



2019 Annual Sustainability and Climate Action Report

February 2020

Office of Sustainability, County of Santa Clara

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The 2019 Annual Sustainability and Climate Action Report (2019 Annual Report) provides information on the Office of Sustainability's achievements and continued progress on the County's sustainability and climate action programs, policies, activities, and Environmental Sustainability Goals (ESGs) for the period of June 2019 through December 2019.

Executive Summary

The County of Santa Clara (County) continues to be a leader in its commitment to “building and maintaining a healthy and safe community for current and future generations through preserving natural resources and the environment, fostering a healthy economy, and meeting the basic needs of all residents with respect and cultural awareness”. In 2019, the County made many sustainability advancements which included the following:

Energy Efficiency and Renewable Energy

One hundred percent of electrical power for County facilities is now sourced from renewable sources.

The current percentage of highest efficiency lighting owned and operated by the County is at 11 percent and will increase to 26 percent when the current energy efficiency lighting projects are complete.

Seven hundred and sixty-eight single-family and multi-family home and property owners and real estate professionals reached through the BayREN program and one hundred and 188 building professionals trained on energy code compliance and best practices.

Over \$1.7 million rebates delivered through BayREN to single-family and multi-family property owners in Santa Clara County for home improvements, thereby reducing GHG emissions by an estimated 769 metric tons of carbon dioxide equivalent (CO2e) — equivalent to the CO2e emitted from the energy use of approximately 130 average American homes annually.

Waste Reduction

Countywide waste diversion rates for calendar year 2019 remained stable at 71 percent, despite the addition of new County facility sites, including two new hospitals.

Water Conservation

Facility potable and recycled water usage decreased by 5 percent in calendar year 2019, despite an increase in the County real estate portfolio, which includes office buildings, detention facilities, and health clinics.

Green Fleets and Employee Commutes

A total of 137 active electric vehicle charging ports are available for fleet vehicles, County employees, and the general public, with another 33 ports expected to be available in the spring of 2020 and 110 ports planned for future construction.

Completion of the County Employees Transportation Demand Management Implementation Guide, which includes employee commute transportation programs recommendations to reduce GHG emissions, reduce regional traffic and parking constraints at County facilities, and make the County an employer of choice while reducing commute-related stress.

Urban Forestry

Development of an Ecology-Based Tree Management Guide and a County Tree Inventory on 38 FAF-managed sites, and 29 County parks to help structure and organize County tree management and develop future department tree planting and maintenance plans.

Stream and Riparian Corridor Stewardship

Adoption of a new Environmental Stewardship Goal (ESG No. 12) to promote environmental education and stewardship of the County's streams and riparian corridors.

Green Workforce and Job Training

Seventeen local youth trained as Energy Specialist through partnership with the Rising Sun Center for Opportunity provided 457 no-cost Green House Calls to help homeowners save energy, water, and money.

Sustainability and Greenhouse Gas Reduction, Programs & Policy Updates

The Board of Supervisor adoption of a resolution declaring a climate emergency to combat the consequences of global warming.

Addition of seven new member counties to the County Climate Coalition, bringing the total to 29 member counties in the coalition.

Progress with the development of the County's Sustainability Master Plan (SMP) and Communitywide Climate Action Plan (CCAP).

Energy Efficiency and Renewable Energy

Environmental Stewardship Goal No.1

Ensure that 100% of light fixtures owned and operated by the County, in buildings, on streets, and in parks are at the highest energy efficiency standard.

As of June 2019, the Facilities and Fleet (FAF) department estimated that 13% of the County's real estate was retrofitted with the highest efficiency lighting.¹ Through Board approved lighting efficiency contracts in 2019 with Ameresco and Siemen, FAF estimates that upon completion of planned energy efficient retrofits, the percent of County real estate using the most efficient lighting will increase by 18%, from 13% to 31%. Figure 1 shows the distribution of lighting efficiency over the different type of fixtures with lighting for roadways getting the highest efficiency score.

However, due to the recent County acquisition of facilities including the Tasman campus, Silver Creek campus, St Louise Hospital, De Paul Health Center, and O'Connor Hospital, the County's real estate baseline has increased significantly, from roughly 10 million to 11.7 million square feet. Using the new County real estate baseline, the County's current percentage of highest efficiency lighting is 11%, which will increase to 26% when the lighting projects mentioned above are complete.

FAF and Valley Medical Clinics (VMC) continue to work with energy services company Engie on energy efficiency retrofits at the VMC campus. The VMC project scope would represent an additional 900,000 square feet of energy efficiency retrofitted space. FAF is currently in the process of contract negotiations with Engie and is concurrently making a capital request to the Administrative Capital Committee to fund this project.

¹ Facilities and Fleet (FAF) estimates the number of existing light fixtures based on building square footage and calculates lighting upgrades based on actual, completed retrofits.

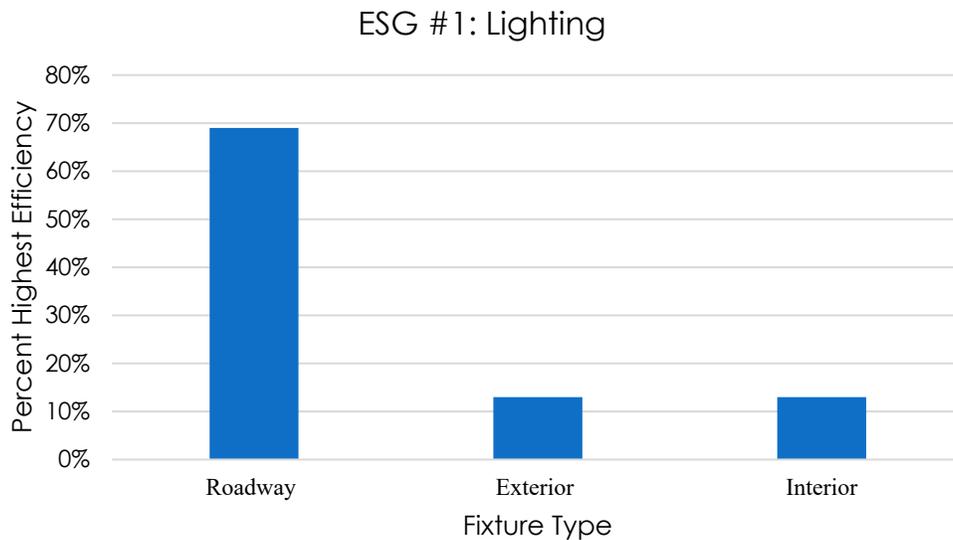


Figure 1: Percent Highest Efficiency Lighting

Environmental Stewardship Goal No.2

Reduce per capita energy use by 50%.

Due to BayREN changes in data collection and reporting, the County's estimated 2019 per capita energy use when compared to 2018 is currently unavailable. However, the County continues to make progress with stakeholder engagement and participation in the BayREN program. In 2019, 768 single-family and multi-family home and property owners and real estate professionals were reached through the BayREN program and 188 building professionals were trained on energy code compliance and best practices.

BayREN Residential Workshop Outreach 2019

In 2019, as part of the Bay Area Residential Energy Network², OOS conducted eight single-family residential workshops in partnership with local cities throughout the County, with a total of 493 participants. One of these workshops,

² The Bay Area Regional Energy Network (BayREN) is a collaboration of the nine counties that make up the San Francisco Bay Area and provides regional-scale energy efficiency programs, services, and resources for single and multi-family residents. In Santa Clara County, this program is administered through the Office of Sustainability.

offered in Spanish, had 60 attendees. Ten additional presentations, five for single family homeowner community groups, two for multifamily property owners and three for real estate professionals attracted a total of 275 attendees.

Codes and Standards Activities 2019

BayREN also administers a “Codes and Standards” program for local governments, to help member cities evaluate and improve compliance with energy codes and develop options for accelerating energy efficiency. The program offers no-cost training to building departments and hosts quarterly regional forums throughout the Bay Area. In 2019, OOS partnered with the cities of Gilroy, Milpitas, Morgan Hill, San Jose and Silicon Valley Clean Energy (SVCE) to host seven trainings to educate 188 building professionals to increase understanding of developments in the Energy Code and promote best practice for compliance and enforcement.

BayREN Impacts 2019

The 2019 BayREN Single Family program has been entirely redesigned and re-launched as “Home+.”³ From the inception of the Home+ program in January 1, 2019 to December 31, 2019, a total of 512 Santa Clara County single-family residences have completed Home+ applications, which represents 1,852 energy efficiency upgrades such as air sealing, insulation, and heating and cooling system improvements or upgraded appliances. Santa Clara County homeowners received \$819,815 in incentives in 2019. In 2019, single family improvements have reduced energy usage by about 65,590 kilowatt-hours (kWh) and 34,476 therms.

³ Home+ is intended to appeal to moderate-income homeowners by allowing single measure upgrades to reduce upfront costs and decrease barriers to participation.



Figure 2: BayREN single-family residential workshop

The BayREN Bay Area Multifamily Building Enhancements (BAMBE) program from January 1, 2019 to December 31, 2019, installed energy efficiency improvements in 15 multifamily properties (accounting for 1,238 units) and delivered \$928,500 in rebates to Santa Clara County building owners. In 2019, multifamily improvements have reduced energy usage by 382,708 kWh and 50,956 therms.

In summary, in 2019, BayREN delivered over \$1.7 million rebates to single family and multifamily property owners in Santa Clara County. These single and multifamily improvements have collectively reduced energy usage by over 448,298 kWh and 85,432 therms, thereby reducing GHG emissions by an estimated 769 MT of CO₂e — equivalent to the CO₂e emitted from the energy use of some 130 average American homes' annually.

Silicon Valley Clean Energy

In collaboration with Silicon Valley Clean Energy, the County achieved commitment to save customers money, buy cleaner power and reduce community-wide carbon emissions – in 2019 24,900 unincorporated Santa Clara County households and businesses received carbon-free electricity, resulting in \$2,614,000 in electricity savings for unincorporated customers and \$55,600 in cash payments to customers for generating surplus solar energy.

Energy Services Companies (ESCOs) Projects

FAF and Valley Medical Center (VMC) have been working with three separate ESCOs to develop energy efficiency projects at County facilities. On June 18, 2019 and October 8, 2019, the Board approved contracts with the first two ESCOs, Ameresco, and Siemens, respectively. Combined, these two projects will implement \$7 million of energy efficiency measures at 1.8 million square feet of County facilities over the next two years.

Environmental Stewardship Goal No.3

Receive 100% of our electrical power from clean renewable sources

The County has achieved ESG No.3 of receiving 100 percent of its electricity from renewable sources. This was accomplished through a mix of strategies that includes on-site renewable energy projects, solar farms, direct renewable electricity purchases from Community Choice Energy providers, and the purchase of Renewable Energy Certificates (REC). Figure 3 shows the County's renewable electricity percentage usage from 2009 through 2019.

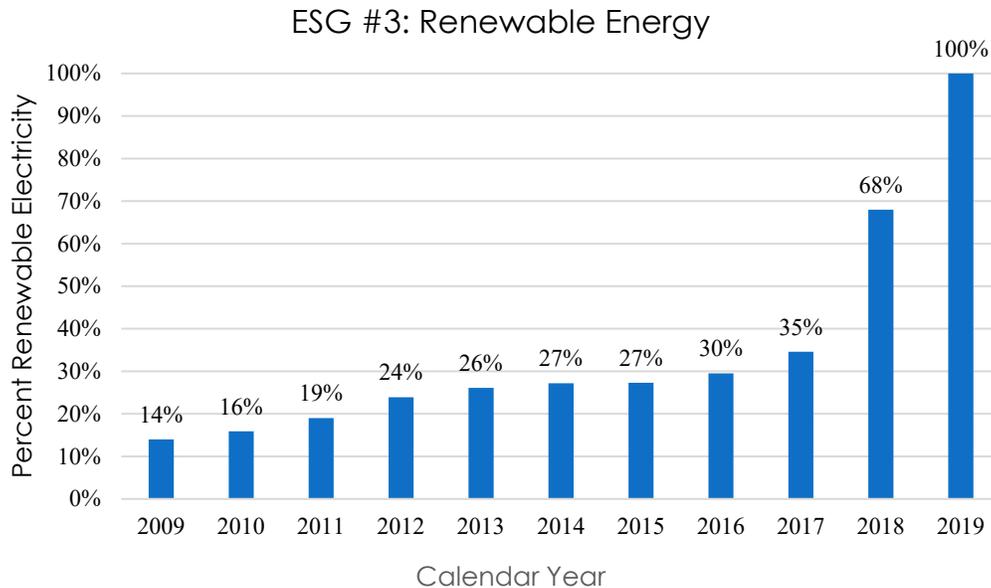


Figure 3: Countywide Renewable Energy

Green Buildings

Environmental Stewardship Goal No.4

Ensure that 100% of County buildings are LEED certified and require LEED standards for construction in county land use jurisdictions.

Since adoption of the Green Building Policy 7.14, a total of three (3) FAF managed facilities have received certification under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. FAF continues to incorporate Green Building Policy 7.14 in all its current planning of new construction projects, including Main Jail South, the South County Animal Shelter Services Center, and the Vietnamese American Service Center.

Sustainability in Capital Projects

To achieve an integrated design process and exceed State and County sustainability goals, the Energy and Sustainability group within FAF continues to engage during the programming, design, and schematic design phases of three major new construction projects: Main Jail South; South County Animal Services Center; and the Vietnamese American Service Center. Due to the varying nature and use of each facility, the sustainability strategies will differ. However, all three facilities are targeted to meet the County of Santa Clara's Green Building Policy 7.14, which requires all new County-owned facilities to achieve Leadership in Energy and Environmental Design (LEED) Silver certification. The Energy and Sustainability group is responsible for reviewing draft LEED scorecards and life cycle cost analyses to recommend strategies that ensure that a facility is designed, operated, and maintained in a sustainable manner.

Waste Reduction

Environmental Stewardship Goal No.5

Divert 100% of county waste from landfills and convert waste to energy.

Zero Waste Program

For calendar year 2019, despite the addition of various new County facility sites, including two new hospitals, the countywide diversion rates remain stable at 71% (see Figure 4). The existing contract with Republic is set to expire in December 2020. The RFP to be released in February 2020, will incorporate additional sustainability goals and use of innovative technology along with the base services⁴ scope of services to enable the County to reach the 100 percent diversion goal through waste to energy options or other means. Examples of innovative technologies may include a small-scale anaerobic digester that can process organic waste to capture biogas and generate finished compost. Business practices that highlight environmental stewardship and innovation will be considered as part of the solicitation and evaluation criteria.

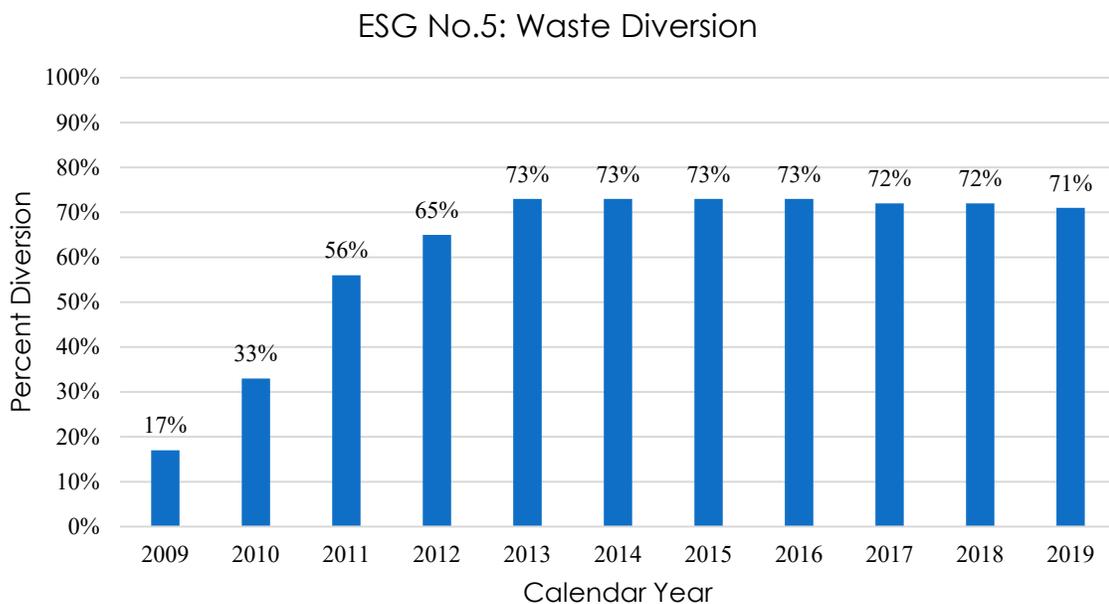


Figure 4: Waste Diversion Percentages at County Facilities

⁴ Base services include the collection and processing of the County's solid waste for composting, recycling, and landfill in support of the County's diversion requirement.

Water Conservation

Environmental Stewardship Goal No.6

Reduce our consumption of water by 20% and recycle or beneficially reuse 100% of our wastewater.

Despite an increase in the County real estate portfolio, which includes office buildings, detention facilities, and health clinics, facility potable and recycled water usage decreased by five percent (5%) in calendar year 2019. In addition, there are currently six facilities that use recycled water, including the new Downtown Health Center. Figure 5 provides the potable and recycled water usage for FAF serviced facilities.

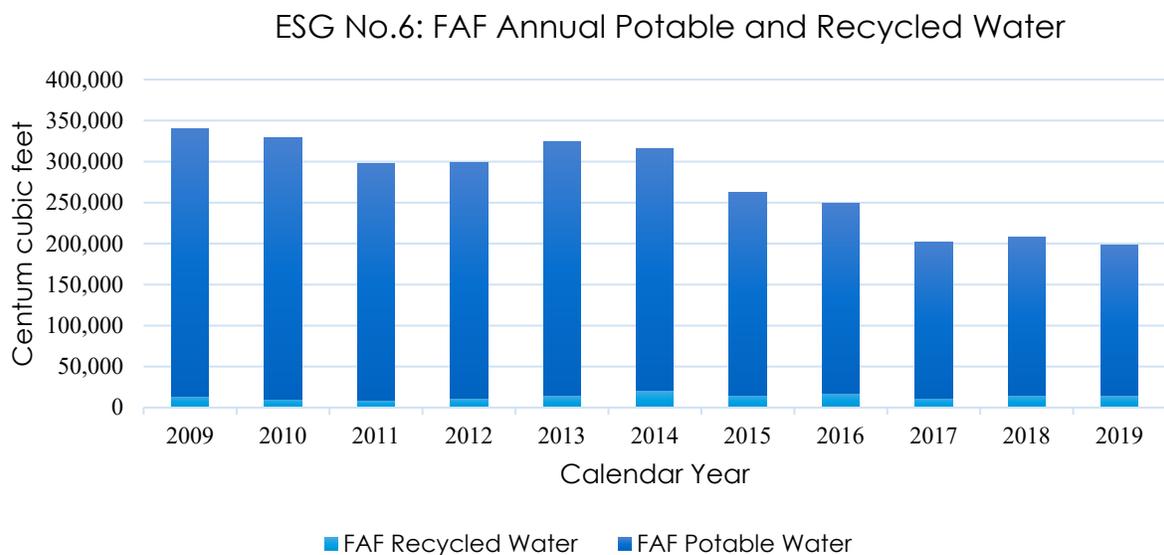


Figure 5: Potable Water and Recycled Water Usage in FAF Serviced Facilities

Charcot Recycled Water Project

FAF received a total of \$1 million in FY 19-20 funds to complete a landscaping upgrade at the County Center at Charcot. Project highlights include a full recycled water irrigation system, as well as low water and maintenance planting. Currently, the consultant is finalizing construction documents and the project is expected to be completed in fall 2020. Using recycled water for irrigation will save approximately 3.5 million gallons of potable water annually,

not only preserving the drinking water supply but also providing an estimated \$2,200 in annual savings because recycled water is about 10 percent less expensive than potable water.

Sustainable Landscaping

OOS continues to maintain the County sustainable landscape management website that provides information to educate and promote sustainable landscaping to County employees, residents and businesses and reduce water usage.

A Landscape Assessment for all FAF-managed buildings (34 sites) was completed in June 2019. The Assessment included inventory and maps of existing landscape layouts, plant palettes, and irrigation systems and recommended changes to irrigation systems and plant palettes to increase sustainability and water efficiency, along with staffing and resource levels needed to maintain these new landscapes. The provided cost estimation for transitioning all existing project landscapes to sustainable was \$10.7 million. FAF is exploring funding options. OOS will request additional funding for sustainable landscaping public outreach for FY 2020-21.

Environmental Stewardship Goal No.8

Ensure that 100% of public fleet vehicles are electric, hybrid electric or run on alternative fuels.

The County of Santa Clara's total fleet vehicle inventory has remained stable over the last eight years. The 2009 year-end fleet inventory was 1,698 and the 2019 year-end inventory was 1,817, an increase of 119 vehicles or about 7%. During this time, the County workforce increased by 15%, from approximately 19,000 to 22,000 employees.

The total percentage of alternative fuel vehicles (AFVs) for FAF and Parks and Recreation Department (Parks) was 29.8% percent. Alternative Fuel Vehicles (AFVs) in the fleets of other departments are currently not reported. Figure 6 illustrates the percentage of AFVs for FAF and Parks since 2009.

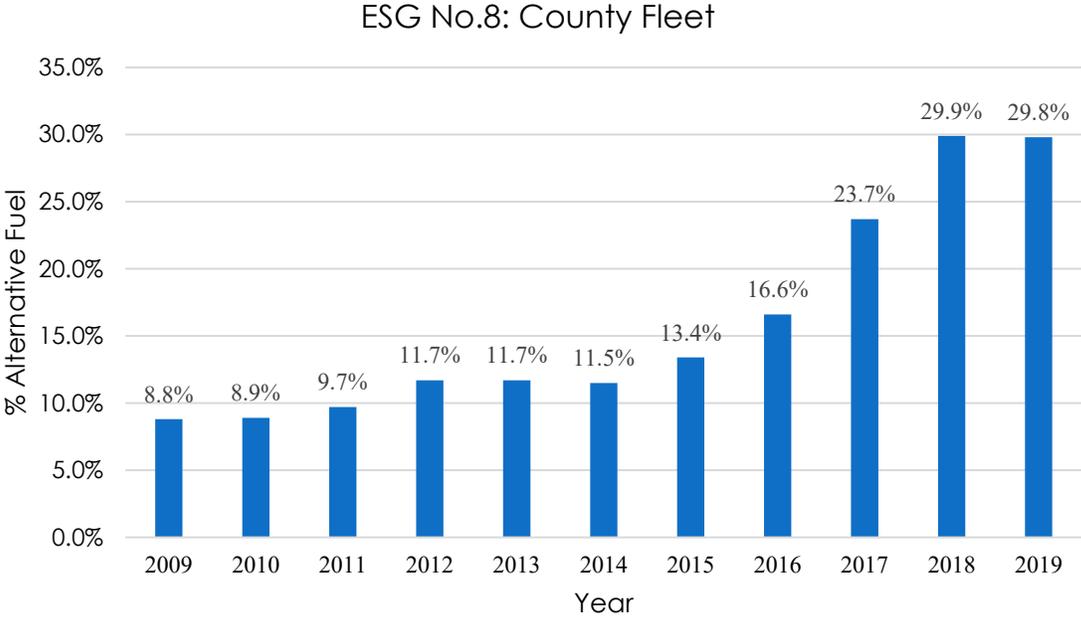


Figure 6: Alternative Fuel Fleet, Excludes Roads and Airports (Roads) Vehicles

Electric Vehicle Charging Stations

FAF has allocated \$2.1 million to design and construct approximately 170 level II electric vehicle charging ports. As shown in Table 1, the County has 137 active charging ports with another 33 ports that are expected to be available in the spring of 2020. Additionally, the County has 110 ports that are currently planned, but not yet under construction, for the PG&E EV Charge Network Program. Majority of the County's charging stations are made available for fleet vehicles, County employees, and the general public. The installation of these charging stations increases the use of electric vehicles, thus reducing GHG emissions that would otherwise occur with vehicles operated using fossil fuels.

Table 1: Locations of County EV Charging Stations

Charging Station Address	# of EV Ports	Status of Level 2 Chargers
950 N San Pedro, St San Jose	12	Active
70 W Hedding St, San Jose	4	Active
2265 Junction Ave, San Jose	18	Active
79 N 17th St, San Jose	16	Active
751 S Bascom Ave, San Jose	20	Active
2220 Moorpark Ave, San Jose	8	Active
55 W Younger Ave, San Jose	6	Active
1553 Berger Drive, San Jose	18	Active
373 W Julian St, San Jose	10	Active
171 W Hedding St, San Jose	20	Active
19050 Malaguerra Ave, Morgan Hill	5	Active
2310 N 1st St, San Jose	19	Under Construction
373 W Julian St, San Jose	14	Under Construction
150 Tasman Ave, San Jose	80	Planned
13555 Diessner Ave, San Martin	16	Planned
7475 Camino Arroyo, Gilroy	14	Planned
TOTAL	280	

Greening County Fleet and Operations

On October 8, 2019 (Item No. 76), the Board of Supervisors approved a Service Agreement with Matrix Consulting Group, Ltd. to complete a Greening County Fleet and Operations Study. The Study will conduct a detailed evaluation of the County's fleet management operation to determine a course of action for lowering GHG emissions, optimize the use of AFVs, reduce the use of non-renewable resources, operational efficiencies to reduce fleet vehicle demand, vehicle and staff levels needed to support the evolving fleet, and improve fuel efficiency in the most practical and cost-effective manner. It is anticipated that the study will be completed by the end of calendar year 2020.

Employee Commuter Programs

Transportation Demand Management (TDM) Study

On January 28, 2020, FAF and OOS will provide the Board of Supervisors with an overview of the findings from the County Employees TDM Implementation Guide and make recommendations for transportation programs for the County to consider in FY 2021. The Implementation Guide supports the County's decision to extend the VTA SmartPass Program, and also recommends to implement a (i) Transit Subsidy Program, a (ii) Commuter Shuttle Program that can connect employee at the O'Connor and the VMC at Bascom Hospitals to Diridon Station, a (iii) more robust Carpool Program, and a (iv) Bikeshare Program. These programs were recommended because they are cost-effective compared to alternatives. They will also significantly reduce GHG emissions, reduce regional traffic and parking constraints at County facilities, and make the County an employer of choice while reducing commute-related stress.

VTA SmartPass Program

The County offers a SmartPass Program that has roughly 1,500 County individual employees who use the service for free non-express bus and light rail rides each month. Providing SmartPasses for just County employees currently costs \$658,000 annually, which is roughly \$440 annually per employee. On December 10, 2019, the Board extended the SmartPass Program for six months until June 30, 2020. The Administration recommends to extend the SmartPass Program for the foreseeable future because it will have significantly higher participation and GHG reduction potential than any other proposed commute program that provides an equivalent service for VTA users.

Pre-Tax Commuter Benefits

The County currently also offers a voluntary Pre-Tax Commuter Benefit Program which allows employees to save money on public transit (e.g. Caltrain, BART, etc.) and work-related parking expenses. However, participation in this benefit has remained at less than 60 employees per month over the 8 months the Program has been in place. Low participation is due mostly because it only provides a partial discount proportional to an employees' income tax rate, while employees pay out of pocket for their remaining public transit costs.

Environmental Stewardship Goal No.10

Plant 1,000 trees in unincorporated urban county pockets and work with local governments and agencies to build a comprehensive urban forest

The County so far has planted 757 trees (75 percent) between 2011 and 2019 through contracts with the volunteer-based non-profit organization Our City Forest (OCF). At the Feb. 11, 2020 Board of Supervisors meeting OOS will present to the Board an approach and strategy to support the annual planting of 1,000 climate-appropriate species in areas to address issues such as urban heat islands, low tree canopy, poor air quality, and stormwater management, and work with local governments, agencies, and non-profits to build a comprehensive urban forest.



Figure 7: County Tree Planting with Our City Forest

County Tree Programs

Tree Management Guide and Departmental Plans

In 2018-19, the OOS Integrated Pest Management (IPM) program worked with Roads and Airports Department (RDA), FAF and Parks to identify departmental challenges, propose solutions, and share best practices aimed at creating sustainable tree management, completing ESG# 10, and ultimately developing a Countywide forest management plan. An *Ecology-Based Tree Management Guide (Tree Guide)* was co-developed with RDA, FAF and Parks to help structure and organize County tree management overall, as a foundation for then developing subsequent department-specific plans. Policy support and direction will be explored to adopt this guide and implement department-specific guide development.

County Tree Inventory

In 2019, Davey Resource Group completed a tree inventory on 38 FAF-managed sites, as well as in 29 County parks, in areas which receive the most interaction with people, such as restrooms, picnic areas, parking lots, and buildings. This inventory included 19,056 trees and documented their condition based on International Society of Arboriculture standards. Inventory data can be used to more accurately develop future department tree planting and maintenance plans, as well as to determine environmental benefits of County trees. Tree inventory data is maintained in Davey's TreeKeeper system. Inventory data will be analyzed for recommendations and then discussed with departments for appropriate actions. This may lead to additional tree maintenance funding requests from respective departments.

Green Workforce and Job Training

Environmental Stewardship Goal No.11

Increase the available blue and white collar "clean and green workforce" course/trainings available regionally and in Santa Clara County and help place 20,000 trainees and graduates in the regional labor force by the end of 2013.

In 2019, OOS through the BayREN partnered with Rising Sun Center for Opportunity to employ and train seventeen local youth as Energy Specialists. The youth provided four hundred and fifty-seven no-cost Green House Calls to help homeowners save energy, water, and money.



Figure 8: Rising Sun Center Youth Energy Specialists Cohort

Stream and Riparian Corridor Stewardship

Environmental Stewardship Goal No.12

Develop educational programs and volunteer service opportunities that promote local stewardship of streams and riparian corridors and develop programs of ecologically compatible recreational use of streams and riparian corridors.

On September 10, 2019 (Item No. 42), the Board adopted a new ESG to “Develop educational programs and volunteer service opportunities that promote local stewardship of streams and riparian corridors and develop programs of ecologically compatible recreational use of streams and riparian corridors.” Efforts on achieving this goal will be coordinated between OOS, Parks, and the County’s Consumer and Environmental Protection Agency (CEPA).



Figure 9: Penitencia Creek at Mabury Rd. & N. Jackson Ave., San Jose

Sustainability and Greenhouse Gas Reduction, Programs & Policy Updates

County Adopts Climate Emergency Resolution

In August 27, 2019 (Item No.10), the Board approved a resolution declaring a climate emergency that demands immediate action to halt, reverse, restore, and address the consequences and causes of global warming. OOS will be working with County departments and external partners to identify and accelerate action to reduce our greenhouse gas emission and prepare for climate change impacts.

Sustainability Master Plan (SMP)

OOS recently relaunched efforts to complete development of the Sustainability Master Plan. On January 22, 2020, the County's Directors Stewardship Team and Sustainability County Working Group (consisting of agency directors, managers, and sustainability leads) convened for an update on the progress of the SMP, OOS facilitated discussions on SMP goals, strategies, and targets. Over 50 staff were in attendance and contributed valuable feedback to aid in the SMP's development. Further updates on the SMP's progress will be provided in March per the HLUET Work Plan.

Community Climate Action Plan (CCAP)

In October 2019, OOS completed consultant interviews for the CCAP and is moving forward with contract negotiations in mid-February 2020.

Municipal Operations GHG Inventory

The municipal operations GHG emissions inventory for CY 2019 will be available in spring 2020. FAF is awaiting approval to release an Employee Commute Survey to compile information for the employee commute emissions sector. However, it is anticipated that this sector will be the largest contributor towards operational emissions.

Climate Adaptation and Preparedness Through Silicon Valley 2.0 (SV2.0)

In October 2019, OOS revisited the feasibility of updating the SV2.0 Climate Change Preparedness Decision Support Tool. Discussions between OOS, AECOM, and Point Blue continue regarding potential improvements to the tool, its integration with other sustainability efforts, and its usability for both County staff and the public.

County Climate Coalition

OOS continues to work with the Climate Reality Project (CRP) to build the County Climate Coalition. As of December 2019, seven new member counties have joined, bringing the total to 29 member counties in the coalition. OOS staff continue to meet with CRP staff monthly to discuss program updates and the coordination and distribution of its quarterly newsletter. The newsletter provides members with the latest updates on local climate initiatives and provide resources for members to connect with one another. The next newsletter is scheduled to be sent in February 2020.