

# Climate Action Plan

March 2011



1 So Van Ness Living Roof





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## 1. INTRODUCTION

September 2009, The Department of Public Works released its [2009-2010 Strategic Plan](#) to deliver world class public service. The plan articulates the Departments' vision, mission, and three strategic goals: 1) Ensure safe, clean, and green infrastructure and public rights-of-way, 2) Create and maintain beautiful, highly functional and sustainable facilities, and 3) Deliver world class public service. Objectives for each goal are also outlined, which includes objective 1C) Green the city's infrastructure and DPW's business practices. Each year the Department reviews progress on achieving our strategic goals and either confirms or modifies objectives and strategic actions for the next year. This report serves to inform this assessment and adjustment process for strategic objective 1C.

Additionally, the San Francisco [Environmental Code](#) requires, beginning at the close of fiscal year 2008-2009, and every year following, all City departments submit, in a format specified by the Department of the Environment, a written update of greenhouse gas (GHG) emitted by the department, the status of plans and actions taken by the department. The code requires these updates to the extent feasible; provide information to enable the Department of the Environment to calculate the City's progress toward meeting the greenhouse gas emissions limits established in [Section 904](#) of City and County of San Francisco Environment Code.

Along with informing DPW's strategic planning process, the purpose of this DPW Climate Action Plan is to comply with the requirements of the Environmental Code and document DPW's carbon footprint, report on actions taken and establish or adjust strategic actions to further reduce DPW's GHG emission in coordination with the City's Environmental Plan and contribute to making San Francisco a beautiful livable, vibrant, and sustainable city.

San Francisco's greenhouse gas emission are detailed in [Climate Action Plan for San Francisco, Local Actions to Reduce Greenhouse Gas Emissions](#) released in September 2004, by the Department of Environment and San Francisco Public Utilities Commission. The plan establishes the city goal to reduce the city's greenhouse gas emissions to 20% below 1990 levels by 2012, provides background information on the causes of climate change, and projections of its impact on San Francisco.

*“Global Warming is real. The world's leading climate scientists agree that human behavior is accelerating global warming, and that the earth is already suffering the impacts of the resulting climate change.*

***We have a responsibility to act.** San Francisco is responsible for about 9.7 million tons of CO<sub>2</sub> emissions per year. In 2002, the San Francisco Board of Supervisors passed the Greenhouse Gas Emissions Reduction Resolution, committing the City and County of San Francisco to a greenhouse gas emissions reductions goal of 20% below 1990 levels by the year 2012. The resolution also states that the Mayor and Board of Supervisors actively support the Kyoto Protocol, and calls upon national leaders to do so as well. Federal inaction makes state and local action all the more important. The development of this Climate Action Plan, called for in the resolution, describes what San Francisco can do in order to achieve our greenhouse gas reduction goal.” **San Francisco Climate Plan, September 2004***

**For more information about DPW's Climate Action Plan** contact DPW's Climate Action Liaison, Cynthia Chono at: 1 Dr. Carlton B. Goodlett Place, City Hall, Room 348, San Francisco, CA, 94102; office phone: 415-554-6901; email address; [Cynthia.chono@sfdpw.org](mailto:Cynthia.chono@sfdpw.org).

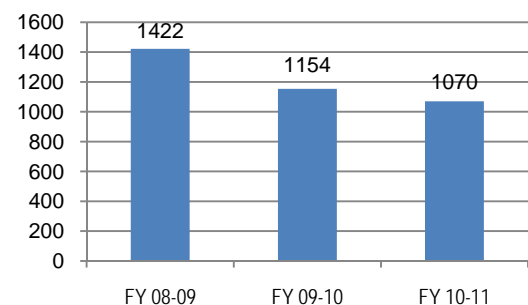
## 2. DEPARTMENTAL PROFILE

Originally established in 1900, the Department of Public Works (DPW) is one of the oldest government agencies within the City and County of San Francisco. Its scope is far reaching, affecting on a daily basis residents, business, and visitors alike. When you travel down a city street, stroll on a sidewalk, go to your neighborhood library, or stand under the shade of one of the many city maintained street trees, you are benefiting from services provide by DPW.

**DPW's mission** is to enhance the quality of life in San Francisco by proving outstanding public service. We design, build, operate, maintain, green, and improve the city's infrastructure, public rights-of-way, and facilities with skill, pride, and responsiveness, in partnership with the San Francisco community.

DPW designs, builds, and maintains streets, plazas, stairways, and other public areas; coordinates street excavation work; enforces litter laws; removes graffiti; and maintains 850 miles of roadway and more than 40,000 of the City's 108,000 street trees; and manages 100 Street Parks. DPW regulates street and sidewalk use while enhancing and protecting the public rights-of-way. DPW provides architectural, hydraulic, structural, electrical, civil, and mechanical engineering services, including project and construction management. These services are provided by the 1,070 DPW employees committed to delivering world class public service.

**Full & Part Time Equivalent Positions**



### DPW's Budget

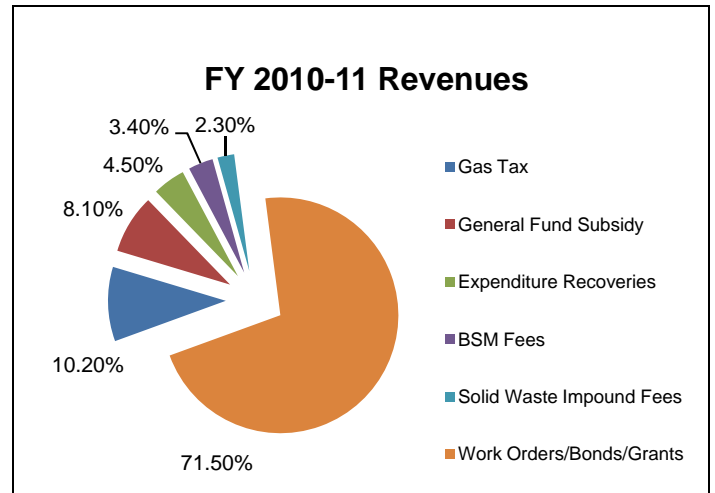
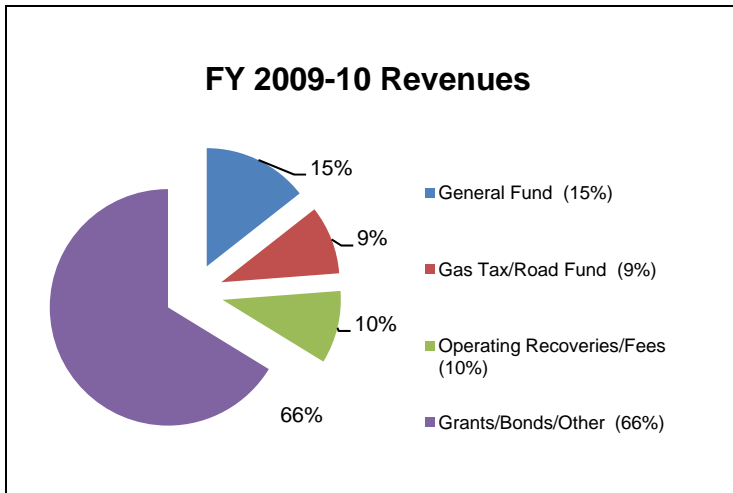
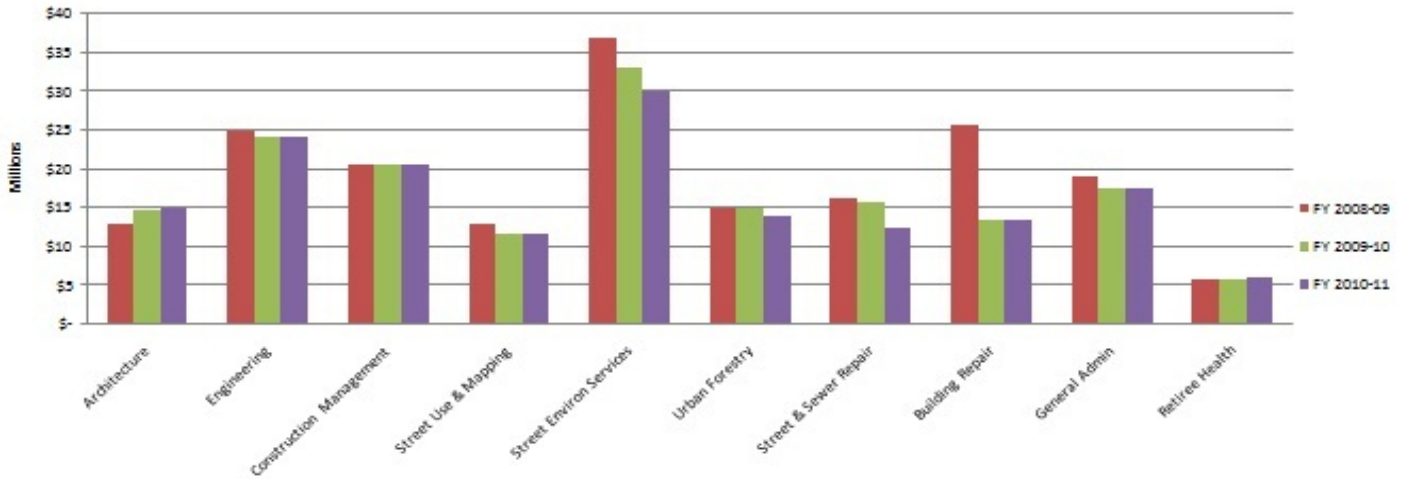
DPW's \$164.5 million FY 2010-11 budget is \$7 million less than FY2009-10.

FY 2010-11 Budget highlights Includes:

- \$16.9 million in gas tax revenues, or \$1.7 million (nine percent) less than last fiscal year.
- \$13.3 million from the general fund, or \$3.7 million (twenty-two percent) less than last fiscal year.
- 1,070 Full and Part Time positions, which is 352 fewer positions than 2008/09.
- Decreases spending on materials and supplies by over \$99,000.
- Reduces Workers Compensation by more than \$200,000 with improved health and safety program and strict return to work policies.
- Reduces costs associated with vehicles by nearly \$300,000.
- Reduces street cleaning, building maintenance, and permitting and inspections services

FY 2010-11 marks the fourth year that the Department of Public Works (DPW) has cut its budget to help balance citywide funding shortfalls.

**Budget Comparison**  
Approved FY 08-09 & FY 09-10 vs. FY 10-11



### 3. DEPARTMENTAL CARBON FOOTPRINT

The term "[carbon footprint](#)" as defined by the US Environmental Protection Agency, "is used to describe the amount of greenhouse gases (GHG) emitted into the atmosphere by an entity, such as a person, household, building, organization, or company and is usually measured in units of carbon dioxide equivalents (CO<sub>2</sub>e).

DPW's carbon footprint for the purposes of this report is a measurement of the CO<sub>2</sub>e emitted through the use of energy: electricity, natural gas, steam and liquid fuels: unleaded gas, biofuels (B20), liquefied petroleum gas (LPG) and compressed natural gas (CNG). Identifying our facilities, energy use, and fleet use activities will enable us to discover those activities that are the most carbon intensive, to make informed choices on how to minimize our carbon footprint and contribute to making San Francisco a beautiful, viable, vibrant, and sustainable city. The consumption of water, production of waste water and production and handling of solid waste all contribute to creating greenhouse gases and are addressed later in the report.



The City' goal is to reduce operational emission of C02e: 20% form 1990 baseline by 2012, 25% by 2017, 40% by 2025, and 80% by 2050

DPW would have to hit the following C02e emission targets to reach the city's C02e emission goals.

**DPW FY 2009-10 C02e Emission**

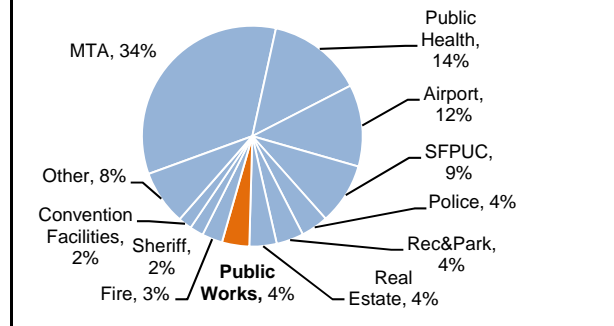
DPW emitted 5,993.87 metric tons of C02e during FY 2009-10. This is 355.94 metric tons less than in FY 2008-09, an overall reduction of 5.6%. 14.4% short of our 2012 goal of a 20% reduction. Department of Environment reports that DPW contributes 4% toward the total C02e emissions from city departments.

FY 2009-10 DPW made reductions in all areas except in electricity where there was an increase in use. However, the greatest source of C02e emission came from the consumption of unleaded fuel.

**DPW's C02 Emission Goals (metric tons)**

|                      | Energy  | Liquid Fuels | Total C02e Emission |
|----------------------|---------|--------------|---------------------|
| <b>2008 baseline</b> | 870.78  | 5479.01      | 6349.79             |
| <b>20% by 2012</b>   | 696.624 | 4383.21      | 5079.83             |
| <b>25% by 2017</b>   | 653.09  | 4109.26      | 4762.34             |
| <b>40% by 2025</b>   | 522.468 | 3287.41      | 3809.87             |
| <b>80% by 2050</b>   | 174.156 | 1095.80      | 1269.96             |

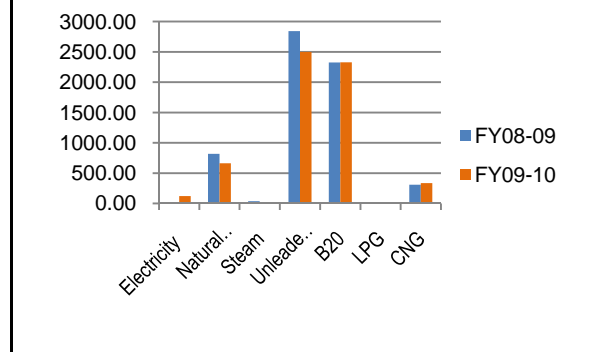
**City Department C02e Emissions**



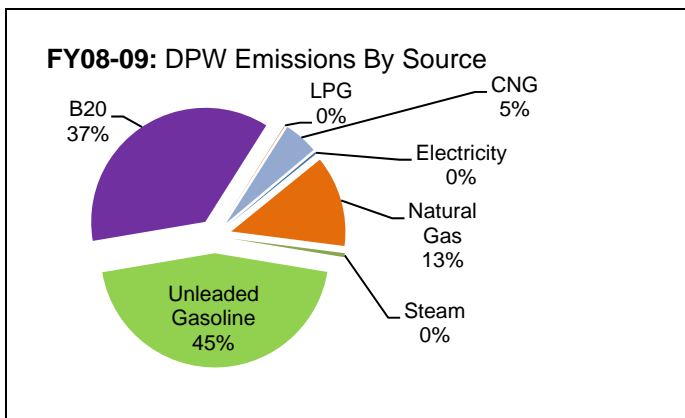
**DPW's C02e Emission**

|                     | FY08-09         | FY09-10         |
|---------------------|-----------------|-----------------|
| <b>Electricity</b>  | 16.49           | 121.27          |
| <b>Natural Gas</b>  | 818.04          | 663.70          |
| <b>Steam</b>        | 36.25           | 24.58           |
| <b>Unleaded Gas</b> | 2841.33         | 2499.65         |
| <b>B20</b>          | 2324.40         | 2327.47         |
| <b>LPG</b>          | 4.37            | 22.15           |
| <b>CNG</b>          | 308.91          | 335.06          |
| <b>TOTAL</b>        | <b>6,349.81</b> | <b>5,993.87</b> |

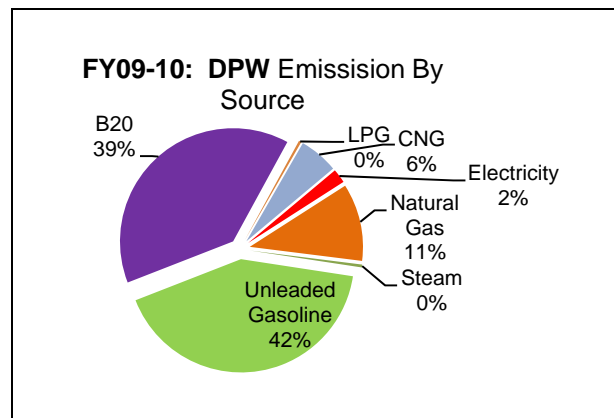
**DPW C02e Emission by Source**



**FY08-09: DPW Emissions By Source**



**FY09-10: DPW Emission By Source**



## A) Facilities – Energy Use & Reduction Measures

### DPW'S FACILITIES ENERGY USE

DPW is organized into 4 major functional areas: Operations, Engineering, Finance and Budget, and General Administration and has offices in 6 locations: 2323 Cesar Chavez, City Hall, 30 Van Ness, 875 Stevenson, 1680 Mission, and 2099 Kearny. Additionally, DPW is responsible for maintaining over 40,000 street trees, various landscape areas, tunnels (Broadway, Stockton, Geary Streets), and operating the 3<sup>rd</sup> and 4<sup>th</sup> street bridges.

|                    | C02e Emitted<br>(Metric Tons) |         |
|--------------------|-------------------------------|---------|
|                    | FY08-09                       | FY09-10 |
| <b>Electricity</b> | 16.49                         | 121.27  |
| <b>Natural Gas</b> | 818.04                        | 663.70  |
| <b>Steam</b>       | 36.25                         | 24.58   |
| <b>TOTAL</b>       | 870.78                        | 809.55  |

*Information provided by DOE*

The use of electricity, natural gas and steam contribute to the emission of C02e. The following list of locations is used to tack our use of electricity, natural gas, and steam to calculate our C02e emissions.

FY 2009-10 DPW emitted 61.23 metric tons less than in FY2008-2-09, a 7% approximate reduction.

### DPW ENERGY USE FACILITATES LIST FY 2009-10

| PUC Code | DPW Place Name           | DPW Address               |
|----------|--------------------------|---------------------------|
| 111B     | Corporation Yard         | 2323 Cesar Chavez St      |
| 111A     | Corporation Yard         | 2323 Cesar Chavez St      |
| 1907     | Sprinkler Timer 65 Reuel | 65 Reuel Court            |
| 1881     | Civic Center Steam Loop  | 400 Van Ness Ave          |
| 1812     | 449 Grove St Parking Lot | 449 Grove St              |
| 1811     | 426 Grove St Parking Lot | 426 Grove St              |
| 1711     | Octavia Blvd.            | Octavia Blvd Btw Market / |
| 1711     | Octavia Blvd.            | Octavia Blvd Btw Market / |
| 1467     | Pedestrian Overcrossing  | 400 Grand View Ave        |
| 1466     | Gardner's Shed           | 3600 Mission St           |
| 1465     | DPW Street               | 2221 Cesar Chavez St      |
| 1459     | UN Plaza                 | 08th St & Market St       |
| 1458     | DPW Building Repair      | Cesar Chavez St           |
| 1249     | Corporation Yard Parking | 2545 Cesar Chavez St      |
| 1210     | Materials Testing Lab    | 2099 Kearny St            |
| 1201     | Temporary City Offices   | 875 Stevenson St          |
| 813      | 25 Van Ness Ave          | 25 Van Ness               |
| 808B     | 30 Van Ness Ave          | 30 Van Ness Ave           |
| 808A     | 30 Van Ness Ave          | 30 Van Ness Ave           |
| 779      | 1680 Mission St          | 1680 Mission St           |
| 473      | Civic Center Powerhouse  | McAllister St & Larkin St |
| 472      | City Hall                | 400 Van Ness Ave          |
| 466      | DPW Tree Planting Div    | 1221 Oakdale Ave          |

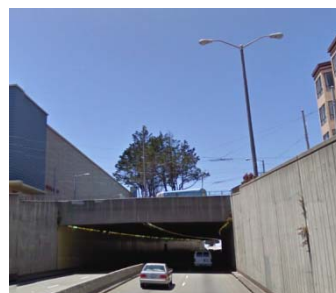
| PUC Code | DPW Place Name         | DPW Address            |
|----------|------------------------|------------------------|
| 465      | Sprinkler Timer 01     | 01 Cashmere            |
| 464      | DPW Tree Planting Div  | Sunset Blvd South Dr   |
| 461      | DPW Tree Planting Div  | Sunset Overpass Sloat  |
| 455      | DPW Tree Planting Div  | Approx 700 Columbus    |
| 447      | DPW St Cleaning        | Newcomb Ave &          |
| 446      | DPW St Cleaning        | Ne Webster St & Sutter |
| 445      | DPW St Cleaning        | Garlington Ct          |
| 444      | DPW St Cleaning        | 24 Dedman Ct           |
| 443      | DPW St Cleaning        | 230 Cashmere St        |
| 442      | DPW St Cleaning        | 1442 Kirkwood Ave      |
| 441      | DPW St Cleaning        | 1418 Innes Ave         |
| 437      | Tunnel: Geary          | Geary Blvd & Masonic   |
| 436      | Telegraph Hill         | Telegraph Hill Slope   |
| 434      | Street Repair Facility | 900 Quint St           |
| 433      | Drawbridge: Islais     | 3325 03rd St           |
| 432      | Drawbridge: 03rd St &  | 03rd St & Channel St   |
| 431      | Tunnel: Broadway       | Broadway               |
| 173      | St Cleaning            | Bay Shore Blvd         |
| 103      | Storage (Brooks Hall)  | 250 Polk St            |
| 101      | Hallidie Plaza         | Cyril Magnin St & Eddy |
|          | Sidewalk               | Broadway &             |
|          | Storage                | 99 Grove               |



Broadway Tunnel



3<sup>rd</sup> Street Bridge



Geary Underpass



Hallidie Plaza

**ENERGY USE REDUCTION MEASURES**

DPW's facilities emitting more than 10 mega tons of CO<sub>2</sub>e during FY 2009-10 were: DPW's asphalt plant, DPW's corporation yard, 30 Van Ness, 1680 Mission, 25 Van Ness, and DPW's Material Testing Lab, Broadway tunnel, and Geary underpasses.

 Facilities emitting more than 10 mega tons of CO<sub>2</sub>e during FY 2009-10

| Code | DPW Place Name    | DPW Address            | Electricity |                   | Natural Gas |                   | Total CO <sub>2</sub> e |
|------|-------------------|------------------------|-------------|-------------------|-------------|-------------------|-------------------------|
|      |                   |                        | kWh         | CO <sub>2</sub> e | Therms      | CO <sub>2</sub> e |                         |
| 434  | Street Repair     | 900 Quint St           | 892,160.00  | 19.04             | 56159       | 298.74            | <b>317.78</b>           |
| 111B | Corporation Yard  | 2323 Cesar Chavez      | 655,231.00  | 13.98             | 22,908.00   | 121.86            | <b>135.84</b>           |
| 779  | 1680 Mission St   | 1680 Mission St        | 553,794.00  | 11.82             | 15060       | 80.11             | <b>91.93</b>            |
| 813  | 25 Van Ness       | 613 Sq Ft Office Space | 918,261.63  | 19.60             | 3,278.62    | 17.44             | <b>37.04</b>            |
| 1210 | Materials Testing | 2099 Kearny St         | 84,320.00   | 1.80              | 5,815.00    | 30.93             | <b>32.73</b>            |
| 431  | Broadway Tunnel   | Broadway Tunnel        | 569,200.00  | 12.15             | 0           | 0                 | <b>12.15</b>            |
| 437  | Geary Underpass   | Geary Blvd &           | 452,160.00  | 9.65              | 0           | 0                 | <b>9.65</b>             |

During FY 2009-10 at the request of DPW, SFPUC conducted energy audits at the DPW's Corporation Yard (2323 Cesar Chavez) and 1680 Mission. An audit was requested for 2099 Kearny.

DPW's Asphalt Plant at 900 Quint Street closed November 2009. By April 2010 all production was stopped. With the closure of the asphalt plant we anticipate a significant reduction in our FY 2010-11 natural gas and electrical usage.

DPW's Corporation yard received a lighting efficiency audit by SFPUC's Energy Efficiency Program in May 2009. Recommendations were implemented during the summer of 2010. Electrical lamps were replaced, electrical fixtures and ballasts were retrofitted or replaced, and sensors and day lighting controls installed. SFPUC estimates an annual electricity savings of 101,231 kilowatt-hours (kWh), approximately 12% of 2009 usage. Also in 2010, building A's old single pane windows were replaced with energy efficient double pane windows in. Building A is the administration building housing operations administrative offices.

1680 Mission houses DPW's administrative offices for the Bureau of Construction Management and Engineering. April 2010, SFPUC's Energy Efficiency Program completed lighting and HVAC efficiency audits. March 2010 began implementation of the lighting efficiency recommendations. New electrical lamps, ballasts, and motion sensors will be installed. The SFPUC reports expected annual reduction in Co<sub>2</sub> emissions of 50,465 lbs.

Geary Boulevard underpasses are scheduled in 2011 to have the lamps replaced with more energy efficient ones.

FY 2010-11 we will focus on identify efficiency actions to reduce our electrical and natural gas usage at 2099 Kearny Street and will review and updated DPW engineering design policy and procedures to ensure compliance with the Environmental Code and to reduce CO<sub>2</sub>e emissions.



2323 Cesar Chavez



900 Quint



1680 Mission



## B) Facilities - Water Use and Reduction Measures

SFPUC Water is the water provider for all City departments, and the City's lead agency for tracking and reporting water usage. Water is tracked and billed by amount consumed and waste water by amount produced. FY 09-10 is the first year water usage is being reported.

DPW water usages not only include buildings with DPW offices, but also watering of public landscape area such as Sunset Blvd medians.

### DPW's FY 09-10 WATER USE and Waste Water Costs

| FY 09-10         | Water Use / gal. | Cost: Water Use | Cost: Sewage |
|------------------|------------------|-----------------|--------------|
| <b>Quarter 1</b> | 57,325,030.59    | \$165,973       | \$100,481    |
| <b>Quarter 2</b> | 37,603,882.85    | \$122,701       | \$132,042    |
| <b>Quarter 3</b> | 13,473,775.80    | \$40,101        | \$16,446     |
| <b>Quarter 4</b> | 11,281,184.53    | \$33,533        | \$13,613     |
| <b>Total</b>     | 119,683,874      | \$362,308       | \$262,581    |

*\*information provided by SFPUC*

### DPW's FY 2009-10 Top 5 Water Users

| Account    | Address                | Water (Gals) | Cost: Water |
|------------|------------------------|--------------|-------------|
| 5181020000 | <b>2398 Market St</b>  | 13,282,236   | \$36,757.81 |
| 4178910000 | <b>2800 Sunset Bl</b>  | 12,864,852   | \$35,191.80 |
| 3178910000 | <b>2401 Sunset Bl</b>  | 10,114,456   | \$27,336.25 |
| 4095020000 | <b>1 Washington St</b> | 7,345,360    | \$19,553.57 |
| 5679910000 | <b>3000 Lawton St</b>  | 6,199,424    | \$16,525.96 |

### DPW's FY 2009-10 Top 5 Waste Water producers

| Account    | Address                           | Cost: Sewage |
|------------|-----------------------------------|--------------|
| 2519910000 | <b>2323 Cesar Chavez St</b>       | \$27,237.03  |
| 2452120000 | <b>400 Van Ness Av</b>            | \$21,701.53  |
| 4519910000 | <b>2323 Cesar Chavez St</b>       | \$11,787.71  |
| 8819910000 | <b>1680 Mission St</b>            | \$2,720.27   |
| 5618910000 | <b>1801 Jerrold Av (AC Plant)</b> | \$2,331.62   |

*\*information provided by SFPUC*

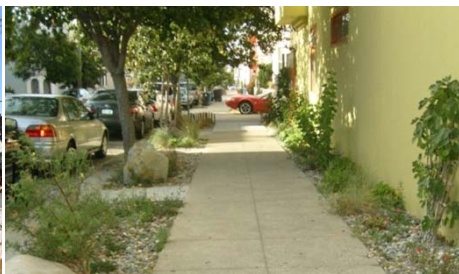
## WATER USE REDUCTION MEASURES

DPW has taken the following actions to reduce water use and divert water from treatment plants:

- Hosted a series of workshops and provided volunteer free resources and grant information to create their own Street Parks. [Street Parks](#) is partnership with the San Francisco Parks Trusts that works with neighborhood groups to create public open-space gardens located on city-owned public rights-of-way.
- Supported transformation of pavement to parks. [Pavement to Parks](#) is a collaborative effort between the Mayor's Office, the Planning Department, the Municipal Transportation Agency, and the Department of Public Works. To date 17 parklets have been constructed.
- Facilitate increased sidewalk landscaping as a means to increase permeable square footage in the public Right-of-Way. [Sidewalk Landscaping Permit](#) Application information, How to Guide, and fact sheets have been posted on DPW web site. Seventy-five (75) more Sidewalk Landscaping permits were issued in FY 2009-10 than in FY 2008-09. A little more than a 47% increase.



[Guerrero Park](#)



Sidewalk Landscaping



Tree Planting

FY 2010-11 DPW established as a strategic objective to increase new permeable surface and began to track permeable square footage construction. During the first two quarters of FY 2010-11 104,335 square feet of permeable surface have been constructed through greening projects, sidewalk landscaping, and planting of new street trees. FY 2010-11 will establish a baseline measurement of permeable square footage constructed.

#### Sidewalk Landscaping Permits

| Permits Issued             | FY 08-09 | FY 09-10 |
|----------------------------|----------|----------|
| Tree Planting - new        | 993      | 1021     |
| Tree Planting -replacement | 365      | 421      |
| Sidewalk Landscaping       | 159      | 234      |

#### Square Feet of permeable surface constructed

|  | FY 2010-11 Q1 & Q2 |
|--|--------------------|
| Greening Projects                          | 101,385            |
| Permits (Sidewalk Landscaping & New Trees) | 2,950              |



Market at Kearny Streets. The project replaced a concrete MUNI crash barrier with landscaped planter

In addition to tracking and increasing the construction of permeable surface, DPW will assess the water usage and waste water production at the top five facilities to identify and implement conservation measures at our facilities as well as through landscaping and irrigation projects.

### C) Fleet – Fuel Use & Reduction Measures

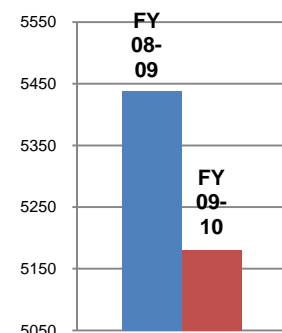
The gasoline and diesel burned to power vehicles on San Francisco roads is the largest source of greenhouse gasses, accounting for 51% of the City's carbon dioxide emissions. The City's goal is to reduce CO<sub>2</sub> emissions from transportation by 963,000 tons annually. To meet this goal it will take reducing vehicle tips and promoting use of clean fuels.

FY 2009-10 DPW emitted 5,180 metric ton of CO<sub>2</sub>e from the consumption of liquid fuels. This is 259 metric tons less than then 5,439 Tons of CO<sub>2</sub> emitted in FY 08-09.

DPW's total **CO<sub>2</sub>E EMISSION FROM FUEL USE** in FY 2009-10 was less than in FY 2008-09

| Bureau             | FY 2008-09        |                       | FY 2009-10        |                      |
|--------------------|-------------------|-----------------------|-------------------|----------------------|
|                    | CO <sub>2</sub> e | COST                  | CO <sub>2</sub> e | COST                 |
| ARCHITECT          | 6.71              | \$2,181.48            | 5.44              | \$1,773.94           |
| BBR TREASURE       | 16.79             | \$5,267.01            | 1.83              | \$584.22             |
| GENERAL OFFICE     | 19.87             | \$7,102.24            | 15.12             | \$4,920.46           |
| ENGINEERING        | 42.96             | \$13,519.61           | 36.48             | \$11,877.04          |
| CONSTRUCTION MGT   | 101.73            | \$32,515.49           | 98.00             | \$31,895.29          |
| BSM                | 104.08            | \$34,189.63           | 97.86             | \$31,880.17          |
| BSSR-SEWER         | 204.16            | \$69,753.19           | 220.75            | \$71,342.21          |
| BLDG REPAIR        | 361.13            | \$111,728.86          | 264.05            | \$85,922.68          |
| BSSR-STREET REPAIR | 515.84            | \$177,330.83          | 611.89            | \$203,931.80         |
| BUF-URB FORESTRY   | 700.85            | \$228,686.32          | 617.48            | \$199,457.21         |
| BSES-ST ENVIR SVC  | 3364.60           | \$1,103,777.39        | 3,211.37          | \$1,037,344.5        |
| <b>TOTALS</b>      | <b>5438.73</b>    | <b>\$1,786,052.04</b> | <b>5,180.27</b>   | <b>\$1,680,929.6</b> |

**CO<sub>2</sub>e Emmitted (metric tons)**

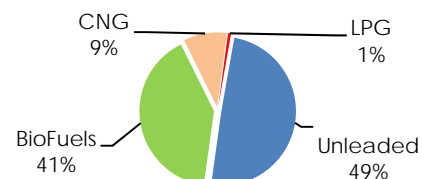


*\*information provided by Central Shops*

FY 2009-10 49% of the liquid fuel consumed by DPW was unleaded gasoline. This is also DPW's major source of total CO<sub>2</sub> emissions.

#### FY 2009-10 DPW's Liquid Fuel Use by TYPE OF FUEL

|              | Consumed (Gals)   | Cost                  | CO <sub>2</sub> Emitted |
|--------------|-------------------|-----------------------|-------------------------|
| Unleaded     | 283,728.26        | \$813,015.04          | 2,499.64                |
| BioFuels     | 232,467.77        | \$743,890.52          | 2,327.48                |
| LPG          | 3,825.82          | \$15,125.77           | 22.16                   |
| CNG          | 54,205.53         | \$108,898.27          | 330.99                  |
| <b>TOTAL</b> | <b>574,227.38</b> | <b>\$1,680,929.60</b> | <b>5,180.27</b>         |

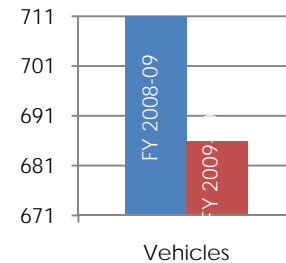


**DPW'S FLEET**

FY 2009-10 DPW's equipment (heavy/small equipment, small off road, and trailers) was added to the fleet inventory.

| FY 2008-09          |           |            |           |            |            | FY 2009-10 |            |           |            |            |             |             |          |              |            |            |
|---------------------|-----------|------------|-----------|------------|------------|------------|------------|-----------|------------|------------|-------------|-------------|----------|--------------|------------|------------|
| Bureau              | Car       | Pick-Up    | Van       | Truck      | TOTAL      | Car        | Pick-up    | Van       | Truck      | sub-total  | Heavy Equip | Small Equip | Off Road | Trailer/Misc | sub-total  | TOTAL      |
| URBAN FORESTRY      | 0         | 40         | 3         | 60         | 103        | 0          | 62         | 3         | 39         | 104        | 3           | 3           | 1        | 12           | 19         | 123        |
| STREET ENVIRON SVCS | 0         | 93         | 28        | 132        | 253        | 2          | 155        | 33        | 73         | 262        | 0           | 16          | 6        | 1            | 23         | 286        |
| STREET USE.&MAPPING | 15        | 18         | 6         | 0          | 39         | 13         | 21         | 6         | 0          | 40         | 0           | 0           | 0        | 0            | 0          | 40         |
| SEWER REPAIR        | 0         | 3          | 0         | 20         | 23         | 0          | 2          | 0         | 22         | 24         | 6           | 0           | 0        | 2            | 8          | 32         |
| STREET REPAIR       | 1         | 15         | 1         | 49         | 66         | 1          | 15         | 1         | 43         | 60         | 7           | 0           | 2        | 4            | 13         | 73         |
| CONSTRUCTION MGMT   | 22        | 36         | 5         | 0          | 63         | 14         | 35         | 5         | 0          | 54         | 0           | 0           | 0        | 0            | 0          | 54         |
| BBR TREAS ISLE VEH  | 0         | 6          | 2         | 4          | 12         | 0          | 0          | 0         | 0          | 0          | 0           | 1           | 0        | 1            | 2          | 2          |
| BUILDING REPAIR     | 0         | 60         | 31        | 24         | 115        | 0          | 79         | 25        | 6          | 110        | 0           | 0           | 0        | 1            | 1          | 111        |
| GENERAL OFFICE      | 7         | 0          | 1         | 0          | 8          | 5          | 0          | 1         | 0          | 6          | 0           | 0           | 0        | 0            | 0          | 6          |
| ENGINEERING         | 6         | 10         | 2         | 0          | 18         | 9          | 10         | 1         | 0          | 20         | 0           | 0           | 0        | 0            | 0          | 20         |
| ARCHITECTURE        | 10        | 0          | 1         | 0          | 11         | 5          | 0          | 1         | 0          | 6          | 0           | 0           | 0        | 0            | 0          | 6          |
| <b>TOTAL</b>        | <b>61</b> | <b>281</b> | <b>80</b> | <b>289</b> | <b>711</b> | <b>48</b>  | <b>379</b> | <b>76</b> | <b>183</b> | <b>686</b> | <b>70</b>   | <b>20</b>   | <b>9</b> | <b>21</b>    | <b>120</b> | <b>753</b> |

DPW's fleet of 753 pieces of equipment and vehicles 257 (34%) are older than 2001. During FY 2010-11 DPW will retire 4 of these vehicles and replace 46 with more energy efficient ones. As DPW reviews the usage of vehicles it will need to take into consideration the special functions and purposes of some vehicles, for example of the 379 pick-up listed in the inventory 123 have special features, such as utility aerial lifts; of the 76 Vans 39 or more than half are cargo vans used for activities such as surveying; and of the 183 trucks listed over 100 are either sweepers, packers, or dump trucks.



FY 2009-10 DPW reduced the number of vehicles by 24 from FY 2008-09 inventory. However, with the addition of equipment to the fleet inventory the overall inventory increased to 753.

DPW the following actions to reduce fuel consumption:

- Reduced street cleaning frequencies and realigned street routes to increase efficiencies.
- Continues to seek volunteers to join the [Adopt-A-Street Program](#). Volunteer actively clean and beautify city streets, helping to reducing the number of DPW trips.
- Continues to seek volunteers to Graffiti Watch Program, who remove graffiti from public property, helping to reducing the number of DPW trips. Co-sponsored in April 2009 The Huddle, a citywide conference to help residents and property owner contribute to ridding the City of graffiti vandalism.

FY 10-11 DPW will continue to evaluate vehicle usage, methods to reduce fuel consumption, and use of alternative fuels.



2010 World Series Celebration



UN Plaza Re Lighting

## 4. OTHER SUSTAINABLE PRACTICES

### A) Zero Waste

The City and County of San Francisco is committed to being a leader in environmental initiatives, including recycling and waste reduction. We set a goal of diverting 75% of our waste from landfill by the end of the calendar year, 2010 and to zero waste by 2020. This ambitious goal is supported by existing policies that require City departments to reuse, recycle, compost, and purchase products with recycled content.

Some of these policies include the Resource Conservation Ordinance (the RCO) and the Universal Recycling and Composting Ordinance. The RCO requires departments to do such things as minimize waste by printing double-sided, appoint a Recycling Coordinator for each department location to lead their waste reduction efforts and purchase products with recycled content, such as office paper with 100% post-consumer recycled content. The Universal Recycling and Composting Ordinance, which took effect on October 21st, 2009, require everyone in San Francisco to separate refuse properly into recyclables, compostable and trash. This means that every City department location must have recycling and composting collection service in place, as well as clearly-marked recycling, composting and waste bins available for employees and visitors to use.

DPW has implemented at all its work locations the 3 bin to separate refuse into recyclables, compostable and trash. Zero Waste Coordinators at each work location have been identified to monitor their use and recommend improvements.



FY 10-11 began conducting quarterly meetings of DPW's Zero Waste Coordinators to share determine if department wide additional program improvements can be made, DPW completed a Waste Questionnaire for each of DPW work locations, created DPW electronic procedure manual on SharePoint, initiated electronic signatures of documents, and send contract and construction materials lab reports electronically.

Waste Questionnaires for DPW offices at City Hall, 2099 Kearny, 2323 Cesar Chavez, 30 Van Ness, 1680 Mission, and 875 Stevenson are attached in Appendix A.

### B) Employee Commute

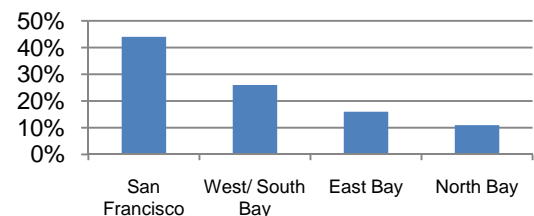
In San Francisco, the transportation sector accounts for 51% of greenhouse gases emitted into the atmosphere. With approximately 27,000 employees, the City and County of San Francisco (CCSF) has a significant impact on air quality in the area. Therefore, it is imperative that CCSF employees use alternative transportation for their commute in order to improve air quality and to meet both city and state carbon dioxide reduction goals.

In order to begin the process of reducing the impact that an employee's commute has on air quality, a complete understanding of how each employee gets to and from work is necessary. The best tool to gather this information is through a transportation survey.

DPW's 1070 employees live approximately in the following locations:

- 44% in San Francisco
- 26% in West and South Bay area (i.e. Daly City, South City, San Mateo, and San Jose)
- 16% in the East Bay area (i.e. Livermore, Fremont, Richmond, Concord, Berkeley, and Oakland)
- 11% in the North Bay area (i.e. Martinez, Vallejo, Sonoma, Petaluma, Santa Rosa)

**DPW staff Comute from**



DPW conducted a transportation survey in the fall of 2010 (October – November). The Department of the Environment provided the questions. The survey was conducted both on-line through Survey Monkey and a tabling event at DPW's operations yard. This year additional information on the computer benefits program, ride share, and the Great Race for Clean Air to encourage use of alternative transportation was provided by the Department of Environment at tabling events setup at four of DPW's work locations: 2323 Cesar Chavez, 1680 Mission, 30 Van Ness, and 875 Stevenson.

FY 201-11 there were 357 survey participants or about 30% of all DPW Staff. This is significant improvement over last fiscal year's survey in which there were only 70 participants. However, there was no significant change in enrollment in the Commuter Benefits Program. The Commuter Benefits is a federally approved program that allows employee pre-tax deductions up to \$230 per month to pay for transit and vanpool expenses.

DPW Employees Enrolled in the Commuter Benefits

|          | July | Aug | Sept | Oct | Nov | Dec | Jan |
|----------|------|-----|------|-----|-----|-----|-----|
| FY 09-10 | 161  | 159 | 163  | 156 | 165 | 168 | 163 |
| FY 10-11 | 156  | 164 | 160  | 152 | 167 | 161 | 163 |

The FY 2010-11 survey results indicated that of the 357 employees completing the survey in the fall 2010:

| Survey Participants Main Work Location | Commuter Benefits Enrollment |          |
|--|------------------------------|----------|
|  | FY09-10                      | FY 10-11 |
| 1680 Mission                           |                              | 10.5%    |
| 2099 Kearny                            | 1%                           | 0.3%     |
| 2323 Cesar                             | 10%                          | 44.8%    |
| 30 Van Ness                            | 61%                          | 23.5%    |
| 875 Stevenson                          | 4%                           | 12.0%    |
| City Hall                              | 13%                          | 2.5%     |
| Other Locations                        | 10%                          | 6.4%     |

| Commute included   | FY 09-10 |  | FY 10-11 |  |
|--------------------|----------|--|----------|--|
|                    |          |  |          |  |
| Walk               | 20%      |  | 2.6%     |  |
| Bike               | 4%       |  | 4.5%     |  |
| Bus/Train / Ferry  | 48%      |  | 30.8%    |  |
| Van/Car Pool/Taxi  | 12%      |  | 14.0%    |  |
| Motorcycle/Scooter | NA       |  | 1.6%     |  |
| Telecommute        | NA       |  | 0.5%     |  |
| Drive Alone        | 16%      |  | 46%      |  |



| Reasons for driving alone  |        |
|--|--------|
| Driving alone is more convenient, flexible, less stressful       | 44.19% |
| I need to make stops to and/or from work (e.g. pick up/drop off) | 38.37% |
| Public transit does not match my route/schedule                  | 25.58% |
| I don't feel safe using alternative forms of transportation      | 11.05% |
| It's difficult to find people to carpool/vanpool with.           | 12.79% |
| Adverse weather conditions (e.g. rain, extreme heat/cold)        | 9.88%  |
| I use my vehicle for work  | 8.14%  |
| I believe driving alone saves money                              | 5.23%  |
| Other  | 9.88%  |

| One Way Commute Time | FY 09-10 |  | 10-11 |  |
|----------------------|----------|--|-------|--|
|                      |          |  |       |  |
| 0-10 minutes         |          |  | 10%   |  |
| 10-30 minutes        | 30%      |  | 48%   |  |
| 30-50 minutes        | 56%      |  | 24%   |  |
| Greater than         | 14%      |  | 19%   |  |



Yard Bicycle Shed

FY 2009-10 DPW took the following action to encourage staff to use alternative transportation:

- Initiated a shuttle service from BART to the Yard (2323 Cesar Chavez)
- Constructed a bicycle shed at the Yard
- Created a bicycle pool for BSM staff at 875 Stevenson
- Hosted information table about computer benefits at 875 Stevenson, 30 Van Ness, 1680 Mission, and 2323 Cesar Chavez
- Participated in the Great Race for Clean Air. DPW won the award highest percent of staff participation for an organization with more than 1,000 employees.



### C) Green Purchasing

The climate impact of all materials and products is not currently tracked. However, we know that, from a life cycle perspective, consumption of materials--"stuff", accounts for 44% of Americans carbon footprint. More information can be found at: [http://www.epa.gov/oswer/docs/ghg\\_land\\_and\\_materials\\_management.pdf](http://www.epa.gov/oswer/docs/ghg_land_and_materials_management.pdf). By purchasing environmentally conscious products we are also helping to reduce our exposure to toxic chemicals and keeping our water supplies clean!



**Guidelines for Green Purchasing:** City funds may only be used to purchase REQUIRED items in the SF Approved Catalog. This ordinance applies to all purchases: direct, service contract, and delegated/Prop Q. All items in the SF Approved Catalog meet high standards set by the Department of Environment. Many items were tested by City staff & meet standards that are more rigorous than eco-labels in protecting our health & environment.

The Department of Environment reports annually on city departments' green purchasing. For reporting purposes products are grouped into nine major categories: Computers, foodware, janitorial cleaners, janitorial papers, lighting (blubs, lamps, and ballasts), Multifunction Printers, office paper, office supplies, and toners. While the 2009 Annual report provides information on citywide purchases of green products in all nine categories, information on department purchases are categorized into two groups (1) janitorial papers and cleaners and (2) lighting.

The [2009 San Francisco Green Purchasing Program Annual Report](#) reported for FY 2009-10 80% of DPW purchases of janitorial papers and cleaners were green products and that 74% of lighting products purchased were green products. 26% of the lighting purchases were for limited use ballasts and would require retrofitting the electrical system to use green type ballasts.

The Department of Environment scored DPW's 2010 Buy Green efforts 1.5 out of a possible 2. DPW's 2010 Buy Green Scorecard is attached as Appendix B. FY 2010-11 DPW will review our purchasing procedures and forms to encourage review of SF Approved List [SF Approved](#) before purchasing.

#### D) Information Technology

Power consumption associated with personal computers is the City's single largest use of energy for the City's IT operations. Personal computers are critical to the productivity of City employees. However, the energy consumption associated with personal computers can be mitigated by (1) purchasing energy efficient computers and (2) ensuring that power management tools are in place so that personal computers consume energy only when in use.

Currently, the City has a strong, well-enforced policy to ensure that new personal computers are energy efficient. Based on a policy adopted by the Committee on Information Technology (COIT) in response to Executive Directive (08-01), all personal computers must meet the [Electronic Product Environmental Assessment Tool](#) (EPEAT) Gold standard. In addition to other environmental attributes, EPEAT Gold requires all personal computers to be Energy Star compliant (05-104). The EPEAT Gold standard is enforced through the CIO's review of IT purchases.

During FY 2009-10 DPW has taken the following actions to reduce IT energy use:

- Created a centralized Help Desk section to better respond to user requests
- Reduced the number of servers by using virtualization
- Consolidated and centralized the infrastructure

## 5. CARBON SEQUESTRATION / URBAN FOREST

Along with actions taken to reduce output of greenhouse gases it is also important that actions be taken wherever possible to actively take existing emissions out of the air, this is called "sequestration".

Trees, wetlands, and other complex ecosystems all actively sequester emissions. These are called "carbon sinks". In addition to the climate benefits they provide, the trees and ecosystems have other "services" such as storm water mitigation, shore protection, erosion prevention, and air filtration to name a few. As a municipality, the City manages our urban infrastructure in order to provide security and a good quality of life to our citizens. It is therefore important to recognize that in addition to the global climate benefit they provide our urban carbon sinks also actively provide real and immediate benefits to us locally. In other words, stewardship of urban forests and other urban ecosystems is an essential piece of public health, safety and infrastructure management.

### STREET TREES

DPW maintains about 40,000 of the 108,000 street trees in San Francisco, mostly along major transportation corridors and within some redevelopment areas. In addition to pruning trees on an as-needed basis, DPW provides routine maintenance. These trees are pruned between two to seven years, depending on the trees' characteristics and condition. It can take between one to six months to prune an entire street.



Additionally, many of DPW projects, such as Great Streets Program and greening projects seek to enhance the city ability to sequester emission though landscaping, use of permeable pavement, and catching rain water for irrigation.

### URBAN GLEANING PROGRAM

DPW is working with San Francisco residents and businesses to help collect and distribute food grown from trees and community gardens for distribution to shelters, food banks and other communities of need. You can participate by registering your fruit trees and coordinating with DPW as a part of the Urban Gleaning Program. In FY 2009-2010 DPW collected 456 pounds of fruit and just in the first two quarters of FY 2010-11 (July -Dec) over 1,651 pounds have been collected.



### DIG IN SAN FRANCISCO

DPW and the [San Francisco Parks Trust Street Parks Program](#), in partnership with [The American Community Gardening Association](#), [Woodbridge by Robert Mondavi](#), and [Recology](#) conducted two Dig In San Francisco, a free workshop on sustainable gardening. Sessions included composting, planting, maintenance techniques, and demonstrations from a guest chef on how to cook fresh garden vegetables. More than 100 00 San Francisco gardeners, gleaners and vegetable growers gathered to learn about urban horticulture techniques and swap civic food cultivation secrets as a part of the semi-annual sustainable gardening.



### STREET PARKS PROGRAM

Street Parks is a partnership between DPW, the [San Francisco Parks Trust](#) and the residents of San Francisco to develop and create community managed gardens on public rights of way owned by DPW. [Grey 2 Green Workshops](#) are held at the County Fair Building to provide information and guide participants through the steps needed to transform sidewalks into gardens and parks.

The Street Parks program transforms vacant lots into gardens, trash and illegal dumping spots into greenery, and hillsides into parks. Since its inception in 2004, 35 community gardens have been developed and 64 more are in progress. View a list of completed Street Parks and gardens in progress [here](#).



Leland Ave Streetscape

## GREEN BUILDINGS

DPW designs buildings, new facilities and major remodels to comply with the City's Environment Code, which includes compliance with Leadership in Energy and Environmental Design Certification (LEED) and its various elements including, location and access to public transit to reduce greenhouse gas emissions; increased thermal envelope insulation, mechanical equipment and lighting efficiency to reduce energy consumption; building commissioning and enforcement of LEED requirements through construction to assure performance; and re-use and recycling of construction debris to reduce waste.

DPW's Policies and Procedures and Standard Contract Documents have been revised to incorporate these requirements with references to the City's Environment Code or other regulations as required. Today, DPW has over 60 professionals already LEED's accredited.

FY 2009-10 construction began on four branch libraries: Visitation Valley, Ortega, Merced and Anza. All four were designed to meet LEED Silver Certification are scheduled to open in FY 2010-11. LEED requirements for tenant improvements were also incorporated into the Offices of the Bureau of Project management at 30 Van Ness which features a modular glazing system designed to be re-useable and to maximize use of day light. The work was designed and constructed by DPW. Tenant improvements also continue at One South Van Ness. The project staff is aiming for a LEED Silver Certification, which includes the replacement of the roof with a living roof with the ability to harvest rain water for irrigation and beekeeping.



Parkside Library  
LEED Silver Certification



1 So Van Ness Living Roof



30 Van Ness Tenant Improvement

## 6. COMMUNITY WIDE IMPACT

In addition to the many of DPW's programs that contribute to greening the city's infrastructure, a fundamental DPW business practice has been to enable and empower San Franciscans to improve and care for the city's infrastructure. These volunteer programs exemplify the concept of act locally and help reduce trips and CO<sub>2</sub>e emissions.

### Graffiti Watch

Graffiti Watch is a partnership between the City and its residents to keep graffiti off our streets and sidewalks for a safer and cleaner San Francisco. Graffiti Watch empowers individuals or groups to take ownership of a heavily-tagged four-block area in their neighborhood and remove graffiti from public property such as utility poles, mailboxes, trash receptacles and other street furniture. In return, DPW provides training and tools.

FY 2009-10, 28 new members joined increasing the total number of volunteers to 266.



### Adopt-A-Street

The Adopt-A-Street Program is a partnership between the City and its merchants and residents. Groups or individuals agree to adopt an area and take responsibility for keeping the street, sidewalk, and storm drain clean. In return, DPW provides free street cleaning supplies, and litter and compostable leaf bag pickup.

FY 2009-2010, 221 new members joined increasing the total number of volunteers to 2157, since the programs beginning in 2008.





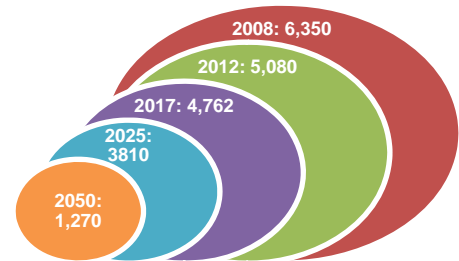
## 7. DPW'S ENVIRONMENTAL GOALS

DPW's [2009-2012 Strategic Plan](#) established as a strategic goal to **Ensure safe, clean, and green infrastructure and public right-of-way** with the objective to **Green the city's infrastructure and DPW's business practices**. DPW's Climate Action Plan is integral in DPW achieving its strategic goals.

DPW's environmental goals are to:

- Reduce our operational CO<sub>2</sub>e emission
- Achieve zero waste
- Ensure that all DPW building designed, managed, maintained and construction projects strive to meet LEED Gold Standards.
- Green DPW's business practices, including the use of construction materials and construction methods.

DPW's CO<sub>2</sub>e (metric tons) Emission Goals



DPW is committed to reducing our carbon footprint and to contributing to reducing our community's emissions through smart policies such as increase uses of efficient clean energy, clean fuels and public transportation (this includes biking, walking and taxi's too!); enhancing public education, planting and caring for trees and community gardens; and greening our business practices to also achieve zero waste.

The development and implementation of the department's climate action plan is essential to accomplishing DPW Strategic vision to be, **"A world class public works organization that contributes to making San Francisco a beautiful, liable, vibrant and sustainable city."**