



**RECREATION &
PARK DEPARTMENT
CLIMATE ACTION PLAN**

FY 2010-2011

April 2012

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San Francisco Board of Supervisors

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This report was developed by Ana M. Alvarez in compliance with Sec. 904. City and County of San Francisco
Environment Code

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1. Introduction

The San Francisco Recreation and Park Department (SFRPD) presents its Climate Action Plan for Fiscal Year 2010-2011, which also serves as the greenhouse gas emissions baseline for its sustainability plan of parks and open spaces system. The report is based on the Global Reporting Initiative (GRI) framework to benchmark the Department's performance with respect to laws, norms, codes, performance standards and voluntary initiatives; demonstrate organizational commitment to sustainable development and operations; and compare organizational performance over time. The GRI framework utilized for the development of this report is a critical element to promote and adhere to a standardized approach to reporting in order to stimulate demand for sustainability information.

Most importantly, the GRI's principle of materiality was applied to the development of this report, which states, "information in the report should cover issues and indicators that would substantively influence the decision of the stakeholders using the report." Lastly, the format for the report incorporated required sections and elements as defined by the San Francisco Department of the Environment and referenced by Sec. 904. City and County of San Francisco Environment Code.

Scope of this Report

It is a well-known environmental mantra that we cannot conserve what we cannot measure. While many entities claim to institute waste-reduction or pollution prevention strategies, few of them diligently evaluate their environmental performance to determine if systems are actually producing effective results.

The San Francisco Recreation and Park Department's environmental impact is presented using comprehensive data collected from every aspect of its operations across its five divisions. This report tracks the Department's environmental performance and initiatives, based upon one fiscal year of data from fiscal year 2010-2011, and also includes details on several new initiatives to reduce its carbon footprint in fiscal year 2011-12, along with introducing recommendations, which are fully explored in the Department's sustainability plan for its park and open spaces system.

The Department began to track its environmental performance through a free, shared-use and open source Google Docs system, which includes raw data on the following areas. These performance indicators represent what the Department has defined as its total environmental footprint. Tracking usage of these key items allows the Department to analyze trends, stay compliant, reduce liabilities, and move further toward sustainability.

- consumption of electricity, natural gas, gasoline, diesel, propane, fuel oil and water
- generation of solid waste

- waste production
- greenhouse gas emissions and Clean Air Act Criteria Air pollutant emissions

Regretfully, the scope of this report does not include hazardous waste tracking nor Universal Wastes such as batteries, electronics, fluorescent lamps, mercury switches and PCB-containing ballasts. This is an area of focus for future performance tracking and reporting.

Reporting Methodology

Though the GRI was integrated as a guide for the development of this report, it was determined that, as a large-sized municipal agency, many of the GRI indicators were not relevant to the Recreation and Park Department. Other indicators were arguably material, but beyond staff's ability to measure at the present time. Instead, the Department has focused this report on GRI's environmental performance indicators, which are presented in the Environmental Performance section of this report. Other GRI indicators were included such as the Department's mission and strategy, organizational profile, report scope, report profile, structure and governance, and overarching policies and management systems.

The San Francisco Recreation and Park Department does not currently own, manage and operate environmental performance systems. As such, analysis was conducted by gathering and utilizing actual utility bills, waste hauling fees, and purchasing receipts from across divisions. Also, the raw data along with calculations and conversion factors were reviewed by multiple municipal agencies for accuracy. The format of the Environmental Performance Section of this report aims to present one year of data for each environmental aspect and area of impact, interprets that data, then gives specific examples of projects, programs, and initiatives that affect that data – for better or worse.

Report Highlights

The Department's carbon footprint includes the consumption of energy in its 196 buildings, and liquid fuels consumed by its fleet and its operation of small power tools. For Fiscal Year 2010-2011, 342.58 metric tones of CO₂ emissions are from the consumption of electricity, while 5,435.96 metric tones of CO₂ emissions are from natural gas and 1,757.78 metric tones of CO₂ emissions are from the use of liquid fuels. It is important to note that unleaded gasoline is the highest contributor to the Department's carbon footprint. A historical analysis is included that compares and contrasts three year's of information from the Department's use of energy from fiscal years 2008-09, 2009-10, and 2010-11.

The Department fully embraces its critical role as the main provider of green infrastructure, open spaces, parks, recreational spaces and San Francisco's urban forest. As such, it has embarked in several significant initiatives to lower its GHG and improve on its sustainable practices. Most notably the Department has achieved significant environmental performance benchmarks, as described throughout

this report. Table 1 highlights the Department’s most notable achievements throughout the Climate Action focus areas, which are considered its performance indicators.

Table1. SFRPD FY 2010-2011 Performance Achievements

CLIMATE CHANGE FOCUS AREA	PERFORMANCE INDICATOR	FY 2010-11 ACHIEVEMENT
Building Energy	Consumption of electricity	<ul style="list-style-type: none"> • Reduction by 28%
Fleet & Fuel	Consumption of clean fuel	<ul style="list-style-type: none"> • Conversion of 3 fueling stations at golf courses to B20. • Increase consumption by 7%
Urban Forestry	Net tree gain (NTG)	<ul style="list-style-type: none"> • Achieved a 27% NTG
Zero Waste	Diversion rate	<ul style="list-style-type: none"> • Achieved a 47% diversion rate at public parks • Achieved an 82% diversion rate at Candlestick Stadium • Maintained a 96% diversion rate from green waste

While there is an insignificant increase in water consumption, the Department has engaged in strong water efficiency and conservation efforts in partnership with the Public Utilities Commission, as described in Section 3a2. Water. It is important to note that the Recreation and Park Department is probably the highest performing municipal agency in the management of green waste, with re-use and recycling strategies at its golf courses, Candlestick Park Stadium and Golden Gate Park. Lastly, a special report highlight includes the Department’s advocacy effort on climate change in partnership with the Department of the Environment and the Business Council on Climate Change, described in Section 5. Community Wide Impact.

2. Departmental Profile

As the third largest department in the City and County of San Francisco, the Recreation and Park Department's mission is to foster the well-being of San Francisco's diverse community by maintaining beautiful parks, preserving the environment and providing enriching recreational activities. In support of its mission, the Department manages the operation and stewardship of a robust parks and open space system as well as a citywide service delivery system of recreation and community services. SFRPD is considered to be the second largest land-owner in San Francisco, constituting approximately 15 percent of the peninsula.

San Francisco Parks and Open Spaces section embraces a legacy of 140 years of stewardship with over 220 parks – inclusive of iconic destination places, sports fields, neighborhood parks and natural areas that comprise 4,113 acres of parkland. Regional parks such as Golden Gate Park, McLaren Park, Glen Canyon, Harding TPC Park, Stern Grove, and Buena Vista Park, frame the community gardens, neighborhood and mini parks sprinkled throughout San Francisco's urban fabric. Destination places managed by the Department, such as twenty seven off-leash Dog Play Areas, the Palace of Fine Arts, Coit Tower, six municipal golf courses, summer-favorite Camp Mather in the Sierra Nevada Mountains, Candlestick Stadium, the Marina Small Craft Harbor, and miles of open trails and natural areas sprinkled by wildlife, significantly contribute to San Francisco's makeup as a world-class destination. Land management efforts, inclusive of conservation, restoration, interpretation, and landscape maintenance and installation, are provided through six park service areas and five open space areas distinguished by topographical boundaries in collaboration with our park partners, stakeholders, and volunteers.

Through a citywide service delivery system of recreation and community services, the Department contributes to the vibrancy and wellness of San Francisco's neighborhood life through 39 recreation complexes inclusive of nine aquatic centers and five Afterschool Enrichment Club Houses. Robust cultural arts program offerings in the form of visual and performing arts are provided in five iconic recreational art centers such as the Randall Museum, Sharon Arts Studio and Harvey Milk Center for the Recreational Arts. Recreation, health and wellness program offerings make up a solid program framework that supports the entire human development spectrum of San Franciscans with special focus on toddlers, youth and seniors. The Department sponsors and provides sports and athletic programs for youth and adults within seventeen gymnasiums, 140 multi-use athletic fields, and over 150 sport courts. Adult-focused extreme recreation offerings are the newest and latest recreational competency added to the Department's recreation services core, which closes a gap in service delivery and responds to San Franciscan's diverse and dynamic recreational interests.

Departmental Budget

Similar to other General Fund Departments, SFRPD has experienced ongoing reductions to its General Fund support in the past decade, as operating costs have increased, which has significantly reduced the value of each departmental dollar. General Fund subsidies have declined nearly 25 percent (\$12 million) per year since fiscal year 2005-06. Responsive to the instability of the General Fund subsidies to public parks and not without controversy from park users, the Department has increased annual earned revenue by more than \$10 million (27 percent) since fiscal year 2005-06. The San Francisco Planning & Urban Research Association (SPUR) dedicated its monthly publication, September 2011 Urbanist, to finding solutions to San Francisco's parks funding crisis by examining converging factors that contribute to the funding crisis such as the diminishing public funds as a result of the economic recession of historic proportions. SPUR best describes the Department's fiscal climate, as undermining the mission of the Department and the health of the park system, which constitutes 20 percent of San Francisco green infrastructure, comprising San Francisco's urban forest, biomass, and open spaces to support ecological systems and wildlife.

▪ **Fiscal Years 2010-11 and 2011-12 Highlights**

The San Francisco Recreation and Park Department (SFRPD) operates with a \$127 million budget in fiscal years 2010-11 and 2011-12; it is funded by a wide variety of revenue sources. As the City has struggled with its structural budget deficit, the San Francisco Recreation and Park Department has faced unprecedented annual service reductions and layoffs. In the current fiscal year, the Department receives \$35 million in General Fund support, and generates an additional \$30.9 million in General Fund revenue from its programs, facility rentals and concessions. In addition, the Department benefits from the \$38 million Open Space Fund, the Golf Fund in the amount of \$12 million and the Marina Fund in the amount of \$3 million. The remainder of the Department's budget is funded through gifts, grants, bonds, work orders and other funds.

In the current fiscal year, the Department has an operating budget of \$117 million. Sixty-three percent (\$73.8 million) of the Department's FY 2011-12 operating budget funds salaries and fringe benefits, which includes 150 youth worker positions to assist in the 2012 summer camp programs. An additional fifteen percent (\$18 million) pays for services of other municipal departments. Of the \$18 million that the Department has budgeted in contractual services, \$13 million is in fixed costs such as debt service in the Open Space Fund, annual management fee to the Zoological Society, and operation of the Harding Park Clubhouse. Another \$1.3 million of the contractual services budget covers annual garbage service for the Department in FY 2011-12. The Department's budget includes \$4.5 million to cover materials and supplies costs, which includes the Department's contribution with the Housing Authority to jointly fund over 2,200 sessions of summer camps, learn-to-swim lessons and other summer

programs for low-income youth residing with the Housing Authority. Outside of the Housing Authority partnership, the Department provides access to low-income San Francisco residents through its robust and growing Scholarship Program. In FY 2010-11 SFRPD provided \$497,000 in scholarship assistance to recreation program users. The Department expects to increase that amount to \$715,000 by the end of the 2011-12 fiscal year; an increase of 44 percent. In the coming fiscal years, SFRPD will work to increase scholarship subsidies even further with the goal of ensuring that ability to pay is never a barrier to participation in public recreation and park programming.

▪ **Fiscal Years 2012-13 and 2013-14 Highlights**

In Fiscal Years 2012-13 and 2013-14 the Recreation and Park Department will continue to provide robust, high-quality recreation services through its recreation model and in partnership with other city agencies, sustain high levels of park maintenance through operating efficiencies and its Gardener Apprentice Program. Most notably, the Department has engaged in a strong advocacy effort in partnership with the San Francisco Port, the Mayor's Office, members of the Board of Supervisors, the Capital Planning Committee and park stakeholders, to place a \$185 million General Obligation Bond on the November 2012 ballot to renovate and improve additional park and recreation facilities. The proposal builds on the successful framework of the 2008 Clean and Safe Neighborhood Parks Bond and will fund the renovation of neighborhood parks, parks infrastructure, and waterfront open spaces across the city. SFRPD owns over 200 parks and 400 built structures with an estimated capital need in excess of \$1.5 billion. The Department anticipates to significantly decrease its carbon footprint with the renovation of old facilities and mechanical systems; in particular, the renovation of several aquatic centers are proposed in the 2012 Parks Bond, which will replace water filtration and pump systems, considered the highest consumption of electricity in the Department.

Employees

The heart and soul of the Department's operations is its people who keep San Francisco's parks, recreation and open spaces safe, vibrant and inviting. The Department's core mission is delivered through 846 full-time equivalent (FTE) positions through five divisions with respective programs and projects that are unique to the Department's mission, which 668 positions are full-time. Twenty-one percent of all employees are employed part-time. SFRPD part-time labor makeup includes "as needed" pool of employees working less than 960 hours per fiscal year to provide as needed custodial, janitorial, dock attendance, park patrol and recreation programming support. Also, the Department manages alternate work programs with full-time employees consisting of over 100 public service aids, fifteen gardening apprentices and paid internships; currently the Department employs ten interns from San Francisco State University and one City Hall Fellow. Ninety percent of the Department's human resource is managed by the Operation's Division, which delivers the day-to-day mission of the Department in

providing and maintaining clean, green, and safe parks as well as a wide range of fun and engaging recreational activities and programs for all San Franciscans. All other Departmental divisions, as listed below, provide support and conduct ancillary functions to the Department's mission.

- Administration and Finance Division
- Planning and Capital Division
- Partnerships and Resource Development Division
- Policy & Public Affairs Division

Facilities

The Recreation and Park Department is the largest municipal land owner in the City and County of San Francisco. The Department manages and maintains more than 220 parks and playgrounds, and over 3,400 acres of recreational and open spaces within the city limits. The Department owns and operates 196 buildings that include 47 park club houses, 25 recreation complexes, nine aquatic centers, five Afterschool Enrichment Club Houses, 96 public park restrooms, 2 administration complexes, a nursery, and four maintenance yards. On average, full-complex recreation centers occupy a 25,000 to 30,000 square feet building footprint; whereas club houses' building foot print range from 900 square feet to 5,000 square feet.

Vehicles

SFRPD is fully dependent on its vehicle fleet in order to fulfill its mission of providing world-class parks, open space and recreation spaces to residents and visitors of San Francisco. The Department's rolling stock inventory includes approximately 700 items, inclusive of mowers, and heavy equipment trucks. The SFRPD fleet supports land management, inclusive of horticultural and agronomy functions, performed by a wide range of City staff such as gardeners, arborists, turf specialists, natural areas specialists, and integrated pest management specialists; as well as the entire spectrum of crafts found in Structural Maintenance such as, stationary engineers, roofers, carpenters, plumbers, electricians, etc.

Departmental Contact Information

The Department's Climate Action Plan and climate action adaptation initiatives are led by Ms. Ana M. Alvarez who serves as the City's Superintendent of Parks and Open Spaces. Currently she is developing a Sustainability Plan for San Francisco's Parks that incorporates more sustainable landscape maintenance and landscape installation practices to reach "sustainability designations;" repositions its park and open space system as a viable source of municipal green infrastructure, and explores the viability of establishing long-term economic engine(s) through ecosystem services districts and banking for LEED's Sustainable Landscape credits for private entities. She can be reached at (415) 831-2700 and thru email: ana.alvarez@sfgov.org.

Superintendent Alvarez chairs and leads the Department's Climate Action Committee (CAC), which includes eight focus areas in FY 2010-11, as follow. The CAC was developed in FY 2009-10 where the primary focus has been to gather information and verify data, as a required step to establish environmental indicators for performance tracking. The CAC will expand its focus next year to incorporate awareness and education as well as explore additional initiatives to reduce the Department's carbon footprint. Also, a new focus area will be integrated in FY 2011-12 on landscaping practices.

CLIMATE ACTION FOCUS AREA	CAC MEMBER	CONTACT INFORMATION
	Ana M. Alvarez Chair	ana.alvarez@sfgov.org (415) 831-2700
Building Energy Efficiency	Dennis Kern *energy efficiency	dennis.kern@sfgov.org (415) 831-2700
	Rick Thall *green buildings	rick.thall@sfgov.org (415) 558-4007
	Erin Anderson *facilities data base	erin.anderson@sfgov.org (415) 831-6840
	Sean Stasio *information technology	sean.stasio@sfgov.org (415) 831-2718
Employee Transportation Options	Jeffrey Bramlett	jeffrey.bramlett@sfgov.org (415) 831-2707
Fleet & Fuel	Lydia Zaverukha	lydia.zaverukha@sfgov.org (415) 831-2778
	Charlene Puccini	charlene.puccini@sfgov.org (415) 831-2700
Green Purchasing	Sean McFadden	sean.mcfadden@sfgov.org (415) 831-2700
Urban Forestry	Dennis Kern	dennis.kern@sfgov.org (415) 831-2700
	Kelly Cornell	kelly.cornell@sfgov.org (415) 819-5604
Water Efficiency & Conservation	Ana M. Alvarez	ana.alvarez@sfgov.org (415) 831-2700
Zero Waste	Kellie Cornell *green waste	kelly.cornell@sfgov.org (415) 819-5604
	Ronnie Scott *parks and public spaces	ronnie.scott@sfgov.org (415) 831-2700
	Ellen McCarthy *recreation facilities	ellen.mccarthy@sfgov.org (415) 254-9708

3. Department's Environmental Performance: Carbon Footprint

The Department's carbon footprint has been calculated utilizing compiled raw data from various sources, which has been entered in one comprehensive data base with shared-use between SFRPD and the San Francisco Department of the Environment's Climate Action Team. As part of this report, the data base has been carefully reviewed to confirm inventories of properties, facilities, meters, and fleet as well as to identify and correct any discrepancies. Also, in an effort to accurately capture the carbon footprint associated with the Department's operations, energy and fuel consumption has been carefully reviewed to ensure a complete and accurate count.

Data & Source

- Electricity and natural gas use information as provided by San Francisco Public Utilities Commission (SFPUC)
- Updated electricity emission factor by SFPUC
- Water use and waste water quantities information as provided by SFPUC
- SFRPD properties and buildings inventory
- Building inventories and tenant square footage as noted in the SF City and County Real Estate Division
- Fleet and fuel use information provided by or managed by the SF City and County City Administrator Office Fleet Management Division (CAO)
- Fuel use information from other sources
- SFRPD fleet inventory

▪ **3a. Facilities & Reduction Measures**

Facilities Verification

SFRPD owns 230 sites that support operations; a few of the facilities that make up the Department's real estate portfolio include iconic and historical landmarks such as Candlestick Park Stadium, the Conservatory of Flowers, Coit Tower, TPC Harding Park, Kezar Stadium, the Exploratorium, five additional golf courses, forty-two park club houses and the Palace of Fine Arts. There are a significantly large number of built structures that consume energy to support the public's use of San Francisco's park and recreation system, which includes concession buildings, 96 public restrooms, two large amphitheaters, five municipal stadiums, 151 tennis courts, a nursery, three maintenance yards, four parking garages and 35 community gardens. Also, there are two City-owned properties outside SFRPD parkland and managed or occupied by the Department as follow:

1. **30 Van Ness Building:** This building is utilized to support administrative functions in the Department's Planning and Capital Division. The building is owned by the City's Department of Real Estate (DRE). SFRPD occupies 3 percent of the entire building footprint. The carbon footprint attributed to its use has been incorporated in the Real Estate Department's Climate Action Plan. For more information regarding this property, please contact Ms. Taylor Emerson, DRE Chief Financial Officer at (415) 554-9863.
2. **Lake Merced Complex:** The property is owned by the SFPUC and managed by SFRPD through a Memorandum of Understanding. The complex includes a freshwater lake in the southwest corner of San Francisco with recreational amenities such as a boat house, boat launch areas, and public restrooms. The energy use to support this complex has been incorporated in the SFRPD carbon footprint.

The listing of facilities used to calculate the FY 2010-11 departmental carbon footprint has been verified to be accurate and complete with one exception, which has been reported to the Department of the Environment. The Crissy Field property erroneously continues to show on the Department's listing of facilities, which is a property owned and managed by the Golden Gate National Recreation Area (GGNRA); the Department's carbon footprint has been adjusted to reflect a correction by abstracting GGNRA data accordingly throughout this report.

3a1. Energy

FY 2010-11 Carbon Footprint from Consumption of Electricity & Natural Gas

Table 2 below illustrates the consumption of electricity and natural gas for FY 2010-2011, associated with the operation of SFRPD properties. The data includes tenant consumption and carbon dioxide (CO₂) emissions attributed to such for Department-owned properties inclusive of those leased or managed by other entities; either through property use agreements and/or management agreements. It is important to note that SFRPD does not currently utilize steam as a source of energy. The Department's overall carbon dioxide emissions have decreased by 7.89 percent, as compared to last fiscal year. While the use of both electricity and natural gas has been reduced, the greatest decrease is noted in the use of electricity by a 28 percent reduction, which can be attributed to a number of factors including the lighting efficiency retrofit projects conducted in FY 2009-10 at the Department's primary administration buildings located in Golden Gate Park: Historical McLaren Lodge and the McLaren Lodge Annex. Both buildings have multiple floor levels with lighted attics and basements.

Table2. SFRPD FY 2010-2011 Energy Emissions

EMISSION SOURCE	CONSUMPTION	FY10-11	FY09-10
		CO2 EMISSION (metric tons)	CO2 EMISSIONS (metric tons)
Electricity (kWh)	23,211,355	342.72	474.35
Natural Gas (Therms)	1,021,873	5435.96	5799.19
Total		5778.67	6273.54

Energy Efficiency & Conservation

Energy efficiency is a green resource and by reducing facility energy use, SFRPD facilities can reduce their greenhouse gas emissions. The San Francisco Public Utilities Commission (SFPUC) is the City's lead agency, reducing municipal electricity and natural gas use. An area of great interest to the Department is to complete a data validation project with the SFPUC to realign the records so that meters are tied to park names and building names in order to have greater control of energy reduction measurers. Currently, meter numbers are tied to physical addresses only with multiple meters and multiple addresses in one property.

SFRPD has partner with the SFPUC to benefit from the agency's specialized energy efficiency services and to secure energy efficiency planning, design, and construction assistance. In FY 2009-10 the Department's Operation Division in collaboration with the SPUC's Energy Efficiency Services (EES), conducted several studies of potential measurers to capture the greatest amount of energy savings, which resulted in the development of an Energy Efficiency Plan for SFRPD, which can generate a potential annual energy savings of 1,824,488 kWh and potential cost savings of \$363,000 in phase I alone. Future phases of this program include additional lighting upgrades to select RPD gymnasiums, pools, and garages – garage upgrades are anticipated to include ventilation upgrades as well. All phases of this program are contingent upon budget availability; with that in mind, SFRPD submitted a waiver request for the Lighting Efficiency Ordinance in which we committed to following a compliance schedule that will allow us to be fully compliant by December 2013.

Energy Efficiency Retrofit Projects

Following the assessment reviews and preliminary studies conducted on fiscal year 2009-10 by SPUC EES, lighting efficiency retrofit projects were conducted on FY 2010-11 at seven SFRPD owned buildings currently operated by the Department for recreational program offerings (see listing below). The project scope for all facilities included general lighting systems and fixtures upgrades to T12; replacement

of 4' and 8' linear fluorescents; and replacement of incandescent lamps, excluding high bay fixtures. The retrofit projects were started in late July 2011 and completed by mid December 2011. The total estimated energy savings are projected as 59,126 kWh per year with a peak savings of 17.9 kW; actual savings will be captured and confirmed in the FY 2011-12 Department Climate Action Plan. While progress was delayed, as the SFPUC completed important ARRA projects that tied up consultant and Job Order Contract capacity, the projects were successfully implemented with no other challenges.

Table3. 2011 SFRPD Lighting Retrofit Projects: Facility Listing

NO	FACILITY NAME	ADDRESS
1.	Eureka Valley Recreation Center	100 Collingwood Street, San Francisco, CA 94114
2.	Golden Gate Senior Center	6101 Fulton Street, San Francisco, CA 94121
3.	Mission Recreation Center	2450 Harrison St, San Francisco, CA 94110
4.	Mission Cultural Arts Center	745 Treat Avenue, San Francisco, CA 94110
5.	Potrero Hill Recreation Center	801 Arkansas St, San Francisco, CA 94107
6.	SOMA / Eugene Recreation Center	270 6th St, San Francisco, CA94103
7.	St. Mary's Recreation Center	Murray & Justin Dr, San Francisco, CA 94110

Compliance with the Existing Commercial Building Energy Performance Ordinance

On February 1, 2011 the San Francisco Existing Commercial Building Energy Performance Ordinance was approved by the Board of Supervisors, amending the Environment Code. The ordinance pertains to all nonresidential and municipally owned buildings greater than 10,000 sq ft, requiring building owners to demonstrate energy performance using the following methods: (1) benchmarking; (2) auditing; and (3) reporting. The ordinance allows SFPUC to develop a compliance plan for municipally owned buildings. In order to comply with the Existing Commercial Building Energy Performance Ordinance (Ordinance 17-11, SF Environmental Code Chapter 20), SFRPD accessed and utilized an Energy Performance Benchmarking web tool provided by the SFPUC to collect and verify the following information:

- Verification of the Department's list of facilities; 102 SFRPD facilities were identified and verified in January 2012, as a starting point. Remaining buildings were excluded based on mutually agreed criteria such as square footage and use.

- Verification of existing data for each facility (such as street address, year built, gross square footage – where available, and primary EPA building category).
- ENERGY STAR benchmarking data specific to the primary Environmental Protection Agency (EPA) building category (such as weekly operating hours, number of workers on main shift, and if applicable, additional information on the facility, subspaces, and parking areas).

Compliance with the Lighting Efficiency Ordinance

The Commercial Lighting Efficiency Ordinance requires all City departments that own buildings to comply with specific requirement for mercury content and energy efficiency of each four foot or eight foot fluorescent lamp. The Department has 47 buildings that are compliant and 57 buildings that are not compliant with the requirements outlined in the Commercial Lighting Efficiency Ordinance (SF Building Inspection Commission Code Chapter 13D); a temporary waiver for compliance has been granted by the Department of the Environment. A copy of the approved Waiver is included in Appendix A.

It should be noted that much of the progress made in meeting the requirements of this ordinance was achieved through the partnership with SFPUC's General Fund Energy Efficiency Program and as described in the SFRPD Energy Efficiency Plan. Most notably, the joint planning and funding effort has resulted in significant energy savings of 28 percent. Below is a listing of program accomplishments and a program status update for future projects:

SFRPD Energy Efficiency Plan Accomplishments

- ***Historial McLaren Lodge and McLaren Lodge Annex Project:*** An initial lighting retrofit project was identified to kick off the general fund SFRPD program and was completed on FY 2009-10.
- ***Recreation Centers Project:*** As a result of a comprehensive department-wide energy efficiency planning effort, seven recreation centers were identified as high users of electricity with a significant large capacity to generate energy savings. The recreation centers were identified as a group in Phase 1La, General Lighting Upgrades, and were completed in December 2011.

SFRPD Energy Efficiency Plan Status Update

- ***Phase 1Lb, Gymnasium High Bay Energy Efficiency Lighting Upgrades:*** All SFRPD owned gymnasias have been audited by the SFPUC. The installation of two demonstration fixtures is tentatively scheduled for 2012, in an effort to identify a viable solution and capture the highest energy savings possible while maintaining lighting program requirements.

- **Phase 1Lc, Lighting Upgrades:** The continuation of lighting retrofit project at recreation centers is included in 1Lc phase. Contingent upon budget availability, the Department is considering the capacity to potentially expand Phase 1Lc to include pool lighting at Rossi and Balboa aquatic centers, and general lighting at the Randall Museum. A proposal report on the pool lights has been completed and is currently under review.
- **Phase 2L, Garage Lighting Upgrades:** locations identified by the SFRPD Energy Efficiency Plan include three large and highly used public garages: St. Mary's, Portsmouth, and Union Square. The facilities have been audited; currently confirming the projects' scope of work, possibly to incorporate motion sensors.
- **Phase 1M, Garage Direct Control Ventilation Projects:** Ventilation projects have been identified to support St. Mary's, Portsmouth, and Union Square garages. Currently, the design has been completed and is under review.
- **Phase 2M, Miscellaneous Mechanical Measures:** Phase 2M currently consists of a small mechanical project at the Randall Museum which has already been audited; but due to its small size is difficult to implement economically on its own. Preferably it will be combined with other projects yet to be identified. 2M also includes a potential pool cover for the outdoor pool at Mission Aquatic Center. 2M is currently on hold while staff evaluates the preceding phases, available funding, and program staff capacity based on the prioritized work plan.

Green Buildings

San Francisco's municipal new construction and major renovation projects of 5,000 sq ft or larger are required by Chapter 7 of the Environment Code to achieve Leadership in Energy Efficiency Design (LEED) Gold Certification by the U.S. Green Building Council. Additional green building requirements include Environment Code Chapter 5 Sec 509: non-PVC Plastics, and Environment Code Chapter 8: Tropical Hardwood and Virgin Redwood Ban. Green building design is an important driver for both mitigation and adaptation to climate change. Advanced green buildings are currently reducing energy use and carbon emissions approximately 20 to 50 percent below conventional building designs. Green buildings also save water, protect habitat, provide healthy indoor environments, and promote public transit.

In FY 2010-11 SFRPD continued with a robust capital program with 57 overall capital projects, out of which five are LEED projects under construction and two new projects. The overall estimated investment toward green buildings is 83 million dollars, which are mostly subsidized by the 2008 Clean and Safe Neighborhood Parks Bond. The specific projects are listed in the table below with the LEED

certification goals; it should be noted that the Sunset Recreation Project has already secured a Silver LEED Certification. Also, two projects are on hold, contingent upon funding availability. The Department has provided to the Department of the Environment with a “2008-2011 San Francisco Municipal Green Building Report” that incorporates detailed information on SFRPD capital projects with a LEED certification or is going through the process of acquiring a LEED certification. A copy of the report is included in this report and referenced as Appendix B.

Table4. Listing of SFRPD LEED Projects

LEED PROJECT NAME	LEED GOAL	PROJECT SQ. FT.	ESTIMATED PROJECT COST
Cayuga Clubhouse	LEED-NC Silver	3,500	8.65 million
Chinese Recreation Center	LEED-NC Silver	21,990	18.5 million
Geneva Office Building	LEED-NC Silver	n/a	- no funding -
Glen Canyon Recreation Center Renovation	LEED-NC Silver	17,600	2012 Bond
Nursery Center for Sustainable Gardening	LEED-NC Platinum	12,500	13 million
Palega Recreation Complex	LEED- NC Silver	17,000	17.4 million
Randall Museum	LEED-NC Silver	9,000	5.5 million
Sunset Recreation Center Renovation	LEED-NC Silver	18,780	13.7 million

FY2010-11 Highlight on Sustainability

During FY2010-11 the Department embarked in a strong partnership effort with the San Francisco Botanical Society and other stakeholders to develop a concept for sustainable gardening at the heart of San Francisco’s park and open space system, Golden Gate Park. The Center for Sustainable Gardening (“Nursery”) is a LEED Platinum-targeted facility that would replace the existing 45+ year old nursery and plant production facilities within the 55-acre San Francisco Botanical Garden (formerly known as Strybing Arboretum). The Nursery will function as a propagation center and growing facility, that will serve as a base for the SFBGS nursery staff, including curatorial and plant collections management staff, and for SFRPD gardening staff assigned to the Botanical Garden. When completed, the Nursery will provide for habitat enhancements, plant propagation and energy efficiencies within the Botanical Garden.

The current greenhouse nursery site will be cleared to allow for an expansion of the popular and educational California Native Garden. The proposed Nursery will be an excellent example of sustainable design and operational practices within the Recreation and Park Department.

Renewable Generation

In 2011, Hayes Valley Playground welcomed once-again San Francisco's neighborhood children and ushered them through a newly renovated recreational space with functional and educational sustainable designed amenities. The Trust for Public Land (TPL) partnered with the San Francisco Recreation and Park Department in a five-year journey to revitalize Hayes Valley Playground located between San Francisco's Hayes Valley and Western Addition neighborhoods. Hayes Valley Playground, located at the corner of Hayes and Buchanan Streets in the Hayes Valley neighborhood, is a quarter-acre inner city playground and clubhouse established in 1958. Reflecting the agencies' shared value to create livable communities through land conservation, the new playground and clubhouse provide this dense urban area with a safe, welcoming facility that fosters an appreciation for nature, outdoor activity, and social gathering.

The facility integrates a holistic system of passive site and building strategies, including the living roof, solar hot water heating, and passive cooling. Building orientation takes maximum advantage of the site's sun and wind conditions, allowing for optimal day lighting and ventilation. Other sustainable design elements include recycled denim insulation, low-flow toilets, Forest Stewardship Council certified wood, and native, drought-tolerant plantings. The ventilated rain screen provides additional insulation. The outdoor playground incorporates recycled materials and pervious surfaces to further minimize environmental impact. The fully equipped, sustainably designed clubhouse is the first Recreation and Park building in San Francisco with a living roof and recycled denim insulation.

3a2. Water

FY 2010-11 Water Consumption

As part of this report, all billing water records were reviewed to identify discrepancies and verify water use. SFPUC is the only water provider to SFRPD and owner of all water use records, which are managed by meter number accounts to a physical address. It is important to note that SFRPD is one of the SFPUCs largest water use clients, using 493,377,060 gallons in FY10-11, which excludes the GGNRA annual water use for Crissy Field of 6,212,888 gallons. There are no greenhouse gasses (GHG) associated with the delivery of water attributed to SFRPD since the source of water is from the Hetch Hetchy Regional Water System, which delivers water through gravity. The high elevation of Hetch Hetchy

Reservoir and the engineering infrastructure of the Regional Water System move water from its source, across the state, and to its customers using little more than gravity. Also, the CO2 emissions associated with the management of water on parkland is already factored in the electricity use data.

The water use data base requires different configuration to increase its granularity. SFRPD anticipates implementing the following actions, as part of its Sustainability Plan for San Francisco's Parks to improve the data base: (1) assign each meter account to a park and/or building; (2) include use by time of day.

Water Efficiency and Conservation

The Department, motivated by its commitment to a more sustainable San Francisco, recognizes the value of water budgeting and water resource conservation planning to ensure the long-term availability of quality water. In FY 2010-11 there was an overall increase in water use of over 5 million gallons, as compared to FY 2009-10 water consumption rates. Several water efficiency and conservation initiatives were implemented in FY 2010-11, which included water conservation awareness and education efforts within park operation as well one in-house irrigation system repair project, as follows.

- **Annual Work Plans:** The Parks and Open Spaces Section of the Department's Operations Division, integrated water efficiencies and irrigation uniformity work objectives for Park Section Supervisors for all Gardening Complexes and corresponding field crews in the FY 2010-11 performance planning and evaluations.
- **Expanding Knowledge & Refining Skills:** In FY 2010-11 fourteen managerial and supervisory staff, inclusive of all Park Services Managers, participated and completed a Landscape Irrigation Auditor three-day course provided by the Irrigation Association, which is the leading membership organization for irrigation equipment and system manufacturers, dealers, distributors, designers, consultants, contractors and end users. SFRPD park operations have made a strong commitment to water conservation as exemplified by the investment in building staff capacity during extreme budgetary constraints.
- **TPC Harding Park Irrigation System Renovation:** SFRPD evaluated the TPC Harding Park irrigation system in FY 2010-11. The water audit included findings of ineffective water coverage and poor water distribution on the roughs, fairways, and greens surrounds. In an effort to remediate these problems and conserve water, a map was developed that showed the water distribution problems across the turf areas and 1,400 of the sprinkler rotors were replaced accordingly. In addition, 150 quick couplers were installed in the fairways, which enable precise and controlled irrigation where needed to prevent over saturation and runoff from the turf areas. The project's final phase included changing 72 greens surround rotors

from 1/2 circle to full circle to enable even distribution of water on the greens and surrounds at the same time. Quick couplers are also used to ensure precise watering for the greens. One remaining problem is the lack of individual head control in the fairways and roughs since many of the stations control 2 heads when activated. In May 2012, 14 new irrigation control panels will be installed, which will have the ability to control 50 stations (individual sprinkler heads) per panel.

Parks Water Conservation Plan

SFRPD partnered with SFPUC to develop a Parks Water Conservation Plan for twelve parks where the most water can be conserved, which was completed in November 2009. The parks selected for this study are listed in the table below. These parks have the highest per-acre water use of the city parks. Therefore, they are projected to have the greatest potential for water saving when water conservation measures are implemented. The total project water savings for all selected parks is estimated to be 15,420,773 gallons per year with an average savings of 18% over the total SFRPD current water use. The implementation of the Plan's recommendations and corrections on findings require a significant investment of capital funding in the millions, which is an unfounded cost.

The Department has engaged in a strong revenue advocacy and philanthropic efforts to conduct the necessary water conservation and irrigation efficiencies recommendations from the 2009 Parks Water Conservation Plan. During FY 2010-11 the Department submitted for funding assistance from the SFPUC, which resulted in the award of three Large Landscape Irrigation Grants in an amount of \$2.1 million for Jefferson Square Park, Balboa Park and Alta Plaza Park, highlighted in the Table5 below.

Table5. Parks with Highest Potential for Water Conservation

	PARK	IRRIGATED AREA (ACRES)	AVERAGE CCF/MO PER ACRE	AVERAGE GALLONS/MO PER ACRE	RENOVATION FUNDING *secured in FY2010-11
1.	Jefferson Square Park	5.00	134	100,332	\$1,063,980
2.	Franklin Square Park	2.60	109	81,669	- 0 -
3.	Balboa Park	20.20	96	71,481	\$120,180
4.	Jackson Playground	3.50	74	55,060	- 0 -
5.	Alamo Square Park	10.00	67	49,968	- 0 -
6.	Marina Green	10.20	65	48,562	- 0 -
7.	Alta Plaza Park	10.00	60	45,221	\$936,130
8.	Ocean View Playground	6.00	58	43,233	- 0 -
9.	Moscone Rec. Center	13.00	53	39,866	- 0 -
10.	West Sunset Playground	12.75	41	30,866	- 0 -
11.	Hamilton Rec. Center	1.50	41	30,529	- 0 -
12.	Louis Sutter Playground	4.70	11	8,346	- 0 -

SFRPD Water Efficiency Capital Projects

- Jefferson Square:** The SFPUC awarded a \$1,063,980 grant to fund an irrigation and landscape improvement project with an overall projected water conservation of 35 percent over existing conditions. This would result in an estimated annual water savings of 2,140,776 gallons. The antiquated irrigation system will be fully replaced with new irrigation lines; redesigned irrigation heads for uniform coverage; replacement of irrigation heads and valves; installation of flow sensor, master valve and a weather-based "smart" irrigation controller within the park; and installation of 'no-mow' fescue, a low-water using lawn alternative, in select areas.

In April 2012, the City awarded a contract combining water conservation projects at Alta Plaza Park (see below) and Jefferson Square to Bauman Landscape & Construction, Inc. Construction is anticipated to begin in June 2012.

- Balboa Park:** The SFPUC awarded a \$120,180 grant to fund an irrigation and landscape improvement project with an overall projected water conservation of 39 percent over existing

conditions. This would result in an estimated annual water savings of 3,775,156 gallons. The project primarily involves a re-design of the non-pressurized components of the irrigation system. This would include redesigned irrigation heads for uniform coverage, replacement of heads, installation of flow sensor and master valve, and installation of three weather based 'smart' irrigation controllers. This project is currently in the design phase.

This project would be carried out congruently with the Trust for Public Land's improvement project that is planned for another section of Balboa Park. These renovations together will yield significant water conservation savings as well. The two projects will greatly improve and enhance the overall irrigation efficiency at Balboa Park.

- **Alta Plaza Park:** The SFPUC awarded a \$936,130 grant to fund an irrigation and landscape improvement project with an overall projected water conservation of 20 percent over existing conditions. This would result in an estimated annual water savings of 1,935,977 gallons. The irrigation system is severely deteriorated and inoperable due to mainline leads in many locations. The project focuses on the southern portion of the park and involves replacement of the irrigation system and installation of 'no-mow' fescue, a low-water using lawn alternative, in select areas.

In April 2012, the City awarded a contract combining water conservation projects at Alta Plaza Park and Jefferson Square (see above) to Bauman Landscape & Construction, Inc. Construction is anticipated to begin in June 2012.

▪ **3b. Fleet & Fuel Reduction Measures**

The San Francisco Recreation and Park Department owns and operates a large fleet that follows and adheres to best management practices, as listed in Chapter 4 of the Environment Code Healthy Air and Smog Prevention Ordinance. The listings of vehicles and liquid fuel consumption values have been verified to calculate the FY10-11 Department carbon footprint, which is accurate and complete.

The vehicle fleet dedicated use allocation to support the primary Departmental functions, includes a 3 percent fleet allocation to support recreation service delivery and less than 1 percent to support administration services with a 96 percent fleet allocation, exclusively dedicated to support the Department's aging infrastructure, and the maintenance, restoration and preservation of parkland and its facilities. Table 6 below illustrates the Department's fleet inventory by type.

Table6. SFRPD FY2010-11 Fleet Inventory

VEHICLE TYPE	COUNT
12 PASSENGER VAN	1
8 PASSENGER	13
AERATOR	1
BACKHOE	1
BUCKET	2
BUNKER RAKE	4
CARGO VAN	27
CNG SEDAN	8
DUMP TRUCK	20
ELECTRIC CART	12
ELECTRIC CARRIER	12
ELECTRIC VEHICLE	6
FORKLIFT	9
GARBAGE TRUCK	2
GAS/DIESEL SEDAN	5
HEAVY TRUCK	13

VEHICLE TYPE	COUNT
HYBRID SEDAN	6
INFIELD RAKE	13
MOWER	141
PICKUP TRUCK	218
SAND RAKE	2
SPRAYER	2
SPREADER	1
STANDARD TRACTOR	27
STREET SWEEPER	3
SWEEPER	4
TRACTOR	3
TRUCKSTER	11
TURF RAKE	1
TURF VEHICLE	132
BOAT	2
UTILITY VEHICLE	5

Grand Total	709
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3b1. Fuel

FY 2010-11 Carbon Footprint from Mobile Combustion of Fuel

The San Francisco Recreation and Park Department's primary liquid fuel use in its operation for FY 2010-11 was unleaded gasoline, which comprised approximately 61 percent of its entire fuel consumption and generated 64 percent of the Department's carbon dioxide (CO2) emissions from mobile combusting of fuel. Overall, the Department emitted approximately 1,758 metric tons of CO2 from a combination of combusting fuels ranging from two forms of biodiesel, compressed natural gas (CNG) and unleaded gasoline. The Department reduced its consumption of unleaded gasoline by 18,000 gallons, as compared to FY 2009-10. Also, it is important to note that SFRPD's Greenhouse Gases (GHG) emissions counts do not include methane (CH4) or nitrous oxide (N2O), which have a much higher and increasingly tremendous global warming potential, as compared to CO2. The table below summarizes SFRPD's carbon footprint from CO2 by type of combusting fuel for FY 2010-11.

LIQUID FUEL TYPE	CONSUMPTION (gals)	CO2 (tons)
Unleaded Gasoline	127,108.02	1,119.57
B20	46,086.59	374.12
B5	563.50	5.43
LPG	10,618.00	61.48
CNG (GGE)	13,619.74	83.15
Diesel	11,234.00	114.03

Table7. SFRPD FY2010-11 Liquid Fuel Report

SFRPD's primary fuel source continues to be the City Administrator Office (CAO) Fleet Management Division, which supplies the fuel pumps at the Maintenance Yard in Golden Gate Park. As such, the Department defers to Central Shops in their management of the bulk of the fuel provided to SFRPD. Unfortunately, short, frequent trips are the norm for field staff, due to the nature of a decentralized citywide system of parks, public spaces, recreation facilities and open spaces. As such, the Department regularly reminds staff to reduce vehicle miles traveled whenever possible.

Additionally, SFRPD owns and maintains five fueling locations with above-ground fuel tanks that dispense unleaded gasoline and diesel fuel. The SFRPD fueling stations are located in and outside of San Francisco city limits, as follow:

- **Camp Mather:** Located in the Sierra Nevada Mountains in Groveland, Tuolumne County.
- **Candlestick Park Stadium:** Located in the south-east corner of San Francisco
- **Lincoln Park:** Located at 32nd Avenue and Clement Street in San Francisco
- **Sharp Park:** Located in Pacifica, San Mateo County.
- **TPC Harding Park:** Located at Lake Merced in San Francisco.

3b2. Fleet

Healthy Air and Clean Transportation Plan for FY 2011-12

In 2011, the Department provided a response to the requirements set forth by Section 403 of the Healthy Air and Clean Transportation Ordinance (HACTO) (Chapter 4 of the City's Environmental Code) that requires the reduction of the number of passenger vehicles and light duty trucks in municipal fleets by 5 percent per year through 2015, as well as remove from service all vehicles that are 12 years or older beginning in 2015. The Department's HACTO Plan is attached to this report as Appendix C. It is important to note that compliance to HACTO requires a significant capital investment in the millions,

which is unfunded. Also, the Department is significantly challenged by an aging and failing infrastructure with an unmet deferred maintenance unfunded liability in the excess of \$1.5 billion.

Due to the more than 4,000 acres that recreation, parks and open spaces encompass, the Department's fleet serves as the lifeline to City staff, who are the stewards maintaining and preserving parkland, wildlife, biomass and its supporting facilities; as environmental resources for current and future generations. For the most part, vehicles serve as "*rolling tool boxes*," carrying the supplies and equipment needed to perform the work required at SFRPD properties, which includes a broad range from preventative and routine maintenance activities to emergency malfunction response, breaks, and safety issues.

The other HACTO requirement to remove from service all vehicles that are 12+ years old by the year 2015 will bring the work of the Department to a standstill, unless the required replacement vehicles are approved. In the last two fiscal years, five HACTO-type vehicles approved for replacement in FY 10-11 and six HACTO-type vehicles approved for replacement in FY 11-12. Assuming replacement approval at the same pace, six per year, it would take approximately 35 years to replace all of the Department's 208 vehicles that are 12+ years old as of the date of this report, which make up for 30 percent of the fleet.

Since the fleet is crucial to providing a service delivery system in a responsive manner, the Department's overall goal is not to reduce the fleet, **but potentially to expand** the fleet due to the ever-increasing land management and building maintenance requirements. However, the Department's Operation Division Sustainability Plan anticipates converting the existing fleet over time with newer, more fuel efficient vehicles, as well as alternative fuel clean vehicles. Below is a brief summary of FY 2010-11 HACTO compliance highlights to minimize single-occupancy vehicle transportation for official duties and explore alternatives:

- **UC Davis Showcase Initiative:** SFRPD is one of fifteen City Departments participating in a pilot demonstration project managed by University of California, Davis and Chrysler Corporation. The Department operates one 2012 Dodge Ram Hybrid Truck (651 00327), on loan on 2011 through March of 2014. The truck is outfitted with an enhanced Global Positioning System (GPS) unit that transmits truck performance to the laboratory at UC Davis. The designated driver and Fleet Manager periodically meet with the researchers from UC Davis to discuss truck performance. The Department looks forward to seeing this vehicle available for sale on the consumer market and hopes our participation in this demonstration project helps bring that day closer.
- **Vehicle Sharing:** Vehicle sharing continues to be the norm in the Recreation and Park Department, due to the large territory under its management, a 24-hour -7-day operation, and the relatively limited number of vehicles in the fleet. Five of the six administration vehicles are shared

on a 1:16 vehicle to staff ratio by nearly 80 staff in three administration buildings located in Golden Gate Park and downtown: (1) Historic McLaren Lodge; (2) McLaren Lodge Annex; and, (3) 30 Van Ness/Capital & Planning. Horticultural vehicles are shared on a 2:1 passenger to vehicle ratio; whereas, custodial vehicles are shared on a 3:1 ratio. Supervisor vehicles are typically designated as dedicated vehicles due to job duties and diverse, numerous locations supervised. However, the practice for the most part and whenever practical is to share the vehicle with field staff, based on work priorities.

- **Use of Public Transportation:** It should be noted that administrative support staff often uses public transportation for regularly scheduled meetings at City Hall. Also, Capital & Planning Division staff often commute from 30 Van Ness to the Department's administrative building utilizing public administration.
- **FY 2010-11 Electric Vehicles:** As part of the Department's strategy in seeking expanded funding support, SFRPD is participating in a multi-agency grant process to acquire electric vehicles partially funded by the federal grant funds funneled to local agencies through Cal Trans. These electric vehicles would replace the privately owned, higher polluting, vehicles that our Parks, Open Space and Recreation Managers currently use to perform their duties throughout the City. Invited by City-wide Fleet Management to participate in this grant, SFRPD seized this opportunity to add clean vehicles to the fleet and as part of the FY 11-12 budget, requested matching funds for eleven electric vehicles. Despite approval to acquire eleven vehicles by the granting agency, the City budget process only approved matching funds for four electric vehicles.

Focus on the HACTO Light Duty Fleet

SFRPD is a decentralized Department with more than 400 sites spread throughout the City, reducing its fleet any further would significantly hinder operations and the Department's ability to delivery services and sustain San Francisco's park system. The Department cannot meet nor sustain its mission, if it is held to the HACTO requirement to reduce the light duty fleet by 5 percent per year through 2015.

As previously noted, the Department actually needs to expand the vehicle fleet in order to enhance park operation's efficiencies. As illustrated in Table 8 below, of the 113 HACTO light duty vehicles, 81 percent are maintenance vehicles. The remaining 19 percent are vehicles dedicated to recreation programming, where staff offers programs at multiple sites throughout the city and/or are vehicles dedicated to supervisors that have responsibility for multiple sites throughout the city. An initial five percent reduction would remove six vehicles from operation, leaving staff without an efficient mode of transportation to effectively complete their job responsibilities.

Passenger Vehicles and Light Duty Trucks		
<u>Type</u>	<u>Count</u>	<u>Percentage</u>
Cargo	3	3%
Passenger	22	19%
Truck	88	78%
Grand Total	113	100%

Table8. SFRPD 2011 Light Duty Vehicles Inventory

Compliance with State of California Diesel Emissions Regulations

The Department continues to aggressively comply with the California State diesel emissions regulations, either by retiring, retrofitting or preferably, replacing, both on and off road vehicles. The challenge has been to receive adequate funding for this compliance program through the annual City budget process. For instance, in the budget request for FY 2010-11, the Department requested funding for eighteen catalytic converter retrofits and received funding for only two. Additionally, five of six vehicles requested to be replaced due to emissions regulations received funding for replacement purchase. The FY 2011-12 budget request included funding for fifteen catalytic converter retrofits and the Department was approved for nine; both vehicles requiring replacement to meet emissions requirements were approved for purchase. Despite this challenge, the Department has been successful in securing the funding for all of the on-road diesel vehicles requiring retrofit and all on-road vehicles have either been retired, replaced or retrofit, with only one remaining on-road vehicle requiring retrofit in 2012.

Off-road retrofit and replacement is also underway and the funding secured for this population of vehicles will bring us into compliance through 2014. In fact, the City's Fleet Management Division considers the Recreation and Park Department a model department, as we are one of the very few City Agencies that has met the State's diesel emission regulation deadlines. We do not expect to request funding for additional off-road retrofit until the budget process FY 2013-14 and FY 2014-15.

Systems that Support Sustainable Fleet Management

SFRPD accounts for its fleet inventory in our asset management software, Total Managed Assets. Additionally, CAO Fleet Management Division completed full implementation of new fleet management software, Asset Works. The Department now has much easier access to vehicle information. Finally, SFRPD has increased its use of GPS with additional alerts for the purposes of safety, better fuel economy and reduced idling. During this last fiscal year, the idle alert was lowered to five minutes, in order to fully comply with the City-wide policy. Speeding alerts are now issued for the purpose of both safety and fuel economy. Smog checks were again completed remotely through the GPS system, eliminating the need for most vehicles to make the trip to Central Shops for a smog test.

Department's Showcase Initiative: GPS Generating Green Benefits

At the end of FY 2010-11, the Department conducted and completed the installation of Global Position Systems (GPS) in all of its vehicles in its fleet with a CA license plate, 290 vehicles. The GPS produces a Greenhouse Gas Emissions Report, a sample of which appears at the end of this report and referenced as Appendix D. The report encompasses an 80 percent sample in a one month period, January 1 – February 1, 2012, and includes emissions for all run time of each vehicle. The vendor uses the following for their GHG emission calculations:

- GHG L (Greenhouse Gas – Light Duty Vehicles) is computed by $(2 * \text{Idle Hours} * 0.01015 \text{ Tons CO}_2)$
- GHG H (Greenhouse Gas – Heavy Duty Vehicles) is computed by $(3.5 * \text{Idle Hours} * 0.01015 \text{ Tons CO}_2)$
- Idle Fuel consumption is based on Idle GPH
- GHG is based on CO2 Emissions Rate by Fuel Type

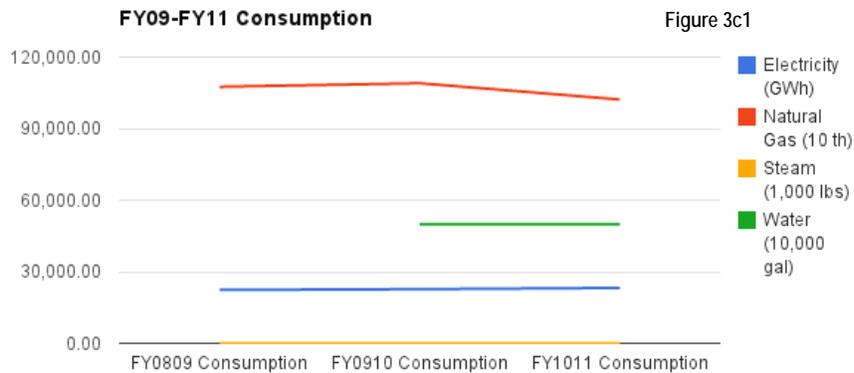
As the Department will now begin to produce this report on a monthly basis, which will be incorporated in next year's Climate Action Plan.

Biodiesel Fuel

Despite SFRPD's relatively small direct purchase of diesel fuel as compared to the total amount Central Shops purchases Citywide (2 percent), the Department recognizes and fully endorses the importance of the Executive Order 06-02 to convert to bio-diesel for municipal fleets. As such, during the last quarter of FY 2010-11, SFRPD converted to B20 bio-diesel at three of its five Department-owned fueling locations: Lincoln Park, Sharp Park, and TPC Harding Park. The conversion to B20 exceeded the Executive Order 06-02 requirement to convert to B5 fuel. In partnership with the City's Central Shops, all five fuel tanks were inspected and cleaned to determine their suitability for conversion to bio-diesel prior to the actual conversion. The Department anticipates a 100 percent B20 fuel use in FY 2011-12 at its three golf course fueling locations.

In FY2009-10 the Department has received an exemption from the Mayors Office for the conversion to biodiesel at Candlestick Park Stadium and Camp Mather. Candlestick Park Stadium necessitates a diesel tank to function as the primary fuel source for the facility's backup generator in the event of an emergency. The Stadium is a primary shelter location for the City's Disaster Preparedness Plan as well as forms part of the Homeland National Security Plan. At Camp Mather, the diesel is used for both vehicle fueling and back-up generator fueling. The use of biodiesel at Mather is impractical due to seasonal weather conditions, where cold temperatures solidify the biodiesel for most of the year, making it impossible to use as a fuel alternative.

▪ **3c. Historical Analysis**



In reviewing consumption for the three fiscal years FY2008-09, FY2009-10 and FY2010-11, energy and water consumption remains relatively steady. Figure 3c1, illustrates SFRPD's FY09-FY11 Consumption.

It should be noted that the Department has engaged in an aggressive data verification process in the last two years. The FY 2008-09 data was the Department's first attempt to capture data; in FY 2009-10, the Department was able to correctly verify and complete the data, as environmental performance indicators. As such, the Department considers performance data only for FY2009-10 and FY10-11, as its carbon footprint baseline. The Department anticipates a significant reduction in electricity and water use upon the completion of energy efficiency retrofit projects and water efficiency capital projects.

As discussed in the Fleet Section, the Department does use a variety of alternative fuels including electric power and compressed natural gas. The Department's goal continues to be to further expand the fleet of alternative fuel vehicles, where practical. Figure 3c2, illustrates SFRPD FY09-FY11 CO2 Emissions by Source. Fuel consumption for the three fiscal years remains relatively steady with year to year increases, correctly reflecting increased activity in park operations, as follows. The one anomaly in fuel consumption in FY 09-10 Q3 actually reflects a fuel gauge error at the Golden Gate Park fuel pump. Consumption was significantly less than indicated, at approximately 33,000 gallons for that quarter.

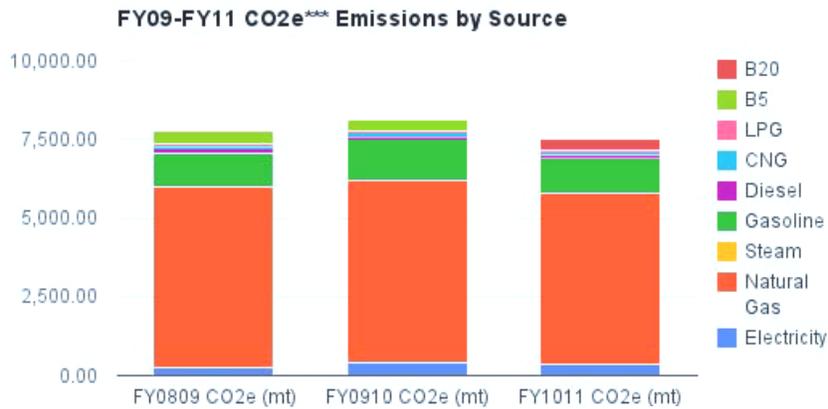


Figure 3c2

- Alternate Work Programs:** The Department has experienced an infusion of alternate work programs to sustain park operations, which included Jobs Now workers and the addition of a Mobile Gardener Apprenticeship crew, which utilize vehicles and power tools.
- Other Fluctuations:** Additional fluctuations of fuel consumption may be attributed to the Department's increased park patrol and deployment of clean-up crews for illegal encampments. In addition, it should be noted that in the last two fiscal years, the Department has significantly increase consumption of fuel, energy and water to meet PGA Tours activities and golf tournament events at TPC Harding Park.

SFRPD underscores its intent and desire to only purchase clean light-duty passenger cars and trucks that have high efficiency and low carbon impact. The Department will continue to emphasize renewing the fleet in order to achieve fuel savings, maintenance cost savings and other residual savings resulting from the retirement of older fleet vehicles. The Department looks to become an even greater partner with the Department of the Environment and the CAO in the long-term fleet management function.

4. Other Sustainable Practices

4a. Zero Waste

Parks & Public Spaces

SFRPD has made significant improvements in waste management throughout its park system in FY 2010-2011. Sustainable practices were developed for waste management and are regularly reevaluated, as ecosystems, parklands and urban environments evolve. Past practices, additional trainings and greater analysis has allowed the Department to achieve a 47 percent diversion rate, which is calculated by Recology Services based on SFRPD's contractual annual waste services. Achieving this level of diversion in a citywide park system comprising of over 800 public spaces has a significant impact on diverting waste from San Francisco Bay Area landfills. In addition, the Department's waste disposal cost for FY 2010-2011 was reduced by \$165,542, as compared to FY 2009-2010. Below is a brief listing of FY 2010-11 Departmental efforts to increase zero waste awareness and create efficiencies in reducing the waste stream in San Francisco's parks and public spaces:

- **Education & Awareness:** SFRPD provided extensive training in two-part sessions to thirty managerial and supervisory park operations staff, comprising of Parks Services Managers, Park Services Supervisors and Assistant Custodial Supervisors. The training consisted of a review of Recology contractual services by park service area; review of existing challenges in regional parks where illegal dumping occurs; and an overview of the SFRPD strategy, "*site-by-site*", to reduce unnecessary waste receptacles throughout parks and public spaces.
- **Efficiencies by Monitoring:** In FY 10-11 SFRPD conducted monitoring and a close examination of the Recology services as compared to actual park user behavior. As a result the Department eliminated and additional 27 percent of its total service and removed 16 unlocked and/or open dumpsters. Staff conducted repeated site visits at critical locations; analyzed past collection of these sites and interviewed front-line staff about container fullness as well as seasonal use factors. Consequently, the Recology Services contract was amended accordingly to reduce pick-up frequency and reduce container size. In addition, the Department locked several containers to prevent illegal dumping. Such aforementioned actions equated to eliminating 7,200 cubic yards of waste, a 16 percent reduction in overall waste volume.

Candlestick Park Stadium

Most notably, during FY 2010-2011 Candlestick Park Stadium was able to reach a diversion rate of 82 percent in a facility that hosted over 840,000 people attending ten San Francisco 49ers home games and two national soccer games. Also, Stadium restaurants have achieved an astounding 100 percent green waste diversion through composting programs. It should be noted that unlike most National Football League Stadiums, Candlestick Park Stadium hand-sorts all waste disposal containers after each and every San Francisco 49ers game and special events. Additional waste management efforts include close monitoring of tailgating in the parking lots pre and post events and games, which has significantly reduced the amount of waste left behind in the parking lots.

Green Waste

The SFRPD has done a tremendous job in managing its green waste. The Department excels in its green waste diversion rate at an astounding and constant 96 percent rate, with strategies such as grass recycling at golf courses and reuse of green waste for soil protection. The Department also develops soil from mulching the finest granular material from horticultural waste, referred to as the “fines”, with bio solid waste from the Golden Gate Park horse stables, managed by SFPD. TNA Timber Salvage in Vallejo collects the 3 percent of green waste not reused in San Francisco’s parkland for biomass fuel, which includes “tub grindings” and green waste that is not reusable, such as flax and palm.

2011 Waste Assessment

In February 2011, a Waste Assessment Questionnaire was distributed to Facility Coordinators at SFRPD facilities to collect data on existing waste prevention measures; assess the fullness of the containers; and determine the level of City staff training and understanding on waste prevention. SFRPD utilized the same Waste Assessment Questionnaire from FY 2009-10 in an effort to capture a reliable baseline comprising of two years of data. The results of the Department’s Waste Assessment Questionnaire and a copy of the questionnaire are attached to the report as Appendix E, which indicate an achievement of 100 percent return rate. Most notably, the assessment results indicate that 75 percent of SFRPD facility coordinators are aware and have general understanding of the City’s waste prevention program. Also, included in Appendix E is a listing of the 32 facilities assessed with corresponding addresses; it should be noted that the Department assessed large recreational complexes and aquatic centers with the exception of four facilities that were closed due to renovation. Based on the Waste Assessment findings, as well as other waste prevention initiatives, the Department commits to the following waste reduction action items for next year to promote and achieve waste reduction at each of its facilities, as referenced in Appendix E.

SFRPD Waste Reduction Commitments

- **Change in Practice:** Large recreation complexes will implement recycling and composting practices throughout the facilities. Also, recreation programs' material scraps and unused materials will be gathered for reuse in order to minimize waste and eliminate unnecessary purchasing.
- **Awareness & Education:** Annual waste management training will be conducted to reach recreation staff managing public facilities.
- **SFRPD Special Events:** Tree Lighting, Eggstravaganza, Day on the Green and Scaregrove will integrate waste management in their planning, as a performance measure. In addition, the aforementioned events will implement eco-stations monitored by event staff.

4b. Transportation Options

In San Francisco, the transportation sector accounts for 51 percent of GHG emitted into the atmosphere. SFRPD makes up approximately 3 percent of the entire City and County of San Francisco's labor force of 27,000. In 2011, the Department participated for the first time in the City and Department of the Environment supported Great Race for Clean Air, which took place from September 1st through October 31st. Ten SFRPD employees actively participated, which resulted in 768 CO2 lbs. saved per participant for a total of 7680 CO2 lbs. saved. SFRPD race results include 223 clean days and the Department finished 23rd out of 106 participating employers.

CCSF Commuter Programs

Under the Section 403 of the Healthy and Clean Transportation Ordinance (Chapter 4 of the City's Environmental Code), as described in Section 3b2. Fleet, the Department is required to promote public transportation, ridesharing or other driving alternatives to minimize single-occupancy vehicle transportation for work-related duties. The Department's HACTO Plan is attached to this report as Appendix C.

The City and the County of San Francisco (CCSF) extends a menu of alternatives under its Commuter Programs, inclusive of a Pre-Tax Commuter Program allowing employees to set aside a percentage of their pay pre-tax toward public transit and vanpool expenses. A total of 399 SFRPD employees participated in the Pre-Tax Commuter Program. The Department posts CCSF Commuter Programs information in its Human Resources offices; also, information is provided to all new employees as part of their information packet. A notable highlight in FY2010-11 is the Department's Health Fair where an information table on CCSF Commuter Programs by the Department of the Environment was

integrated as part of the information booths. The Department is currently scheduling CCSF Commuter Programs presentations at SFRPD staff meetings with the intent to penetrate the entire organization of over 800 employees.

CCSF Work-Related Trip Programs

The City and the County of San Francisco (CCSF) extends a menu of alternatives under its Work-Related Trip Program, inclusive of a City Bicycle Fleet, which replaces the use of a City vehicle to attend official City business with a City bicycle, u-lock, lights, helmet and a limited maintenance plan. As part of this program, there are currently eighteen bicycles integrated in the Operations Division mostly in Golden Gate Park with 44 percent and Park Patrol with 33 percent of the SFRPD bicycle fleet. During FY 2010-11, eight additional bicycles were requested, which have not yet been received.

4c. Green Purchasing

The Recreation and Park Department's goal is to administer a green purchasing program in support of the Department's operational and capital needs. While there is a small Purchasing Section of the Department's Administrative and Finance Division, SFRPD is a decentralized organization with many individuals responsible for requesting the purchase of materials and supplies. In order to facilitate a successful green purchasing program in this decentralized environment, education and awareness must be emphasized. SFRPD Purchasing regularly alerts staff to green purchasing principles through a variety of methods including training materials, e-mail notifications and presentation of SF Approved materials in the Environment, Health and Safety Newsletter.

The Department encourages the use of San Francisco Approved Products and attempts to review each requisition for adherence to the requirements of the SF Approved program. The Department has worked closely with the Department of Environment to troubleshoot the most effective ways to improve green purchasing. Most notably, during FY2010-11 SFRPD janitorial staff attended a consultation with the Department of the Environment regarding use of appropriate janitorial and paper products along with the intricacies of composting. Specific FY 2010-11 highlights of the Department's Green Purchasing successes include:

- 100 percent of office paper purchased met the SF Approved Products Program requirement of 100 percent Post Consumer Recycled Processed Chlorine Free Paper
- Replacement of all cleaners in the Storeroom with SF Approved green cleaning products.
- Identification of 100 percent recyclable janitorial paper products that will fit current fixtures in use citywide, which includes 96 park restroom facilities.

The Department engaged in a recent assessment of its purchasing practices, as part of this report, as well as participated in a Buy-Green Consultation with the Department of the Environment staff in FY 2010-11. The Department participated in the San Francisco 2011 Environment Buy Green Scorecard, which received a score of 0.75 out of 2 resulting in a rating of **Fair**, a decrease in rating from FY 2009-10 of .4 points. A copy of the FY 2010-11 Score Card is referenced in this report as Appendix F.

During FY 2010-11, SFRPD had some difficulty meeting electrical materials and supplies goals for green products. Based on a recommendation from the Department of the Environment, SFRPD Purchasing and Structural Maintenance staff will attend the new electrical materials and supplies contract meeting to insure that items required by SFRPD will be included in the contract. The Department will also increase the level of effort for review of individual requests for purchase orders to insure that staff is requesting the greenest product available for a particular category. The Department expects to improve on its Buy Green Scorecard during the next fiscal year by continuing to increase staff awareness of the benefits of using SF Approved Products Program and the Virtual Warehouse.

4d. Information Technology

The San Francisco Recreation and Park Department's Management of Information Systems (MIS) currently manages over 300 desktop personal computers (PCs) that are spread across all of San Francisco. The Department's administrative offices located at the Historical McLaren Lodge and McLaren Lodge Annex in Golden Gate Park have approximately 100 PCs, which is the largest quantity of PC's in one location. While low staffing levels and intuitional practices continue to be a challenge, SFRPD MIS had trouble meeting all of its climate protection objectives due primarily to budget reductions during FY 2010-11. The Department has improved since FY 2009-10 in the area of server virtualization. The Department has been working with the Department of Technology to virtualize SFRPD production servers. MIS has currently spun down three of our oldest servers and replaced them with virtualized servers. As a result, electricity consumption has been reduced and lower cooling costs.

4e. Urban Forest

The San Francisco Recreation and Park Department manages approximately 19.5 percent of the entire City's urban forest, which is composed of approximately 670,000 trees owned and maintained by private, federal and municipal agencies. The United States Department of Agriculture Forest Service's Center for Urban Forest Research (CUFR) reported on December of 2007, the estimated value of San Francisco's urban forest benefits to be worth 103.4 million dollars, with the greatest benefits derived from property value and hydrology-related issues. Hydrological benefits alone report a worth estimated at 4.4 million dollars. Trees on public parklands located in San Francisco's parks and open space system are worth over 2 million dollars and their hydrological benefits report a worth estimated at \$866,640. Also, it is important to note that the SFRPD parks and open spaces are dominated by the three specimens that store and sequester the most carbon in San Francisco's urban forest, which is estimated at 196,000 tons.

Trees on Parklands

For the most part, San Francisco's urban forest came into being in the late 1800s, when intense afforestation programs were initiated over a 30 year period; as part of the basic structure of vegetation in the City's large parks such as Golden Gate Park, John McLaren Park, Stern Grove, Twin Peaks and Mountain Lake Park. A study conducted by McBride and Froehlich in 1984 on the structure and condition of older stands in parks and open spaces areas of San Francisco, best documents the Department's share of San Francisco's urban forest. The study indicates that the SFRPD urban forest has come to be dominated by three species, Monterey Pine (*pinus radiata*), Monterey Cypress (*cupressus macrocarpa*) and Blue Gum Eucalyptus (*eucalyptus globulus*). Most importantly, they noted that the pine and cypress were not regenerating while blue gum was regenerating from root sprouts.

The precise number of trees within the Department's responsibility is not known. A 1993 census identified approximately 27,192 trees in Golden Gate Park. The SFRPD Significant Nature Areas Management Plan estimates 64,000 trees in the 868 acres of natural areas. HortScience estimates that there are 67,000 in the 2,389 parkland acres outside of the Natural Areas. As such, the best approximation on hand is a total of 131,000 trees on Recreation and Park Department properties in San Francisco. This estimate does not include either Sharp Park or Camp Mather.

It is important to note that the assessment above utilizes a more rigorous definition for trees than the definition utilized by other San Francisco agencies. The Department utilizes the definition of tree found in the Glossary of Arbocultural Terms (2009. International Society of Arboriculture), which defines a tree as a "woody perennial usually having one dominant trunk and a mature height greater than 15 ft."

The definition utilized to estimate and characterize SFRPD trees, refines the definition contained in Article 16, Section 802 of the Public Works Code, where a tree is defined as “any large perennial having a woody trunk(s), branches and leaves. Trees also shall include palm trees.”

FY 2010-11 Accomplishments

Urban Forestry Operations Review

The Department contracted the consulting services of HortScience, Inc. to review current Urban Forestry operations and practices, in order to develop recommendations for improvement. The assessment report was completed in July 2010, at which time the Recreation & Park Commission reviewed its findings. The most noteworthy findings include annual maintenance levels and cycles based on constrained budget and labor resources. The Department’s Forestry Program is primarily divided between tree maintenance with sixteen FTE positions, and reforestation efforts with thirteen FTE positions. Together, they are able to treat approximately 1,250 trees annually with a maintenance cycle for all trees over 50 years. Other noteworthy findings include that all tree care activity is request-driven, and reactive, rather than planned or programmed in a tiered assessment/care approach. Additionally, reforestation efforts occur in “pulses” rather than continuously, given resources at hand.

During FY 2010-11 the Department’s Urban Forestry operations treated approximately 2,222 trees, a 78 percent higher annual treatment rate than estimated by the 2010 HortScience Assessment. SFRPD Urban Forestry planted 1,109 new trees and removed 431 trees from San Francisco’s park system, achieving a net tree gain (NTG) of 678 trees, which is a 27 percent increase from the total number of trees lost in FY 2010-11 (including stolen trees). Additional activities during this time period include pruning completion rates on average of 60 trees per month, which does not include tree maintenance, removal or plantings from the 2008 Park Bond Forestry Program. In addition, the data is not inclusive of tree removals and tree failures due to storm systems. It should be noted that during FY 2010-11, 100 trees were significantly vandalized to a comprising level or stolen, 39 percent of such activities occurred in July 2010.

Alamo Square Park Tree Assessment

The trees and tree canopy at Alamo Square Park was a primary focus for FY2010-11. Alamo Square Park was established in 1857 and is located in the Alamo Square Historical District. A tree assessment was commissioned by the Alamo Square Neighborhood Association and completed in 2011 for the park’s 166 trees, representing twenty-one species that make up its iconic landscape. The assessment included an evaluation of tree health and structural condition; assessment of the risk of tree failure; an evaluation of species performance and future planting; as well as, recommendations for action.

It should be noted that Monterey Cypress (*Cupressus Macrocarpa*), was found to be the most frequently occurring tree species with 79 trees, comprising 48 percent of the entire park's tree make up.

New Tree Plantings at Washington Square Park

In addition, as a result of a strong partnership with the Friends of Washington Square Park, FY2010-11 marked the beginning of the implementation of the Washington Square Park Tree Assessment. Washington Square Park is one of San Francisco's three original parks, established around 1850 and located in San Francisco's bustling "Little Italy," North Beach. Seven new trees were planted to honor the historical landscaping design as well as reflect on the current neighborhood demographical makeup, including Stone Pine, Deodar Cedar, and Canary Island Pine. Funding for the 2011 tree planting was made possible by a grant award from the ReLeaf Foundation. The work completed under this project is not included in the Department's Urban Forestry operation data, as it is considered a philanthropic partnership effort.

2008 Park Bond Forestry Program

As part of the 2008 Clean and Safe Neighborhood Parks Bond, the Department has allocated 4 million dollars to assess and treat part of the parkland aging canopy and revitalize SFRPD urban forest, providing all San Franciscans healthy, safe, and sustainable greenery. During FY 2010-11 the Department contracted with HortScience to conduct tree assessments, pruning and replanting work based on assessment findings. The site assessments were completed and 1,103 trees were surveyed at four sites: Parkside Square, Park Presidio Boulevard, Pine Lake Park, and Stern Grove Park. Assessment findings confirmed predominant species currently on the sites from four species: 72 percent Blue Gum, 11 percent Coast Redwood, 7.5 percent Monterey Pine and 6 percent Monterey Cypress. The following species were represented within the survey by few trees: Blackwood Acacia, Box Elder, California Bay, Coast Live Oak, Douglas Fir, Elm, Myoporum, Red River Gum, Silk Oak, White Alder, Willow Leaf Peppermint, Willow, and Silver Mountain Gum.

The scope of work received environmental clearance in August 2011. The Department initiated tree removal and pruning starting in January 2012 through March 2012. Currently, the Department is conducting public hearings for reforestation efforts at Golden Gate Park. Detail information on these projects will be incorporated in the FY2011-12 Department's Climate Action Plan. Appendix G includes a summary listing of the 2008 Park Bond Forestry Program.

5. Community Wide Impact

As a main provider of green infrastructure, open spaces, parks, recreation spaces, and urban forest, the San Francisco Recreation and Park Department plays a critical role in increasing its carbon sink as well as reducing its own GHG emissions and those from the community who patronize its facilities and visit its parks. Challenged by the unprecedented budget shortfalls and increased influx of park visitors and recreation program users due to the economic recession, SFRPD continues to embrace – more than ever – its core mission to maintain beautiful parks, preserve the environment and provide enriching recreational activities. The Department engages the community on a daily basis and serves as a repository of green efforts by the general community, such as volunteer activities in landscape maintenance and restoration efforts.

“Gray to Green” Community Advisory Panel

Most notably, the Department engaged in a citywide advocacy effort on climate change for three months in FY2010-11. In partnership with the Department of the Environment and the Business Council on Climate Change, the San Francisco Recreation and Park Department engaged in a strong advocacy effort on climate change adaptation during the FY2010-11. SFRPD's Parks and Open Spaces Superintendent, Ms. Ana M. Alvarez, chaired and led the “Gray to Green” community advisory panel comprising of representatives from the public and private sectors, including San Francisco Planning & Urban Research Association, San Francisco's Park Trust and the San Francisco Neighborhood Association.

The Gray to Green Community Advisory Panel focused on the role of green infrastructure and valuing the climate benefits of San Francisco's urban ecosystems. The panel suggested that the city consider the ecosystem services generated by green spaces along side traditional "gray" or built infrastructure when planning for climate change and long term public health. The important role community groups and neighborhoods play as stewards of their local green spaces was also emphasized. The Department made several presentations on climate change as it pertains to public parks and open spaces as well as the role and current state of San Francisco's parks in relationship to climate change mitigation and adaptation.

A series of recommendations were presented to San Francisco's Mayor, Edwin Lee, in May 2011 which fell in four primary areas: guiding principles for green infrastructure; climate change mitigation strategies utilizing biomass; climate change adaptation strategies, repositioning the City's green infrastructure for prevention and intervention of climate change conditions; and City and County agency organization on watershed management. The Gray to Green Panel Recommendations are included in Attachment H.

Appendices Listing

Appendix A: Lighting Efficiency Ordinance Approved Waiver

Appendix B: 2008-2011 San Francisco Municipal Green Buildings Report

Appendix C: HACTO Plan

Appendix D: GPS GHG Emissions Report

Appendix E: Listing of Assessed Facilities, Waste Assessment Findings and Waste Assessment Questionnaire

Appendix F: Green Purchasing Scorecard

Appendix G: 2008 Parks Bond Forestry Program

Appendix H: 2011 Gray to Green Advisory Panel Recommendations