

***Status of Green Operations Action Plan  
&  
Calendar Year 2011 Emissions Inventory***

***Gulf of the Farallones National Marine Sanctuary  
Sanctuary Advisory Council (SAC) Meeting***

***Upper Fort Mason, San Francisco, CA  
23 August 2012***

# Background

- **Goal:** Improve the energy conservation and efficiency of the Gulf of the Farallones National Marine Sanctuary (GFNMS) Crissy Field Headquarters
- **By implementing:** Green Operations chapter of the GFNMS Ocean Climate Initiative Action Plan
- **Recommendations from Aug 09 SAC Meeting:**
  - Adopt and implement Action Plan at GFNMS
  - Distribute plan to all sanctuaries
  - Present status of Green Operations Plan each year
  - Conduct & present emissions inventory each year

# Green Operations Plan

- Tracked status of all 136 actions
- Five categories: Energy (39), Transportation (26), Water (21), Waste (41), and Education & Outreach (9)
- Each category has specific actions, a measurable reduction target, evaluation metrics, and potential partners.
- Used CLIP emissions inventory to determine if reduction targets were met.

# Action Plan Summary Results

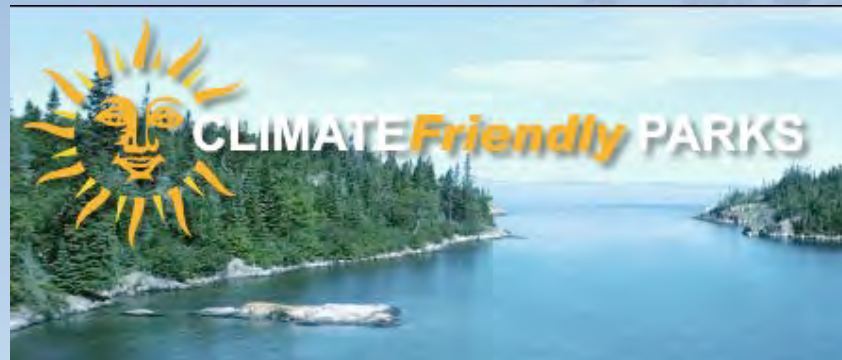
**Total - 136 Actions**

<b>Action Plan Status</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>%</b>
Completed	13	26	28	21
Ongoing	61	59	65	48
In Progress	31	31	21	15
No Action	25	15	13	10
Unable	6	5	9	7

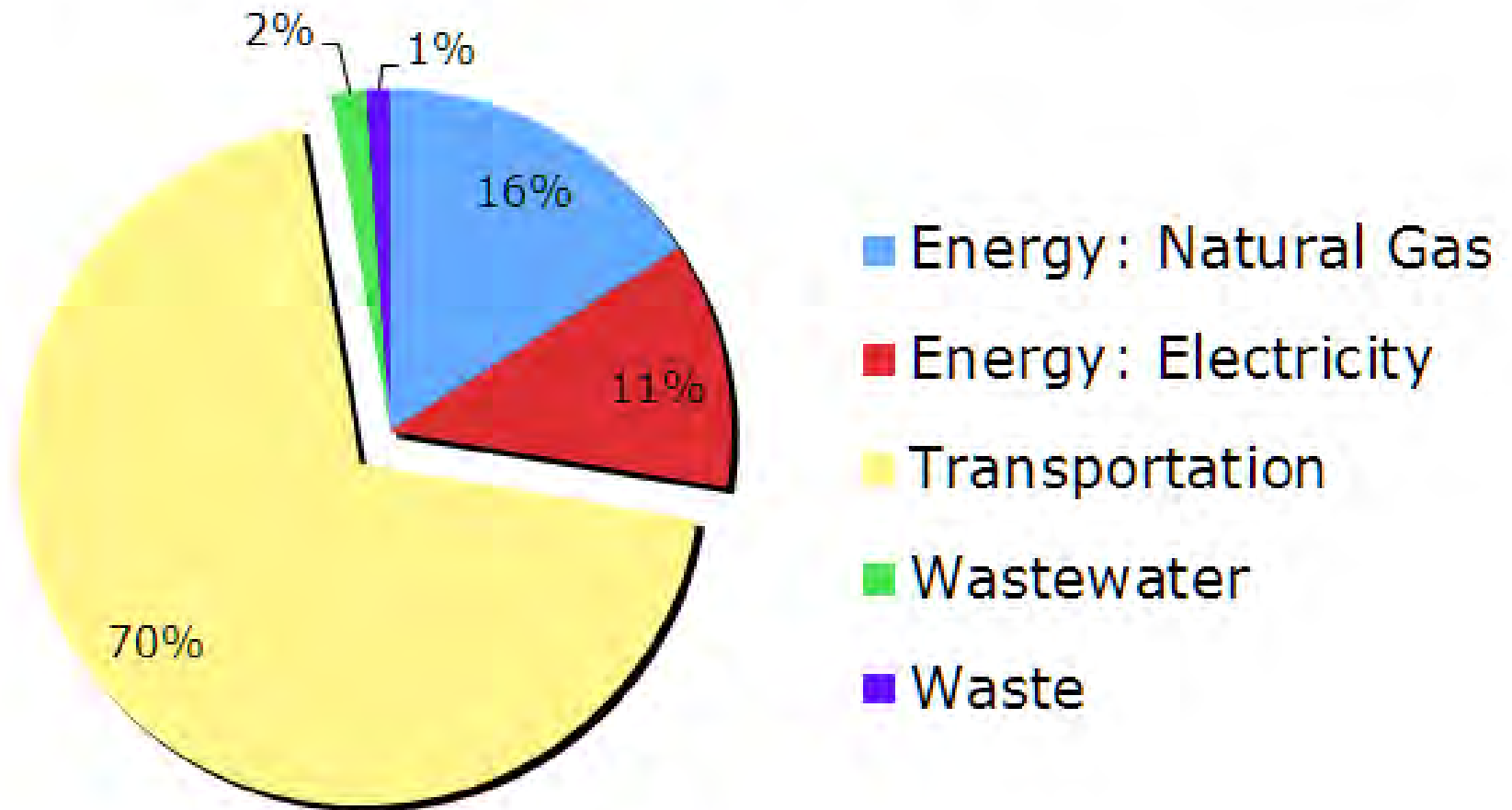
**Made progress on 83% of actions**

# 2011 Emissions Inventory

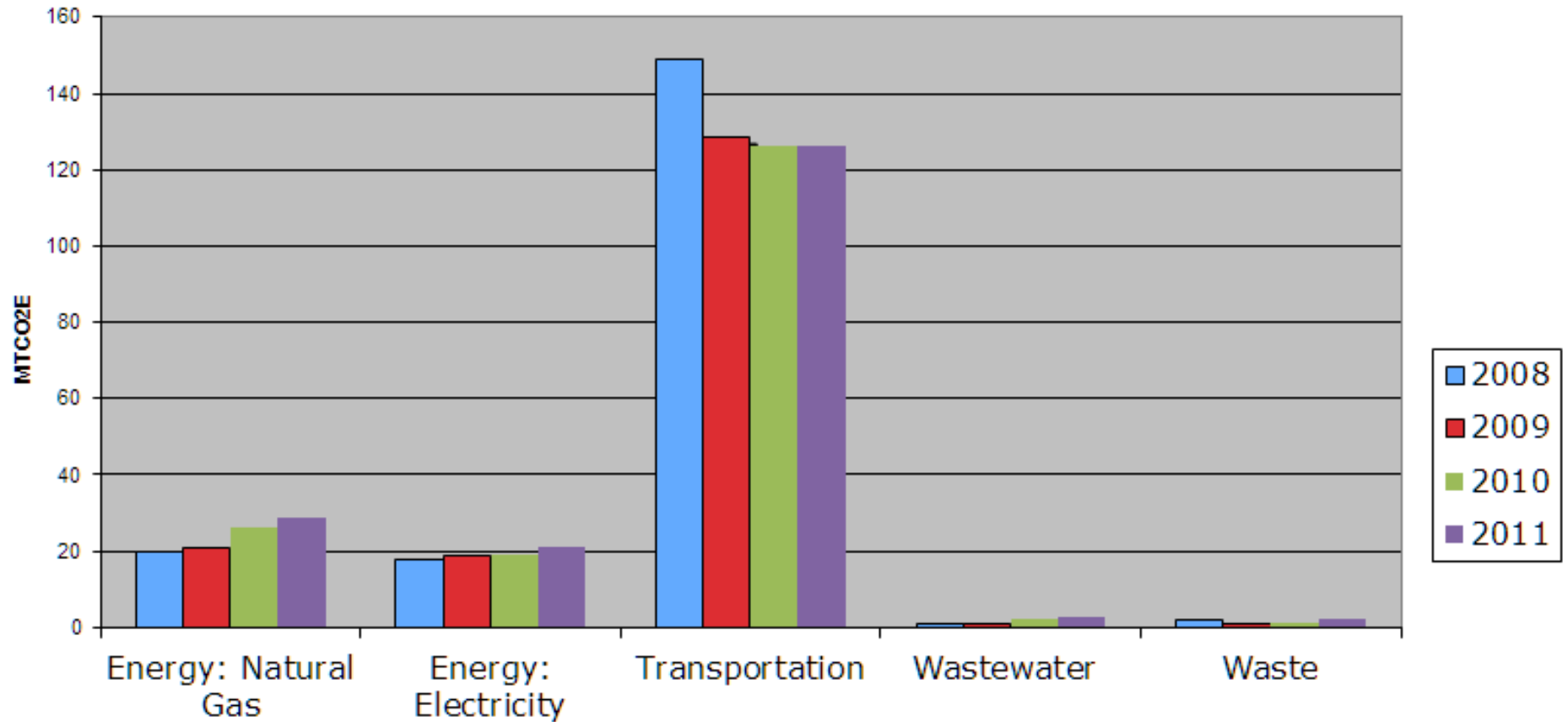
- Measured energy (natural gas and electricity), transportation, wastewater, and solid waste
- National Park Service CLIP Tool
- Derived per capita estimate



**2011**  
**Emissions as Percent of Total**  
**Gulf of the Farallones National Marine Sanctuary**



**2008-2011**  
**Gross Emissions by Sector**  
**Gulf of the Farallones National Marine Sanctuary**



# Gross Emissions by Year, Sector, and Per Capita (MTCO<sub>2</sub>E)

Year	Stationary Combustion	Purchased Electricity	Mobile Combustion	Wastewater Treatment	Solid Waste	Gross Emissions	Number of Staff	Per Capita Emissions
2008	20	18	149	1	2	190	23	8.26
2009	21	19	128	1	1	171	23	7.43
2010	26	19	126	2	1	174	24.8	7.02
2011	29	21	126	3	2	180	27.3	6.59



# Energy Efficiency

## 39 Actions

**Challenges-** Historic building codes, vampire loads, new building

**Successes-** Heater cleaned, Energy Star Fridge & dishwasher

Completed	7	18%
Ongoing	16	41%
In Progress	7	18%
No Action	4	10%
Unable	5	13%



**TARGET:** ↓ 3% annually or 30% by 2020.

**RESULTS:** ↑ 50% (gas) & 17% (electric) since 2008 (27% of 2011 emissions)

# Transportation Management

## 26 Actions

**Challenges-** Presidio Trust transit, Muni, Bikes, HMB Van

**Successes-** HMB Van, Carpool Parking, Much less Air Travel

Completed	7	24%
Ongoing	10	40%
In Progress	6	24%
No Action	1	4%
Unable	2	8%



**TARGET:** ↓ 5% annually or 50% by 2020

**RESULTS:** ↓ 15% since 2008 (70% of 2011 emissions)

Car/Boat - 0% Air - down 40% Bus - down 50%

# Water Management

## 21 Actions

**Challenges-** Sprinklers, recycled water source, dry winter, “historic landscape”

**Successes-** High-efficiency toilets, utilities work funded, dishwasher, leaks

Completed	3	15%
Ongoing	8	40%
In Progress	4	20%
No Action	6	25%
Unable	0	0%



**TARGET:** ↓ 2% per yr or 20% by 2020

**RESULT:** ↑ 100% since 2008 (2% of 2011 emissions)

# Waste Management

## 41 Actions

**Challenges-** Required GSA vendors & shipping

**Successes-** Reusable meeting supplies, composting, junk mail

Completed	10	25%
Ongoing	26	63%
In Progress	2	5%
No Action	1	2%
Unable	2	5%



**TARGET:** ↓ 95% by 2015 and 100% by 2020.

**RESULT:** ↓ 50% since 2008 (1% of 2011 emissions)

# Education & Outreach

## 9 Actions

**Challenges-** Prioritizing and linking strategies to emissions

**Successes-** Signage, Green Operations culture, planning exhibits

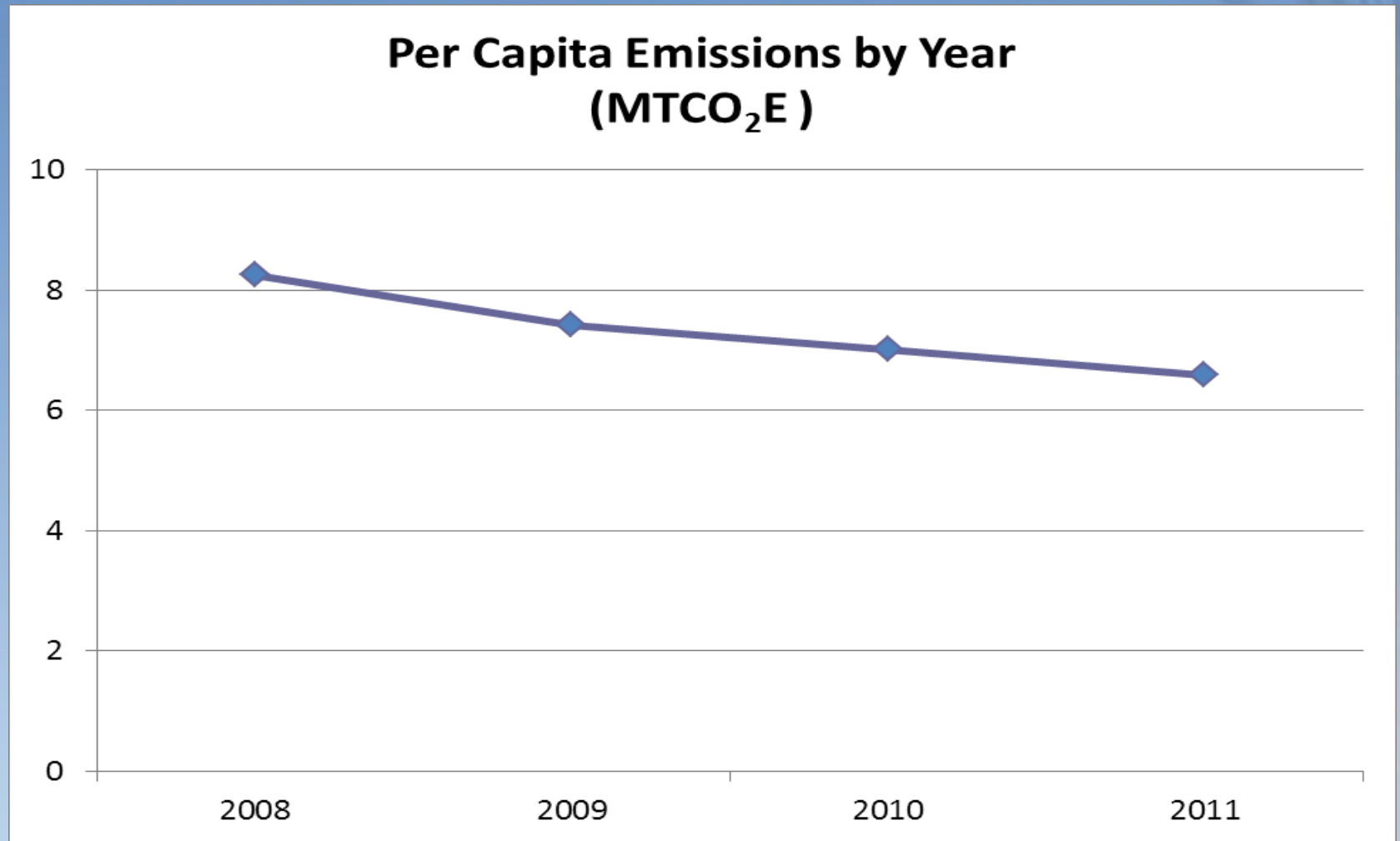
Completed	1	11%
Ongoing	5	56%
In Progress	2	22%
No Action	1	11%
Unable	0	0%



**TARGET:** A measurable increase in environmental education and outreach specific to climate change.

**RESULT:** 8 of 9 actions addressed

# Per Capita Metric Tons Carbon Dioxide Equivalent



**REDUCED 1.67 (MTCO<sub>2</sub>E) per capita**

# Observations

- Occupants increased from 23 to 27.3 since 2008
- Number of buildings doubled since 2008
- Meeting transportation and waste targets
- Another government vehicle in 2012 inventory
- Electricity, natural gas, and water use increased in 2011 with new building, but should level in 2012
- Challenging to correlate individual actions to reduction targets
- Per Capita is good metric for dynamic campus

# More Information

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# Definition of Carbon Dioxide Equivalent

## Carbon Dioxide Equivalent (CO<sub>2</sub>e):

The universal metric unit of measurement used to indicate the global warming potential of each of the six greenhouse gases. Carbon dioxide, a naturally occurring gas that is a byproduct of burning fossil fuels and biomass as well as land-use changes and other industrial processes, is the reference gas against which the other greenhouse gases are measured.

# GFNMS Crissy Field Campus Update

## **FY10**

- Occupied Ocean Climate Center (Residence) in Oct 2010

## **FY11**

- Funded Utilities upgrade / agreement
- Campus design ongoing - Lifeboat Station, Shop/Garage, Exhibits and Landscape

## **FY12**

- Campus design ongoing
- Plan and design Utilities upgrade

## **FY13**

- Campus painting / lead remediation
- Utilities construction

# Highlights

- ✓ Working Group formed to draft Green Operations Plan
- ✓ SAC approved plan and requested that it be adopted by site, and forwarded to all sanctuaries
- ✓ Site adopted Green Operations Plan & distributed nationally
- ✓ Stellwagen Bank completes emissions audit
- ✓ Monterey, Thunder, Fagatele Bay, USFW, PRBO inquire about plan
- ✓ West Coast Region Ocean Acidification Team adopts strategies
- ✓ 2008-11 Emissions Inventories completed

# 2011 Transportation Emissions as Percent of Total

