text of Emergency Regulation (update May 2016)	2016	Alters statewide mandatory reduction to rely on "stress test" approach to water conservation regulation - suppliers must self-certify that they have enough water to meet demand for the next three years and must institute a plan if there is an expected shortage

[240] California Executive Department, Executive Order B-29-15, April 2015. Accessed August 4, 2016.
[241] California Executive Department, Executive Order B-37-16, May 2016. Accessed August 4, 2016.
[242] California Government Operations Agency, California Drought. Accessed August 4, 2016.
[243] UC-Davis, Center for Water-Energy Efficiency. Accessed August 4, 2016.

VI. MUNICIPAL OPERATIONS

VI.1 TARGETS

City and County of San Francisco Target

- City Departments must take actions to reduce their water consumption by 10 percent (Executive Directive 14-01)
- City Departments must submit annual climate action plans to show progress towards citywide goals
- Zero emissions taxi fleet by 2020 (Resolution 2007-21)
- 2013 Climate Action Strategy had goal to reduce natural gas emissions by 30 percent

VI.2 PROGRESS TO DATE

In 2012, municipal operations comprised just over 3 percent of the City's GHG emissions profile. The contributors of municipal emissions include the Muni fleet and energy consumed in municipal government buildings. Since 100 percent of the municipal electricity is provided by the Hetch Hetchy hydroelectric system, the 2012 emissions from municipal electricity were nearly zero.[244] As of 2015, municipal operations comprise 2.6 percent of the City's GHG emissions. The main contributor to departmental emissions is the consumption of natural gas, which accounted for 87,029 MTCDE in the 2015 inventory. Due to cleaner fuels, overall building energy emissions from this sector have decreased 21.5 percent compared to 1990 levels despite increases in consumption of electricity and natural gas.

While fleet fuel from Muni buses contributed 42,026 MTCDE, consumption of fuel has declined 21 percent.[245] The agency's emissions profile peaked in 2010 but has since declined due in large part to switching the primary fuel source from diesel to biodiesel B20 and most recently to renewable diesel.[246] Renewable diesel is made from the same main components as biodiesel B20 but is produced through a cleaner process. The full lifecycle emissions of renewable diesel can be more than 60 percent lower than those from petroleum or B20.[247] In 2015, SFMTA was one of four public transportation agencies to be recognized by the American Public Transportation Association as a Platinum-level member of their Sustainability Commitment.[248]

[244] San Francisco Department of Environment, 2015 San Francisco Greenhouse Gas Inventory. Accessed August 11, 2017.
[245] San Francisco Department of Environment, 2015 San Francisco Greenhouse Gas Inventory. Accessed August 11, 2017.
[246] SFMTA, SFMTA Carbon Footprint. Accessed August 4, 2016.
[247] Aaron Bialick, Switch to Renewable Diesel Will Make your Muni Ride Cleaner & More Reliable, December 2015. Accessed August 4, 2016.
[248] SFMTA, Future in Focus, FY2014-2015 Annual Report. Accessed August 4, 2016.

CHART 6. EMISSIONS FROM MUNICIPAL BUILDINGS AND FLEETS

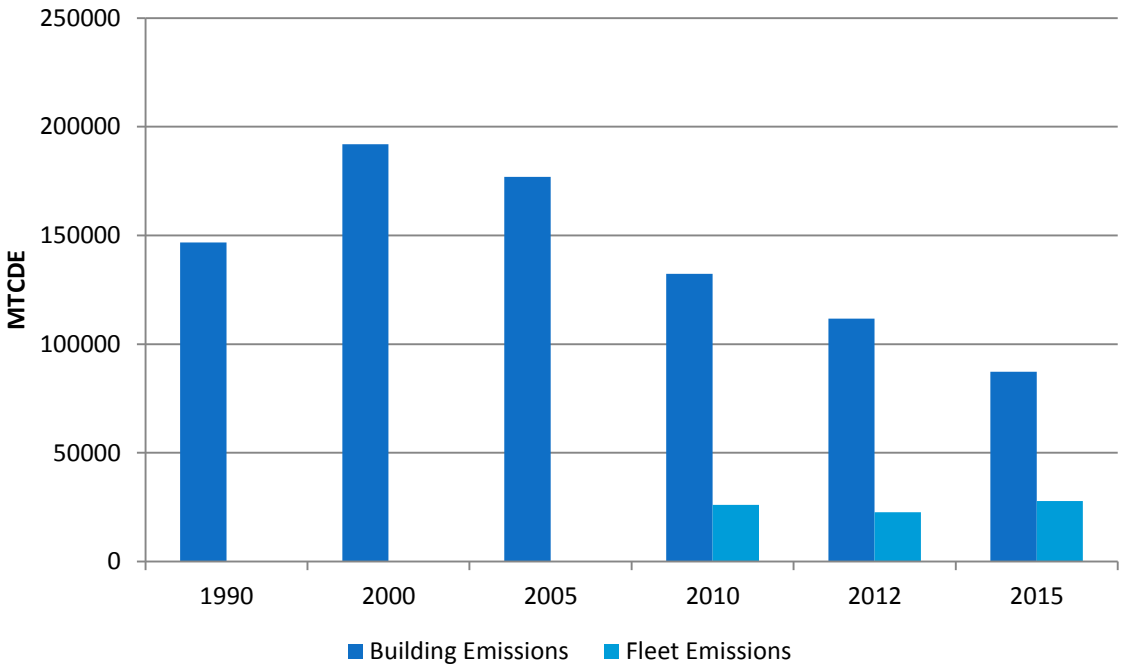


TABLE 23. EMISSIONS FROM MUNICIPAL BUILDINGS AND FLEET (MTCDE)

Year	Building Emissions	Fleet Emissions
1990	146,763	--
2000	191,965	--
2005	176,998	--
2010	132,349	26,100
2012	111,728	22,676
2015	87,251	27,886

VI.3 IMPLEMENTATION ACTIONS

Climate Commitments and Programs

San Francisco city departments have been at the forefront of planning for climate change, and have been recognized both nationally and internationally for their efforts. In 1997, the Board of Supervisors adopted San Francisco's first Sustainability Plan. In 2002, the Board passed a goal to achieve zero waste and Resolution 158-02, which called for the City to develop a greenhouse gas reduction plan. One year later, the San Francisco Department of the Environment established the Municipal Environmental Code and in 2004, the first climate action plan for the City was published. San Francisco hosted the United Nations World Environment Day in 2005. At this meeting, Mayor Newsom and mayors from over 140 Cities committed to the Urban Environmental Accords to implement

best practices for energy, waste reduction, urban nature, transportation, and water.[249] In the same year, Mayor Newsom also signed on to the Mayors Climate Protection Agreement, committing San Francisco to Kyoto Protocol emission reduction targets. Since 2005, the City and State have implemented an unprecedented number of codes and ordinances to address climate change mitigation and impacts, many of which are highlighted in this report. The most recent Climate Action Strategy was published by SF Environment in 2013. In 2015, the EPA awarded San Francisco with the Climate Leadership Award to recognize the City's attainment of reducing emissions by at least 20 percent in 2012 compared to 1990 levels.[250] In 2016, San Francisco was nominated a finalist in the U.S. Department of Transportation's Smart City Challenge.[251], [252]

Departments have collaborated to create comprehensive plans to prepare the City for climate change impacts. Recently published reports include the San Francisco Municipal Decarbonization Report (2016), Sea Level Rise Action Plan (2016), Urban Water Management Plan (2015 Public Review Draft), the Climate Action Strategy (2013), Renewable Energy Task Force Recommendations Report (2012), as well as department-specific plans including the SFMTA Climate Action Strategy (2011) and the San Francisco Bicycle Strategy (2013). Specific neighborhood plans to address emissions reductions have also been created. Area plans have core policies and objectives to minimize greenhouse gas emissions (see Table 26). In 2015, the SFPUC published the Civic Center Sustainable Utilities District Plan. The plan is unique in that the majority of the buildings within the designated 62-acre area are publicly owned. The key goals of the plan are to achieve zero waste, zero wastewater, and net-zero imported energy use and carbon emissions. The plan's proposals include a water treatment facility, an energy generation facility, and green stormwater infrastructure.[253] In addition to specific plans, the City Planning Department and SFMTA have both adopted policy frameworks to incorporate core sustainability goals into all projects.

San Francisco is a member of the 100 Resilient Cities program and released a citywide resiliency strategy in April of 2016. One of the key components of *Resilient San Francisco* is to adapt to sea level rise and to design for a waterfront that will have minimal destruction from increased extreme weather events.[254] Specific goals include "Lead the world in greenhouse gas mitigation" and "Adapt San Francisco to climate change". In addition to the newly established Office of Resilience and Recovery, the work will require significant cross-departmental collaboration and has already involved coordination between the Port, Public Works, the Planning Department, and the Department of Public Health. Bay Area Chief Resiliency Officers from the Bay Area will also be involved provide support for the Bay Area Resilient by Design Challenge. Based on New York's Rebuild by Design, the competition will encourage interdisciplinary and innovative proposals to address climate change impacts.

Ordinance 81-08 and Implementation Actions

Greenhouse Gas Emissions Targets

Ordinance 81-08 adopted the following reduction targets for the City of San Francisco and mandated that City departments "consider the effect of all decisions and activities within their jurisdiction on greenhouse gas emissions and undertake their responsibilities to the end that the City achieves the greenhouse gas emissions limits set forth in this Ordinance."

[249]SFMTA, Future in Focus, FY2014-2015 Annual Report. Accessed August 4, 2016.
[250]The United States Conference of Mayors, U.S. Conference of Mayors Climate Protection Agreement. Accessed August 4, 2016.
[251]SFMTA, The City and County of San Francisco Honored with Climate Leadership Award, February 2015. Accessed August 4, 2016.
[252]U.S. Department of Transportation, U.S. Transportation Secretary Foxx Announces Seven Finalist Cities for Smart City Challenge, March 2016. Accessed August 4, 2016.
[253]SFPUC, Civic Center Sustainable Utilities District Plan, June 2015. Accessed August 4, 2016.
[254]Patrick Otellini, City & County of San Francisco and 100 Resilient Cities, Resilient San Francisco, April 2016. Accessed August 4, 2016.

- 25 percent reduction below 1990 levels by 2017
- 40 percent reduction below 1990 levels by 2025
- 80 percent reduction below 1990 levels by 2050

Department Climate Action Plans

Between 2005 and 2008, departments voluntarily reported their GHG emission profile to the California Climate Action Registry (CCAR). In 2008, the Board of Supervisors passed Ordinance 81-08, requiring departments to submit detailed inventories and carbon action plans annually. Emissions by source type, fiscal year, and department can be found at data.sfgov.org. Highlights from the San Francisco Airport (SFO) and SFPUC climate action plans are below.

San Francisco Airport Climate Action Plan

The San Francisco Airport served 48.2 million passengers in 2015. The airport covers 2,400 acres of developed Airport land and 2,800 acres of wetlands and tidelands. The 2015 Climate Action Plan for SFO was published in May of 2016. The plan outlines a target for SFO to achieve zero GHG emissions, zero solid waste, and zero net energy consumption by 2021. As of 2015, the airport had achieved a 21 percent reduction in emission levels compared to 1990 with an additional 18 percent in offsets, resulting in an overall reduction of 38.8 percent below 1990 levels. The reductions were achieved with the following actions: a 2,480 MTCDE reduction from 1990 levels for natural gas and electric due to efficiency projects and cleaner electricity, a 383 MTCDE reduction from improved fuel efficiency and use of alternative fleet fuel, reduction of landfilled solid waste and replacing high-emitting refrigerant R-12 with R-134A while also reducing leakage of fugitive refrigerants. In FY2015, the airport recycled and composted roughly 55 percent of solid waste.[255]

SFPUC Climate Action Plan

The SFPUC is composed of water, wastewater, and power enterprises. The SFPUC provides water and wastewater service to San Francisco businesses and residents, and water to jurisdictions throughout the Bay Area. The SFPUC also provides power to San Francisco's city departments , including the hydroelectric power required to operate San Francisco's electric transportation system. The SFPUC hydropower is a key component of the City's goal to achieve 100 percent GHG free electricity. SFPUC operations emitted 7,729 MTCDE for fiscal year 2012-2013, with 68 percent of the emissions coming from fleet fuel use and 32 percent emitted from natural gas consumption. The electricity has zero carbon emissions associated with it. The SFPUC has implemented a number of emissions reductions projects including municipal solar projects, conversion to biodiesel blends for in-city non-emergency vehicles, and a new LEED Platinum headquarters at 525 Golden Gate Avenue. In addition to intradepartmental projects, the SFPUC is updating infrastructure citywide to increase efficiencies and decrease GHG emissions. Major capital improvements projects include the Water System Improvement Program and the Sewer System Improvement Program (see Water Efficiency section for more information).

Planning Department Responsibilities

In addition to preparing a Department Climate Action Plan, Ordinance 81-08 requires the San Francisco Planning Department to:

1. Update and amend the City's applicable General Plan elements to include the emissions reduction limits set forth in the Greenhouse Gas Reduction Ordinance and policies to achieve those targets.
   a) The General Plan and Area Plan elements related to emission reduction limits are highlighted in Tables 25 and 26.
2. Consider a project's impact on the City's GHG reduction limits specified in this ordinance as part of its review under CEQA.

[255] San Francisco International Airport, 2015 Climate Action Plan, May 2016. Accessed August 4, 2016.

a) The Planning Department has a checklist for municipal and private developers to go through to ensure accordance with all codes that have expected emission reduction impacts.

3. Work with other City departments to enhance the Transit First Policy to encourage a shift to sustainable modes of transportation thereby reducing emissions and helping to achieve the targets set forth by this ordinance.[256]
   a) City employees benefit from a number of policies that support Transit First including the Emergency Ride Home program, pre-tax commuter benefits, a discounted membership for Bay Area Bike Share, and access to CityCycle, a free shared bike fleet for city employees.

Department of Building Inspection Responsibilities

Under Ordinance 81-08, the Department of Building Inspection is required to review and recommend amendments to the Building Code and other local laws to (1) improve energy efficiency in new construction and in repairs and alterations to existing buildings, (2) optimize energy efficiency of HVAC, lighting, and other building systems, and (3) mandate retrofitting of buildings at the time of sale. There are a number of resources and codes to successfully implement green building standards for both municipal buildings and for private development. Municipal buildings are subject to design requirements outlined in the San Francisco Environment Code Chapter 7 and all buildings are held to specific water conservation and energy performance standards, highlighted throughout this report. As pursuant to section 705(b), all municipal construction projects larger than 10,000 square feet are subject to LEED Gold certification requirements. The City Municipal Green Building Task Force, comprised of representatives from city departments and one member of the public, meets twice a month to discuss policies and building issues related to the code.[257] SF Environment staff provides green building training modules for City design professionals, including LEED workshops, energy modeling, building commissioning, integrated design stormwater management and materials selection trainings.

Department of Public Works Responsibilities

The Department of Public Works is required to review and recommend amendments to maintenance and construction standards, programs and requirements within its jurisdiction, and the Department's Standard Plans and Specifications to address greenhouse gas emissions. The ordinance also requires that the Public Works Department, in consultation with the SFPUC, review and recommend changes to street and other public lighting standards to enhance energy efficiency and thereby reduce the City's greenhouse gas emissions. In 2016, the SFPUC began to replace 18,500 City-owned streetlights with LEDs and smart controller technology. As of 2017, SFPUC has converted 6,000 of the fixtures to LEDs and plans to convert the remaining 12,5000 fixtures by the end of 2017. LEDs are up to 50 percent more energy efficient than conventional bulbs and four times longer. Smart controller technology allows for the monitoring of individual streetlight performance, the ability to adjust light intensity levels, and receives real-time information when lights have failed or are about to fail. Smart controller technology is expected to increase energy conservation and reduce maintenance costs.[258]

City Administrator & SFPUC Responsibilities

Ordinance 81-08 requires the City Administrator to review and recommend amendments for increased efficiency and urges the SFPUC to develop and implement an energy action plan. The plan was mandated as follows: (1) in coordination with SF Environment, develop a plan to achieve the goal of San Francisco becoming fossil fuel free by 2030; (2) in coordination with SF Environment, set annual goals for generating electricity locally through

[256]The City's Transit First Policy, passed in 1973 and incorporated into the City Charter, gives priority to public transit investments, adopts street capacity and parking policies to discourage increased automobile traffic, and encourages the use of transit, bicycling and walking rather than the use of single-occupant vehicles.

[257]San Francisco Department of the Environment, Municipal Green Building Task Force. Accessed August 4, 2016.

[258]SFPUC, LED Conversion. Accessed August 4, 2016.

renewable generation; and (3) integrate the greenhouse gas emissions targets and policies into the Sewer Master Plan.

In response to this ordinance, the SFPUC has implemented a number of comprehensive and long-term strategies to address energy and sewer emission reduction goals. In 2011, the SFPUC published an update to the 2002 Electricity Resource Plan. The Commission is currently responsible for 19 municipal solar installations that can generate up to 7.9 megawatts of energy, with several more approved or undergoing installation in the coming years.[259] The SFPUC has also implemented the Sewer System Improvement Program (SSIP) and the Water System Improvement Program (WSIP) to invest into the City's aging infrastructure (see Water Efficiency Section for more detail). Municipal buildings are eligible for the wide array of rebates and free assessments that the SFPUC offers to upgrade fixtures for water and energy conservation (see Water Efficiency Section). In 2011, the Board of Supervisors adopted Ordinance 17-11 to add Chapter 20 to the Environment Code, which requires disclosure of energy performance data for commercial buildings larger than 10,000 square feet. With the adoption of this code, the SFPUC has performed energy analysis on over 465 public buildings and has published annual energy performance benchmarking reports.[260] The 2014 report found that energy use intensity (kBtu/square foot) improved over 16 percent between 2009 and 2014 and the average carbon footprint decreased by over 27 percent in the same period.[261] The airport, hospital, and educational buildings comprised roughly 67 percent of energy consumption for the inventoried buildings.[262]

Material Resources & Waste Management Practices for Municipal Operations

San Francisco's Environment Code specifies green building material standards for municipal buildings. Section 706 of Chapter 7 restricts flooring, finishes, paints, coating and adhesives to materials that have been associated with lower levels of emissions. Chapter 8 bans the purchase of tropical hardwood and virgin redwood by City departments. The ordinance finds that deforestation of the tropical rainforests has been scientifically linked to global warming and has led to increased concentrations of CO2 in the atmosphere. City departments are prohibited from procuring or engaging in contracts that would use ordinance-listed tropical hardwoods and virgin redwood.

Chapters 2, 5 and 19 of the Environment Code specify requirements for the City to maximize purchases of recycled products and divert from disposal as much solid waste as possible to help achieve the Citywide zero waste target by 2020. The Resource Conservation Ordinance (Chapter 5) sets minimum recovered material content requirements for the purchase of various products and requires departments to appoint a Recycling Coordinator, prepare a Departmental Waste Assessment, submit a Resource Conservation Plan, and submit an Annual Recycling Survey that reports the amount of solid waste diverted. In 2014, 727 city employees were trained, including 72 departmental Zero Waste Coordinators, on how to most effectively compost, recycle, prevent waste, and institute city policies. City departments are also subject to provisions established by Executive Directive 08-02: Enhancement of Recycling and Resource Conservation. The directive calls for departments to purchase 100 percent post-consumer content recycled paper and to purchase supplies that are approved under the "SF Approved" product list screened by SF Environment.[263] Visit www.SFapproved.org for a full list of products and services that meet the City's health and environmental standards.

In 2006, Mayor Newsom passed Executive Directive 06-05. In addition to requiring specific diversion and waste management targets, the directive called for City departments to reuse office furniture, computers and supplies through the Virtual Warehouse. The Virtual Warehouse is an exchange system for surplus office furniture, computers, equipment, and supplies. The mission of the program is to facilitate the reuse, recycling, and disposal

[259] SFPUC, Solar Installation. Accessed August 4, 2016.
[260] SFPUC, Energy Benchmarking for Municipal Buildings. Accessed August 4, 2016.
[261] SFPUC, Energy Benchmarking for Municipal Buildings: 2014 Energy Benchmarking Report, December 2015. Accessed August 4, 2016.
[262] Ibid.
[263] Office of the Mayor, Executive Directive 08-02: Enhancement of Recycling and Resource Conservation, March 2008. Accessed August 4, 2016.

for surplus City materials.[264] Many City departments also offer receptacles for recycling batteries, light-bulbs, cleaners, paints, pesticides, and electronic waste, including cell phones, cameras, and iPods. SF Environment maintains a webpage dedicated to providing departments with recycling and composting information and resources.[265]

Municipal Transportation

City employees benefit from a number of policies that support Transit First including the Emergency Ride Home program, pre-tax commuter benefits, discounted membership for Bay Area Bike Share and access to CityCycle, a free shared bike fleet for city employees. In addition to increasing use of alternative transportation modes, efforts have been made to lower emissions of the municipal fleet. In 2005, the Board of Supervisors passed Ordinance 278-10, The Healthy Air and Clean Transportation Ordinance was codified by Executive Directive 05-103. The directive required that 70 percent of the City's new, non-emergency light-duty vehicles were alternative fuel vehicles and that 90 percent of the new light-duty purchases were alternative fuel or high efficiency vehicles. In 2006, the Mayor announced Executive Directive 06-02 for municipal fleets to use 25 percent B20 by March of 2007 and 100 percent B20 by December of that year.[266] Most recently, targets have been updated in section 403B of the San Francisco Environment Code, which calls for the City to optimize fleet management and align greenhouse gas reduction goals with the Federal Executive Order: Planning for Federal Sustainability in the Next Decade (March 2015). The goal is to achieve a 4 percent reduction in emissions by 2017 and a 15 percent reduction by end of fiscal 2021 for light-duty fleet vehicles. Under the code, the City Administrator must submit an annual report to the Board of Supervisors of findings and recommendations towards this goal.[1] In 2015, Mayor Lee announced that the City was phasing out all petroleum-based diesel fleet vehicles and fueling the whole municipal fleet with 100 percent renewable diesel.[267] While the specific emissions savings estimated from this switch will be calculated with the next greenhouse gas inventory update, it is estimated that this conversion will result in a 60 percent reduction in emissions compared to diesel vehicles.[268]

The City has become a leader in the development and employment of electric vehicles. In 2008, Mayors Newsom (San Francisco), Reed (San Jose), and Dellums (Oakland) announced a joint effort to make the San Francisco Bay Area the "Electric Vehicle Capital of America." According to SF Environment, the City has installed 300 Level 2 charging points in municipal garages. In addition, there are plans for approximately 2,000 Level 2 chargers around the Bay Area.[269] In May of 2016, San Francisco became the first Climate Action Champion to be selected to receive $4.75 million in funding from the U.S. Department of Energy to pursue fuel cell technology in vehicles and supporting hydrogen infrastructure.[270] The same month, the City's first hydrogen fuel station opened in South San Francisco.[271] The California Resources Board has projected that by the end of 2016, California will have 51 fully operational hydrogen fuel stations.[272]

As of June 2016, the SFMTA manages 2,026 permitted taxi medallions operating within the City. In June 2007, the Taxi Commission passed Resolution 2007-21, which called for the San Francisco taxi industry to reduce GHG emissions by 20 percent from 1990 levels and 50 percent from current levels by 2012, as well as to work to offset remaining emissions with investments in renewable energy or energy efficiency by 2015, and to move to a Zero

[264] Virtual Warehouse
[265] San Francisco Department of Environment, City Government Zero Waste. Accessed August 3, 2017.
[266] C40 Cities, A World-Leading Low Emissions Transport System with Zero-Emission Vehicles, November 2011. Accessed August 4, 2016.
[267] San Francisco Environment Code, Section403B
[268] Office of the Mayor, Mayor Lee Announces San Francisco to Use Renewable Diesel in City Fleet, July 2015. Accessed August 4, 2016.
[269] Ibid.
[270] San Francisco Department of the Environment, Municipal Installations. Accessed August 4, 2016.
[271] Office of Energy Efficiency & Renewable Energy, Energy Department Announces Climate Action Champion, City of San Francisco, Embracing Hydrogen and Fuel Cell Technologies, May 2016. Accessed August 4, 2016.
[272] California Energy Commission, Hydrogen Fueling Station in South San Francisco Expands Network, May 2016. Accessed August 4, 2016.

Emissions taxi fleet by 2020. In January 2008, the San Francisco Taxi Commission adopted a resolution to address the greenhouse gas emissions from San Francisco's taxi fleet. In order to achieve the Taxi Commission's greenhouse gas reduction goals, the Board of Supervisors passed the taxicab gate cap, which ratified previous gate fees, instituted a gate surcharge for low emission vehicles, and requires taxi companies to reduce average per vehicle greenhouse gas emissions by 20 percent from 1990 levels by 2012 (ordinance 26-08 SF Police Code). In 2012, Mayor Lee announced that the taxi fleet had achieved and exceeded this goal, with a 49 percent reduction in taxi emissions.[273] As of 2016, 98 percent of the SFMTA taxi fleet was comprised of alternative / zero emissions vehicles.[274]

Commission on the Environment

Section 4.118 of the City Charter establishes the Commission on the Environment. The Commission is directed to regularly produce an assessment of the City's environmental condition and prepare plans for the long-term environmental sustainability of San Francisco. The Commission, which is appointed by the Mayor, meets once every two months.

San Francisco Carbon Fund

The San Francisco Carbon Fund was created in response to Executive Directive 07-13, directing SF Environment to develop and pilot a Local Carbon Offset Program, the first of its kind in the United States. The program is codified in Chapter 52 of the City's Administrative Code (Ordinance 172-09, 2009). The program gives City departments, local businesses, and residents the opportunity to mitigate carbon pollution generated by their own activities by investing monies from activities that produce GHGs into local projects that reduce GHGs. The City currently invests roughly 13 percent of all airfare employees take for business trips into City parks, planting of trees and other greenhouse gas offsetting projects.[275]

[273] Air Resources Board, Fuel Cell Electric Vehicle Deployment and Hydrogen Fuel Station Network Development, July 2015. Accessed August 4, 2016.

[274] ""The combustion of biomass and biomass-based fuels emit CO2 emissions…[but] are tracked separately because the carbon in biomass is of a biogenic origin – meaning that it was recently contained in living organic matter [and would be naturally released during decomposition] –while the carbon in fossil fuels has been trapped in geologic formations for millennia.' This distinction between biogenic and anthropogenic emissions applies only to CO2, and not to CH4 and N20, which are also emitted from biomass combustion due to the reason that 'no CH4 or N20 would have been produced had the biomass naturally decomposed.' So, for the purposes of operational municipal GHG inventory reporting, both the biodiesel (B100) portion and the renewable diesel (RD100) portion of diesel fuel is not included." Preliminary studies show that "PM, THC, and CO emissions from biodiesel showed consistent and significant reductions from ULSD [Ultra Low Sulfur Diesel], but NOx emissions increased with increasing biodiesel blend level." [San Francisco Renewable Diesel GHG Memo (2015). Accessed August 4, 2016]. & "The LCA of renewable diesel under the Low Carbon Fuel Standard showed reductions in GHGs of about 15% to 80% depending on feedstock source." [California Environmental Protection Agency, Staff Report Multimedia Evaluation of Renewable Diesel, May 2015. Accessed August 4, 2016.]

[275] Patrick Otellini, City & County of San Francisco and 100 Resilient Cities, Resilient San Francisco, April 2016. Accessed August 4, 2016.

TABLE 24. SAN FRANCISCO CODES RELATED TO MUNICIPAL OPERATIONS

	Code	Description
Transportation	Commuter Benefits Ordinance [SF Environment Code, Section 427(b)]	All employers of 20 or more employees must provide at least one of the following benefit programs: A Pre-Tax Election consistent with 26 U.S.C. § 132(f), allowing employees to elect to exclude from taxable wages and compensation, employee commuting costs incurred for transit passes or vanpool charges, OR Employer Paid Benefit whereby the employer supplies a transit or vanpool subsidy for each Covered Employee. The subsidy must be at least equal in value to the current cost of the Muni Fast Pass including BART travel, OR Employer Provided Transportation furnished by the employer at no cost to the employee in a vanpool or bus, or similar multi-passenger vehicle operated by or for the employer.
	Emergency Ride Home Program [SF Environment Code, Section 427(d)]	All City employees are automatically enrolled in the San Francisco Emergency Ride Home program.
	Transportation Management Programs *[SF Planning Code, Section 163]*	Requires new buildings or additions over a specified size (buildings >25,000 sf or 100,000 sf depending on the use and zoning district) within certain zoning districts to implement a Transportation Management Program and provide on-site transportation management brokerage services for the life of the building.
	Requirements for Fuel Efficient Vehicle and Carpool Parking *[CALGreen, Section 5.106.5]*	Requires New Large Commercial projects and Commercial Interior projects to provide designated parking for low-emitting, fuel efficient, and carpool/van pool vehicles. Refer to Table 5.106.5.2 to determine number of stalls. If over 200 spaces, mark 8 percent of parking stalls for such vehicles. For nonresidential additions and interior alterations to existing buildings, the regulation applies for projects that would add 10 or more parking spaces to the project site.
Transportation	Bicycle Parking for City-Owned and Leased Properties *[SF Planning Code, Sections 155.2]*	Requires bicycle facilities for City-Owned and Leased Properties. Refer to Section 155.2 for requirements by use.
	Showers and Lockers [SF Planning Code, Section 155.4]	Requires showers and clothes lockers for short-term use for tenants or employees of the building in new and expanded buildings, change of occupancy, or increase of use intensity. Number of showers based on size and use of building - see Section 155.4(c).
	Healthy Air and Clean Transportation: Transit First Policy *[SF Environment Code, Section 403(a)]*	Requires all City officers, boards, commissions and department heads responsible for departments that require transportation to fulfill their official duties to reduce the Municipal Fleet by implementing Transit First policies by: Maximizing the use of public transit, including taxis, vanpools, and car-sharing; Facilitating travel by bicycle, or on foot; and, Minimizing the use of single-occupancy motor vehicles, for travel required in the performance of public duties.
	Healthy Air and Clean Transportation : Purchase of Clean Fleet *[SF Environment Code, Section 403(b)]*	Requires the reduction of the number of passenger vehicles and light-duty trucks in the Municipal Fleet. In addition, requires new purchases or leases of passenger vehicles and light-duty trucks to be the cleanest and most efficient vehicles available on the market. Also aligns the greenhouse gas reduction goals with the Federal Executive Order – Planning for Federal Sustainability in the Next Decade, dated March 19, 2015 – reducing average per-mile greenhouse gas emissions from general purpose, light-duty fleet vehicles, relative to a baseline of emissions in fiscal year 2014, to achieve the following percentage reductions: (A) not less than 4 percent by the end of fiscal year 2017; and (B) not less than 15 percent by the end of fiscal year 2021.

Transportation	Clean Construction Ordinance [SF Environment Code, Chapter 25 (Sections 2505 & 2506)]	Section 2505 Requirements within Air Pollutant Exposure Zones: For all work performed on a Major Construction Project located in an Air Pollutant Exposure Zone, equipment is subject to emission and idling standards as outlined in Section 2505. Additionally, before starting on-site Construction Activities, the Contractor shall submit a Construction Emissions Minimization Plan ("Emissions Plan") to the Department Head for review and approval. After the start of Construction Activities, the Contractor shall maintain quarterly reports at the construction site documenting compliance with the Construction Emissions Minimization Plan. Section 2506 Requirements outside Air Pollutant Exposure Zones: For public works projects located outside Air Pollutant Exposure Zones, the Contractor shall utilize only off-road equipment and off-road engines fueled by biodiesel fuel grade B20 or higher and utilize only off-road equipment that either: (A) meets or exceeds Tier 2 standards for off-road engines, or (B) operates with the most effective VDECS.
Zero Waste	Construction and Demolition Debris [SF Environment Code, Sections 706, 708 & Chapter 14; SF Green Building Code, Sections 5.103.1.3 and 4.103.2.3]	Requires mixed construction and demolition (C&D) debris material in San Francisco to be hauled by a Registered Transporter to a Registered Facility where the material will be processed for recovery from landfill. C&D material can also be source separated at the job site for reuse or recycling. Any full demolition must submit a Demolition Debris Recovery Plan to the Department of the Environment for approval before the Department of Building Inspection will issue a permit.
	Collection, Storage and Loading of Recyclable and Compostable Materials / Mandatory Recycling & Composting Ordinance [SF Environment Code, Section 707 & Chapter 19; CALGreen Section 5.410.1]	All City departments must have adequate, accessible, and convenient recycling, composting and trash areas (interior and exterior) that are integrated into the design and provided within City-owned facilities and leaseholds. Recycling and composting must be equally convenient as trash. Collection containers must be as easily accessible by collection vehicles. In accordance with the City and County of San Francisco's solid-waste diversion goals, and the Mandatory Recycling and Composting Ordinance (Chapter 19 of the Environment Code), the departments shall provide sufficient space to allow the collection, storage and loading of 100 percent of the facility's recyclable, compostable and waste materials. Furthermore, City departments are required to recycle used fluorescent and other mercury containing lamps, batteries, and universal waste as defined by California Code of Regulations, Section 66261.9.
	Resource Conservation Ordinance / Professional Services Contracting [SF Environment Code. Chapter 5 & SF Administrative Code, Section 6.4]	Chapter 5 of the Environment Code establishes a goal for each City Department to: Maximize purchases of recycled products and Divert from disposal as much solid waste as possible and appoint at least one person responsible for compliance with the chapter Each City department shall prepare a Waste Assessment annually. The ordinance requires janitorial contracts to consolidate recyclable materials for pick up. Lastly, the ordinance requires departments to specify the purchase of 30 percent post-consumer recycled content for all paper products except copier and bond paper. Pursuant to section 506 (a) (3), executive directive 08-02 increased the amount of post-consumer recycled content required for copier and bond paper from 30 percent to 100 percent. Furthermore, section 6.4 of the Administrative code requires the use of recycled content material in public works projects to the maximum extent feasible and gives preference to local manufacturers and industry.
Zero Waste	Resource Conservation Ordinance / Non-PVC Plastics [SF Environment Code, Section 509]	This ordinance requires non-PVC plastics to be specified in City purchasing and construction projects.

	Bottled and Package Free Water Ordinance [San Francisco Environment Code, Chapter 24, Section 5]	No City officer, department, or agency shall use City funds to purchase bottled water for its own general use. A department may use City funds to purchase bottled water for uses specifically exempted from or allowed under Chapter 24. It shall be City policy not to have drinking water systems in City offices or facilities that use plastic water bottles of any size where satisfactory alternatives exist and are feasible at the location under construction.
Water Efficiency	Food Service and Packing Waste Reduction Ordinance [San Francisco Environment Code, Chapter 16, Section 3]	City departments (city contractors, leases, and food providers) may not purchase, acquire, or use Food Service Ware for (1) where the food service ware is made in whole or in part, from polystyrene foam, or (2) where the food service ware is no compostable or recyclable.
	Stormwater Management Ordinance [SF Public Works Code, Article 4.2 (Section 147)]	For City sponsored projects, the LEED® Project Administrator shall submit documentation verifying that a construction project that is located outside the City and County of San Francisco achieves the LEED® SS6.2 credit. Construction projects located within the City and County of San Francisco shall implement the applicable stormwater management controls adopted by the San Francisco Public Utilities Commission (the "SFPUC"). All construction projects shall develop and implement construction activity pollution prevention and stormwater management controls adopted by the SFPUC, and achieve LEED® prerequisite SSp1 or similar criteria adopted by the SFPUC, as applicable.
	Stormwater Management Ordinance and Construction Pollution Prevention*[San Francisco Environment Code, Chapter 7]*	Municipal construction projects that create and/or replace 5,000 or more square feet of impervious surface in separate and combined sewer area and projects that create and/or replace from 2,500 up to but not including 5,000 square feet of impervious surface in separate sewer areas only, must implement post-construction stormwater controls that comply with the Stormwater Management Ordinance. Municipal construction projects that involve land-disturbing activities on 5,000 or more square feet of ground surface must implement construction site run-off best management practices in compliance with the Construction Site Runoff Ordinance.
	Water Efficient Irrigation Ordinance *[SF Administrative Code, Chapter 63]*	Projects that include 500 square feet (sf) or more of new or modified landscape are subject to this ordinance, which requires that landscape projects be installed, constructed, operated, and maintained in accordance with rules adopted by the SFPUC that establish a water budget for outdoor water consumption. Tier 1: 1,000 sf <= project's modified landscape < 2,500 sf Tier 2: (A) New project landscape area is greater than or equal to 500 sf or; (B) the project's modified landscape area is greater than or equal to 2,500 sf. Note: Tier 2 compliance requires the services of landscape professionals. See the SFPUC web site for information regarding exemptions to this requirement: www.sfwater.org/landscape

Water Efficiency	Alternate Water Sources for Non-Potable Applications *[SF Health Code, Article 12C]*	It shall be City policy that within five years of the effective date of Ordinance No. 109-15 (effective date 2015) adding this subsection (e) to Article 12C, the City shall use only non-potable water for the purpose of irrigating and cleaning parks, streets and other public spaces. Furthermore, large development projects (equal to or greater than 250,000 SF) should meet toilet and urinal flushing and irrigation demands through the collection and reuse of available onsite Rainwater, Graywater, and Foundation Drainage, to the extent required by application of the Water Budget Documentation developed for each Development Project. Small development projects should use the Water Budget Calculator, as provided by the General Manager's rules, to prepare a Water Budget assessing the amount of Rainwater, Graywater and Foundation Drainage produced on site, and the planned toilet and urinal flushing and irrigation demands. Prior to initiating installation of any Alternate Water Source project, Project Applicants shall submit to the Director an application for permits to operate Alternate Water Source systems.
	Construction Site Runoff Pollution Prevention for New Construction *[SF Public Works Code, Article 4.2 (Section 146.5)]*	Construction Site Runoff Pollution Prevention requirements depend upon project size, occupancy, and the location in areas served by combined or separate sewer systems. Any project disturbing ≥5,000 square feet of ground surface is required to submit and receive approval of an Erosion and Sediment Control Plan prior to commencing any construction-related activities. The plan must be site-specific, and details the use, location, and emplacement of the sediment and erosion control devices at the project site. All construction sites, regardless of size, must implement BMP's to prevent illicit discharge into the sewer system. For more information on San Francisco's requirements, see www.sfwater.org.
	Indoor Water Use Reduction [SF Environment Code, Section 706]	Municipal construction projects subject to a LEED certification requirement shall demonstrate a minimum 30 percent reduction in the use of indoor potable water, as calculated to meet and achieve LEED credit Indoor Water Use Reduction.
	Requirements for water use reduction [SF Environment Code, Section 709 & SF Green Building Code, Chapter 13A]	City-owned facilities and leaseholds are subject to all of the requirements of the Commercial Water Conservation Ordinance (SF Building Code, Chapter 13A), including provisions requiring the replacement of non-compliant water closets and urinals on or before January 1, 2017 (Section 709). 1. All water closets with a rated flush volume exceeding 1.6 gallons per flush must be replaced with high-efficiency water closets that use no more than 1.28 gallons per flush. All wall-mounted urinals with a rated flush volume exceeding 1 gallon per flush shall be replaced with high-efficiency urinals that use no more than 0.5 gallons per flush.. Furthermore, City departments purchasing water closets and urinals may only purchase high-efficiency water closets and urinals listed by the General Manager of the SFPUC. 2. All showerheads in the facility having a maximum flow rate exceeding 2.5 gallons per minute must be replaced with showerheads that use no more than 1.5 gal/ min. 3. All faucets and faucet aerators in the facility with a maximum flow rate exceeding 2.2 gallons per minute must be replaced with fixtures having a maximum flow rate not to exceed 0.5 gallons per minute per appropriate site conditions.
	Green Building Requirements for City Buildings [SF Environment Code, Sections 705 & 706]	All municipal new construction and major alteration projects over 10,000 square feet must achieve at a minimum LEED® Gold certification. Municipal construction projects shall demonstrate compliance with locally-required measures provided in Section 706.

Energy Use in Buildings Energy	Energy Efficiency, Better Roofs, and Energy Resilience [SF Environment Code, Section 706]	Municipal construction projects subject to a LEED certification requirement must demonstrate that the project meets LEED prerequisite Minimum Energy Performance EA1 Energy Performance and complies with Title 24, Part 6 California Energy Standards. Municipal new construction or whole building renovation projects must set a target for annual net energy consumption and report this to the Task Force. Municipal new construction or whole building renovation projects with an estimate height no more than three stories above grade must determine the feasibility of designing and constructing such projects to have zero net annual site energy consumption, including all building end uses. Municipal new construction must include a combination of photovoltaic, solar thermal, and/or living roof area, meeting the requirements of Planning Code Section 149 and Green Building Code Chapter 5. Municipal new construction or whole building major renovation projects must analyze the costs and benefits of incorporating onsite batteries that store electricity from onsite solar photovoltaic systems and can be temporarily separated from the electricity grid to supply the community with electricity in event of a disaster.
	Renewable Energy [SF Environment Code, Section 706]	The LEED Project Administrator shall confer with SFPUC on renewable energy opportunities for municipal construction projects. The LEED Project Administrator shall submit documentation verifying that either: At least 1 percent of the building's energy costs are offset by on-site renewable energy generation, achieving LEED credit EA 2, including any combination of: photovoltaic, solar thermal, wind, biofuel-based electrical systems, geothermal heating, geothermal electric, wave, tidal, or low impact hydroelectric systems, or as specified in Section 25741 of the California Public Resources Code; OR In addition to meeting LEED prerequisite EA 1 Energy Performance requirement, achieve an additional 10 percent compliance margin over Title 24, Part 6, 2008 California Energy Standards, for a total compliance margin of at least 25 percent.
	Commissioning [SF Environment Code, Section 706]	For municipal construction projects subject to a LEED certification requirement, the design team must demonstrate that the project achieves Option 1 LEED credit (Enhanced and Monitoring-Based Commissioning) in addition to LEED prerequisite (Fundamental Commissioning and Verification).
Energy Use in Buildings	Regulation of Diesel Backup Generators [SF Health Code, Article 30]	All diesel generators to be registered with the Department of Public Health All new diesel generators must be equipped with the best available air emissions control technology as determined by the California Air Resources Board or the Bay Area Air Quality Management District.
	Existing Commercial Buildings Energy Performance Ordinance [SF Environment Code, Chapter 20]	Owners of nonresidential buildings in San Francisco with ≥10,000 square feet that are heated or cooled must conduct energy efficiency audits, and annually measure and disclose energy performance. Certain exceptions apply for new construction or if specified performance criteria are met. Furthermore, as pursuant to section 2006, municipal facilities should follow particular compliance plans if developed.

	Better Roof Requirements [SF Environment Code, Chapter 26]	Newly constructed Group R occupancy buildings of 10 occupied floors or less shall install solar photovoltaic systems and/or solar systems in the Solar Ready Area required by Title 24 Part 6 Section 110.10 of the California Code of Regulations. Newly constructed buildings of nonresidential occupancy which are 2,000 square feet or greater and possess 10 occupied floors or less shall install solar electric photovoltaic systems and/or solar hot water heating systems in the Solar Ready Area required by Title 24 Part 6 Section 110.10 of the California Code of Regulations. Pursuant to Chapter 26 of the Environment Code, the Environment Director shall collaborate with the Department of Building Inspection, Department of Planning, and the Public Utilities Commission to prepare and publish an annual report on the renewable energy resources developed in compliance with the Better Roof Requirement codes.
	Light Pollution Reduction [CALGreen, Section 5.106.8]	For nonresidential projects, comply with lighting power requirements in CA Energy Code, CCR Part 6. Meet California Energy Code minimum for Lighting Zones 1-4 with Backlight/Uplight/Glare ratings meeting CALGreen Table 5.106.8. Lighting for public streets is exempt as pursuant to section 140.7 of the Energy Code.
Ecological Sustainability & Conservation	Street Tree Planting Requirements [SF Public Works Code, Section 806(d)]	Public Works Code, Section 806(d) requires projects that include new construction, significant alterations, new curb cuts, a new garage, or new dwelling units to plant a 24-inch box tree for every 20 feet along the property street frontage.
	Environmentally Preferable Purchasing Ordinance *[SF Environment Code, Chapter 2]*	For certain common product categories, the ordinance mandates that City Departments purchase only products listed on the Director's Approved Alternatives List. The items on the SFApproved website meet the most rigorous standards for protecting our health and environment.
	Tropical Hardwood and Virgin Redwood Ban *[SF Environment Code, Chapter 8]*	The ordinance prohibits City departments from procuring, or engaging in contracts that would use the ordinance-listed tropical hardwoods and virgin redwood.
	Arsenic-Treated Wood Ordinance [SF Environment Code, Chapter 13]	For City departments, prohibits the use of arsenic-treated wood for most applications, with the exception of saltwater immersion. Details can be found at SFApproved.org/wood
	Wood Burning Fireplace Ordinance [SF Building Code, Chapter 31, Section 3111.3]	Bans the installation of wood burning fire places except for the following: Pellet-fueled wood heater EPA approved wood heater Wood heater approved by the Northern Sonoma Air Pollution Control District

Low Emitting Materials [SF Environment Code, Section 706(a10)]	The LEED Project Administrator shall submit documentation verifying that the project achieves LEED Low Emitting Materials (3 points). For all municipal new construction, major renovation and tenant improvement projects that include furniture and interior surfaces (including but not limited to countertops, doorknobs, handles, wall paints, and carpet, and for purchases made by or on behalf of City departments for these projects, the furniture must comply with regulations pertaining to the following environmental attributes: Added flame retardant chemicals; Emissions of volatile organic compounds (VOCs); Use of certified wood; Polyvinyl chloride (PVC) content; Antimicrobial chemicals; Fluorinated chemicals; Required ecolabels; and Other environmental attributes, consistent with this chapter
Indoor Air Quality: During Construction and Before Occupancy *[SF Environment Code, Section 706(a8)]*	For each municipal construction project subject to a LEED certification requirement, the LEED Project Administrator must submit documentation verifying that the project achieves LEED credit Enhanced Indoor Air Quality Strategies (1 point), LEED credit Construction Indoor Air Quality Management (1 point), and LEED credit Indoor Air Quality Assessment Option 2: Air Testing (2 points). During construction: Sponsoring City department must prepare and implement an Indoor Air Quality Management Plan that achieves LEED credit EQ 3.1.

TABLE 25. SAN FRANCISCO GENERAL PLAN GOALS RELATED TO MUNICIPAL OPERATIONS

General Plan Element	Objective/Policy
Air Quality	Policy 6.2 Encourage recycling to reduce emissions from manufacturing of new materials in San Francisco and the region.
Community Safety	Policy 1.8 Direct City actions to reduce its contributions towards climate change, and mitigate future releases of greenhouse gasses.
Environmental Protection	Policy 4.5 Exert leadership in the voluntary reduction of pollution emissions during air pollution alerts.
Environmental Protection	Policy 12.1 Incorporate energy management practices into building, facility, and fleet maintenance and operations.
Environmental Protection	Policy 12.2 Integrate energy cost reduction measures into the budget process.
Environmental Protection	Policy 12.3 Investigate and implement techniques to reduce municipal energy requirements.

Environmental Protection	Policy 12.4 Encourage investment in capital projects that will increase municipal energy production in an environmentally responsible manner.
Environmental Protection	Policy 12.5 Include energy emergency preparedness plans in municipal operations.
Environmental Protection	Policy 13.5 Emphasize energy conservation in local government housing assistance programs.
Environmental Protection	Objective 15. Increase the energy efficiency of transportation and encourage land use patterns and methods of transportation which use less energy.
Environmental Protection	Policy 15.1 Increase the use of transportation alternatives to the automobile.
Environmental Protection	Policy 15.2 Provide incentives to increase the energy efficiency of automobile travel.
Environmental Protection	Policy 15.5 Encourage consideration of energy use issues when making transportation investment decisions.
Environmental Protection	Policy 15.6 Promote alternative work arrangements which will contribute to more efficient transportation use.
Environmental Protection	Objective 17. Support Federal, State and PG&E energy programs that are equitable, and encourage conservation and renewable energy use.
Environmental Protection	Policy 17.3 Encourage PG&E involvement in energy management programs for residential, commercial and industrial users.
Environmental Protection	Policy 18.3 Establish a self-supporting system for funding municipal energy cost reduction investments.
Environmental Protection	Policy 19.3 Encourage City agencies to act as role models by establishing a Waste Minimization Program.
Housing Element - 2014	Policy 13.4 Promote the highest feasible level of “green” development in both private and municipally-supported housing.
Recreation and Open Space	Policy 2.8 Consider repurposing underutilized City-owned properties as open space and recreational facilities.
Transportation	Policy 2.2 Reduce pollution, noise and energy consumption.
Transportation	Policy 14.5 Encourage the use of alternative fuels for City vehicles, transit vehicles and as feasible, any other motor vehicles as a means of reducing toxic automobile emissions and conserving energy.
Transportation	Objective 20. Give first priority to improving transit service throughout the City, providing a convenient and efficient system as a preferable alternative to automobile use.
Transportation	Policy 20.11 Promote the electrification of bus operation.
Transportation	Policy 21.11 Ensure the maintenance and efficient operation of the fleet of transit vehicles.
Transportation	Policy 22.1 Maintain a taxi service adequate to meet the needs of the city and to keep fares reasonable.

Transportation	Objective 29. City government should play a leadership role in increasing bicycle use.
Transportation	Policy 29.1 Consider the needs of bicycling and the improvement of bicycle accommodations in all city decisions and improve accommodations as much as possible.

TABLE 26. SAN FRANCISCO AREA PLAN GOALS RELATED TO MUNICIPAL OPERATIONS

Area Plan	Objective/Policy
Central Waterfront	Policy 4.1.5 Ensure Muni's storage and maintenance facility needs are met to serve increased transit demand and provide enhanced service.
Central Waterfront	Policy 8.5.3 Demonstrate preservation leadership and good stewardship by the City of publicly owned historic and cultural resources.
East SoMa	Policy 4.1.5 Ensure Muni's storage and maintenance facility needs are met to serve increased transit demand and provide enhanced service.
East SoMa	Policy 8.5.3 Demonstrate preservation leadership and good stewardship of publicly owned historic and cultural resources.
Market and Octavia	Policy 5.2.7 Establish parking pricing in city-owned facilities that supports short-term use.
Mission Area	Policy 4.1.5 Ensure Muni's storage and maintenance facility needs are met to serve increased transit demand and provide enhanced service.
Mission Area	Policy 8.5.3 Demonstrate preservation leadership and good stewardship of publicly owned historic and cultural resources.
Showplace/Potrero	Policy 4.1.5 Ensure Muni's storage and maintenance facility needs are met to serve increased transit demand and provide enhanced service.
Showplace/Potrero	Policy 8.5.3 Demonstrate preservation leadership and good stewardship of publicly owned historic and cultural resources.
Transit Center	Policy 4.8 Support revenue measures and investments essential to enhancing Muni's capacity, reliability and operational efficiency in providing service to and within the District.

VI.4 STATE STRATEGIES FOR MUNICIPAL OPERATIONS

The 2008 Air Resources Scoping Plan encouraged local governments to reduce municipal operations emissions by 15 percent by 2020 based on then-current year emissions.[276] The original Scoping Plan includes a section called "The Role of Local Government: Essential Partners" that highlights the importance of implementing policies at the local level to achieve statewide goals. According to the proposed 2017 Update to the Air Resources Board Scoping Plan, 70 percent of cities in California have completed a GHG inventory, and 42 percent of local governments have completed a climate, energy, or sustainability plan that directly addresses GHG emissions.[277] As of the 2017, 1,060 mayors in the State had signed on to the U.S. Conference of Mayors Climate Protection Agreement.[278] SB375, passed in 2008, commits metropolitan planning organizations to adopt a Sustainable Communities Strategy in

[276] California Environmental Protection Agency, Air Resources Board, Climate Change Scoping Plan, December 2008. Accessed August 4, 2016.
[277] California Air Resources Board, Climate Change Scoping Plan 2017 Update. Accessed on June 30, 2017.
[278] California Environmental Protection Agency, Air Resources Board, First Update to the Climate Change Scoping Plan, May 2014. Accessed August 4, 2016.

line with the statewide greenhouse gas reduction targets as part of its regional transportation plan. Pursuant to SB375, the Air Resources Board set regional targets for passenger vehicle emissions for 2020 and 2035.[279]

Local governments have access to a number of online resources for measuring GHG emissions and creating effective policies to reduce and address climate change impacts. The ARB maintains a Local Government Operations Protocol (LGOP) resource for GHG assessment. The protocol provides standardized emission factors and equations and serves as a model for local agencies to use for inventorying. The most recent update to the LGOP came out in 2010.[280] CoolCalifornia, designed by the Air Resources Board, the University of California, Next10 (a nonprofit) and other partnering organizations maintains a website with steps for local governments to follow for implementing greenhouse gas reduction targets and plans.[281] CoolCalifornia also organizes the CoolCalifornia City Challenge to help local governments engage their communities to lower carbon footprints. Twenty two cities around the state participated in the 2015-2016 competition.[282] In addition, Cities can access the Funding Wizard through CoolCalifornia, a searchable database to help agencies find grants and financing options for sustainable projects.[283] Municipalities also have access to the Beacon Program, a platform for local governments to share best practices for reducing greenhouse gas emissions offered by the Institute for Local Government and the Statewide Energy Efficiency Collaborative. The Beacon Program Awards recognize an agency's and an individual's accomplishments in achieving agency GHG reductions, community GHG reductions, agency energy savings, natural gas savings and sustainability best practice activities.[284]

TABLE 27. STATE ASSEMBLY BILLS RELATED TO MUNICIPAL OPERATIONS

Bill	Year	Description
AB939 Integrated Waste Management Act	1989	Cities & counties to divert 50 percent of solid waste by the year 2000
Executive Order S-20-04	2004	Directed state agencies, departments, and other entities under the direct authority of the Governor to take measures to reduce grid-based energy purchases for buildings by 20 percent by 2015 and to construct new and renovated state-owned facilities to LEED Silver requirements. The order also directed the California Energy Commission establish a methodology to benchmark energy consumption and energy efficiency building commissioning guidelines.
SB375 Sustainable Communities and Climate Protection Act	2008	Coordinated transportation and land use planning; requires Sustainable Communities Strategy for all Regional Transportation Plans.
Air Resources Board Climate Change Scoping Plan	2008	Recommendation for a greenhouse gas emissions reduction target for local government municipal and community-wide emissions to reduce 15 percent from 2008 levels by 2020

[279] California Environmental Protection Agency, Air Resources Board, SB375 Regional Targets Advisory Committee Report, September 2009. Accessed August 4, 2016.

[280] California Environmental Protection Agency, Air Resources Board, Local Government Operations Protocol for Greenhouse Gas Assessments, December 2011. Accessed August 4, 2017.

[281] CARB, Cool California. Accessed August 4, 2016.

[282] CoolCalifornia, CoolCalifornia Challenge, 2016. Accessed August 4, 2016.

[283] CARB, Funding Wizard. Accessed August 4, 2016.

[284] Institute for Local Government, Beacon Program. Accessed August 4, 2016. & Institute for Local Government, Beacon Program. Accessed August 4, 2016.

Executive order B-16-2012	2012	10 percent of fleet purchases of light-duty vehicles be zero-emission by 2015; at least 25 percent of fleet purchases of light-duty vehicles by zero-emission by 2020; Goal of placing 1.5 million zero-emission vehicles to California by 2025 & 80 percent reduction of transportation emissions by 2050 from 1990 levels
AB1532 Greenhouse Gas Reduction Fund	2012	Established the framework for the Greenhouse Gas Reduction Fund
SB535 Greenhouse Gas Reduction Fund	2012	Focused investment in communities disproportionately impacted by pollution; requires 25 percent of Greenhouse Gas Reduction Fund to go to projects that benefit disadvantaged communities with at least 10 percent going to projects that are locating within these communities
SB743 Environmental Quality	2013	Streamlining for transit oriented infill projects; led to process for LOS reform to be replaced with VMT

VII ECOLOGICAL SUSTAINABILITY & CONSERVATION

VII.1 TARGETS

City and County of San Francisco Target

- 50,000 new street trees by 2034 (based on 2014 level of 105,000; Urban Forest Plan)

VII.2 PROGRESS TO DATE

There are roughly 700,000 trees along the streets, parks, and private properties of San Francisco.[285] Urban forests directly decrease atmospheric greenhouse gas emissions through carbon dioxide sequestration. In 2010, the City's trees sequestered the equivalent of 4,717 MTCDE.[286] Urban forests also decrease emissions indirectly through reducing energy needs. It has been shown that trees reduce the heat island effect; reduce natural gas consumption by limiting heat loss from buildings; and decrease electric cooling needs due to provided shade.[287] Trees also help to manage stormwater, improve air quality, and add aesthetic value. As of 2015, San Francisco canopy cover was near 14 percent, ranking 17th in tree cover compared to the 20 most populated cities in the country.[288] The City is working to expand tree coverage where possible while also investing appropriately into the maintenance of the existing canopy to maximize the benefits of urban forest for both greenhouse gas sequestration and livability benefits.

VII.3 IMPLEMENTATION ACTIONS

There are a number of efforts underway to increase the urban forest, enhance people's interactions with park and open space, improve greenway connectivity, and protect important watersheds. The overall target of the City's Urban Forest Plan is to increase the number of trees in City streets by 50,000 by 2034.

Urban Forestry Council

Authorized by Chapter 12 of the San Francisco Environment Code, the Urban Forestry Council meets throughout the year to advise City Departments and the Mayor on funding and staffing needs for tree maintenance and opportunities for programs.[289] In collaboration with surveying efforts from SF Environment and pursuant to section 1209 of the Environment Code, the Urban Forestry Council publishes an annual report on the state of the urban forest and the efforts of the departments and organizations that oversee the Urban Forest Plan and other citywide tree programs.[290]

Friends of the Urban Forest

The mission of the Friends of the Urban Forest is to promote a larger and healthier urban forest as part of the urban ecosystem through community planting, maintenance, education, and advocacy. The Friends of the Urban Forest is a non-profit organization that has offered assistance to individuals and neighborhood groups who want to plant and care for trees since 1981. Since its inception, the organization has planted over 50,000 trees.[291] In 2011

[285] SF Planning, San Francisco Urban Forest Plan, Fall 2014. Accessed August 4, 2016.
[286] San Francisco Department of the Environment, San Francisco Climate Action Strategy, 2013. Accessed August 4, 2016.
[287] Davey Resource Group, Resource Analysis of Inventoried Public Trees, April 2013. Accessed August 4, 2016.
[288] Lizzie Johnson, Homeowners rally for plan to transfer tree ownership back to city, December 2015. Accessed August 4, 2016.
[289] SF Environment, Urban Forestry Council. Accessed August 4, 2016.
[290] San Francisco Environment Code, Section 1209
[291] Friends of the Urban Forest, History. Accessed August 4, 2016.

the organization partnered with the City to produce the San Francisco Urban Forest Map.[292] The Urban Forest Map is an effort to map every tree in the City, calculate the associated environmental benefits of those trees, and provide information for future planning and research related to urban forests.

San Francisco Parks Alliance

The Neighborhood Parks Council and San Francisco Parks Trust joined together in 2011 to form the San Francisco Parks Alliance, an organization that serves to assist communities in improving parks and working with the City. The group assists in public land planning and policy. In 2015, the San Francisco Parks Alliance and San Francisco Department of Public Works published the *SF Street Parks Manual*, a reference guidebook on how to create a Street Park in the city. The Street Parks program seeks to support communities in the development and upkeep of open spaces owned by Public Works.[293] Over 100 gardens and parks have been developed since Street Parks began in 2004.[294]

Recreation and Open Space Element

In 2014, SF Planning updated the Recreation and Open Space Element of the City's General Plan. Key objectives include increasing recreation and open space, protecting and enhancing biodiversity, improving access and connectivity, engaging communities in stewardship, and securing long-term funding.[295] There are a number of programs addressing these objectives, many of which are discussed below.

Urban Forest Plan

A cooperative effort between SF Planning, SF Department of Public Works, the Urban Forestry Council and Friends of the Urban Forest, the Urban Forest Plan is the City's long term strategic plan for growing and protecting the street canopy, parks, and private plantings. The plan is divided into three phases: Street Trees, Parks and Open Space, and Buildings and Private Property. The first phase, published in 2014, included the following key recommendations:

- Maximize the benefits of street trees
- Grow the street tree population by half (50,000 new trees)
- Establish & fund a citywide street tree maintenance program
- Manage street trees throughout their entire life-cycle[296]

A number of efforts are underway to address these recommendations. In 2013, a tree census was conducted for four neighborhoods around the city (accounting for roughly 25 percent of the total street tree population) to identify species, age, condition, costs and benefits to inform the Urban Forest Plan.[297] Beginning in 2016, the City is working to update the Street Tree Census with EveryTreeSF, a program that aims to count every street tree. Trees identified through this survey will be added to the Urban Forest Map. As of March 2017, 124,795 trees were reported in the survey.[298]

The fourth recommendation of the Urban Forest Plan Phase 1 is to "manage street trees throughout their entire life-cycle". In 2014, a report was prepared on the re-use of urban forest wood in San Francisco. It was found that most street trees are chipped by the Department of Public Works and sent to compost facilities. Trees that are too large for chipping are hauled as logs to Recology and then sent to biomass power plants for production of electricity. The report recommended that the City's harvested lumber be used in ways that are visible to the public

[292] Urban Forest Map. Accessed August 4, 2016.
[293] SF Parks Alliance, About. Accessed August 4, 2016.
[294] San Francisco Public Works and San Francisco Parks Alliance, SF Street Parks Manual, June 2015. Accessed August 4, 2016.
[295] SF Planning, Recreation and Open Space Element, April 2014. Accessed August 4, 2016.
[296] SF Planning, San Francisco Urban Forest Plan (Summary), Fall 2014. Accessed August 4, 2016.
[297] Davey Resource Group, Resource Analysis of Inventoried Public Trees, April 2013. Accessed August 4, 2016.
[298] SF Planning, EveryTreeSF – Street Tree Census, March 2017. Accessed June 29, 2017.

and suggested a sawmilling program to create rough sawn wood for City use. Other recommendations included sharing wood processing facilities and equipment for street trees and park trees, and developing compost and mulch processing within the Department of Public Works.[299]

In 2015, the Planning Department published the San Francisco Street Tree Nursery Study, an assessment of the potential for a community-based local nursery.[300] According to the report, a local nursery could reduce transportation and environmental costs, decrease transplanting shock, increase species availability, and provide local green jobs and educational opportunities. There are a number of nurseries that produce native plants in San Francisco, but there is only one in operation that also produces trees (The Presidio Nursery).

Additional programs to implement the Urban Forest Plan recommendations are dependent in part on identifying and securing appropriate funding. Public Works Code Article 16 gives the Department of Public Works jurisdiction over trees in the public right-of-way. Due to significant budget cuts during the recession, however, the City's arborist staff has been substantially reduced and tree maintenance around the City has suffered from lack of resources. Pruning occurs every 10 to 12 years rather than the recommended 3 to 5 years.[301] As a result, in 2011 the Department of Public Works instituted the Tree Relinquishment Program to transfer maintenance responsibility of over 20,000 trees to private property owners. As of 2015, Public Works maintained 32,000 trees while property owners were responsible for 73,000.[302]

The 2013 Street Tree Census report determined that for every $1 spent on public trees, San Francisco residents receive $4.37 in benefits ranging from social and economic health, aesthetics, stormwater management, energy savings, air quality improvements, and overall greenhouse gas reductions.[303] The same year, the City conducted a study to determine how to most effectively finance the needs of the urban forest. A key recommendation of *Financing San Francisco's Urban Forest* was to institute a comprehensive municipal street tree program to lower costs for property owners and benefit from economies of scale and the cost efficiencies of coordinated routine maintenance.[304]

With overwhelming citywide support, San Francisco residents passed Proposition E in November 2016.[305] There is currently proposed legislation to implement a tree tax and transfer maintenance responsibilities back to the City.[306] The ballot measure, sponsored by Supervisor Weiner and Eric Mar, proposed that the City be responsible for all street streets and sidewalk damage and eliminates personal liability from property owners. The ballot establishes a steady funding source for maintenance with an additional budget for maintaining 50,000 more trees that could be planted in the coming decades.[307] Street tree maintenance is scheduled to return to the City beginning July of 2017.

In addition to a potential tree tax, the City has access to other financing mechanisms for tree maintenance and parks and recreation projects. In 2000, San Francisco voters created the Park, Recreation and Open Space Fund, setting aside a 2.5 cents tax for park and recreational facilities through 2031 in addition to the money from the City's General Fund. In 2016, voters approved Proposition B to extend the fund through 2046, to set minimum funds from the General Fund, and to increase the General Fund baseline by $3 million annually through 2027. The Proposition also calls for the Recreation and Parks Department (RPD) to work to ensure that low-income

[299] Jonathan Dirrenberger, Cheryl Dorsey, Ryan Miller, & Sonia O'Claire, San Francisco Urban Forest Wood Re-use Study, May 2014. Accessed August 4, 2016.
[300] Stephanie Ng, San Francisco Street Tree Nursery Study, 2015. Accessed August 4, 2016.
[301] SF Public Works, Street Tree Maintenance Transfer, June 2011. Accessed August 4, 2016.
[302] Lizzie Johnson, Homeowners rally for plan to transfer tree ownership back to city, December 2015. Accessed August 4, 2016.
[303] Davey Resource Group, Resource Analysis of Inventoried Public Trees, April 2013. Accessed August 4, 2016.
[304] AECOM, Financing San Francisco's Urban Forest, December 2013. Accessed August 4, 2016.
[305] San Francisco Public Works. Proposition E Street Tree and Sidewalk Maintenance FAQs. Accessed on June 29, 2017.
[306] Lizzie Johnson, Homeowners rally for plan to transfer tree ownership back to city, December 2015. Accessed August 4, 2016.
[307] Friends of the Urban Forest, Fix the Tree & Sidewalk Mess. Accessed August 4, 2016.

neighborhoods and disadvantaged communities receive equal services and resources.[308] The Open Space Fund has provided finances for a number of RPD programs that support urban forest and agriculture, including maintenance and infrastructure for community gardens.[309]

The San Francisco Carbon Fund was created in response to Executive Directive 07-13, directing SF Environment to develop and pilot a Local Carbon Offset Program. The program is codified in Chapter 52 of the City's Administrative Code (Ordinance 172-09, 2009), and gives City departments, local businesses, and residents the opportunity to mitigate carbon pollution generated by their own activities by investing monies from activities that produce GHGs into local projects that reduce GHG emissions. The City currently invests roughly 13 percent of all airfare employees take for business trips in parks, planting of trees, and other greenhouse gas offsetting projects.[310] The San Francisco Carbon Fund helps finance the Urban Orchard Project, a program launched in 2011 to plant and maintain publicly accessible fruit trees in partnership with local nonprofit organizations.[311]

In 2012, voters approved a $195 million Clean & Safe Neighborhood Parks Bond (Proposition B). The Bond-funded projects include $99 million to be spent towards Neighborhood Parks, $21 million for Golden Gate Park, Lake Merced Park and John McLaren Park, $12 million for the Community Opportunity Fund, $15.5 million for Failing Playgrounds, $13 million for forestry, trails, and water conservation, and $34.5 million for Waterfront Open Spaces. The funding for the bond is structured to be spent between 2013 and 2018.[312]

SFPUC Watershed & Environmental Improvement Program

SFPUC manages 63,000 acres of watershed land. The SFPUC Watershed and Environmental Improvement Program is a $50 million watershed management project funded by a bond approved under Measure A in 2002 and by operating funds.[313] Between fiscal year 2006 and 2015, SFPUC had spent roughly $37 million on projects around the Bay Area including a rare plant surveys, watershed management plans, dam removal, trail construction and flow and weed studies.[314]

Better Streets Policy

In 2006, the City adopted the Better Streets Policy as part of the San Francisco Administrative Code (Chapter 98). The policy ensures that streets serve pedestrian and transit priorities through "attractive, safe, and usable public open spaces corridors" that support "sustainable and healthy components of the City's ecology" and take "advantage of available technologies to reduce the environmental impact of our street systems."[315] In 2010, the Better Streets Plan was adopted. Major concepts of the Better Streets Plan include distinctive, unified streetscape design; space for public life; enhanced pedestrian safety; improved street ecology; universal design and accessibility; integration of pedestrians with transit; creative use of parking lanes; traffic calming to reduce speeding and enhance pedestrian safety; pedestrian-priority designs; and extensive greening.[316]

[308] City of San Francisco, Elections. Accessed August 4, 2016.
[309] Ballot Simplification Committee, Park, Recreation and Open Space Fund, 2016. Accessed August 4, 2016.
[310] Patrick Otellini, City & County of San Francisco and 100 Resilient Cities, Resilient San Francisco, April 2016. Accessed August 4, 2016.
[311] SF Environment, Urban Orchards. Accessed August 4, 2016.
[312] Taylor Emerson and James Hurley, 2012 San Francisco Clean and Safe Neighborhood Parks Bond Status Report Presented to the Citizens' General Obligation Bond Oversight Committee, March 2016. Accessed August 4, 2016.

[313] SFPUC, Watershed and Environmental Improvement Program. Accessed August 4, 2016.
[314] SFPUC, Watershed and Environmental Improvement Program 10 Year Report FY2006-2015, February 2016. Accessed August 4, 2016.
[315] San Francisco Administrative Code, Chapter 98. Accessed August 4, 2016.
[316] SF Planning, Better Streets Plan, January 2011. Accessed August 4, 2016.

Green Connections Plan

The Green Connections Plan was finalized in 2014. The project, which is a collaborative effort with the San Francisco Planning Department, SFMTA, San Francisco Department of Public Health, Mayor's Office of Housing and several community-based organizations, aims to increase connectivity between open spaces and access to parks.[317] The plan outlines principles to encourage active transportation through pedestrian and bicycle infrastructure and to support livability through beautification, landscaping, stewardship, and public art.[318] SF Plant Finder is a resource developed under Green Connections to assist communities interested in greening their neighborhood with a plant database to encourage plants that are appropriate for San Francisco's climate.[319]

Pavement to Parks Program

The Pavement to Parks program is a joint effort between non-profit organizations, the Planning Department, the SFMTA, and San Francisco Public Works. With input from local communities, Pavement to Parks temporarily transforms the street realm into public open space through temporary seating, landscaping, and paving designs. The three main project types of the program are: parklets, plazas, and prototyping. The goals of the program are to reimagine the potential of city streets; encourage non-motorized transportation; enhance pedestrian safety and activities; foster neighborhood interaction; and support local businesses.[320]

Green Landscaping Ordinances

The City has a number of planting requirements in the Planning Code and Public Works Code. In 2010, the Planning Department compiled the *Guide to the San Francisco Green Landscape Ordinance*, which explains the variety of codes related to greening setback areas and parking lots, inputting street trees, and climate appropriate plants (see Table 28 for more detail on specific codes).[321] The Urban Forestry Ordinance, Article 16 of Public Works Code, is the main chapter dedicated to urban forestry management and maintenance for public streets and places. In addition to defining the purpose and authority of the Urban Forestry Council, the code includes protection for Significant and Landmark trees (Sections 810 and 810A). It also includes the process for relinquishing street tree maintenance responsibilities to property owners.[322] While there are no green roof requirements in the code, the Planning Department has published *The Living Roof Manual,* a design guidebook for implementing successful green roofs in San Francisco. The Planning Department also maintains an interactive web-based map of existing and planned living roofs.[323]

Biodiversity Policy

In 2011, SF Environment adopted a San Francisco Biodiversity Policy requesting that the Department add biodiversity staff and programs to its fundraising and sustainability programs (Resolution 005-11-COE).[324] In 2012, the Department hired the first biodiversity staff member. Current biodiversity priorities aim to facilitate and institutionalize interagency natural resources management and local nature-based policymaking, collaborate with agency and community partners to empower San Franciscans to connect to, heal and restore nature in every city neighborhood, restore indigenous ecosystems and bring natural ecology and corridors into the urban environment, and to strengthen intercity urban biodiversity collaboration and partnerships to share data and best

[317] The involved organizations include: Nature in the City, San Francisco Parks Alliance and Walk San Francisco

[318] SF Planning, SFMTA, & SF Department of Public Health, Green Connections, March 2014. Accessed August 4, 2016.

[319] SF Plant Finder, What is SF Plant Finder?. Accessed August 4, 2016.

[320] SF Planning, SF Public Works, & SFMTA, About Pavement to Parks. Accessed August 4, 2016.

[321] SF Planning, Guide to the San Francisco Green Landscaping Ordinance, April 2010. Accessed August 4, 2016.

[322] San Francisco Public Works Code, Article 16

[323] SF Planning Department, San Francisco Living Roofs Overview. Accessed August 3, 2017.

[324] SF Environment, Resolution adopting a San Francisco Biodiversity Policy, November 2011. Accessed August 4, 2016.

practices.[325] The Recreation and Parks Department manages the Natural Areas Program, which is dedicated to habitat restoration and environmental education for the City's Natural Areas.[326]

Privately-Owned Public Open Spaces

As pursuant to Section 138 of the San Francisco Planning Code, applicants for a permit to construct a new building or build a substantial addition in C-3 districts must provide open space to the public. Types of open space that qualify include: "a plaza, an urban park, an urban garden, a view terrace, a sun terrace, a greenhouse, a small sitting area (a snippet), an atrium, an indoor park, or a public sitting area in a galleria".[327]

Usable Open Space for Dwelling Units and Group Housing

As pursuant to Section 135 of the San Francisco Planning Code, usable open space is required by the amounts specified in Tables 135A and 135B of the code dependent on the district in which the building is located. Section 135.1 includes specific requirements for commercial and institutional development in Chinatown, Section 135.2 has specific requirements for live/work units in newly constructed buildings and expansions, and Section 135.3 has specific requirements for usable open space in developments in SoMa, the Eastern Neighborhoods Mixed Use District and Downtown Residential Districts.[328]

Green Business Program

The Green Business Program, established by Chapter 15 of the San Francisco Environment Code in 2006, is designed to encourage and recognize businesses that conserve the use of natural resources, such as electricity, water and fuel; reduce, reuse, recycle, and compost materials; reduce the use and generation of hazardous materials and hazardous waste; and take affirmative steps to prevent pollution. The Green Business Program helps San Francisco businesses adopt environmental practices that are sustainable and profitable. The program sets stringent criteria, provides technical assistance, and publicly recognizes and promotes green businesses with a seal that enables customers to shop in keeping with their values.[329]

Codes Related to Conservation & Air Quality Efforts

San Francisco's Environment Code and California's Green Building Code (CALGreen) specify material and air quality standards for municipal buildings and private developments. In the codes, materials for flooring, finishes, paints, coating and adhesives are restricted to comply with volatile organic compound (VOC) emission limits. Municipal projects must track indoor air quality before occupancy, during construction, and during occupancy. All projects are prohibited from installing non-approved wood-burning fireplaces as pursuant to Chapter 31 of the San Francisco Building Code and CALGreen standards.

Chapter 8 of the Environment Code bans the purchase of tropical hardwood and virgin redwood by City departments. The ordinance finds that deforestation of the tropical rainforests has been scientifically linked to global warming and has led to increased concentrations of CO2 in the atmosphere. City departments are prohibited from procuring or engaging in contracts that would use ordinance-listed tropical hardwoods and virgin redwood.

[325] San Francisco Department of Environment, Current Biodiversity Priorities. Accessed on June 29, 2017.
[326] San Francisco Recreation and Parks Department, Natural Areas Program. Accessed August 4, 2016.
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TABLE 28. SAN FRANCISCO CODES RELATED TO ECOLOGICAL SUSTAINABILITY & CONSERVATION

Code	Description
Street Tree Planting Requirements [SF Public Works Code, Section 806(d)]	Public Works Code, Section 806(d) requires projects that include new construction, significant alterations, new curb cuts, a new garage, or new dwelling units to plant a 24-inch box tree for every 20 feet along the property street frontage.
Enhanced Refrigerant Management [CALGreen, Sections 5.508.1.-5.508.2]	Commercial buildings must not install equipment that contains chlorofluorocarbons (CFCs) or halons. Applies to new construction and all alterations. New commercial refrigeration systems containing refrigerants with Global Warming Potential (GWP) of 150 or greater, installed in food stores with 8,000 square feet or more of refrigerated display cases, walk-in coolers or freezers connected to remote compressor units or condensing units: Piping shall meet all requirements of Section 5.508.2 (all sections), and shall undergo pressure testing during installation prior to evacuation and charging. System shall stand unaltered for 24 hours with no more than a one pound pressure change from 300 psig.
Low-emitting Adhesives, Sealants, Caulks, Paints & Coatings [CALGreen, Sections 5.504 (non-residential) and 4.504 (residential)]	Paints and coatings - Comply with VOC limits in the Air Resources Board Architectural Coatings Suggested Control Measure. Aerosol paints and coatings should meet BAAQMD VOC limits (Regulation 8, Rule 49) and Product-Weighted MIR Limits for Reactive Organic Compound. (CCR Title 17, Section 94520). Adhesives, sealants, and caulks - Comply with VOC limits in SCAQMD Rule 1168 VOC limits and California Code of Regulations Title 17 for aerosol adhesives. See CALGreen Tables 4.504.1-4.504.3 for details for Residential and Tables 5.504.1-5.504.3 for non-residential.
Carpet, Wood & Flooring [CALGreen, Sections 5.504 (non-residential) and 4.504 (residential)]	All carpet cushions must meet Carpet and Rug Institute Green Label, and indoor carpet adhesive & carpet pad adhesive must not exceed 50 g/L VOC content (Table 4.504.1 & 5.504.4.1). In addition, all carpet must meet one of the following: (1) Carpet and Rug Institute Green Label Plus Program, (2) California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350), (3) NSF/ANSI 140 at the Gold level, (4) Scientific Certifications Systems Sustainable Choice, OR (5) For non-residential, compliant with the Collaborative for High Performance Schools California Criteria Interpretation for EQ 7.0 and EQ 7.1 dated July 2012 and listed in the CHPS High Performance Product Database. Composite wood - Meet CARB Air Toxics Control Measure for Composite Wood, including meeting the emission limits in CALGreen Tables 5.504.4.5 & 4.504.5. Resilient flooring systems - For 80 percent of floor area receiving resilient flooring, install resilient flooring complying with: (1) Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program, (2) Compliant with the VOC-emission limits and testing requirements of California Department of Public Health 2010 Standard Method for the Testing and Evaluation Chambers v.1.1, (3) Compliant with the Collaborative for High Performance Schools (CHPS) and listed in the CHPS High Performance Product Database, OR (4) Certified under the UL GREENGUARD Gold

Wood Burning Fireplace Ordinance [SF Building Code, Chapter 31 (Section 311.3) CALGreen, Sections 4.503.1 and 5.503.1]	Bans the installation of wood burning fire places (except those that are designed for food preparation in new or existing restaurants or bakeries OR historic wood burning appliances installed with approval in historic structures) except for direct-vent or sealed combustion units compliant with EPA Phase II limits (CALGreen, Sections 4.503.1 and 5.503.1) and at least one of the following: (1) Pellet-fueled wood heater (2) EPA approved wood heater (3) Wood heater approved by the Northern Sonoma Air Pollution Control District

ADDITIONAL CODE FOR PUBLIC BUILDINGS

Environmentally Preferable Purchasing Ordinance **[SF Environment Code, Chapter 2]**	For certain common product categories, the ordinance mandates that City Departments purchase only products listed on the Director's Approved Alternatives List. The items on the SFApproved website meet the most rigorous standards for protecting our health and environment.
Tropical Hardwood and Virgin Redwood Ban **[SF Environment Code, Chapter 8**	The ordinance prohibits City departments from procuring, or engaging in contracts that would use the ordinance-listed tropical hardwoods and virgin redwood.
Arsenic-Treated Wood Ordinance **[SF Environment Code, Chapter 13]**	For City departments, prohibits the use of arsenic-treated wood for most applications, with the exception of saltwater immersion. Details can be found at: SFApproved.org/wood
Low Emitting Materials **[SF Environment Code, Section 706(a10)]**	The LEED© Project Administrator must submit documentation verified that the project achieves LEED Low Emitting Materials (3 points). For all municipal new construction, renovation and tenant improvement projects that include furniture and interior surfaces, and for purchases made by or on behalf of City departments, the furniture must comply with regulations pertaining to the following environmental attributes: (A) Address flame retardant chemicals; (B) Emissions of volatile organic compounds (VOCs); (C) Use of certified wood; (D) Polyvinyl chloride (PVC) content; (E) Antimicrobial chemicals; (F)Fluorinated chemicals; (G) Required ecolabels; and (H) Other environmental attributes, consistent with chapter

Indoor Air Quality: During Construction **[SF Environment Code, Section 706(a8)]**	For each municipal construction project subject to a LEED certification requirement, the LEED Project Administrator must submit documentation verifying that the project achieves LEED credit Enhanced Indoor Air Quality Strategies (1 point), LEED credit Construction Indoor Air Quality Management (1 point), and LEED credit Indoor Air Quality Assessment Option 2: Air Testing (2 points). During construction: Sponsoring City department must prepare and implement an Indoor Air Quality Management Plan that achieves LEED credit EQ 3.1.

TABLE 29. SAN FRANCISCO GENERAL PLAN GOALS RELATED TO ECOLOGICAL SUSTAINABILITY & CONSERVATION

*The 2010 Greenhouse Gas Reduction Strategy included elements from the drafted Recreation and Open Space Element (ROSE). The table below highlights the objectives and policies from the 2014 adopted ROSE.

General Plan Element	Objective/Policy
Air Quality	Objective 1 Adhere to State and Federal Air Quality Standards and regional programs.
Air Quality	Policy 1.1 Cooperate with regional agencies to promote air quality improvement in San Francisco which, in turn, will contribute to air quality improvements at the regional level.
Air Quality	Policy 1.2 Adhere to State and Federal air quality standards in the future through sustained efforts and continued budgetary resources.
Air Quality	Policy 1.3 Support and encourage implementation of stationary control measures established by the State.
Air Quality	Policy 3.9 Encourage and require planting of trees in conjunction with new development to enhance pedestrian environment and select species of trees that optimize achievement of air quality goals.
Air Quality	Policy 4.2 Educate the public about air polluting household consumer products and activities that generate air pollution. Increase public awareness about the environmental costs of using these products and activities.
Air Quality	Policy 4.3 Minimize exposure of San Francisco's population, especially children and the elderly, to air pollutants.
Air Quality	Policy 6.5 Require energy efficient, low polluting fireplace inserts, and wood stoves in all new residential development.
Community Safety	Objective 1 Reduce structural and non-structural hazards to life safety and minimize property damage resulting from future disasters.
Community Safety	Policy 1.10 Examine the risk of flooding due to climate change-related effects, such as storm surges, changes in precipitation patterns, and sea level rise as well as adaptation actions that will reduce population, built environment, and ecosystem vulnerability due to these threats.
Environmental Protection	Objective 1. Achieve a proper balance among the conservation, utilization and development of San Francisco’s natural resources.
Environmental Protection	Policy 1.1 Conserve and protect the natural resources of San Francisco.
Environmental Protection	Policy 1.2 Improve the quality of natural resources

Environmental Protection	Policy 1.3 Restore and replenish the supply of natural resources.
Environmental Protection	Policy 1.4 Assure that all new development meets strict environmental quality standards and recognizes human needs.
Environmental Protection	Objective 2. Implement broad and effective management of natural resources.
Environmental Protection	Policy 2.1 Coordinate regional and local management of natural resources.
Environmental Protection	Policy 2.2 Promote citizen action as a means of voluntarily conserving natural resources and improving environmental quality.
Environmental Protection	Policy 2.3 Provide environmental education programs to increase public understanding and appreciation of our natural surroundings.
Environmental Protection	Objective 3. Maintain and improve the quality of the Bay, Ocean and shoreline areas.
Environmental Protection	Policy 3.4 Encourage and assist privately operated programs to conserve the resources of the Bay, Ocean, and Shorelines.
Environmental Protection	Policy 3.5 Protect sensitive economic and environmental resources in Northern California offshore coastal areas threatened by oil development.
Environmental Protection	Policy 4.1 Support and comply with objectives, policies, and air quality standards of the Bay Area Air Quality Management District
Environmental Protection	Policy 7.1 Preserve and add to public open space in accordance with the objectives and policies of the Recreation and Open Space Element.
Environmental Protection	Objective 8. Ensure the protection of plant and animal life in the City.
Environmental Protection	Policy 8.1 Cooperate with and otherwise support the California Department of Fish and Game and its animal protection programs.
Environmental Protection	Policy 8.2 Protect the habitats of known plant and animal species that require a relatively natural environment.
Environmental Protection	Policy 8.3 Protect rare and endangered species.
Housing Element - 2014	Policy 10.4 Support state legislation and programs that promote environmentally favorable projects.
Housing Element - 2014	Policy 12.2 Consider the proximity of quality of life elements, such as open space, child care, and neighborhood services, when developing new housing units.
Housing Element - 2014	Policy 13.4 Promote the highest feasible level of “green” development in both private and municipally-supported housing.
Recreation and Open Space	Objective 1 Ensure a well-maintained, highly utilized, and integrated open space system
Recreation and Open Space	Policy 1.3 Preserve existing open space by restricting its conversion to other uses and limiting encroachment from other uses, assuring no loss of quantity or quality of open space.
Recreation and Open Space	Policy 1.8 Support urban agriculture and local food security through development of policies and programs that encourage food production throughout San Francisco.
Recreation and Open Space	Objective 2 Increase recreation and open space to meet the long-term needs of the city and Bay region
Recreation and Open Space	Policy 2.1 Prioritize acquisition of open space in high need areas.

Recreation and Open Space	Policy 2.8 Consider repurposing underutilized City-owned properties as open space and recreational facilities.
Recreation and Open Space	Policy 2.11 Assure that privately developed residential open spaces are usable, beautiful, and environmentally sustainable
Recreation and Open Space	Policy 2.12 Expand the Privately-owned Public Open Spaces (POPOS) requirement to new mixed-used development areas and ensure that spaces are truly accessible, functional and activated.
Recreation and Open Space	Policy 3.3 Develop and enhance the City's recreational trail system, linking to the regional hiking and biking trail system and considering restoring historic water courses to improve stormwater management.
Recreation and Open Space	Policy 3.4 Encourage non-auto modes of transportation - transit, bicycle and pedestrian access - to and from open spaces while reducing automobile traffic and parking in public open spaces.
Recreation and Open Space	Policy 3.6 Maintain, restore, expand and fund the urban forest.
Recreation and Open Space	Objective 4 Protect and enhance the biodiversity, habitat value, and ecological integrity of open spaces and encourage sustainable practices in the design and management of our open space system.
Recreation and Open Space	Policy 4.1 Preserve, protect and restore local biodiversity.
Recreation and Open Space	Policy 4.4 Include environmentally sustainable practices in construction, renovation, management and maintenance of open space and recreation facilities.
Recreation and Open Space	Objective 5 Engage communities in the stewardship of their recreation programs and open spaces
Transportation	Objective 8. Maintain and enhance regional pedestrian and hiking access to the coast, the Bay and ridge trails.
Transportation	Policy 8.2. Clearly identify the Citywide Pedestrian Networks where they intersect with the Coast, Bay and Ridge Trails.
Transportation	Policy 24.2 Maintain and expand the planting of street trees and the infrastructure to support them.
Transportation	Policy 24.3 Install pedestrian-serving street furniture where appropriate.
Transportation	Policy 24.5 Where consistent with transportation needs, transform streets and alleys into neighborhood-serving open spaces or “living streets”, especially in neighborhoods deficient in open space.
Transportation	Policy 31.3 Encourage equity between drivers and non-drivers by offering transit fare validations and/or cash-out parking programs where off-street parking is validated or subsidized.
Urban Design	Objective 1. Emphasis of the characteristic pattern which gives the City and its neighborhoods an image, a sense of purpose, and a means of orientation.
Urban Design	Policy 1.4. Protect and promote large-scale landscaping and open space that define districts and topography.
Urban Design	Policy1.5. Emphasize the special nature of each district through distinctive landscaping and other features.
Urban Design	Policy 1.10. Indicate the purposes of streets by means of a citywide plan for street landscaping.

Urban Design	Objective 2. Conservation of resources which provide a sense of nature, continuity with the past, and freedom from overcrowding.
Urban Design	Policy 2.1. Preserve in their natural state the few remaining areas that have not been developed by man.
Urban Design	Objective 3. Moderation of major new development to complement the City pattern, the resources to be conserved, and the neighborhood environment.
Urban Design	Objective 4. Improvement of the neighborhood environment to increase personal safety, comfort, pride and opportunity.
Urban Design	Policy 4.12. Install, promote and maintain landscaping in public and private areas.

TABLE 30. SAN FRANCISCO AREA PLAN GOALS RELATED TO ECOLOGICAL SUSTAINABILITY & CONSERVATION

Area Plan	Objective/Policy
Balboa	Policy 4.7.1 New development should meet minimum levels of green construction.
Balboa	Objective 5.1 Create a system of public parks, plazas, and open spaces in the Plan Area.
Balboa	Policy 5.1.1 Create a variety of new public open spaces.
Balboa	Policy 5.1.3 Ensure that new open spaces are linked to and serve as an extension of the street system
Balboa	Policy 5.1.5 Use “found space” as public open space.
Balboa	Objective 5.2 Create open space within new development that contributes to the open space system.
Balboa	Policy 5.2.1 Require good quality public open space as part of major new developments.
Balboa	Objective 5.4 Create a space system that both beautifies the neighborhood and strengthens the environment.
Balboa	Policy 5.4.1 Make the open space system more environmentally sustainable by improving the ecological functioning of all open spaces in the plan area.
Balboa	Policy 5.4.2 Encourage efforts to uncover and restore Islais Creek to its natural state.
Balboa	Objective 6.5 Promote the environmental sustainability, ecological function, and the overall quality of the natural environment in the Plan Area.
Balboa	Policy 6.5.1 The connection between building form and ecological sustainability should be enhanced by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
Central Waterfront	Policy 2.3.5 Explore a range of revenue- generating tools including impact fees, public funds and grants, assessment districts, and other private funding sources, to fund community and neighborhood improvements.

Central Waterfront	Policy 2.3.6 Establish an impact fee to be allocated towards an Eastern Neighborhoods Public Benefit Fund to mitigate the impacts of new development on transit, pedestrian, bicycle, and street improvements, park and recreational facilities, and community facilities such as libraries, child care and other neighborhood services in the area.
Central Waterfront	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Central Waterfront	Objective 3.3 Promote the environmental sustainability, ecological functioning and the overall quality of the natural environment in the Plan Area.
Central Waterfront	Policy 3.3.1 Require new development to adhere to a new performance-based ecological evaluation tool to improve the amount and quality of green landscaping.
Central Waterfront	Policy 3.3.3 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
Central Waterfront	Policy 4.6.6 Explore opportunities to identify and expand waterfront recreational trails and opportunities including the Bay Trail.
Central Waterfront	Policy 4.7.3 Support the establishment of the Blue-Greenway by including safe, quality pedestrian and bicycle connections from Central Waterfront.
Central Waterfront	Objective 5.1 Provide public parks and open spaces that meet the needs of residents, workers and visitors.
Central Waterfront	Policy 5.1.1 Identify opportunities to create new public open spaces and provide at least one new public open space serving the Central Waterfront.
Central Waterfront	Policy 5.1.2 Require new residential and commercial development to provide, or contribute to the creation of public open space.
Central Waterfront	Objective 5.2 Ensure that new development includes high quality private open space.
Central Waterfront	Policy 5.2.1 Require new residential and mixed-use residential development to provide on-site private open space designed to meet the needs of residents.
Central Waterfront	Policy 5.2.2 Establish requirements for commercial development to provide on-site open space.
Central Waterfront	Policy 5.2.3 Encourage private open space to be provided as common spaces for residents and workers of the building wherever possible.
Central Waterfront	Policy 5.2.4 Encourage publicly accessible open space as part of new residential and commercial development.
Central Waterfront	Policy 5.2.6 Ensure quality open space is provided in flexible and creative ways, adding a well-used, well-cared for amenity for residents of a highly urbanized neighborhood. Private open space should meet the following design guidelines: A. Designed to allow for a diversity of uses, including elements for children, as appropriate. B. Maximize sunlight exposure and protection from wind C. Adhere to the performance-based evaluation tool.
Central Waterfront	Objective 5.3 Create a network of green streets that connects open spaces and improves the walkability, aesthetics, and ecological sustainability of the neighborhood.

Central Waterfront	Policy 5.3.1 Redesign underutilized portions of streets as public open spaces, including widened sidewalks or medians, curb bulb-outs, living streets or green connector streets.
Central Waterfront	Policy 5.3.2 Maximize sidewalk landscaping, street trees and pedestrian scale street furnishing to the greatest extent feasible.
Central Waterfront	Policy 5.3.3 Design the intersections of major streets to reflect their prominence as public spaces.
Central Waterfront	Policy 5.3.4 Enhance the pedestrian environment by requiring new development to plant street trees along abutting sidewalks. When this is not feasible, plant trees on development sites or elsewhere in the plan area.
Central Waterfront	Policy 5.3.6 Where possible, transform unused freeway and rail rights-of-way into landscaped features that provide a pleasant and comforting route for pedestrians.
Central Waterfront	Policy 5.3.7 Develop a continuous loop of public open space along Islais Creek.
Central Waterfront	Policy 5.3.9 Explore opportunities to identify and expand waterfront recreational trails and opportunities including the Bay Trail and Blue-Greenway.
Central Waterfront	Objective 5.4 The open space system should both beautify the neighborhood and strengthen the environment.
Central Waterfront	Policy 5.4.1 Increase the environmental sustainability of Central Waterfronts system of public and private open spaces by improving the ecological functioning of all open space.
Central Waterfront	Objective 5.5 Ensure that existing open space, recreation and park facilities are well maintained.
Central Waterfront	Policy 5.5.1 Prioritize funds and staffing to better maintain existing parks and obtain additional funding for a new park and new open space facilities.
Central Waterfront	Policy 5.5.2 Renovate run-down or outmoded park facilities to provide high quality, safe and long-lasting facilities. Identify at least one existing park or recreation facility in the Central Waterfront for renovation.
East SoMa	Policy 2.3.6 Establish an Eastern Neighborhoods Public Benefit Fund to mitigate the impacts of new development on transit, pedestrian, bicycle, and street improvements, park and recreational facilities, and community facilities such as libraries, child care and other neighborhood services in the area.
East SoMa	Policy 2.5.3 Require new development to meet minimum levels of green construction.
East SoMa	Objective 3.3 Promote the environmental sustainability, ecological functioning and the overall quality of the natural environment in the plan area.
East SoMa	Policy 3.3.1 Require new development to adhere to a new performance-based ecological evaluation tool to improve the amount and quality of green landscaping.
East SoMa	Objective 5.1 Provide public parks and open spaces that meet the needs of residents, workers, and visitors.
East SoMa	Policy 5.1.1 Identify opportunities to create new public parks and open spaces and provide at least one new public park or open space serving the East SoMa.
East SoMa	Policy 5.1.2 Require new residential and commercial development to contribute to the creation of public open space.

East SoMa	Objective 5.2 Ensure that new development includes high quality private open space.
East SoMa	Policy 5.2.1 Require new residential and mixed-use residential development to provide on-site private open space designed to meet the needs of residents.
East SoMa	Policy 5.2.2 Strengthen requirements for commercial development to provide on-site open space.
East SoMa	Policy 5.2.3 Encourage private open space to be provided as common spaces for residents and workers of the building wherever possible.
East SoMa	Policy 5.2.4 Encourage publicly accessible open space as part of new residential and commercial development.
East SoMa	Policy 5.2.6 Ensure quality open space is provided in flexible and creative ways, adding a well-used, well-cared for amenity for residents of a highly urbanized neighborhood. Private open space should meet the following design guidelines: A. Designed to allow for a diversity of uses, including elements for children, as appropriate. B. Maximize sunlight exposure and protection from wind C. Adhere to the performance-based evaluation tool.
East SoMa	Objective 5.3 Create a network of green streets that connect open spaces and improves the walkability, aesthetics and ecological sustainability of the neighborhood.
East SoMa	Policy 5.3.1 Redesign underutilized portions of streets as public open spaces, including widened sidewalks or medians, curb bulb-outs, living streets or green connector streets.
East SoMa	Policy 5.3.2 Maximize sidewalk landscaping, street trees and pedestrian scale street furnishing to the greatest extent feasible.
East SoMa	Policy 5.3.4 Enhance the pedestrian environment by requiring new development to plant street trees along abutting sidewalks. When this is not feasible, plant trees on development sites or elsewhere in the plan area.
East SoMa	Policy 5.3.6 Where possible, transform unused freeway and rail rights-of-way into landscaped features that provide a pleasant and comforting route for pedestrians.
East SoMa	Policy 5.3.9 Explore opportunities to identify and expand connections to the Bay Trail.
East SoMa	Objective 5.4 The open space system should both beautify the neighborhood and strengthen the environment.
East SoMa	Policy 5.4.1 Increase the environmental sustainability of East SoMa's system of public and private open spaces by improving the ecological functioning of all open space.
East SoMa	Objective 5.5 Ensure that existing open space, recreation and park facilities are well maintained.
East SoMa	Policy 5.5.1 Prioritize funds and staffing to better maintain existing parks and obtain additional funding for a new park and new open space facilities.
East SoMa	Policy 5.5.2 Renovate run-down or outmoded park facilities to provide high quality, safe and long-lasting facilities. Identify at least one existing park or recreation facility in East SoMa for renovation.
Glen Park	Objective 11 Maintain and improve Glen Park's mix of public open spaces.
Glen Park	Policy 11.1 Sustain and improve the informal greenway and pedestrian path connecting downtown Glen Park to Glen Canyon Park.

Glen Park	Policy 11.2 Recognize Kern Street and the BART plazas as important public space opportunities.
Glen Park	Policy 11.3 Look for opportunities to reclaim some street space in the commercial core for use as open space.
Glen Park	Policy 11.4 The San Francisco Public Utilities Commission (SFPUC) and Planning Department should conduct a study to assess the feasibility, benefits and impacts of daylighting a portion of Islais Creek through Glen Park.
Market and Octavia	Policy 1.1.10 Recognize the importance of public land and preserve it for future uses.
Market and Octavia	Policy 4.1.2 Enhance the pedestrian environment by planting trees along sidewalks, closely planted between pedestrians and vehicles.
Market and Octavia	Policy 4.2.1 Create new public open spaces around the freeway touchdown, including a plaza on Market Street and a plaza in the McCoppin Street right-of-way, west of Valencia Street.
Market and Octavia	Policy 4.3.2 Improve the visual appearance and integrity of Market Street within the plan area through more consistent tree planting, better tree maintenance, de-cluttering sidewalks, and installing new pedestrian amenities.
Market and Octavia	Objective 7.2 Establish a functional, attractive and well-integrated system of public streets and open spaces in the SoMa West Area to improve the public realm.
Market and Octavia	Policy 7.2.4 Redesign McCoppin Street as a linear green street with a new open space west of Valencia Street.
Market and Octavia	Policy 7.2.5 Make pedestrian improvements within the block bounded by Market, Twelfth, Otis, and Gough Streets and redesign Twelfth Street between Market and Mission Streets, creating a new park and street spaces for public use, and new housing opportunities.
Mission Area	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Mission Area	Objective 3.3 Promote the environmental sustainability, ecological functioning and the overall quality of the natural environment in the plan area.
Mission Area	Policy 3.3.1 Require new development to adhere to a new performance-based ecological evaluation tool to improve the amount and quality of green landscaping.
Mission Area	Policy 3.3.3 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
Mission Area	Policy 3.3.5 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
Mission Area	Objective 5.1 Provide public parks and open spaces that meet the needs of residents, workers and visitors.
Mission Area	Policy 5.1.1 Identify opportunities to create new public parks and open spaces and provide at least one new public park or open space serving the Mission.
Mission Area	Policy 5.1.2 Require new residential and commercial development to contribute to the creation of public open space.
Mission Area	Objective 5.2 Ensure that new development includes high-quality, private open space.

Mission Area	Policy 5.2.1 Require new residential and mixed-use residential development to provide on-site, private open space designed to meet the needs of residents.
Mission Area	Policy 5.2.2 Establish requirements for commercial development to provide on-site open space.
Mission Area	Policy 5.2.3 Encourage private open space to be provided as common spaces for residents and workers of the building wherever possible.
Mission Area	Policy 5.2.4 Encourage publicly accessible open space as part of new residential and commercial development.
Mission Area	Policy 5.2.6 Ensure quality open space is provided in flexible and creative ways, adding a well-used, well-cared for amenity for residents of a highly urbanized neighborhood. Private open space should meet the following design guidelines: A. Designed to allow for a diversity of uses, including elements for children, as appropriate. B. Maximize sunlight exposure and protection from wind C. Adhere to the performance-based evaluation tool.
Mission Area	Objective 5.3 Create a network of green streets that connect open spaces and improves the walkability, aesthetics and ecological sustainability of the neighborhood.
Mission Area	Policy 5.3.1 Redesign underutilized portions of streets as public open spaces, including widened sidewalks or medians, curb bulb-outs, living streets or green connector streets.
Mission Area	Policy 5.3.2 Maximize sidewalk landscaping, street trees and pedestrian scale street furnishing to the greatest extent feasible.
Mission Area	Policy 5.3.3 Design the intersections of major streets to reflect their prominence as public spaces.
Mission Area	Policy 5.3.4 Enhance the pedestrian environment by requiring new development to plant street trees along abutting sidewalks. When this is not feasible, plant trees on development sites or elsewhere in the Plan Area.
Mission Area	Objective 5.4 The open space system should both beautify the neighborhood and strengthen the environment.
Mission Area	Policy 5.4.1 Increase the environmental sustainability of the Mission's system of public and private open spaces by improving the ecological functioning of all open space.
Mission Area	Objective 5.5 Ensure that existing open space, recreation and park facilities are well maintained.
Mission Area	Policy 5.5.1 Prioritize funds and staffing to better maintain existing parks and obtain additional funding for a new park and new open space facilities.
Mission Area	Policy 5.5.2 Renovate run-down or outmoded park facilities to provide high quality, safe and long-lasting facilities. Identify at least one existing park or recreation facility in the Mission for renovation.
Rincon Hill	Objective 3.6 Ensure adequate light and air to the district and minimize wind and shadow on public streets and open space.
Rincon Hill	Objective 4.1 Create a variety of new open spaces and community facilities for active and passive recreation to meet the needs of a significant new residential population.
Rincon Hill	Objective 4.2 Create a new neighborhood park to serve the district.

Rincon Hill	Objective 4.3 Link the area via pedestrian improvements to other public open spaces such as the waterfront promenade at the foot of the hill and planned open spaces in the Transbay district.
Rincon Hill	Objective 4.4 Ensure adequate sunlight and minimize wind and shadow on public streets and open spaces.
Rincon Hill	Objective 4.5 Use excess street space on Spear, Main, and Beale Streets for sidewalk widenings that provide usable open spaces and recreational amenities.
Rincon Hill	Objective 4.6 Create an inviting and pleasant mid-block pedestrian corridor to the waterfront.
Rincon Hill	Objective 4.7 Require private development to contribute to the creation and on-going maintenance and operations of public open spaces and community facilities through in-kind contribution, a community facilities district, and/or developer fees.
Rincon Hill	Policy 4.1 Purchase parcels of adequate size for a neighborhood park. Parcels that should be prioritized for acquisition include 009, 010, 011, and 018 of Block 3766, at the southeast corner of Harrison and Fremont Streets, currently owned by CalTrans, and Parcel 005 of Block 3749, on Guy Place, currently a privately-owned vacant lot. Other parcels within the district may also be considered for a neighborhood park if a park of adequate size that is useable for Rincon Hill residents would be feasible on those sites.
Rincon Hill	Policy 4.2 Significantly widen sidewalks by removing a lane of traffic on Spear, Main, and Beale Streets between Folsom and Bryant Streets per the Rincon Hill Streetscape Plan in order to create new "Living Streets," with pocket park and plaza spaces for active and passive recreational use, decorative paving, lighting, seating, trees and other landscaping.
Rincon Hill	Policy 4.3 Create publicly accessible open space along Essex Street, including the hillside and useable space at the top of the hill.
Rincon Hill	Policy 4.4 Include community recreation, arts and educational facilities as part of a rehabilitated Sailor's Union of the Pacific building.
Rincon Hill	Policy 4.5 Continue to look for additional sites for acquisition and development of open space in the Rincon Hill district.
Rincon Hill	Policy 4.6 Create a community facilities district to fund capital improvements, operation and maintenance of new public spaces, including the Living Streets, the Harrison/Fremont park, and community spaces in the Sailor's Union of the Pacific building.
Rincon Hill	Policy 4.8 Require new development to provide private open space in relation to a development's residential area at a ratio of 75 square feet of open space per unit.
Rincon Hill	Policy 4.9 Allow up to 50 percent of private open space requirements to be provided off-site, provided that this space is publicly accessible. Off-site open spaces should adhere to and implement the Rincon Hill Streetscape Plan.
Rincon Hill	Policy 5.2 Significantly widen sidewalks by removing a lane of traffic on Spear, Main and Beale Streets between Folsom and Bryant Streets per the Rincon Hill Streetscape Plan in order to create new "Living Streets," with pocket park and plaza spaces for active and passive recreational use, decorative paving, lighting, seating, trees and other landscaping. See Figure 6.
Rincon Hill	Objective 7.1 Ensure that private development provides funding for public improvements, and their on-going maintenance and operations, in proportion to the need for those improvements that it generates.

Rincon Hill	Policy 7.1 Require new development to implement portions of the streetscape plan adjacent to their development, and additional relevant in-kind contributions, as a condition of approval.
Rincon Hill	Policy 7.2 Create a community facilities district to fund capital improvements, operation and maintenance of new public spaces, including the Living Streets, the Harrison/Fremont park, and community spaces in the Sailor's Union of the Pacific building.
Rincon Hill	Policy 7.3 Require new development fee to pay an additional per square foot fee to cover features of the public realm plan, based on the need for the public improvements created by new development, that cannot be paid for through the community facilities district.
Rincon Hill	Policy 7.4 The Rincon Hill Streetscape Master Plan serves as the guiding framework for the design of streets within the RIncon Hill Plan Area. The City shall seek to implement the plan to the maximum extent feasible, both through its oversight and permitting of privately sponsored street improvements as well as City-sponsored improvements.
Showplace/Potrero	Policy 2.5.3 Require new development to meet minimum levels of green construction.
Showplace/Potrero	Objective 3.3 Promote the environmental sustainability, ecological functioning, and the overall quality of the natural environment in the Plan Area.
Showplace/Potrero	Policy 3.3.1 Require new development to adhere to a new performance-based evaluation tool to improve the amount and quality of green landscaping.
Showplace/Potrero	Policy 3.3.3 Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
Showplace/Potrero	Policy 4.5.2 As part of a development project's open space requirement, require publicly-accessible alleys that break up the scale of large developments and allow additional access to buildings in the project.
Showplace/Potrero	Policy 4.5.3 Redesign underutilized streets in the Showplace Square area for creation of Living Streets and other usable public space or to facilitate transit movement.
Showplace/Potrero	Objective 5.1 Provide public parks and open spaces that meet the needs of residents, workers and visitors.
Showplace/Potrero	Policy 5.1.1 Identify opportunities to create new public parks and open spaces and provide at least one new public park or open space serving the Showplace / Potrero.
Showplace/Potrero	Policy 5.1.2 Require new residential development and commercial development to provide, or contribute to the creation of publicly accessible open space.
Showplace/Potrero	Objective 5.2 Ensure that new development includes high quality private open space.
Showplace/Potrero	Policy 5.2.1 Require new residential and mixed-use residential development to provide on-site private open space designed to meet the needs of residents.
Showplace/Potrero	Policy 5.2.2 Establish requirements for commercial development to provide on-site open space.
Showplace/Potrero	Policy 5.2.3 Encourage private open space to be provided as common spaces for residents and workers of the building wherever possible.

Showplace/Potrero	Policy 5.2.4 Encourage publicly accessible open space as part of new residential and commercial development.
Showplace/Potrero	Policy 5.2.6 Ensure quality open space is provided in flexible and creative ways, adding a well-used, well-cared for amenity for residents of a highly urbanized neighborhood. Private open space should meet the following design guidelines: A. Designed to allow for a diversity of uses, including elements for children, as appropriate. B. Maximize sunlight exposure and protection from wind C. Adhere to the performance-based evaluation tool.
Showplace/Potrero	Objective 5.3 Create a network of green streets that connects open spaces and improves the walkability, aesthetics, and ecological sustainability of the neighborhood.
Showplace/Potrero	Policy 5.3.1 Redesign underutilized portions of streets as public open spaces, including widened sidewalks or medians, curb bulb-outs, living streets or green connector streets.
Showplace/Potrero	Policy 5.3.2 Maximize sidewalk landscaping, street trees and pedestrian scale street furnishing to the greatest extent feasible.
Showplace/Potrero	Policy 5.3.3 Design the intersections of major streets to reflect their prominence as public spaces.
Showplace/Potrero	Policy 5.3.4 Enhance the pedestrian environment by requiring new development to plant street trees along abutting sidewalks. When this is not feasible, plant trees on development sites or elsewhere in the plan area.
Showplace/Potrero	Policy 5.3.6 Where possible, transform unused freeway and rail rights-of-way into landscaped features that provide a pleasant and comforting route for pedestrians.
Showplace/Potrero	Policy 5.3.7 Develop a comprehensive public realm plan for Showplace Square that reflects the differing needs of streets based upon their predominant land use, role in the transportation network, and building scale.
Showplace/Potrero	Objective 5.4 The open space system should both beautify the neighborhood and strengthen the environment.
Showplace/Potrero	Policy 5.4.1 Increase the environmental sustainability of Showplace Square/Potrero Hill system of public and private open spaces by improving the ecological functioning of all open space.
Showplace/Potrero	Objective 5.5 Ensure that existing open space, recreation and park facilities are well maintained.
Showplace/Potrero	Policy 5.5.1 Prioritize funds and staffing to better maintain existing parks and obtain additional funding for a new park and open space facilities.
Showplace/Potrero	Policy 5.5.2 Renovate run-down or outmoded park facilities to provide high quality, safe and long-lasting facilities. Identify at least one existing park or recreation facility in Showplace Square/Potrero Hill area for renovation.
Transit Center	Objective 2.8 Maintain separation between tall buildings to permit air and light to reach the street, as well as to help reduce 'urban canyon' effects.
Transit Center	Policy 2.24 Maximize daylight on streets and open spaces and reduce heat-island effect, by using materials with high light reflectance, without producing glare.
Transit Center	Policy 2.25 Encourage the use of green, or "living," walls as part of a building design in order to reduce solar heat gain as well as to add interest and lushness to the pedestrian realm.
Transit Center	Policy 3.5 Continue the Living Streets treatment to create linear plazas along Beale, Main, and Spear streets.

Transit Center	Objective 3.10 Enhance the open space network in the area to serve increasing numbers of workers, residents, and visitors.
Transit Center	Policy 3.16 Create a new public plaza at the northeast corner of Second and Howard streets.
Transit Center	Policy 3.19 Permit buildings to satisfy open space requirements through direct connections to the Transit Center Park.
Transit Center	Objective 3.12 Ensure that private open space both enhances the public open space network and achieves the plan's open space goals.
Transit Center	Objective 3.13 Provide flexibility and alternatives to meeting open space requirements that achieve the district's open space vision, and that enhance and improve access to planned public space, particularly the Transit Center park.
Transit Center	Policy 3.21 Permit payment of an in-lieu fee as an alternative to fulfilling Section 138 Open Space Requirements in C-3 Districts.
Transit Center	Policy 4.25 Continue the living streets treatment to create linear plazas along Beale, Main, and Spear streets.
Transit Center	Policy 4.55 Ensure that existing surface parking lots provide landscaping and other amenities to improve the public realm and mitigate their ecological impacts.
Transit Center	Objective 5.1 Protect, preserve, and reuse those historic resources that have been identified and evaluated within the Transit Center plan area.
Transit Center	Objective 6.4 Ensure that new buildings constructed in the plan area represent leading edge design in terms of sustainability, both high performance for their inhabitants and low impact on the environment.
Transit Center	Policy 6.12 Consider requiring all major buildings in the plan area to achieve the minimum LEED levels established in the SF Green Building Ordinance excluding credits for the given inherent factors of location, density, and existing city parking controls, in order to achieve high-performance buildings.
Western SoMa	Objective 1.4 Improve indoor air quality for sensitive land uses in western SoMa.
Western SoMa	Policy 2.2.17 Support both the economic and environmental benefits of participating in the green business movement and encourage commercial businesses in the western SoMa to seek green business certification.
Western SoMa	Policy 3.3.2 Where new zoning has conferred increased development potential; ensure that mechanisms are in place for developers to contribute towards community benefits programs that include open space, transit, community facilities/services, historic/social heritage preservation and affordable housing, above and beyond citywide inclusionary requirements.
Western SoMa	Policy 3.5.6 Establish an impact fee to be allocated towards a public benefit fund to subsidize transit, pedestrian, bicycle, and street improvements; park and recreational facilities; and community facilities such as libraries, child care and other neighborhood services in the area.
Western SoMa	Policy 4.14.6 Work with the departments of public health and building inspection to develop new building code requirements to mitigate ambient air pollution hazards.
Western SoMa	Policy 5.2.1 Fully support and integrate into the western SoMa SUD the environmental policies embodied in green building legislation.
Western SoMa	Policy 5.2.2 Require new development to meet minimum levels of “green” construction.

Western SoMa	Policy 5.2.3 Encourage mandatory targets for certain components of the rating systems, specifically, 5 percent to 10 percent of material re-use for development projects, 100 percent diversion of all non-hazardous construction and demolition debris for recycling and/or salvage, 10 to 25 percent onsite renewable generation, water efficient landscaping to reduce potable water consumption for irrigation by 50 percent, and maximize water efficiency within buildings to reduce waste water by 30 percent.
Western SoMa	Policy 5.2.5 Encourage new development to adhere to a new performance-based ecological evaluation tool to improve the amount and quality of green landscaping.
Western SoMa	Policy 5.2.9 Compliance with strict environmental efficiency standards for new buildings is strongly encouraged.
Western SoMa	Policy 5.2.10 When soil conditions allow, the use of open pavers (porous pavement materials) on drives, sidewalks, parking lots and plazas should be required.
Western SoMa	Policy 5.3.8 Establish and require height limits and upper story setbacks to maintain adequate light and air to sidewalks, parks, plazas and frontages along alleys.
Western SoMa	Objective 7.1 Identify new park site opportunities.
Western SoMa	Policy 7.1.1 Identify opportunities to create new public parks, recreation facilities and open spaces and provide at least one new public park or open space serving western SoMa.
Western SoMa	Policy 7.1.2 Develop an active funding system to support the maintenance and acquisition of park land for the neighborhood.
Western SoMa	Policy 7.1.3 Encourage western SoMa developments on sites of half- acre or more to provide new areas for recreation, parks and open spaces.
Western SoMa	Policy 7.1.4 New development should not result in a net loss of open space.
Western SoMa	Policy 7.1.5 Encourage the replacement of open space displaced in the course of development at a minimum of 1:1 replacement ratio.
Western SoMa	Policy 7.1.6 Development projects on large development sites of one half- acre or more should provide publicly accessible community spaces or provide publicly accessible open spaces.
Western SoMa	Objective 7.2 Work in coordination with other public agencies to ensure that local park, open space, and recreation needs in western SoMa are met by new development.
Western SoMa	Policy 7.2.1 Integrate open space policies with all other planning efforts.
Western SoMa	Policy 7.2.2 Integrate consistent open space-related policies throughout City and regional agencies.
Western SoMa	Policy 7.2.3Continue working with the department of public works great streets and south of market alley improvements programs for new development contributions to design and improved streets following standards that are inclusive, especially improvements that equally support the use of spaces by persons with disabilities, children and the elderly.
Western SoMa	Policy 7.2.4 Continue working with the department of public works great streets and south of market alley improvements programs so new development can contribute to planting new trees, coordinate with urban forestry for planting and maintaining urban trees.

Western SoMa	Policy 7.2.5 Require development projects to contribute to parks and open space directly by creating publicly accessible open space on the site of a project, or by contributing funding for parks and open space such that western SoMa achieve a standard of 10 acres of open space per 1,000 residents in the western SoMa SUD.
Western SoMa	Policy 7.3.2 Redesign underutilized portions of streets as public open spaces, including widened sidewalks or medians, curb bulb-outs, "living streets" or green connector streets.
Western SoMa	Policy 7.3.3 Develop a comprehensive public realm plan for the plan area that reflects the differing needs of streets based upon their predominant land use, role in the transportation network, and building scale.
Western SoMa	Policy 7.3.10 Provide public amenities and infrastructure that support the use of open space such as public toilets, park benches, pedestrian scale lighting, and minimal gates/barriers to access.
Western SoMa	Policy 7.3.11 Require that new development contribute a continuous row of appropriately-spaced trees at all streets adjacent to the project.
Western SoMa	Objective 7.4 Create a network of streets that connects open spaces and improves the pedestrian experience and aesthetics of the neighborhood.
Western SoMa	Policy 7.4.1 Design the intersections of major streets to reflect their prominence as public spaces.
Western SoMa	Policy 7.4.3 Where possible, transform unused freeway and rail rights-of-way into landscaped features that provide a pleasant and comforting route for pedestrians and bicyclists.
Western SoMa	Policy 7.4.5 Enhance the pedestrian environment by requiring new tree planting abutting sidewalks.
Western SoMa	Objective 7.5 Ensure that existing open space, recreation and park facilities are well maintained.
Western SoMa	Policy 7.5.1 Prioritize funds and staffing to better maintain existing parks and obtain additional funding for a new park and open space facilities.
Western SoMa	Objective 7.6 Maintain and promote diversity of neighborhood open spaces.
Western SoMa	Policy 7.6.1 Require all new areas for open space to be designed in versatile ways, and include a wide spectrum of uses.
Western SoMa	Policy 7.6.2 Create new open space areas to be used during the day and at night, by a diverse community, including pets, toddlers, elders, residents, tourists, workers, etc.
Western SoMa	Policy 7.6.3 Fund and maintain public open spaces for a diverse, constantly changing community.
Western SoMa	Policy 7.6.5 Encourage the design of open spaces for use by a different public throughout the day and night as well as throughout the seasons, so these spaces can be enjoyed by a diverse community and for a variety of celebrations and events.
Western SoMa	Policy 7.6.6 Encourage new commercial and industrial development to contribute to public open space such as street-level plazas with benches, street lights, and street front open space accessible to workers, residents and visitors at minimum during the day time.
Western SoMa	Policy 7.6.7 Require new residential, commercial and industrial development to contribute to the creation of public open space, and/or provide on-site private open space designed to be publicly accessible and to meet the needs of residents.

Western SoMa	Policy 7.6.8 Encourage private open space to be provided as common spaces for residents and workers of the building.
Western SoMa	Policy 7.6.9 Strengthen requirements for commercial development to provide on-site open space.
Western SoMa	Objective 7.7 Educate the public about health, food, natural habitats and local resources through recreation and open spaces.
Western SoMa	Policy 7.7.4 Hold an annual event in neighborhood recreational facilities and open spaces to promote community use and ownership of the facilities and parks.
Western SoMa	Policy 7.8.3 Maintain open space other than at grade on existing buildings.
Western SoMa	Policy 7.8.4 Encourage generous not at grade open space in new development when at grade open space is impossible to comply with.
Western SoMa	Objective 7.9 Require noise and air pollution mitigation measures.
Western SoMa	Policy 7.9.1 Require mitigation measures for noise and pollution when building new open spaces and/or recreational facilities.
Western SoMa	Objective 7.10 Promote innovative and alternative green and sustainable publicly-accessible private open space.
Western SoMa	Policy 7.10.1 For major new residential and office development, encourage the establishment and maintenance of rooftop gardens on at least 25 percent of usable roof space.
Western SoMa	Policy 7.10.2 Encourage minimum ecological standards for urban landscaping for all new development and provide incentives for existing development to meet these standards.
Western SoMa	Policy 7.10.5 Maximize solar access to all existing and new recreational open space.
Western SoMa	Policy 7.10.7 Protect and restore natural resource areas by encouraging that land deemed to be a significant natural resource not be developed or altered.
Western SoMa	Policy 7.10.8 Restore, preserve and protect healthy natural habitats in the neighborhood and surrounding areas.
Western SoMa	Objective 7.11 Contribute community benefits funding towards park maintenance and programming.
Western SoMa	Policy 7.11.2 Pursue funding for capital improvements, operation, and maintenance of open space facilities through developer impact fees, in-kind contributions, dedication of tax revenues, and state or federal grant sources.
Western SoMa	Policy 7.11.3 Consider using a portion of public benefits funding for the creation of community gardens based on community support.
Western SoMa	Policy 7.11.4 Work with project sponsors on large development sites to provide publicly-accessible community open space, tot-lots, and recreation resources.
Western SoMa	Objective 9.5 Encourage community recreation, public health, food production, art and education facilities as part of major real estate rehabilitation or new construction projects.
Western SoMa	Policy 9.5.1 Development projects of an acre or more should provide on-site publicly-accessible community spaces or provide publicly-accessible open spaces.
Western SoMa	Objective 9.6 Promote food access and sustainable urban agriculture.

Western SoMa	Policy 9.6.2 Encourage community shared agriculture drop off locations in major new residential developments.
Western SoMa	Policy 9.6.3 Identify new areas for community gardens within the plan area. Consider new locations to be within new or existing parks or near existing or new community facilities.
Western SoMa	Policy 9.6.4 Consider using a portion of public benefits funding for the creation of community gardens based on community support.
Western SoMa	Policy 9.6.5 Consider using a portion of public benefits funding to support the transport of low-income residents to local farmers markets.
Western SoMa	Policy 9.6.6 If a new, remodeled or expanded school facility is developed, encourage the school to include the provision of fully functioning kitchens so that school meals are served on site and provide green space equal to 20 to 40 percent of the project site area to include a school garden.
Western SoMa	Policy 10.6.1 Support building access to all public spaces, streets and public right of ways, as well as access to public spaces within private development in the neighborhood that is safe and accessible from the perspective of all local and federal regulations without contradictions regarding "safety" and "accessibility".

VII.4 STATE STRATEGIES FOR ECOLOGICAL SUSTAINABILITY & CONSERVATION

California has a wide array of resources and programs dedicated to ecological sustainability and conservation efforts. Local governments and the California Department of Toxic Substances Control manage the California Green Business Program. The program, which targets smaller businesses, has certified 3,377 businesses that comply with the program's checklists.[330] The California Natural Resources Agency, CAL FIRE, Strategic Growth Council, and Conservation Corps are some of the core state committees and agencies that work to promote the health and protection of the urban forests. There are a number of organizations that contribute to the research, education, and successful implementation efforts of ecological sustainability such as the California Urban Forests Council, California ReLeaf, the Climate Action Reserve, and the Urban Forestry Ecosystems Institute at Cal Poly. Many of these agencies and organizations offer urban forestry grants.[331]

Section 4799.06-4799.12 of the California Public Resources Code, otherwise referred to as the California Urban Forestry Act of 1978, establishes the authority for the Urban and Community Forestry Program under CAL FIRE to expand and improve tree management in urban forests throughout the state.[332] A key component of the program is to maximize the benefits of trees in working towards AB32 targets. CAL FIRE was allocated $42 million from the Greenhouse Gas Reduction fund in fiscal year 2014-2015 to invest in urban forestry ($18 million) and forest restoration ($24 million) projects. This funding allowed the Urban and Community Forestry Program to grant $15.6 million to 29 different projects throughout the state to invest in tree planting and maintenance in private and public spaces, with a particular focus in disadvantaged communities.[333] The *Urban and Community Forestry Program Strategic Plan* for 2013-2018 includes a number of objectives to optimize urban forests for environmental enhancement and mitigation.[334]

Urban forests play a vital role in the State's greenhouse gas management strategy. As part of California's Cap-and-Trade Program, entities can use Air Resources Board-approved offset credits to fulfill up to 8 percent of their compliance obligation. The California Air Resources Board maintains Compliance Offset Protocols for forest and

[330] California Green Business Program. Accessed August 4, 2016.
[331] California Releaf, Public Grants. Accessed August 3, 2017.
[332] California Public Resources Code, Section 4799.06-4799.12. Accessed August 3, 2017.
[333] CAL FIRE, Urban and Community Forestry Program Greenhouse Gas Reduction Fund Grants 2014/2015. Accessed August 4, 2016.
[334] California Urban Forestry Advisory Committee, CAL FIRE Urban & Community Forestry Program Strategic Plan 2013-2018. Accessed August 4, 2016.

urban forest projects on their website for users to calculate and report the amount of greenhouse gas emissions removed from the atmosphere associated with tree planting.[335] A 2003 study reported that there were just over 177 million trees in California's urban areas.[336] A recent study from the U.S. Forest Service's Pacific Southwest Research Station reported that of this total, there were 9.1 million street trees in 2014. It was estimated that these street trees store 7.78 million MTCDE and that they sequester 375,704 MTCDE per year. The report also concluded that the trees resulted in 257,013 MTCDE in avoided emissions from building energy savings. Accounting for emissions from decomposition of removed trees and the equipment for maintenance, the net annual carbon dioxide removed from the atmosphere comes to 567,748 MTCDE.[337] There is potential for California's cities to significantly increase the number of street trees and the benefits from urban forest. Between 1988 and 2014, the number of street trees increased from 5.9 million to 9.1 million. However, street tree density (the number of trees per kilometer of street length) declined nearly 30 percent.[338]

TABLE 31. STATE SENATE & ASSEMBLY BILLS RELATED TO ECOLOGICAL SUSTAINABILITY & CONSERVATION

Bill	Year	Description
Section 4799.06-4799.12, California Public Resources Code	1978	Establishes the Urban and Community Forestry Program
SB732, Strategic Growth Council	2007	Establishes the Strategic Growth Council

[335] California Air Resources Board, Compliance Offset Program. Accessed August 3, 2017.
[336] E. Gregory McPherson, Natalie van Doorn, John de Goede, Structure, function and value of street trees in California, USA, 2016. Accessed August 4, 2016.
[337] Ibid.
[338] Ibid.

VIII. CONCLUSION

The policies, regulations, and programs outlined in this document collectively comprise San Francisco's greenhouse gas reduction strategy and continue San Francisco's efforts to achieve reduction targets outlined by Ordinance 81-08 of 25 percent below 1990 levels by 2017, 40 percent below 1990 levels by 2025, and 80 percent below 1990 levels by 2050. The 2015 inventory concluded that the City has measurably reduced its greenhouse gas emissions to 38 percent below 1990 levels, thereby meeting the target set by Resolution 158-02 as well as exceeding the current statewide 2020 greenhouse gas emissions reduction goals. As such, the City's GHG reduction strategy furthers the State's efforts to reduce statewide GHG emissions as mandated by AB32.

In 2008, the Air Resources Scoping Plan encouraged local governments to reduce municipal operations emissions by 15 percent by 2020 based on then-current year emissions. The proposed 2017 Update to the Scoping Plan establishes a framework for the most aggressive climate target in North America: a 40 percent reduction in greenhouse gases by 2030 compared to 1990 levels.[339] The City and County of San Francisco continues to make progress in achieving its aggressive greenhouse gas reduction goals and has prioritized climate change actions among City departments by requiring departmental climate action plans and by following the Department of the Environment's 2013 Climate Action Strategy. For example, since 2005, San Francisco's municipal operations greenhouse gas emissions have declined 34 percent.[340]

Given that (1) San Francisco has implemented regulations to reduce greenhouse gas emissions specific to new construction and renovations of private developments and municipal projects; (2) San Francisco's sustainable policies have resulted in the measured success of reduced greenhouse gas emissions levels; (3) San Francisco has met and exceeded AB 32 greenhouse gas reduction goals for the year 2020; and (4) current and probable future state and local greenhouse gas reduction measures will continue to reduce a project's contribution to climate change, projects that are consistent with San Francisco's regulations would not contribute significantly, either individually or cumulatively, to global climate change.

Projects in San Francisco are required to comply with San Francisco's ordinances that reduce greenhouse gas emissions. These regulations are summarized in the private and municipal checklists located in Appendix L. Mandatory compliance with these regulations ensures that development projects do not impair the State's ability to meet statewide GHG reduction targets outlined in AB32, nor impact the City's ability to meet San Francisco's local GHG reduction targets.

As San Francisco continues to implement programs to further reduce greenhouse gas emissions or other programs that yield GHG-reduction benefits, this report should be updated accordingly. Any applicable environmental review document that supports changes to this document should be collected and included in the Appendix C. The next major milestone year is 2017, at which time there will be an updated greenhouse gas inventory and evaluation.

[339] California Air Resources Board. 2017 Proposed Climate Change Scoping Plan Update. Accessed on June 29, 2017.

[340] San Francisco Department of Environment, 2015 San Francisco Greenhouse Gas Inventory. Accessed August 11, 2017.

IX. APPENDICES

Following this page.