



PARKS, TRAILS, OPEN SPACE — & — RECREATION

SUSTAINABILITY REVIEW

Introduction and Background

The Sustainability Review builds on the physical and program inventory to identify opportunities to increase sustainable and resource-saving practices associated the operation and management of parks and open space, as well as recreational facilities within the City.

Drawing on best practices from other cities and agencies, a site tour and inventory findings of Palo Alto’s parks and open space system and staff input, the Sustainability Review evaluates the City’s current policies, programs and practices and identifies opportunities to increase sustainability. The Sustainability Review considers the following indicators of sustainability:

- Air Quality
- Climate Change
- Education and Training
- Energy Efficiency
- Equity
- Green Building
- Integrated Pest Management
- Natural Resources / Habitat
- Operations / Maintenance
- Public Health and Safety
- Transportation
- Waste Management
- Water Conservation
- Water Quality

Sustainability policies and practices are evaluated based on the definition of sustainability provided on the City of Palo Alto’s Sustainability Services website (www.cityofpaloalto.org/services/sustainability/default.asp):

Sustainability is the capacity to endure, or as commonly also described, to meet the needs of the present without compromising the ability of future generations to meet their own needs. For humans, sustainability is the long-term maintenance of well-being, which has environmental, economic, and social dimensions. Dialogue about this definition focused on the necessary aspects of sustainability that must be addressed known as the “Three E’s” – economy, environment, and social equity.

Sustainability Indicators

For the purpose of this analysis, policies, programs and practices are identified as furthering sustainability goals if they result in a positive change to one of the following indicators.

Air Quality

Air quality in Palo Alto, on the Peninsula and in the Bay Area is influenced by emissions from industrial and other stationary sources, but to a much larger degree it is influenced by vehicle emissions. Any policy or action that results in a reduction from either stationary or mobile sources is considered to be furthering sustainability goals.

Climate Change

Climate change issues are usually organized into two categories – mitigation and adaptation. Mitigation involves changing practices and behaviors to reduce Greenhouse Gas (GHG) Emissions. Adaptation refers to adjustments in human systems and ecosystems that reduce the harm caused by climate change. Even with significant mitigation (GHG emission reductions) today, climate change is expected to have significant effects on California's precipitation, temperature, sea level height and weather patterns that communities will need to adapt to. Resilience, a term usually associated with adaptation, is the ability for socio-ecological systems to absorb and recover from environmental stresses imposed by climate change. The following summarizes the anticipated changes Palo Alto is likely to experience.

- **Temperature** – Based on Cal-Adapt, a repository for climate change data generated by California's scientific and research community, temperatures are expected to increase between 3.2 and 5.5 degrees Fahrenheit over 1990 baseline levels by 2090. Related to the temperature change, the City can expect more frequent and longer term heat waves. These changes could threaten public health, affect the viability of native plant species, exacerbate wildfire incidence, decrease water availability, and alter habitats.
- **Precipitation** – Because California already experiences variable precipitation, it is difficult to predict what impact climate change will have on precipitation trends in Palo Alto. Statewide predictions, however, suggest that Palo Alto will experience increasing variability, and potentially overall decline, in precipitation alternating between more extreme rain events and prolonged dry weather periods. Extreme rain events increase the frequency and magnitude of flooding. Drought events decrease water availability and alter habitats and vegetative health.
- **Sea Level Rise** – California coastal waters have experienced an almost 8-inch rise in sea level in the last century. The Bay Conservation and Development Commission (BCDC) predict that the San Francisco Bay Area could experience an additional increase in sea level ranging from 10-17 inches at mid-century and 31-69 inches at the end of the century. Changes in sea level have the potential to impact eastern portions of Palo Alto adjacent to the Bay shoreline including the Golf Course, Baylands Athletic Center and Baylands Nature Preserve.

Any policy or action that directly or indirectly results in a reduction in GHG emissions (or increase in sequestration), or increase the adaptive capacity or resilience of the community is considered to be furthering Palo Alto's sustainability goals.

Education and Training

Any policy or action related to education and training is considered to further the sustainability goals if it results in a change in behavior that has a beneficial result for one or more of the sustainability indicators.

Energy Efficiency

Palo Alto's Utility Department is committed to using 100% renewable electricity. Though the City of Palo Alto has implemented programs that have significantly reduced the non-renewable sources of energy in the City, energy conservation remains an important sustainability indicator. Energy efficient policies and design will allow the Palo Alto's Utility Department to reduce its dependence on energy sources from outside the community. Park and recreation facilities need to be built and operated to maximize energy efficiency and use of renewable energy resources, including onsite generation.

Equity

Some Bay Area residents will be harder hit than others by the cost of resources (e.g., energy and water) and climate change impacts. Income, race, age, living conditions/location, and language barriers are among the challenges facing some members of the community. Policies and actions working to advance Palo Alto's sustainability goals must be designed to involve all segments of the population and benefit the City's highly vulnerable and historically underserved communities.

Green Building

Any policy, action, or design strategy that promotes environmentally responsible use of resources throughout a building's life cycle (e.g. siting, design, construction, operation, renovation, and demolition) is considered to be furthering Palo Alto's sustainability goals.

Integrated Pest Management

Integrated Pest Management (IPM) is a strategy that focuses on long term prevention of pest problems with minimum impacts on human health, the environment or non-target organisms. The City of Palo Alto adopted a reduced risk pest management policy in 2001. This policy requires that each City division that applies pesticides maintain an active IPM plan in order to reduce or eliminate chemical usage as much as possible. IPM techniques include encouraging naturally occurring bio-controls, using alternate plant species or varieties that are less susceptible to pests, using cultural practices that reduce pest problems and changing habitat to make it incompatible with pest development. Pesticides are only used as a last resort and only when pest monitoring indicates they are needed and the least toxic, most target-specific and effective pesticide must be used. There is no spraying allowed within 100 feet of any playground or any creeks at all City sites. Palo Alto has twice been honored for its citywide adoption, implementation, and expansion of IPM policies.

Natural Resources / Habitat

Policies or actions that lead to the protection or enhancement of the physical environment in and around an ecological or environmental area that is inhabited by plant and animal species of community importance, are considered to be furthering Palo Alto's sustainability goals. These policies or actions should preserve or enhance biodiversity, soil fertility and other aspects of ecosystem health.

Operation / Maintenance

Policies and actions that promote modifications in the operation and/or maintenance of equipment and facilities to result in a beneficial change to any of the other sustainability indicators are considered to be furthering sustainability goals.

Public Health and Safety

Policies and actions that are designed to prevent incidents or accidents that are hazardous or deleterious to the public well-being are considered to be sustainable. Similarly, where the policies, programs or projects result in improvements in the natural and built environment that improve the well-being of the community are considered to be furthering sustainability goals.

Transportation

Where policies or actions promote transportation alternatives that reduce GHG emissions, increase physical activity, strengthen community, and/or reduce the amount of land that gets converted from a natural state, they are considered to be furthering Palos Alto's sustainability goals.

Waste Management

Waste management includes policies, programs and practices that reduce the amount of materials that get discarded. This can be accomplished through purchasing decisions that minimize the waste stream, reusing potential waste materials to extend their useable life and reduce the need for "new" potential waste, and/or recycling to convert potential waste into another form that is useable. Policies and actions that promote behaviors that reduce the waste stream (both internally from City operations and externally from park and facility users) are considered to further the City's sustainability goals.

Water Conservation and Quality

Similar to waste management, water conservation includes reducing demand, re-using water for multiple purposes, and recycling water so that it may be reintroduced into the consumption cycle. Water conservation focuses on potable water as the most constrained resource and uses non-potable water primarily as a means for reducing "fresh" water demand. Policies and actions that reduce the use of potable water are considered to contribute to Palo Alto's sustainability goals.

In addition to managing water quantity, water quality is an essential aspect of sustainable water management. Chemical or organic fertilizers and organic inputs, such as dog waste or high quantities of plant debris can cause harmful levels of nutrient loading in stream and bay waters. Policies and actions that promote activities that support stormwater capture clean discharge are considered to further sustainability goals.

Existing Conditions

The Community Services Department (the Department) oversees the Open Space, Parks and Golf Division and the Recreation Division for the City of Palo Alto, including physical planning and operations as well as cultural and recreation programming. At present, there is no plan specifically governing the use, maintenance and operation of the 173.5 acres of urban parkland and 3,984 acres of open space within the City. Consequently, the Community Services Department relies on the Palo Alto

Comprehensive Plan and Baylands Master Plan to provide the policy framework for improvement, operation and maintenance of parks and open space that encourage sustainability practices. Separate from sustainable policies, the City has initiated a number of sustainable programs and practices that are available to support parks and open space. Existing sustainability related policies, programs and practices are summarized in Table 1.

Table 1: Existing Policies, Programs and Practices by Sustainability Indicators

- = not identified or doesn't exist
- ◐ = some policies and/or programs and practices in place
- = robust policies and/or programs and practices in place

Issue	Policies	Projects, Programs and Practices
Air Quality	○	○
Climate Change	◐	○
Education and Training	○	◐
Energy Efficiency	○	●
Equity	○	○
Green Building	◐	◐
Integrated pest Management	●	●
Natural Resources / Habitat	◐	◐
Operations / Maintenance	○	◐
Public Health and Safety	○	○
Transportation	●	◐
Waste Management	◐	◐
Water Conservation	◐	●
Water Quality	○	◐

* For specific policies, programs and practices see Appendix A.

Guiding Policies

The following are high-level policy objectives that can guide the projects that improve sustainability within specific operations.

- 1) Develop a sustainability strategy or plan for parks, recreation and open spaces in Palo Alto.
 - The strategy should emphasize implementation and establish specific performance metrics to evaluate success, or in lieu of measures, a process by which targets will be established and evaluated.
 - Consult Department staff to identify key issues, barriers to implementation and opportunity for improvement.
- 2) Align Community Services mission statements, budgets and operations with City sustainability goals.
- 3) Plan and budget for the long-term maintenance required to support a sustainable park system in Palo Alto.

Program and Practice Recommendations

The Community Services Department has a role to play in addressing every sustainability indicator. However, the Department is better equipped to focus on indicators that align with its mission. These indicators are referred to as the Department's *primary indicators*. The Department can rely upon and support other departments that are better positioned to address the indicators that are not aligned with its mission. These are the Department's *secondary indicators*. For example, Climate Change and Air Quality could be considered secondary indicators for the Department. Parks can help reduce vehicle travel and improve trip efficiency by providing bicycle and pedestrian facilities (e.g. connections to bike paths, bike lockers, etc.) and facilities to accommodate electric vehicle charging stations. In this example the Department supports efforts to address transportation while other organizations with transportation as a primary function (e.g. the Public Works Department or Transportation Division of the Community Environment and Planning Department) deploy the sustainable facility. Applying this approach to all of the sustainability indicators, Table 2 below identifies primary (P) and secondary (S) sustainability indicators for the Department.

Table 2: Existing Policies, Programs and Practices by Primary and Secondary Consideration

	Air Quality	Climate Change	Education/Training	Energy Efficiency	Equity	Green Building	Natural Resource/Habitat	Operations/Maintenance	Public Health/Safety	Transportation	Waste Reduction	Water Conservation	Water Quality	Implementation	Time Horizon
Community Services Department	S	S	P	P	S	P	P	P	P	S	P	P	S	P	2015-2020

P = Primary Consideration

S = Secondary Consideration

Because open space preservation, facility management and program administration are primary functions of the Department, it is well positioned to actively implement sustainability practices in the following areas:

- education/training
- energy efficiency
- green building
- natural resources
- operations/maintenance
- waste reduction
- water conservation

The remaining sustainability indicators (air quality, climate change, equity, public health and safety, transportation, and water quality) are more effectively managed or led by other organizations and supported by Community Services' practices and are identified as secondary considerations.

Following are recommendations for sustainable programs and practices for Palo Alto's park system. These recommendations include best practices from park systems around the country, including the National Park Service; Oregon State Parks Department; New York City, NY; Seattle, WA, Sacramento, CA; and El Cerrito, CA. For a summary of the issues being addressed by these cities and agencies, see Appendix B. The following recommendations are crafted for Palo Alto's unique context.

Climate Change and Air Quality

- 1) Reduce GHG emissions produced by park equipment and fleet and support reduced vehicle use in the city.
 - a. Expand City trails to provide bicycle and pedestrian access to all City urban parks and connect to the regional trail network.
 - b. Reduce emissions from Department equipment and vehicles, including enforcing a "No Idle" program with vehicles and other gas-powered equipment.
- 2) Expand Palo Alto's urban canopy.
 - a. Add additional trees to parks as appropriate (following "Right Tree, Right Place" guidelines), track park tree loss and gain, and maintain trees for 100+ year permanence.
 - b. Implement relevant recommendations in the 2015 Urban Forest Master Plan (UFMP) when adopted.
- 3) Reduce the urban heat island effect in Palo Alto.
 - a. Reduce the use of asphalt and concrete except where necessary.
 - b. Use pervious surfaces in place of pavement where feasible.
 - c. Consider using drought-tolerant native plants in sidewalk and median planting areas.
 - d. Increase tree canopy consistent with UFMP.
- 4) Develop and implement guidance on adapting the location, structure, or function of park facilities in anticipation of climate change, including severe weather impacts.
 - a. Give special consideration to facilities in the Baylands Preserve and Palo Alto Golf Course in respect to predicted sea level rise.
 - b. Design adaptive green infrastructure along creeks where increasingly unpredictable levels of precipitation and sea level rise will impact adjacent properties and ecosystems.
- 5) Demonstrate actions being taken to adapt to anticipated climate change and improve the resilience of park facilities.
- 6) Develop long range plans to adapt parks and open space to shifting climate regimes.

Education and Training

- 1) Implement park facility-based outreach efforts to combine and promote sustainability practices (e.g., energy and water conservation, solid waste reduction, public health, etc.) at park facilities and at home.

- 2) Create “Green Ambassadors” within the Department to support sustainability initiatives and/or ensure the Department has a representative on the City’s Green Team.
- 3) Create interpretive exhibits addressing sustainability issues appropriate to the site (e.g., alternative modes of transportation, green building techniques, adaptation planning near shoreline facilities, etc.)
 - a. Interpretive signage should be added to better promote the educational value of demonstration gardens at Rinconada, Bol and El Palo Alto Parks
 - b. Create additional demonstration landscape projects in neighborhood and regional parks
 - c. Provide education and outreach materials about low-water and native landscaping in multiple languages (especially Spanish, Chinese and Russian) and encourage homeowners to share with private landscaping staff.
 - d. Provide transparent and timely reporting of progress toward these goals.
- 4) Expand nature and sustainability education/interpretation opportunities via programs, classes and volunteer opportunities.
- 5) Consult Department operations and maintenance staff in the development of new practices, policies and programs to ensure they are feasible, implementable and sustainable.
- 6) Educate Department staff on practices to reduce GHG emissions and conserve water and other resources.

Energy Efficiency

- 1) Conduct energy audits for all facilities, establish an energy baseline for operations, benchmark energy performance against comparable facilities, and implement energy tracking and management systems for all park facilities and operations.
- 2) Retrofit facilities for energy efficiency where feasible. Include items such as increased insulation, green or reflective roofs, and low-emissive window glass.
- 3) Select energy-efficient products for Park equipment purchases.
- 4) Expand the collection and use of solar power (parking lots, roofs) and other renewable energy sources at parks and facilities (e.g. pools).

Equity

- 1) Improve and expand public involvement in Palo Alto’s parks and recreation plans and projects.
- 2) Balance and improve access to recreation and nature opportunities through connections to public transit and safe bike and pedestrian paths.
- 3) Focus education and outreach and programming on under-served neighborhoods and communities within Palo Alto.

Develop policies about universal access to playgrounds and other park amenities. Green Building

- 1) Retrofit and upgrade Parks and Recreation facilities to improve aesthetics and functionality while improving green practices (e.g. solar orientation, renewable building materials, energy efficiency, indoor air quality, etc.).
- 2) Coordinate with Development Services to implement green building standards.

- 3) Strengthen dialogue between park designers and park maintenance staff to generate sustainable park and facility design solutions.



Case Study: Arastradero Preserve Gateway Facility

This facility in Palo Alto's Arastradero Preserve is off-the-grid and uses no energy. It relies on passive solar design with seasonally adjustable solar panels. The building was constructed with strawbale and recycled timber. Used for education and interpretation and the stand-alone buildings can be expanded by shifting sliding barn doors. The facility received an Energy Efficiency Integration Award (EEIA) in 2007.

Integrated Pest Management

- 1) Implement the UFMP's recommendations on addressing Sudden Oak Death.
- 2) Evaluate and consider expansion of the Integrated Pest Management (IPM) plan to additional parks and open spaces to reduce use of non-organics in landscape maintenance.

Natural Resources / Habitat

- 1) Avoid disturbance of sensitive biological resources in conjunction with park operations or construction activities.
- 2) Develop a planting palette and maintenance framework that contributes to a healthy ecosystem while establishing a sustainable maintenance workload.
- 3) Connect open spaces and contiguous vegetated areas as wildlife corridors; plant with species that support pollinators.
- 4) Actively support eliminating harmful invasive flora and fauna.
- 5) Program recreational activities in areas that are appropriate for the activity and for the environmental context to avoid impacts to sensitive resources and habitat.
- 6) Explore planting of economically productive species (e.g., food, timber, etc) as appropriate.

Operations

- 1) Coordinate the Department's sustainability efforts with other City Departments and the community to form an active partnership and maximize efficiencies and effectiveness of sustainability actions.
- 2) Work with park maintenance and operations staff as well as volunteer groups to develop and implement a sustainable maintenance plan.
- 3) Include applicable sustainability requirements in all new contracts.
- 4) Track and report progress on sustainability goals on an annual basis.

- 5) Consider true-cost pricing and climate-change-related externalities when evaluating costs of materials, design and approaches to maintenance consider true-cost pricing (consistent with City Resolution No. 9013).

Public Health and Safety

- 1) Improve access to fresh, healthy food by further developing the urban agriculture program in select parks including fostering partnerships with community groups to create and maintain additional community gardens and food-bearing trees.
- 2) Focus urban gardening spaces in parks near low-income neighborhoods and multi-family residences that do not have access to private open spaces and/or spaces with adequate sunlight to grow food.
- 3) Provide education and outreach regarding emergency preparedness in parks facilities and programs.
- 4) Consider implementing a fresh-food policy or preference for concessionaires in parks sites at Department events.
- 5) Quantify, report, reduce and eventually eliminate the presence and generation of hazardous waste and toxins in park facilities.

Transportation

- 1) Install electric vehicle (EV) charging stations at park facilities with parking lots.
- 2) Work with Public Works to replace the vehicle fleet with hybrid and/or electric vehicles.
- 3) Coordinate with the new City Transportation Management Association (TMA) to implement TDM programs that includes improvements such as bike parking, showers for employees, shuttle and rideshare services.
- 4) Support alternate work schedules to avoid travel peaks, encourage telecommuting and other practices that reduce auto trips. Support the implementation of the Bicycle and Pedestrian Master Plan to increase connectivity to parks for bicyclists and pedestrians.
- 5) Encourage alternative transportation by providing directions or routes for transit and bike access to recreation program and community meeting locations.

Waste Management

- 1) Reduce the amount of waste produced at park facilities and by park operations.
 - a. Provide convenient and well-marked compost and recycling receptacles throughout the park system, in recreation facilities and at special events.
 - b. Review purchasing policies and improve employee education to reduce overall consumption of materials throughout the system.
 - c. Procure environmentally preferable products (as required by the City's Environmentally Preferred Purchasing policy) as the "default" purchasing option.
 - d. Initiate composting of green waste within the park system.
- 2) Establish Green Event policies that reduce waste generation for Department-sponsored events and events in City parks and facilities.
- 3) Implement Materials Flow Management, a tool that is used to evaluate the efficient use of materials and material streams. Materials Flow Analysis is the quantitative analysis of the inputs

and outputs of production and consumption cycles, and accounts for both the material and economic requirements of those cycles.

- 4) Implement a program to reduce construction-generated waste and utilize sustainable materials in construction and maintenance operations,
- 5) Encourage the re-use of existing buildings where feasible.

Case Study: [Malibu's Legacy Park](#)

The Park includes 19-acres of public gathering space, natural areas and walking trails. It also cleans stormwater and urban run-off.

Stormwater and urban runoff are known sources of water quality degradation in Malibu Creek and Santa Monica Bay. Legacy Park treats and reuses water that would otherwise



discharge into Malibu Creek, local beaches and Santa Monica Bay. The park's design incorporates a system of bio-filtration devices and an 8-acre vegetated detention pond. The collected water is sent to the nearby Civic Center Stormwater Treatment Facility for ozone disinfection. The treated water is then sent back to the park and dispersed through a subterranean irrigation system. The park includes an outdoor classroom where students learn about the importance of preserving and protecting local watersheds and habitats.

Water Conservation and Water Quality

- 1) Conduct water audits for all parks and recreation facilities and park operations.
- 2) Install high-efficiency urinals, toilets, sinks and showers in all facilities.
- 3) As infrastructure expansion allows, extend recycled water use to more park sites.
- 4) Ensure any irrigation systems on public landscapes are run by a smart controller and/or sensors and that staff are trained in programming them.
- 5) Link all Parks facilities to a centralized irrigation management system to maximize water use efficiency.
- 6) Adopt a planting approach that focuses on transitioning to native and/or drought-tolerant plants, and also provides ecological services such as improving water quality.
- 7) Reduce the overall percentage of turf in the parks system.
- 8) Convert aesthetic turf to mulch, native plantings, or hardscape.
- 9) Design stormwater improvements throughout the park system to incorporate low-impact development systems to treat pollutants in stormwater runoff (e.g., through rain gardens, bio-retention areas and living roof systems)
 - a. Site and implement treatment wetlands where they will provide the highest return on investment, e.g., adjacent to creeks or other wetlands).
 - b. Naturalize creek edges adjacent to parks and open spaced where feasible.
- 10) Increase the use of permeable pavements in parking lots with filtration systems for pollutants.

Case Study: [Marin's Hal Brown Park](#)

The Hal Brown Park at Creekside and Corte Madera Creek Multiuse Pathway are beloved community amenities that were showing their age. Constructed in the mid 1970s, Creekside Park is a community recreation space that also provides habitat for sensitive native animal species and has helped mitigate flooding along Corte Madera Creek. Community outreach events helped to determine the renovation priorities for the project site. The project included:



- *Creation of a nature-based outdoor play environment with separate areas for preschool- and school-age children;*
- *Restoration of upland marsh transition habitat areas;*
- *New park plantings and irrigation systems, including a sensory garden in the children’s play areas and a healing garden for community members and Marin General Hospital patients, visitors and staff;*
- *Improved gathering areas for picnicking, performances and quiet reflection at the marsh overlook; and*
- *Accessibility upgrades at the restroom, park pathways, and dedicated accessible on-street parking spaces.*

Conclusions

The Department is actively pursuing policies, programs and projects that improve the sustainability of the park system and the City as a whole. Working with administrative, operational, and capital projects staff, the Department should use the above menu of sustainability practices to formalize goals and policies that will govern operations, property management, and capital projects. Palo Alto sustainability policies should include provisions for the following:

- Establish a baseline of operations;
- Identify “sustainability targets” for each indicator (e.g., number of pesticide-free parks);
- Establish an implementation strategy for accomplishing the target;
- Monitor and report on results; and
- Adjust goals, policies, programs and actions as needed to continue improving sustainability.

Appendix

A. Current Sustainability Policies, Projects, Programs and Practices

Issue	Policies	Projects, Programs and Practices
Air Quality	None Identified	None Identified
Climate Change	<ul style="list-style-type: none"> - The Land use and the Natural Urban Environment Elements of the City's Comprehensive Plan seek to reduce the urban "heat island effect" and increase GHG sequestration within the City by: <ul style="list-style-type: none"> o Increasing the urban forest (Policies N-17, N-18, and N-19) around paved areas; and o Encouraging parking alternatives (Policy L-70) to minimize the use of open land for parking. - The 2007 Climate Change Protection Plan includes recommendations for policies that could impact practices and policies in the City's parks. These recommendations include: <ul style="list-style-type: none"> o Employ Urban Forest Opportunities to Reduce Energy Use and Increase Carbon Sequestration (Appendix II-4) o Propose Sustainable Gardening and Landscaping Policy and Implementation Plan (Appendix II-5) o Improve recycling in public areas (Appendix II-5) o Integrate climate consciousness into City functions (Appendix II-5) - Sustainability / Climate Action Plan in development; to be adopted in 2015 	None Identified

<p>Education and Training</p>	<p>None Identified</p>	<ul style="list-style-type: none"> - The City is using the Palo Alto Art Center to educate the public about the green features of the LEED silver building in a fun and informative way - Leading by example, the Palo Alto Art Center is intended to inspire the public to develop their own sustainability practices by displaying practices that are possible. - Using "On the Road" art exhibits and the "Artist in Residency" program the City is seeking to: <ul style="list-style-type: none"> o Decrease use of single-use plastic bags and plastic bottles. o Repurpose plastic bags and plastic bottles as an art material. o Increase understanding of impact of single-use plastic bags and plastic bottles on the environment. o Increase recycling practices. - Children's fine art classes seek to: <ul style="list-style-type: none"> o Educate children about waste reduction; and o Inspire children to use existing materials in new ways.
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<p>Energy Efficiency</p>	<p>None Identified</p>	<ul style="list-style-type: none"> - <u>Efficiency</u>: Palo Alto Green has provided the city with renewable energy. For more than 10-years, the percent of energy provided by wind and solar facilities has increased with the ultimate objective of securing 100% of electric energy from renewable sources. The City of Palo Alto now enjoys carbon-neutral electricity. - <u>Conservation</u>: City of Palo Alto Utilities (CPAU) offers SMART metering programs to make consumers aware of their energy use and provides energy retrofitting, lighting, and solar panel rebates to encourage energy efficiency in existing structures. - <u>Retrofit</u>: Through the Studio Lighting project, the City seeks to reduce energy consumption by installing energy efficient lighting in the Art Center studios.
<p>Equity</p>	<p>None Identified</p>	<p>None Identified</p>
<p>Green Building</p>	<ul style="list-style-type: none"> - The City of Palo Alto requires compliance with the 2013 California Green Building Standards Code (CalGreen) - The City of Palo Alto has a local Green Building Ordinance with mandatory measures for both residential and commercial development. 	<ul style="list-style-type: none"> - The City's Green Building program encourages all applicants to consider sustainable building practices - All new municipal structures are being designed to incorporate energy saving features to reduce GHG emissions, water conservation measures, waste reduction practices, pollution prevention measures, and the use of "green" materials that reduce impacts on constrained resources. - The City is working to make the Cubberley Community center as environmentally friendly as possible. - The Palo Alto Art Center will be a LEED Silver Rated Green Building - Golf courses are being reconfigured to incorporate sustainability improvements. The reconfiguration project is scheduled to begin March 2015. - The new Mitchell Park Library and Community Center is a LEED Certified building
<p>Natural Resources / Habitat</p>	<ul style="list-style-type: none"> - The Natural Urban Environment Element includes policies that protect and preserve sensitive habitats and wildlife (Policies N-1 and New Policies N1.6.1) through park and open space management practices. 	<ul style="list-style-type: none"> - Baylands and Acterra Native Plant nurseries grow more than 10,000 plants per year which are used for restoration projects in the baylands and natural systems in Palo Alto and adjacent areas. The objective is to sustain this effort.

<p>Operations / Maintenance</p>	<ul style="list-style-type: none"> - City of Palo Alto Resolution No. 9013 externalities costs resolution provides guidance on true pricing, in which true costs (hidden costs or externalities) are incorporated. 	<ul style="list-style-type: none"> - The 2014 CIP includes park and park related projects that will improve bicycle and pedestrian access, wayfinding, trail connections, accessibility to people with disabilities, and public health and safety.
<p>Public Health and Safety</p>	<p>None Identified</p>	<p>None Identified</p>
<p>Transportation</p>	<ul style="list-style-type: none"> - <u>Multiple Modes</u>: The Land Use and Community Design and the Transportation Elements support, and seeks to expand multi-modal access (particularly bicycle and pedestrian access) to support transportation options that reduce vehicle miles traveled and reduce GHG emissions: <ul style="list-style-type: none"> o Policies L-23 and L-26 seek to improve pedestrian and transit connections at and around the Stanford Shopping Center. o Policy L-31 would improve multi-modal transit connections in the Cal-Ventura Area and California Avenue. o Policies L-33, 34 and 35 would make South El Camino Real more pedestrian friendly. - <u>Trip Reduction</u>: The Land Use, Community Services, and Business and Economics Elements include policies that could reduce travel by expanding neighborhood serving uses and community centers and supporting telecommuting: <ul style="list-style-type: none"> o Policy L-70 supports neighborhood parks as outdoor gathering places and centers of neighborhood activity. o Policies L-41, L-44, T-14 and T-19 encourage bicycle and pedestrian access within Palo Alto and to surrounding communities. o Policies C-15, C-16, C-17, C-18, and C-19 encourage development of neighborhood child and/or senior care facilities. o Policy B-4 supports development of a fiber optic ring around the City. 	<ul style="list-style-type: none"> - The City of Palo Alto is forming a Transportation Management Association to coordinate TDM programs - The City of Palo Alto sponsors a free shuttle, provides information about bicycle and trail connections, and promotes use of public transit to reduce automobile travel to and within the City. - The Middle School Athletic Program provides over 1400 students the opportunity to play sports for their school. In order to get all the kids to away games, parents are strongly encouraged to set up car pool systems to limit the cars needed to travel from game to game.

<p>Waste Management</p>	<ul style="list-style-type: none"> - The Land Use and Community Design Element policy L-20 encourages the reuse of existing buildings. Through reuse, this policy will reduce demand for solid waste disposal. - The Zero Waste policy recommends that best practices to reduce costs and debris become phased-in requirements for public and private projects. (p. 61) 	<ul style="list-style-type: none"> - Zero Waste Palo Alto seeks to virtually eliminate waste being burned or buried through education about reducing waste as well as recycling and hazardous waste disposal programs. It includes recommendations for practices that can be incorporated into Palo Alto's parks and recreation programming: <ul style="list-style-type: none"> o Sustainable Landscaping and Gardening: Education on best practices that will reduce maintenance costs and the amount of debris created and transported from their site. (p. 61) - Improve recycling in public areas. Provide recycling containers wherever trash receptacles are provided. - Compostable products should be used at Special Events. - Children's fine art classes seek to reduce waste by re-purposing materials such as cardboard boxes, egg cartons, magazine, and plastic for art-making purposes.
<p>Water Conservation</p>	<p>None Identified</p>	<ul style="list-style-type: none"> - The City of Palo Alto has a comprehensive water conservation program in partnership with the Santa Clara Valley Water District <p>The City implements additional water use restrictions associated with drought and water shortage consistent with state, county and local policy</p> <ul style="list-style-type: none"> - Through a water reduction program, the Parks are converting non-essential turf to mulched or landscaped areas to reduce water use. - The golf course water conservation initiative has been evolving and growing for several years. The desired outcome is reducing the amount of overall water use, and reducing the potable water use as much as possible while still providing the golfing experience that customer's desire.
<p>Water Quality</p>	<p>None Identified</p>	<ul style="list-style-type: none"> - The Palo Alto Storm Drain Utility offers rebates to residents, businesses and City Departments that implement measures that reduce the amount of runoff flowing into the storm drain system or improving the water quality of the runoff.

B. Sustainability Plan Element Comparison

Park Entity / Issue Areas	Air Quality	Climate Change	Education/Training	Energy Efficiency	Equity	Green Building	Natural Resource/Habitat	Operations/Maintenance	Public Health/Safety	Transportation	Waste Reduction	Water Conservation	Water Quality	Other	Implementation	Time Horizon
National Park Service		P	S	P		S	P	S		P	P	P	S	P ¹		2012-2015 ²
Oregon State Parks	S	S	P	P	P	P	P	P	P	P	P	P	S		P	2013-2017
Pierce County	P	S	P	P		S	S			P	P	P	P			2010-2015
New York City		S	P	S		P		S		S	P	S	S		P	2010-2012
City of Sacramento	P	P	P	P		P	P		P		P	P	S		P	2008-2015
City of Seattle				P			P	P	P	P	P	P	P	P ³		On-going

P = Primary Consideration

S = Secondary Consideration

Though most of the topical areas were discussed in each plan, only issues identified as a policy goal are identified as primary considerations. Secondary considerations represent issues that are described and discussed as important considerations but not as separate policies or programs.

¹ The National Park Service plan includes a goal of meeting and exceeding the requirements of all applicable environmental laws and seeks to foster sustainability through inviting visitors to the parks to participate in sustainability practices. Implementation is discussed in their plan but will be accomplished at individual sites to reflect local conditions.

² The NPS plan does not have a planning horizon but includes various implementation horizons depending on the goal. The shortest time horizon is 3-years from adoption (2015).

³ Aesthetic and design improvement was among the top 10 sustainability goals in Seattle.