



City of Petaluma

Revised Draft General Plan 2025 Air Quality: Greenhouse Gas Emissions

November 2007

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This document only includes Section 4.5 Greenhouse Gas Emissions.
The other sections are shown for contextual purposes only.

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4.5 Greenhouse Gas Emissions

Petaluma seeks to evaluate and lessen the impact of greenhouse gas emissions by reducing emissions, conserving resources and implementing the goals, policies and programs outlined in the General Plan 2025.

GLOBAL

Climate change is a shift in the average weather patterns observed on earth, which can be measured by such variables as temperature, wind patterns, storms and precipitation. The temperature on earth is regulated by what is commonly known as the “greenhouse effect.” Naturally occurring greenhouse gases in the atmosphere, including carbon dioxide, methane, nitrous oxides, and water vapor, absorb heat from the earth’s surface and radiate it back to the surface.

Human activities result in emissions of four principal greenhouse gases: carbon dioxide, methane, nitrous oxide, and halocarbons (fluorine, chlorine and bromine). Of all human activities, the burning of fossil fuels is the largest contributor in overall greenhouse gas emissions, releasing carbon dioxide gas into the atmosphere.¹

The resulting increases in greenhouse gas emissions from human activities are leading to higher concentrations and a change in composition of the atmosphere. For instance, the concentration of CO₂ in the atmosphere has risen about 30 percent since the late 1800s (National Assessment Synthesis Team [NAST], 2001).² Many sources and models indicate that temperatures on earth are currently warming and will continue to warm at unprecedented levels. The global mean surface temperature has increased by 1.1° F since the 19th century (IPCC Synthesis report, 2001), and the 10 warmest years of the last century all occurred within the last 15 years.²

The many effects of Greenhouse Gas Emissions are still being researched and are not fully known, but are expected to include increased temperatures which would: reduce snowpack, a primary source of drinking water; exacerbate air quality problems and adversely impact human health by increasing heat stress and related deaths; increase the incidence of infectious disease, asthma and respiratory health problems; cause sea levels to rise, threatening urban and natural coastlands; increase pests and pathogens; and cause variations in crop quality and yields.

This section of the General Plan is focused on the reduction of greenhouse gas emissions. To the extent that Petaluma is affected by global warming, for example rises in sea level, the issues are addressed in the Water Resources Element.

STATE OF CALIFORNIA

In California, the majority of human activity greenhouse gas emissions can be broken down into four sectors: transportation, industrial, electrical power, and agriculture/forestry. The largest source is from the transportation sector.²

In 2005, Governor Schwarzenegger issued Executive Order S-02-05, calling for statewide reductions to 2000 levels by 2010, 1990 levels by 2020 and to 80 percent below 1990 levels by 2050. The Executive Order also called for the creation of a state “Climate Action Team”, which would report to the Governor every two years on both progress toward meeting the targets and effects of Greenhouse Gas Emissions on the state.

¹ Intergovernmental Panel on Climate Change, Fourth Assessment Report (IPCC 4th), 2007, Working Group (WG) I, Frequently Asked Question 2.1, *How do Human Activities Contribute to Climate Change and How do They Compare with Natural Influences?* http://ipcc-wg1.ucar.edu/wg1/Report/AR4Wg1_Pub_FAQs.pdf

² Climate Action Team, 2006, Climate Action Team Report to Governor Schwarzenegger and the Legislature, March.

In the Fall of 2006, the Governor signed Assembly Bill 32 (AB32), the “Global Warming Solutions Act of 2006,” committing the State of California to reducing greenhouse gas emissions to 1990 levels by 2020. The statute requires the California Air Resources Board (ARB) to track emissions through mandatory reporting, determine what 1990 emissions were, set annual emissions limits that will result in meeting the target, and identify a list of discrete early actions that directly address greenhouse gas emissions, are regulatory, and can be enforced by January 1, 2010.

CITY OF PETALUMA

Municipal Greenhouse Gas Emissions

On August 5th, 2002, the City Council adopted Resolution 2002-117 committing to participate in the Cities for Climate Protection. By doing so the City committed to:

- Taking a leadership role in promoting public awareness about the causes and impacts of Greenhouse Gas Emissions.
- Undertaking the Cities for Climate Protection program’s five milestones to reduce greenhouse gas and air pollution emissions throughout the community by:
 1. Conducting a greenhouse gas emissions inventory and forecast to determine the source and quantity of GHG emissions.
 2. Establishing a greenhouse gas emissions reduction target.
 3. Developing an action plan with both existing and future actions to meet the greenhouse gas reduction target.
 4. Implementing the action plan.
 5. Monitoring to review progress.

In 2005 the City completed steps 1 and 2. On July 18, 2005 the City passed Resolution 2005-118, “Resolution to Establish GHG Emission Reduction Target(s) for the City of Petaluma”. Resolution 2005-118 established greenhouse gas emissions reduction targets of 25% below 1990 levels by 2015 for community emissions and 20% below 2000 levels by 2010 for municipal operations. The City’s reduction targets are more stringent than those passed by the State. The City is currently working on Step 3, development of the action plan for municipal emissions.

Also, the City signed the U.S. Mayors Climate Protection Agreement calling for participating cities to meet or surpass the Kyoto Protocol targets, and the resolutions above do surpass the Kyoto targets.

Since 2005 the City has implemented, or is in the process of implementing, many programs to reach the municipal operations goal. These include: a major lighting retrofit at City Hall, the Police Department and the Lucchesi Community Center; replacement of four traditional fuel fleet vehicles with one zero emission electric vehicle and three hybrid vehicles; retrofit of nine “off-road” vehicles (dump trucks, vacuum trucks, etc) to comply with the California Air Resources Board lower vehicle emission regulations³; replacement of 99 percent of the incandescent traffic lights with LED lights; and replacement of three of nine 1989 diesel buses with four, 2007 Gillig models, which are equipped with clean burning diesel engines that meet the 2010 CARB regulations. As standard procedure, the Public Works Maintenance & Operations staff replaces older lighting fixtures with energy efficient units, as the original fixtures burn out.

The Green Team, a Council sanctioned group composed of City staff members and interested citizens, was formed to analyze City procedures and processes to identify areas of improvement, educate staff and the community, and sponsor the Going Green Expo.

The City is currently preparing a Climate Action Plan (CAP) for its municipal activities per Resolution 2002-117. The purpose of the municipal CAP is to identify and prioritize programs, projects, and procedural policies that will help the City achieve the municipal greenhouse gas emission goals of Resolution 2005-118.

³ California Environmental Protection Agency, Air Resources Board, November 1998, *EV II – Amendments to California’s Low-emission Vehicle Regulations*.

Community Greenhouse Gas Emissions

As stated above, Resolution 2005-118 established greenhouse gas emissions reduction targets of 25% below 1990 levels by 2015 for community emissions. The primary sources of community greenhouse gas emissions in Petaluma are identified in Table 4.1-1 on the following page. In summary, residential and commercial buildings are responsible for about 40 percent; transportation is responsible for about 55 to 59 percent; and municipal services and solid waste management account for about 2 to 5 percent of emissions.

Emissions have grown from about 434,900 tons in 1990 at about 10.1 tons per person to 610,400 tons in 2005 at about 10.7 tons per person. Without benefit of the policies in the General Plan, emissions in 2025 are estimated to be 721,600 tons at about 9.9 tons per person. Although emissions would continue to increase, the rate of increase is expected to slow in the future based on implementation of the General Plan policies and State measures.

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Table 3.10-6: Petaluma Community-wide 1990 and 2005 Greenhouse Gas Emissions and Projected Emissions for 2025

	1990				2005				2025			
	Electricity (kWh)	Natural Gas (Therms)	CO ₂ e Emissions (tons)	Percent of Total	Electricity (kWh)	Natural Gas (Therms)	CO ₂ e Emissions (tons)	Percent of Total	Electricity (kWh)	Natural Gas (Therms)	CO ₂ e Emissions (tons)	Percent of Total
Buildings	335,233,026	9,083,718	172,200	40%	455,792,623	12,245,736	237,400	39%	554,183,117	15,572,117	292,800	40%
Municipal Services - Water & Sewer	6,184,009	209	2,100	0%	6,786,555	209	2,400	0%	10,146,879	6,000	3,600	1%
	Population	Waste Generated (tons)			Population	Waste Generated (tons)			Population	Waste Generated (tons)		
Solid Waste	43,200	49,567	22,500	5%	57,085	29,144	12,500	2%	72,707	37,178	15,900	2%
		Vehicle Miles Traveled				Vehicle Miles Traveled				Vehicle Miles Traveled		
Transportation		305,992,640	238,100	55%		544,710,305	358,100	59%		662,392,145	409,200	57%
TOTAL			434,900	100%			610,400	100%			721,600	100%
Percent Increase							2.7% increase per year from 1990 to 2005				0.9% increase per year from 2005 to 2025	

Notes: Columns may not add due to rounding.

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Throughout the Draft General Plan, many far-reaching goals and policies are identified to promote the vision for Petaluma's long-range physical and economic development and resource conservation. These policies, in such key areas as land use, conservation, systems efficiency, safety, mobility and housing, serve a dual purpose to implement the City's long-range goals and also require that growth occurs in ways that reduce the impact of greenhouse gas emissions. These dual purpose policies are summarized at the end of this section in Table 4.1-1. In addition, Table 4.1-1 also contains changes to these policies as well as additional policies that are in support of Goal 4-G-6. These changes and additions are shown in ~~strikeout~~ and underline.

This section is intended to implement the guiding principles of the General Plan, especially:

11. Foster a sustainable community in which today's needs do not compromise the ability of the community to meet its future needs. Promote green development.

Goal 4-G-6: Greenhouse Gas Emissions

Reduce the contribution to greenhouse gases from existing sources and minimize the contribution of greenhouse gases from new construction and sources.

Policies and Programs:

4-P-18 Fund and/or designate a Green Program Manager to oversee implementation of all Greenhouse Gas Emissions policies and programs identified in the Greenhouse Gas Emissions section as well as the City's Climate Action Plan . The policies and programs will need to be reviewed and updated periodically as new information, regulatory standards, and technologies develop. A report shall be provided to the City Council biannually, reporting on the status of the City's efforts to reduce green house gases, and recommendations for any changes that are deemed necessary.

4-P-19 Comply with AB 32 and its governing regulations to the full extent of the City's jurisdictional authority.

4-P-20 To the full extent of the City's jurisdictional authority, implement any additional adopted State legislative or regulatory standards, policies and practices designed to reduce greenhouse gas emissions, as those measures are developed.

4-P-21 Implement to the fullest extent possible all measures identified in the municipal Climate Action Plan to meet the municipal target set in Resolution 2005-118 (20% below 2000 levels by 2010).

4-P-22 The City may prepare a Community Climate Action Plan to identify and prioritize programs, projects, and procedural policies that will help the City achieve the community greenhouse gas emission goals of Resolution 2005-118 (25% below 1990 levels by 2015).

4-P-23 Prepare a feasibility report for the City of Petaluma forming a Community Choice Aggregation (through AB 117, permits any city or county to aggregate the electric loads of residents, businesses and municipal facilities to facilitate the purchase and sale of electrical energy) as a way of supplying renewable energy to the community.

4-P-24 Continue to provide opportunities for City employees to learn about and participate in the Low Carbon Diet sponsored by the Green Team and consider options for expanding the program to the community.

4-P-25 Train appropriate City staff on new technology and look for opportunities to improve energy efficiency in public facilities.

4-P-26 Continue to monitor new technology and innovative sustainable design practices for applicability to insure future development minimizes or eliminates the use of fossil fuel and GHG-emitting energy consumption.

4-P-27 Provide information and tips on reducing greenhouse gas emissions to the community.

A. Advertise "Green Tip" in the local newspaper.

B. Work with utilities to offer Green Tips with the utility bills.

- C. Continue sponsoring the Going Green Expo.
- D. Create a program of on-going community education.
- E. Support the efforts of the Sonoma Green Business Program.

4-P-28 Develop and implement a municipal Environmentally Preferable Purchasing Program.

Table 4.1-1 Summary of Applicable Policies from other General Plan Sections and New Policies that Reduce Greenhouse Gas Emissions (amendments and new text illustrated with strikeouts and/or underline).

<p><u>2 LAND USE, GROWTH MANAGEMENT AND THE BUILT ENVIRONMENT</u></p> <p>2-P-2 Use land efficiently by promoting infill development, at equal or higher density and intensity than surrounding uses.</p> <p>2-P-6 Encourage mixed-use development, which include opportunities for increased transit access.</p> <p>2-P-12 Encourage reuse of underutilized sites along East Washington Street and Petaluma Boulevard as multi-use residential/commercial corridors, allowing ground-floor retail and residential and/or commercial/office uses on upper floors.</p> <p>2-P-15 Under a discretionary review process opportunities to blend live-work or limited commercial/office uses within medium and high-density residential development may be permitted when abutting an arterial roadway.</p> <p>2-P-29 It is the policy of the City to build within the agreed upon Urban Growth Boundary (UGB). No urban development shall be permitted beyond the UGB.</p> <p>2-P-35 Growth shall be contained within the boundaries of the Urban Growth Boundary; the necessary infrastructure for growth will be provided within the Urban Growth Boundary.</p> <p>2-P-46 New development shall acknowledge, preserve, protect and enhance the ecological and biological health and diversity of the Petaluma River.</p> <p>2-P-49 Preserve existing tree resources and add to inventory and diversity of <u>native/indigenous</u> species.</p> <p>2-P-50 Preserve and expand the inventory of trees on public property.</p> <p><u>3 COMMUNITY DESIGN, CHARACTER, AND GREEN BUILDING</u></p> <p>3-P-7 Encourage creation of a street tree planting program in existing suburban residential areas and industrial areas undergoing revitalization.</p> <p>3-P-28 Develop a cohesive street tree program integral to redevelopment and new development within the Downtown area.</p> <p>3-P-32 Improve bicycle circulation through the corridor by adding bicycle lanes on or parallel to East Washington Street, i.e. East D Street and/or Madison Street.</p> <p>3-P-44 Use the Natural Environment Element, Water Resources Element and the Petaluma River Enhancement Plan as the tool to implement the Petaluma River greenway by maintaining setbacks, creating flood terraces where appropriate, preserving flood storage capacity of the floodplain, protecting and enhancing habitat conservation areas, protecting and enhancing oak and riparian habitat and other open spaces along the river.</p> <p>3-P-50 Provide additional pedestrian/bicycle access to and along the riverfront to connect to existing and future trails toward Downtown.</p> <p>3-P-60 Permit a mix of uses, with fairly high intensities to create the ambiance of a bustling urban corridor.</p> <p>3-P-61 Reinforce existing Neighborhood Commercial uses at West Payran Street; encourage intensification and expansion of the existing center to provide a wider range of products to meet the needs of the surrounding neighborhoods.</p> <p>3-P-62 Encourage development of the area south of Payran Street as an urban corridor, with a mix of uses comparable to those of the Central Petaluma Specific Plan, increasing in intensity approaching Downtown.</p> <p>3-P-63 Preserve and enhance the oak woodland setting and integrate development to protect and enhance these resources.</p> <p>3-P-75 Create an open space network through residential areas by requiring integration of open space with public trails when properties are developed.</p>
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3-P-81 Preserve trees and enhance the natural woodland ecology of the South Hills subarea.

3-P-92 Preserve existing and plant additional trees in the Washington Creek area between North McDowell Blvd. and Sonoma Mountain Parkway.

3-P-93 Provide enhanced facilities to encourage improved pedestrian and bicycle mobility along East Washington Street and East D Street to connect to the existing pedestrian overcrossing of Highway 101, south of the East Washington overpass.

3-P-95 Provide enhanced pedestrian and bicycle network connections between the industrial, commercial, and residential clusters.

3-P-97 Work with regional and other agencies to create a new rail transit station near Corona Road with high-intensity, transit-oriented development.

3-P-98 Promote walkability by clustering business parks and increasing pedestrian linkages between office structures and nearby commercial and restaurant uses.

3-P-100 Work with CalTrans and other agencies to establish a park-and-ride lot close to the new interchange. Include parking spaces with electric vehicle recharging facilities, secure bicycle parking, and reserved spaces for ride-sharing vehicles.

3-P-101 Encourage the development of landscape standards that reduce existing lawns and require tree planting.

3-P-103 Develop high and medium density residential near the proposed rail transit station on Corona Road.

3-P-105 Improve older streetscapes with added street trees, landscaping and pedestrian amenities.

3-P-110 Keep Corona Road as a rural two-lane road (east of Sonoma Mountain Parkway), with an improved cross-section to facilitate safer bicycle and pedestrian use utilizing innovative design standards that increase connectivity and safety while maintaining the rural context.

3-P-116 Improve pedestrian and bicycle amenities along Frates Road/Cedar Lane as access to industrial/employment areas and Shollenberger Park.

3-P-117 Extend bicycle paths along Adobe Creek, and provide new paths along major local connectors and city arterials.

3-P-119 Strengthen pedestrian connections to Downtown and the Central Petaluma Specific Plan (CPSP) subarea through streetscape improvements along the Washington Street/Bodega Avenue corridor.

3-P-122 Street trees shall be preserved and their numbers increased as development/redevelopment/remodeling occurs.

3-P-124 As part of the Development Code and Standards Updates, incorporate sustainable site planning, development, and maintenance standards and procedures, reflecting conditions in the variety of Petaluma settings (such as hillsides and floodplains).

3-P-125 Incorporate green building principals and practices, ~~to the extent practicable and financially feasible,~~ into the planning, design, construction, management, renovation, operations and demolition of all facilities that are constructed, owned, managed or financed by the City.

3-P-125a Encourage Sonoma County to use the same Green Building Standards when constructing new facilities that serve Petaluma, that Petaluma requires for construction of city-owned or city-sponsored facilities after such time as Petaluma has adopted standards.

3-P-126 Evaluate the success of the voluntary green building program and ~~evaluate feasibility and impact of initiating develop and implement a similar, but~~ mandatory, program for new residential, commercial and municipal development and remodels.

~~3-P-127 Encourage the development of green programs for non-residential projects.~~

3-P-127 Require development projects to prepare a Construction Phase Recycling Plan that would address the reuse and recycling of major waste materials (soil, vegetation, concrete, lumber, metal scraps, cardboard packaging, etc) generated by any demolition activities and construction of the project.

4 THE NATURAL ENVIRONMENT

4-P-6 Improve air quality through required planting of trees along streets and within park and urban separators, and retaining tree and plant resources along the river and creek corridors.

4-P-7 Reduce motor vehicle related air pollution.

4-P-7a Support, where feasible, the development of alternative fuel stations.

4-P-7b Require a percentage of parking spaces in large parking lots or garages to provide electrical vehicle charging facilities.

4-P-7c Require electric vehicle charging and alternative fuel facilities at all new and remodeled gas stations.

4-P-7d Promote ride-sharing and car-sharing programs.

4-P-8 Prohibit new and significant expansion of existing drive-thru food and service facilities.

4-P-9 Require development of traffic roundabouts, where feasible, as an alternative to a traffic signal, to reduce idling vehicles.

4-P-9a Develop and integrate Intelligent Transportation Technologies, as applicable, into Petaluma's transportation system.

4-P-10 Improve air quality by reducing emissions from stationary point sources of air pollution (e.g. equipment at commercial and industrial facilities) and stationary area sources (e.g. wood-burning fireplaces & gas powered lawnmowers) which cumulatively emit large quantities of emissions.

A. Continue to work with the Bay Area Air Quality Management District to achieve emissions reductions for non attainment pollutants; including carbon monoxide, ozone, and PM-10, by implementation of air pollution control measures as required by State and federal statutes. The BAAQMD's CEQA Guidelines should be used as the foundation for the City's review of air quality impacts under CEQA.

B. Continue to use Petaluma's development review process and the California Environmental Quality Act (CEQA) regulations to evaluate and mitigate the local and cumulative effects of new development on air quality.

C. Continue to require development projects to abide by the standard construction dust abatement measures included in BAAQMD's CEQA Guidelines. These measures would reduce exhaust and particulate emissions from construction and grading activities.

D. Reduce emissions from residential and commercial uses by requiring the following:

- Use of high efficiency heating and other appliances, such as cooking equipment, refrigerators, and furnaces, and low NOx water heaters in new and existing residential units;
- Compliance with or exceed requirements of CCR Title 24 for new residential and commercial buildings;
- Incorporation of passive solar building design and landscaping conducive to passive solar energy use for both residential and commercial uses, i.e., building orientation in a south to southeast direction, encourage planting of deciduous trees on west sides of structures, landscaping with drought resistant species, and use of groundcovers rather than pavement to reduce heat reflection;
- Use of battery-powered, electric, or other similar equipment that does not impact local air quality for non-residential maintenance activities;
- Provide natural gas hookups to fireplaces or require residential use of EPA-certified wood stoves, pellet stoves, or fireplace inserts.

4-P-11 To reduce combustion emissions during construction and demolition phases, the contractor of future individual projects should include in construction contracts the following requirements or measures shown to be equally effective:

- Maintain construction equipment engines in good condition and in proper tune per manufacturer's specification for the duration of construction;
- Minimize idling time of construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment;
- Use alternative fuel construction equipment (i.e, compressed natural gas, liquid petroleum gas, and unleaded gasoline);
- Use add-on control devices such as diesel oxidation catalysts or particulate filters;
- Use diesel equipment that meets the ARB's 2000 or newer certification standard for off-road heavy-duty diesel engines.

4-P-13 Develop and adopt local energy standards that would result in less energy consumption than standards set by the California Energy Commission's (CEC) Title 24.

A. Identify and implement energy conservation measures that are appropriate for public buildings and facilities.

- Schedule energy efficiency "tune-ups" of existing buildings and facilities.
- Institute a lights-out-at-night policy in all public buildings where feasible.
- Continue to retrofit older lighting fixtures in City facilities until all buildings have been upgraded.
- Where new traffic signals or crosswalk signals are installed, or existing signals are upgraded, continue to use LED bulbs or other equivalent efficient technology that may develop.
- Evaluate the possibility of decreasing the average daily time streets lights are on.
- Periodically evaluate the efficiency of potable and sewer pumping facilities and identify measures to improve pumping efficiency.

- Encourage the County of Sonoma to upgrade existing, inefficient facilities which serve Petaluma (e.g. potable water pumping facilities).

B. Identify energy conservation measures appropriate for retrofitting existing structures. Work with local energy utility to encourage incentive program for retrofitting. Consider the use of alternative transportation fuels among City-owned vehicles and the Petaluma Transit system to reduce dependence on petroleum-based fuels and improve local air quality. Continue to replace traditional fuel vehicles in the City's fleet with alternative fuel vehicles and/or zero/low emission vehicles, as appropriate. When selecting alternative fuel vehicles consider the "full cycle" of emissions for the different fuel types.

C. Investigate and implement alternative sources of renewable power to supply City facilities, such as solar water heating at the Petaluma Swim Center and cogeneration at the Ellis Creek Water Recycling Facility.

4-P-14 Encourage use and development of renewable or nontraditional sources of energy.

4-P-16 Reduce solid waste and increase recycling, in compliance with the Countywide Integrated Waste Management Plan (CoIWMP).

A. Work with Sonoma County to identify environmental and economical means to meet the need for solid waste disposal.

B. Require new or remodeled multifamily residential and all non-residential development to incorporate sufficient, attractive, and convenient interior and exterior storage areas for recyclables and green waste.

C. Continue to encourage waste reduction and recycling at home and in businesses through public education programs, such as informational handouts, on recycling, yard waste, wood waste, and hazardous waste.

D. Consider development of a residential and commercial food waste composting program.

E. Purchase goods containing recycled materials for City use, ~~to the extent possible.~~

F. Continue to cooperate, require, and/or support the operation of resource recovery facilities by the City waste hauler and the disposal site operators.

G. Investigate and replace bottled water in City offices with alternate source of drinking water.

H. Ensure that all public facilities have adequate and accessible depositories for recyclables.

4-P-17 Require future waste contracts to ensure disposal of City waste products at a site with the least potential for environmental impacts.

5 MOBILITY

5-P-1 Develop an interconnected mobility system that allows travel on multiple routes by multiple modes.

5-P-13 Encourage existing major employers and institutions to develop and implement Transportation Demand Management programs to reduce peak-period trip generation (including, but not listed here, sub policies A through F).

G. Encourage provision of preferential parking in selected areas for designated carpools, motorcycles, bikes and alternative vehicles.

5-P-15 Implement the bikeway system as outlined in the Bicycle and Pedestrian Plan, and expand and improve the bikeway system wherever the opportunity arises.

5-P-18 The City shall require Class II bike lanes on all new arterial and collector streets.

5-P-19 All new and redesigned streets shall be bicycle and pedestrian friendly in design.

5-P-20 Ensure that new development provides connections to and does not interfere with existing and proposed bicycle facilities.

5-P-21 Strive to create a five percent bicycle commute share by 2025.

5-P-22 Preserve and enhance pedestrian connectivity in existing neighborhoods and require a well connected pedestrian network linking new and existing developments to adjacent land uses.

5-P-23 Require the provision of pedestrian site access for all new development.

5-P-24 Give priority to the pedestrian network and streetscape amenities near schools, transit, shopping, and mixed use corridors emphasized in the General Plan.

5-P-25 Establish a network of multi-use trails to facilitate safe and direct off-street bicycle and pedestrian travel. At the minimum, Class I standards shall be applied unless otherwise specified.

5-P-28 Allow bicyclists and pedestrians use of all emergency access routes required of existing and new developments.

5-P-30 Require all new development abutting any public trail to provide access to the trail.

5-P-31 Make bicycling and walking more desirable by providing or requiring development to provide necessary support facilities throughout the day.

5-P-32 Promote bicycle and pedestrian safety and increased use of non-motorized transportation alternatives through engineering, education, and enforcement programs.

5-P-33 Fund and perform regular maintenance on all public bicycle and pedestrian facilities.

5-P-34 Utilize a creative variety of measures to fully implement all projects and programs of the Petaluma Bicycle and Pedestrian Plan.

5-P-35 Encourage continuing education and training for City staff to create awareness of bicycle and pedestrian needs and of the importance of planning for bicycle and pedestrian travel at the start of the development process.

5-P-36 Review, and update as necessary, the Petaluma Bicycle and Pedestrian Plan every five years, concurrent with the General Plan.

5-P-37 Continue to solicit and review progressive ideas from other communities and organizations related to bicycling and walking.

5-P-38 Coordinate efforts and resources with the County to construct bikeways called for in the SCTA Countywide Bicycle Plan.

5-P-39 Promote public/private partnerships in the development, implementation, operation, and maintenance of bicycle and pedestrian facilities.

5-P-39a Provide loan bicycles for City staff.

5-P-39b Continue to provide facilities for bicycles on City buses.

5-P-40 Expand the bus transit system so that it is convenient and provides frequent, regular service along major City corridors serving education, shopping and employment destinations, and SMART park-and-ride lots.

5-P-41 Support efforts for transit oriented development around the Petaluma Depot and along the Washington Street, Petaluma Boulevard, McDowell Boulevard, Lakeville Street and other transit corridors.

5-P-42 Maintain a transit system of nominal cost or no cost to riders.

5-P-43 Coordinate transit improvement efforts and schedules among Petaluma Transit, Sonoma County Transit, Golden Gate Transit, paratransit, commuter rail, and schools.

5-P-51 Support efforts to re-establish a local trolley line utilizing the old spur line into the Downtown area.

6 RECREATION AND PARKS

6-P-3 Connect city parks with other public facilities, open spaces, employment centers, and residential neighborhoods by locating new recreational facilities in proximity to these uses and by fully integrating the parks system with the city's pedestrian, bicycle, and transit system.

6-P-19 Support efforts by the City's Tree Advisory Committee to disseminate current information to the public advocating the use of Best Management Practices for the care and perpetuation of the urban forest, including issues such as ~~planting the right tree in the right place,~~ strategic tree planting that considers site conditions as well as shading in selection and placement of trees, proper planting and pruning techniques, and the importance of using Integrated Pest Management practices in order to minimize the use of chemicals harmful to the environment.

6-P-20 Where trees, larger than 8" in diameter, must be removed to accommodate development, they shall be replaced at a ratio established in the Development Code. Replacement trees may be planted on, or in the vicinity of, the development site, subject to approval by the Community Development Department or through the discretionary approval process.

6-P-20a Develop an Urban Forestry Program to consolidate the various City policies and ordinances regarding tree planting and removal and to incorporate the goals of the California Climate Action Team Report to plant 5 million trees in urban areas by 2020 to provide energy conservation and reduce greenhouse gas emissions.

7 COMMUNITY FACILITIES, SERVICES, AND EDUCATION

7-P-15 Improve and expand safe pedestrian, bicycle, and transit access to all school sites and campuses.

8 WATER RESOURCES

8-P-5A Expand the use of recycled water to offset potable water demand.

8-P-5B Continue to expand water conservation to further improve the efficient use of potable water.

8-P-9 Provide tertiary recycled water for irrigation of parks, playfields, schools, golf courses and other landscape areas to reduce potable water demand.

8-P-13 Work to convert existing potable water customers identified under the City's Water Demand & Supply Analysis Report (2006) to tertiary recycled water as infrastructure and recycled water supply become available.

8-P-18 Reduce potable water demand through conservation measures.

8-P-32 Areas within the Petaluma watershed, outside of the City of Petaluma, which are subject to periodic surface water inundation and containment, should not be modified in any manner to reduce the historic storage characteristics and capacity.

9 ECONOMIC HEALTH AND SUSTAINABILITY

9-P-3 Provide an array of employment opportunities to existing and future residents by assuring diversity in Petaluma's industry and enterprise mix.

9-P-10 Encourage economic development that will enhance job opportunities for existing City residents by providing incentives for proposals that:

- Provide jobs that match the skills (occupations) of unemployed or underemployed workers who live in Petaluma, and/or
- Commit to first-source hiring for workers who live in Petaluma, and/or
- Pay wages that enable workers to live in Petaluma.