



CLIMATE *Friendly* PARKS

San Francisco Maritime National Historical Park Action Plan

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SAN FRANCISCO MARITIME NATIONAL HISTORICAL PARK BECOMES A CLIMATE FRIENDLY PARK

As a participant in the Climate Friendly Parks program, San Francisco Maritime National Historical Park belongs to a network of parks nationwide that are putting climate friendly behavior at the forefront of sustainability planning. By conducting an emission inventory, setting an emission reduction goal, developing this Action Plan, and committing to educate park staff, visitors, and community members about climate change, San Francisco Maritime National Historical Park provides a model for climate friendly behavior within the Park Service.

San Francisco Maritime National Historical Park, as a member of the Pacific West Region, is involved in the first regional effort in the National Park Service to become carbon neutral. The Region has developed a vision of having its park operations be carbon neutral and of having all of its parks be a member of the Climate Friendly Parks Program by 2010.

This Action Plan identifies steps that San Francisco Maritime National Historical Park can undertake to reduce greenhouse gas (GHG) emissions and adapt to current and future impacts of climate change. The plan presents the Park's emission reduction goals, and associated reduction actions to achieve the Park's goals. Strategies and action plan items were developed by working groups at San Francisco Maritime National Historical Parks' Climate Friendly Parks (CFP) Workshop.¹ While the plan provides a framework needed to meet the Park's emission reduction and adaptation goals, it is not intended to provide detailed instructions on how to implement each of the proposed measures. The Park's Environmental Management System will describe priorities and details to implement these actions, integrating emission reduction strategies into regular park operations and activities.

San Francisco Maritime National Historical Park aims to reduce park operations:

- Energy use emissions to 35 percent below 2008 levels by 2016.
- Transportation emissions to 35 percent below 2008 levels by 2016.
- Waste emissions to 30 percent below 2008 levels by 2016 through waste diversion and reduction.

To meet these goals, the Park will implement strategies proposed in this plan that relate to the Park's current and future emission inventories. Specifically, the plan recommends four strategies:

Strategy 1: Identify and implement mitigation actions that the Park can independently take to reduce GHG emissions resulting from activities within and by the Park

Strategy 2: Increase climate change education and outreach efforts

Strategy 3: Monitor progress with respect to reducing emissions and preserving natural and cultural resources and infrastructure and identify areas for improvement

THE CHALLENGE OF CLIMATE CHANGE

Climate change presents significant risks and challenges to the National Park Service and specifically to San Francisco Maritime National Historical Park. Scientists cannot predict with certainty the general severity of climate change nor its impacts. Average global temperatures on the Earth's surface have increased about 1.1°F since the late 19th century, and the 10 warmest years of the 20th century all occurred in the last 15 years. The single leading cause of this warming is the buildup of GHGs in the atmosphere—primarily carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O)—which trap heat that otherwise would be released into space.

¹ Original notes from these workshops, including detailed action items not presented in the final plan have been archived by San Francisco Maritime National Historic Park and are available upon request.

The continued addition of CO₂ and other GHGs to the atmosphere will raise the Earth's average temperature more rapidly in the next century; a global average warming of 4-7°F by the year 2100 is considered likely.² Rising global temperatures will further raise sea levels and affect all aspects of the water cycle, including snow cover, mountain glaciers, spring runoff, water temperature, and aquatic life. Climate change is also expected to affect human health, crop production, animal and plant habitats, and many other features of our natural and managed environments.

According to a USGS study, there have been steady increases in sea level in the San Francisco Bay Area over the last 150 years. Since 1850, sea level rise has been rising 2.13 millimeters per year. Rise in sea level threatens coastal land, wetlands, groundwater systems, infrastructure (built environment) and human population. San Francisco coasts could face shoreline retreat, beach loss, and cliff retreat.

Climate change presents significant risk to San Francisco Maritime National Historical Park, increasing temperatures, and changing weather patterns may alter park ecosystems, changing vegetation communities, habitats available for species, and the experience of park visitors. Local affects, such as changes in rainfall, fog and storm frequency and intensity, and sea level rise would impact the resources at San Francisco Maritime National Historical Park. The resources of this park include Hyde Street Pier, the Maritime Museum Bathhouse Building, and six National Historic Landmark vessels. To prevent damage, the San Francisco Maritime National Historical Park is implementing management decisions to plan, respond and adapt.

² IPCC 2007. Climate Change 2007: The Physical Science Basis. Intergovernmental Panel on Climate Change, Geneva Switzerland. Available online at < <http://ipcc-wg1.ucar.edu/wg1/wg1-report.html>>

GREENHOUSE GAS EMISSION INVENTORY AT SAN FRANCISCO MARITIME NATIONAL HISTORICAL PARK

Naturally occurring GHGs include CO₂, CH₄, N₂O, and water vapor. Human activities (e.g., fuel combustion and waste generation) lead to increased concentrations of these gases (except water vapor) in the atmosphere.

Greenhouse Gas Emissions

GHG emissions result from the combustion of fossil fuels for transportation and energy (e.g., boilers, electricity generation), the decomposition of waste and other organic matter, and the volatilization or release of gases from various other sources (e.g., fertilizers and refrigerants). The main sources of energy consumed at San Francisco Maritime National Historical Park are natural gas and purchased electricity. Diesel use specifically for watercrafts is a unique source of emissions in the Bay Area network parks.

In 2008, GHG emissions within San Francisco Maritime National Historical Park totaled 492 metric tons of carbon dioxide equivalent (MTCO₂E). This includes emissions from the Park's operations. For perspective, a typical single family home in the U.S. produces approximately 12 MTCO₂ per year.³ Thus, the Park's emissions are roughly equivalent to the emissions from the energy use of 42 households each year.

The largest emission sector for San Francisco Maritime National Historical Park is energy, totaling 356 MTCO₂E (Fig 1 and Table 1). The transportation emissions are very low because there are no visitor vehicle emissions, visitors are unable to drive within the boundaries of the Park. The Park's fleet includes 3 electric powered utility vehicles for grounds maintenance and a bio-diesel powered lawnmower. The high volume of visitors in this park results in a large amount of waste generated. There is potential to improve the recycling and composting programs at San Francisco Maritime National Historical Park to improve the waste diversion rate.

³ U.S. EPA, Greenhouse Gases Equivalencies Calculators – Calculations and References, Retrieved , Website: <http://www.epa.gov/RDEE/energy-resources/calculator.html>

FIGURE 1

San Francisco Maritime National Historical Park 2008 Total Greenhouse Gas Emissions by Sector

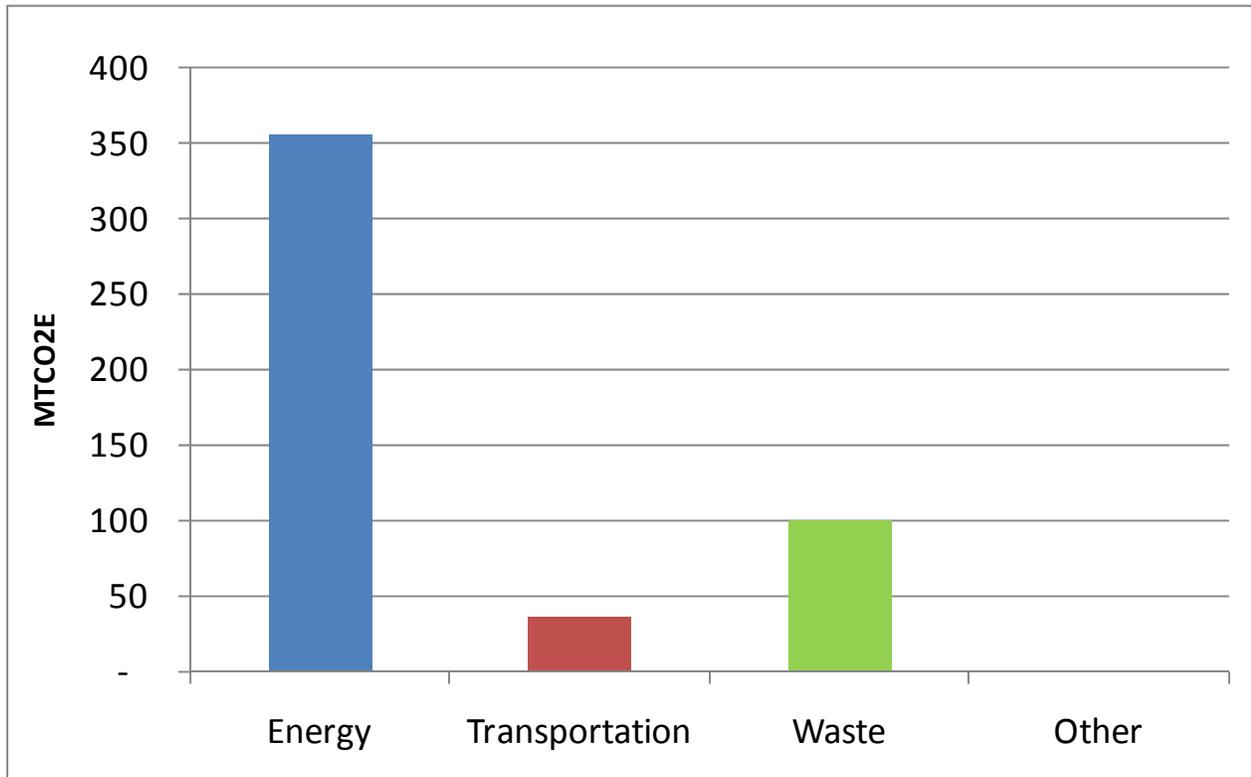


TABLE 1

San Francisco Maritime National Historical Park 2008 Total Greenhouse Gas Emissions by Sector and Source

Energy	356
Stationary Combustion	176
Purchased Electricity	180
Transportation	36
Mobile Combustion	36
Waste	101
Landfilled Waste	80
Wastewater	21
Other	-
Total	492

Note - Totals may not sum due to rounding

Not applicable data sources represent by "-"

San Francisco Maritime National Historical Park Responds to Climate Change

The following actions were developed during the CFP workshop hosted by San Francisco Maritime National Historical Park on October 27th and 28th, 2009, in order to meet the Park's climate change mitigation goals.

STRATEGY 1: REDUCE GHG EMISSIONS RESULTING FROM ACTIVITIES WITHIN AND BY THE PARK

San Francisco Maritime National Historical Park has developed a set of actions that the Park is committed to taking in order to reduce emissions from activities within and by the Park. These strategies have been prioritized based on a qualitative assessment of a set of criteria including: emission reduction potential, cost-effectiveness, feasibility, co-benefits, regional impact, and ability to rapidly implement. Actions that San Francisco Maritime National Historical Park will take have been presented below in order from highest to lowest priority within each sub-category.

Energy Use Management

Emission Reduction Goal: Reduce park operations energy use emissions to 35 percent below 2008 levels by 2016.

Improving energy efficiency and implementing alternative energy sources reduces park-based fuel use, lowers GHG emissions, decreases electricity consumption, and offers monetary benefits for the Park. Emissions inventory results indicate that 72 percent of the Park's GHG emissions from park operations are from energy consumption. Consequently, San Francisco Maritime National Historical Park identified actions it will take to reduce energy-related emissions. Presented below are the actions that are currently under way and which comprise the Park's progress to date, as well as those actions the Park will pursue.

Progress to Date

- Conducted a park-wide upgrade to provide smart strips at all multi-appliance locations to shut off all appliances, computers, copiers, etc. via one grid.
 - Program in place, funding needed to finish all power strips in park – look into PGE Rebates.
- Set the default settings on all computers and copiers to double-sided printing.
- Referring to the Federal Energy Management Program guidelines for purchasing energy efficient appliances in accordance with federal procurement procedures.
 - Ensuring that all new electronic/office equipment is ENERGY STAR qualified.



Energy Use Management – Planned Actions

1 Promote energy efficiency and energy conservation in the Park through behavioral change

- Continue to incorporate operations and maintenance schedule into environmental management systems to make sure scheduling is followed.

- Work with maintenance staff to address energy losses from steam, water and air leaks, uninsulated lines, maladjusted or inoperable controls, and other losses from poor maintenance.
- Encourage energy conservation in all park activities through actions including turning off lights and other electronics, enabling computer and monitor “hibernate” settings, using natural lighting, and reducing water use.
 - Develop tips on conserving energy.
- Develop a mandatory energy-saving training program.
- Evaluate all existing buildings and resident housing for thermostats and upgrade to programmable thermostats.
- Ensure all computers’ power management settings follow current ENERGY STAR recommendations. Set computers to enter system standby or hibernation mode after 30 minutes of inactivity and monitors to enter sleep mode after 15 minutes of inactivity.

2 Upgrade lighting options

- Upgrade all light bulbs in parks to energy efficient bulbs.
 - Use high intensity discharge (HID) lamps and/or fluorescent lights (T-8’s or T5’s with electronic ballasts) in all fixtures used for more than 3 hours a day.
 - Replace incandescent light bulbs with Compact Fluorescent Light (CFLs) bulbs where appropriate.
- Install lighting controls such as motion sensors and make sure that a recommissioning schedule is in place to ensure appropriate use.
- Install energy efficient exit signs, street lighting, and traffic signals.

3 Heating, Ventilation, and Air Conditioning (HVAC)

- Develop and implement a monthly HVAC inspection schedule for coils, filters, dampers, and fans and maintenance schedule that ensures timely replacement and cleaning.

4 Switch to more efficient electronics and devices

- Install energy efficient water heaters.
- Work with procurement and vendors to make sure that CFLs, T8s, and energy efficient appliances are made available. Adhere to auditing procedure of green purchasing document.
- Replace existing boilers and furnaces with energy-efficient models.
 - Will be completed 2010/2011 (funded through ARRA)
- Replace portable heaters with a more energy efficient model.

5 Improve building structures and envelopes



- Create a “green roof” by developing a layer of vegetation on top of flat roof buildings.
 - Landscaped roof over bleachers in progress.
 - Work on interpretation materials and associated public outreach.

6 Utilize alternative energy sources

- Install solar hot water heating systems in housing and other park buildings.
 - Look at the restroom roof and HSP for installation opportunities.
- Install photovoltaic panels on the multipurpose building, the small boat shop, and the Argonaut Hotel.

7 Other

- Monitor energy bills for consumption and cost variations.
 - Transfer all metered building data directly in web-based system and drop data directly in Energy Star Portfolio Manager and Visible Energy.
- Evaluate solar power for lighting pier and promenade.
 - Identify park owned lights
- Review and implement the DOI Sustainable Buildings Implementation Plan.
 - Review upcoming historic structures checklist.
- Add a Sustainability checklist to performance evaluations.

Transportation Management

Emission Reduction Goal: Reduce park operations transportation emissions to 35 percent below 2008 levels by 2016.

Reducing vehicle miles traveled, improving vehicle efficiency, and using alternative fuels can significantly reduce San Francisco Maritime National Historical Park's emissions. As the inventory results indicate, GHG emissions from transportation comprise 7 percent of park operations emissions. Presented below are the actions that are currently under way and which comprise the park's progress to date, as well as those actions that the Park will pursue.

Progress to Date

- Currently using alternative fuel vehicles (AFVs) for light load hauling and maintenance, specifically electric vehicles in the maintenance fleet.

Transportation Management - Planned Actions

1 Transportation-related Behavioral Changes

- Prohibit visitor vehicle idling.
 - Post signs and information with the Park's idling rules.
- Encourage staff carpooling for commuting to work.
 - Develop carpooling information and support services for staff.
- Establish an employee bike-to-work program.
 - Establish bike paths to key areas that are currently not accessible.
 - Establish bike rack/parking areas/infrastructure at all major park locations.
- Use webinars/conference calls to avoid excessive travel, both within and outside of the Park. Purchase necessary equipment for teleconferencing and videoconferencing.
- Prohibit staff vehicle idling unless required for vehicle maintenance.
 - Create dashboard idling guidelines and post in vehicles.
- Establish an alternative fuel employee shuttle system.



2 Reduce fuel consumed by visitor vehicles

- Partner with surrounding state and local communities on alternative transportation opportunities for visitors.
 - Link in-park transportation systems to public transportation whenever feasible, through cooperation with public transportation agencies and gateway communities.
- Incentivize visitor use of high efficiency and alternative fuel vehicles and hybrids.
 - Recognize those who are driving high efficiency (>40 mpg) or alternative fuel vehicles with reduced entrance fees or “climate friendly visitor” bumper stickers.
 - Give incentives or discounts to those traveling by bike or on foot into the Park.
- Provide alternative modes of visitor travel.
 - Develop bicycle-and-pedestrian only trails and equip shuttle buses with bicycle racks. Encourage vendors to offer bike rentals to visitors.
 - Continue studying the impacts and feasibility of historic street car expansion.

3 Reduce NPS vehicle and equipment fuel consumption

- Replace two-stroke engines.
 - Look for opportunities to substitute two-stroke with more efficient four-stroke engines
- Promote efficient driving through the use of employee trainings and dashboard signage.
- Identify areas to reduce or eliminate mowing.
 - Incorporate xeriscaping and increase the use of native vegetation throughout landscaped areas.
 - Reduce leaf blowing to once per week and investigate Victorian Park native plants.

4 Replace NPS vehicles and equipment

- Develop a vehicle replacement plan.
 - Evaluate AFV options: Hybrid electric vehicles (HEVs), electric vehicles, compressed natural gas (CNG), and biodiesel.
 - As vehicles come up for replacement, order alternative fuel vehicles.
 - Replace Alma diesel engines.
 - Look at the San Francisco Waterfront biofuels availability study.
- Right-size the vehicle fleet by the number and type.
 - Use a Vehicle Allocation Methodology (VAM) to achieve a fleet that is the right size and type.
 - Order right-size vehicles and return all vehicles under 7000 miles per year that do not meet right sizing parameters.
 - Order two electric vehicles with dumping capabilities and replace existing small gas truck.

5 Vehicle maintenance

- Develop and maintain a fleet maintenance schedule.
 - Keep vehicles in top mechanical condition: rotate tires every 5,000-miles, check tire pressure, don't top off tank, and get regular tune-ups.

6 Other

- Join Clean Cities Coalition.
 - Take advantage of DOE benefits and investigate the use of biodiesel and new technologies available in the surrounding area.

Waste Management

Emission Reduction Goal: Reduce park operations waste emissions to 30 percent below 2008 levels by 2016 through waste diversion and reduction.

The connection between waste and GHG emissions may not be obvious. However, waste management—in the form of source and solid waste reduction—can dramatically reduce GHG emissions. Landfills are the largest human-generated source of CH₄ emissions in the United States. Waste from San Francisco Maritime National Historical Park facilities routinely travels hundreds of miles to the landfill. Reducing the amount of waste sent to landfills reduces CH₄ emissions caused by decomposition as well as the GHGs emitted from the transportation of waste. The less the Park and its visitors consume in terms of products and packaging, the less energy is used and fewer GHGs are emitted.

San Francisco Maritime National Historical Park's park operation activities emitted 101 MTCO₂E from waste management in 2008. Diverting or reducing the Park's waste stream through increased recycling efforts and waste management will reduce the amount of waste sent to landfills and the resulting emissions. Presented below are the actions that are currently under way and which comprise the Park's progress to date as well as those actions that the Park will pursue.

Progress to Date

- Continuously engage park staff and visitors in recycling program by encouraging proper disposal of waste
 - Employees and visitors are able to recycle appropriate materials in bins located around the Park.



Waste Management – Planned Actions

1 Decrease waste through behavior change

- Require that construction contractors reuse or recycle materials used during building renovations and new site construction/remodeling projects.
- Train park staff and contractors on waste reduction responsibilities.
 - Ensure that staff and contractors are aware of their roles and responsibilities to reduce waste. Conduct periodic trainings to inform maintenance crews about recycling and composting policies at the Park.
 - Require an annual training on waste reduction and green procurement.
 - Make reusable and recyclable materials available for staff to use (e.g. plates, cups, silverware, etc.).
 - Integrate metrics on these responsibilities into performance evaluations.
 - Institute paperless office practices: establish standards for double-sided printing and copying, office supply reuse, electronic correspondence procedures, electronic file storage, elimination of colored paper, etc.

2 Establish new plans and policies that promote waste reduction

- Manage solid waste with an Integrated Solid Waste Alternatives Plan (ISWAP).
 - Incorporate the investigation of large scale composting opportunities into the ISWAP
- Incorporate Waste reduction into Green Office Practices.
 - Reduce purchases where possible and avoid duplicate purchases.
 - Purchase comprehensive procurement guidelines (CPG) office supplies with maximum recycled content, avoid polyvinyl chloride (PVC) supplies.
 - Purchase durable, reusable supplies, always print double sided, reuse office supplies when possible.
- Reduce waste generated at meetings and employee functions.
 - Establish guidelines for waste minimization: use durable, reusable utensils and mugs, buy in bulk, use items with reduced packaging, and provide recycling receptacles.
- Communicate park waste policy or ISWAP to staff and concessionaires.
 - Create an orientation packet and provide information on policies and practices for recycling, green procurement, and other aspects of the Park's waste management policy.
 - Conduct brown bag lunches and training seminars for all park personnel on topics related to waste reduction.
 - Include information on park sustainability, green procurement, and recycling policy in new employee orientations.
- Choose hand dryers over paper towels.
 - Install energy efficient hand dryers throughout park facilities.
- Measure, track, and report waste stream data (include landfilled waste and recycled waste) to monitor reductions and success in diverting waste from the landfill.

- Record waste management data in an EMS or a spreadsheet tracking system.

3 Implement recycling and composting practices

- Compost food scraps from yard trimmings, park food services, and concessionaires.
- Install easy-to-use recycling containers throughout park facilities.
 - Purchase containers with recycled content. Place trash and recycling containers next to each other. evaluate signage; use graphics.
- Recycle or donate old computers and electronics.
 - Recycle unusable computers and electronics.
 - Donate old equipment to schools, senior centers, etc.
 - Practice cradle-to-grave recycling to ensure toxic components are properly managed. Purchase electronics with less toxic components.
- Implement a Construction Waste Management Plan and Job Site Recycling Policy.
 - Require a Construction Waste Management or Recycling Plan; track quantities of recyclables. Make sure contract language addresses proper waste management and recycling. Check on “take-back” policies (e.g., ceiling tiles, cardboard, carpet, and drywall).
 - Reuse construction waste on-site, reuse elsewhere, or sell for recycling materials of value including lumber/wood, drywall, metal, rubble, cardboard, fixtures, hardware, and wiring.
 - Require drywall contractors to recycle waste.
 - Work with haulers to prevent contamination of waste sorting. Ensure no illegal dumping occurs off job site.
- Practice environmentally responsible deconstruction.
 - Old building materials will be reduced, reused, and salvaged, in that order.
 - Inefficient materials or components will not be salvaged; ensure that the reuse of vintage items represents an environmental gain.
- Partner with vendors to reuse and recycle park waste.
- Eliminate non-recyclable styrofoam food serviceware.
 - Use biodegradable cornstarch utensils and biodegradable foam “peanuts.”
 - Styrofoam can be taken in for reuse at UPS Stores, or local businesses that ship items.
- Send used florescent bulbs to reclaim/recycle service center.
- Use recycled oil and recycled coolant and other fluids in auto shop.
- Institute alkaline, lithium battery recycling locations in every office building.

4 Reduce waste through green procurement

- Continually increase the recycled content of purchased materials.
 - Focus on office supplies, gift shop concessionaires, building supplies, furniture and maintenance equipment: hoses, mulch, edging, timbers, posts, and compost with recycled content.
- Adhere to Federal, NPS, and PWR Guidance for Procurement.
- Develop a Green Procurement Plan.
- Implement petroleum product substitution program.
- Use low/no-VOC insulation, carpets, paints, and adhesives.
- Increase the use of Bio-based Products.
- Use carpet with high recycled content for any building projects.
- Promote the use of recycled content products and materials procurement within the NPS.
- Manage waste associated with computers and FAX/printers.
 - Purchase remanufactured toner cartridges.
 - Purchase liquid crystal display (LCD) monitors instead of cathode ray tube (CRT), which use less toxic substances.
 - Reduce the printer-to-employee ratio by maximizing shared network printers.

5 Reduce and reuse wastewater

- Install low-flow faucets.
- Replace toilets with low-flow models.
- Conserve water used in grounds maintenance.
 - Use drought-tolerant grass and native plantings.
 - Mow less grass and grasscycle (leave mowed clippings in place to fertilize).
 - Don't water during the hottest time of day. Don't use fine spray sprinklers. Don't overwater. Maximize permeability of surfaces to allow site to absorb water. Use rain catchment techniques.

STRATEGY 2: INCREASE CLIMATE CHANGE EDUCATION AND OUTREACH

Climate change is a complex and easily misunderstood issue. San Francisco Maritime National Historical Park can play an integral role in communicating about climate change to a vast audience. A better understanding of the challenges and benefits of reducing GHG emissions can motivate staff, visitors, and community members to incorporate climate friendly actions into their own lives. San Francisco Maritime National Historical Park recognizes that the greatest potential impact the Park can have on mitigating climate change is through public education. Thus, the Park sees public education as an end goal of any climate initiative. From increasing the efficiency of public transportation to developing a green purchasing program, the actions San Francisco Maritime National Historical Park takes to address climate change serve as opportunities for increasing the public's awareness of climate change. Presented below are key messages discussed during the workshop, the actions that are currently under way and which comprise the Park's progress to date, and those actions that the Park will pursue.

Progress to Date

- Continuously connect with community and park partners on Climate Friendly Park efforts.
 - Building relationships with park concessionaires, Friends Groups, local environmental groups, representatives from the local tourism/community business board, representatives from the state environment/energy departments, teachers, representatives from the regional transportation authority, and local university partners.

Park Staff

Incorporate climate change into park staff training, events, and performance plans

Developing a climate change education program for park staff is vital to increasing awareness about climate change among park visitors and fostering a sense of collective responsibility among staff to help reduce park emissions. By incorporating climate change education into staff development programs, San Francisco Maritime National Historical Park will enable its staff to demonstrate their commitment through leading by example, and providing visitors with the tools and resources they need to reduce GHG emissions in the Park and in their own communities. Potential actions include:

- Keep staff members that are part of the Green Team/Environmental Management Team informed about Climate-related issues
 - Use materials, publications, and tools available from the U.S. Environmental Protection Agency (EPA) and other agencies and organizations to mentor fellow staff about climate change.
- Create a Park Climate Change Policy Memo specific to San Francisco Maritime National Historical Park.
- Hold internal Climate Friendly Park discussions and workshops.
 - Devise new strategies to continually reduce GHG emissions.



- Distribute resources and tools to staff, and acknowledge success of current strategies, including giving awards to climate leaders.
- Develop intranet pages to inform staff about climate friendly actions.
 - Use internal information technology to encourage staff to achieve GHG emissions reductions at work, and advise them on new ways to reduce personal emissions.
- Incorporate climate change issues into the employee handbook.
 - Include climate materials in employee orientation packets.
- Include the science and impacts of climate change into park education tools.
 - Incorporate sessions on climate change into seasonal staff training.
 - Tailor seasonal staff handbook to include Climate Friendly Parks information.
 - Include Climate Friendly Parks language in Kiosks and other educational materials.
- Incorporate sessions on climate change into new staff training.
- Develop a brown bag series for park staff including concessioners, partners, and occasionally visitors to educate about current climate change science, the Park's efforts, and what they can do.
- Create visual reminders for park employees with climate change information and tips on how employees can help reduce emissions.
- Disseminate information about climate friendly actions the Park is taking at conferences, meetings, and regional workshops.

Visitor Outreach

Understanding climate change and its consequences is essential to initiating individual behavioral change. San Francisco Maritime National Historical Park realizes that it has a unique opportunity to educate the public in a setting free from many of the distractions of daily life. By using existing materials, developing park-specific materials, highlighting what the Park is currently doing about climate change, and encouraging visitors to reduce emissions, San Francisco Maritime National Historical Park can play an important role in educating the public about climate change.

San Francisco Maritime National Historical Park staff recognize the many different audiences that visit the Park, including recreational and non-recreational park visitors, "virtual visitors" who visit the Park online, school-aged visitors, local and out of town visitors, local tribes, and external audiences. Reaching these various audiences with climate change information and engaging them in the Park's efforts requires appropriately focused messaging. The Park has developed a number of strategies to reach these various audiences effectively. These strategies include:

- Educate visitors about climate change.
 - Link climate change and National Parks preservation with actions like using mass transit and alternative transportation.
- Incorporate climate change information into existing park brochures.



- Create/utilize bilingual brochures that talk about the success of the CFP program in terms of resource and economic savings where appropriate. Include information and illustrations on Do Your Part!
- Create signs promoting park's efforts to curb emissions.
 - Develop consistent messaging for recycling, idling, and emission reduction posters.
- Incorporate climate friendly information into interpreter programs and talks.
- Educate visitors about their recycling options at the Park and at home.
- Communicate with local communities, park visitors, and local media about actions they can take to reduce GHG emissions.
 - Encourage internal and external stakeholders to reduce their carbon footprints using tools like Do Your Part!
- Integrate climate change themes into interpretive programs.
 - Integrate Climate Friendly Parks program with school programs using educational kits, wayside exhibits, posters, etc.
- Create demonstration projects and exhibits to convey park sustainability message to visitors.
- Develop a "Do Your Part" program for online visitors.
- Create and distribute previously produced information on climate change and its effects on National Parks in general and on the Park in particular

Local Community Outreach

The gateway communities, agencies, vendors, and volunteers surrounding San Francisco Maritime National Historical Park can play a significant role in supporting the Park's climate change mitigation goals. As such, when appropriate, park staff will assist local communities with incorporating climate change messages into community events and find partners to promote climate change education at those events, and engage with surrounding agencies to coordinate effective outreach and education efforts. Potential actions include:

- Host climate change education workshops.
 - Focus presentations on climate change priorities and talk about success stories.
- Educate local community about what the Park is doing to manage waste.
- Plan a community event for Earth Day.
- Collaboration with other Bay Area NPS Units on Climate Friendly projects.
- Build CFP relationships by partnering with more community groups.
 - Reach out to the Senior Center, Swim Clubs, Argonaut Hotel, Sea Scouts, and Fisherman's Wharf merchants.

- Participate in the First Bloom program to promote climate change awareness.

STRATEGY 3: EVALUATE PROGRESS AND IDENTIFY AREAS FOR IMPROVEMENT

By taking the actions established in strategies 1, and 2 above, San Francisco Maritime National Historical Park plans to reduce its emissions to the specified goal and begin adapting to the impacts of climate change. Achieving these goals will require an ongoing commitment by the Park, which may include subsequent emission inventories, monitoring of adaptation success, additional mitigation and adaptation actions, and reevaluation of goals. As part of this strategy, San Francisco Maritime National Historical Park will:

- Monitor progress with respect to reducing. This will include subsequent emission inventories to evaluate progress toward goals stated in this action plan.
- Develop additional emission mitigation and adaptation actions beyond those listed in this plan.
- Periodically review and update this plan.
- The Park will track climate friendly actions through the Environmental Management System.

CONCLUSION

San Francisco Maritime National Historical Park has a unique opportunity to serve as a model for over 4 million recreational visitors.⁴ This report summarizes the operational actions the Park commits to undertake to address climate change. Specifically, the Park realizes its ability to educate the public and serve as a valuable model for citizens. By seriously addressing GHG emissions within the Park and sharing its successes with visitors, San Francisco Maritime National Historical Park will help mitigate climate change far beyond the Park's boundaries.

The National Park Service faces an uncertain future due to the possible effects of climate change. However, by seriously addressing climate change impacts and reducing emissions, San Francisco Maritime National Historical Park will reduce its contribution to the problem while setting an example for its visitors. The strategies presented in this Action Plan present an aggressive first step towards moving San Francisco Maritime National Historical Park to the forefront of Climate Friendly Parks.

⁴ San Francisco Maritime National Historic Park: Park Statistics. Available online at: <http://www.nature.nps.gov/stats/viewReport.cfm>

APPENDIX A: LIST OF WORK GROUP PARTICIPANTS

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