



Volume 2 / Fall 2015

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Pier 2 Solar

1120 panels

228 W per panel

255 KW total

Marine Mammal Center Solar

196 panels

100 MWh per year

100,000 visitors/year

Park Partner Highlights

Fort Mason Pier 2 Gone Solar



Pier 2 at Fort Mason Center is generating up to 60% of its annual energy from solar panels, and is an example of partnership and creative historic preservation.

SunPower contributed \$200,000 to the effort, with the U.S. Department of Energy matching their contribution with a \$2 million grant. The Fort Mason Center qualified for a Historic Preservation Tax Incentive, and worked with the State Historic Preservation Office (SHPO)

on the design. The SHPO permitted visible solar panels on the historic Pier 2 building, citing that the terracotta roofs on Buildings A to E were more signature to Fort Mason Center. The investment in solar has already shown payoffs: between July 15th, 2014 - January 10th 2015, the Fort Mason Center saved 89,215kW of energy and about \$10,000.

For more information, go to <http://www.fortmason.org/support/pier-2-project>

Sustainable Marine Mammal Center

The Marine Mammal Center is sustainable and proud of it! With natural light from skylights and windows as well as LED lighting, passive ventilation, native plants requiring no irrigation, water-free urinals and dual-flush toilets, pervious concrete to filter rainwater, solar panels atop building roofs and over the pools, and a photovoltaic system monitor that shows real-time energy generation and consumption, the Center lets visitors know that sustainable energy is the future. Even behind the scenes, the Center's staff and volunteers, guided by a volunteer-led Green Team, go the extra mile by purchasing re-usable gloves, donating uneaten fish to organic farms,

and partnering with Waste to Waves and Sustainable Surf to recycle styrofoam into surfboards. Be on the lookout for more sustainability initiatives from The Marine Mammal Center! For more information, go to: <http://goo.gl/G9vvyr>



TMMC patient rests underneath solar panels.

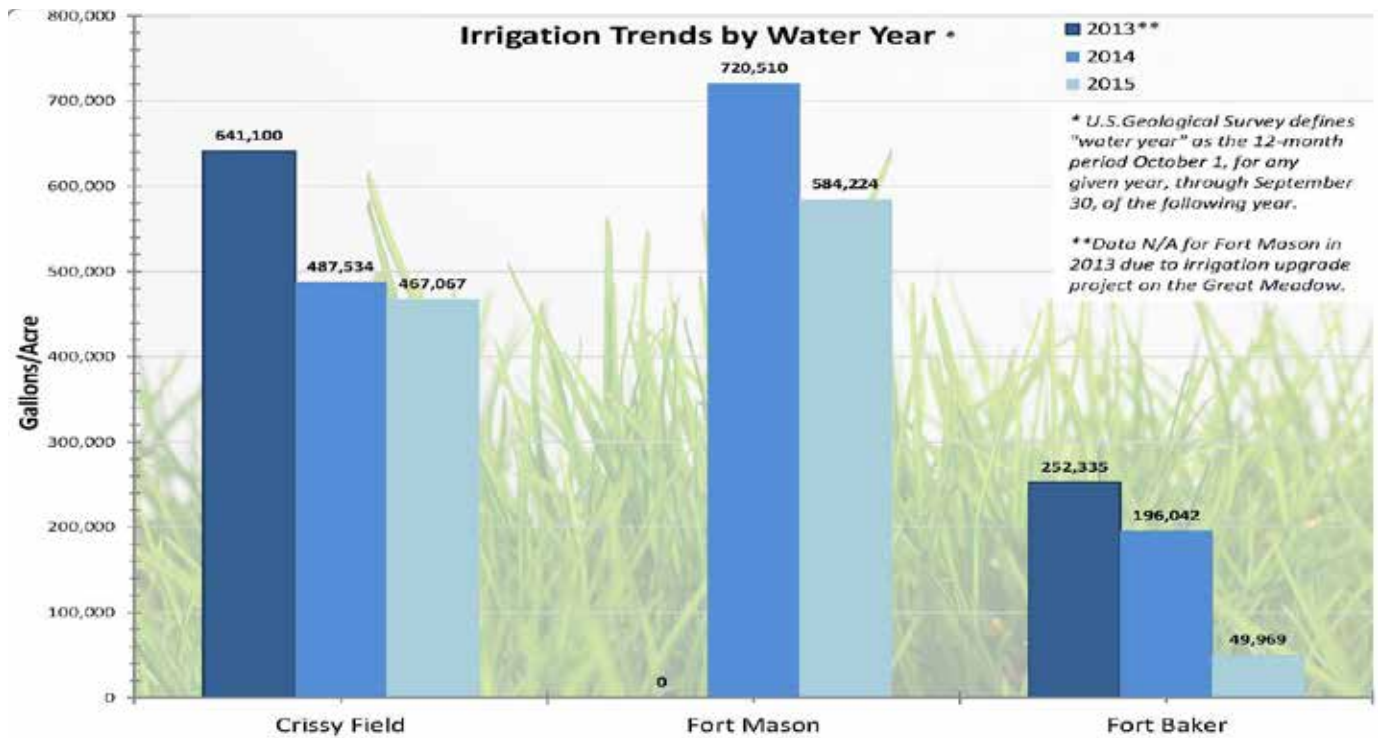


Featured Project

Brown is the New Green!

As California ends its fourth year of drought, Golden Gate National Recreation Area seeks to set examples for water conservation on all fronts, especially

irrigation usage. On major lawns across the parks, water usage has been cut back by over 20% since 2013.



Since climate change may make California drier and drier in future years, Golden Gate National Recreation Area is looking for ways to reduce irrigation usage

permanently. Initiatives could include repurposing lawn areas, introducing more drought-resistant native plants, or using recycled water.



Crissy Airfield January 2013



Crissy Airfield January 2014



In the Field

Marin Clean Energy

Marin Clean Energy (MCE) is a community choice aggregate in the Marin County and Richmond area providing alternative, sustainable sources of energy from wind, solar, biogas, and geothermal sources. MCE offers 3 plans of renewable energy to both residents

and commercial businesses: Light Green (56% renewable energy), Deep Green (100% renewable energy), and Local Sol (100% solar energy). Golden Gate National Recreational Area currently purchases MCE's Deep Green plan for its electrical service in the Marin Headlands.

Renewable Energy Comparison

-  **MCE Local Sol**
100% local solar
-  **MCE Deep Green**
100% renewable energy
-  **MCE Light Green**
50% renewable energy
-  **PG&E**
27% renewable energy

Did You Know?

In 2014, GGNRA used 1,050,900kWh

of renewable energy, accounting for 45% of

parkwide energy use.

For more information, go to: <http://www.nps.gov/goga/learn/management/renewable-energy.htm>

Sustainability Initiatives

- Re-using tool handles, rock sediment, and other work materials
- Re-purposing leftover lumber and metal to our partners at Slide Ranch (For more info: <http://slideranch.org/>)
- Green purchasing: Badger Balm, Seventh Generation Cleaning Products
- Protecting water sources through stormwater best management practices
- Installing low flow sink aerators
- Seeking to eliminate low-mpg vehicles from their fleet

Trails Crew

The Trails Crew not only maintains the many beautiful miles of GGNRA trails, but has also gone above and beyond by demonstrating sustainable, environmentally-friendly practices in their workplace. The trails crew's example shows that small, everyday choices can have lasting impacts on the environment.



These pieces of pressure-treated wood are too short for use by the trails crew, but the folks over at Slide Ranch can use them!



Old tool handles are stored in labeled shelves for re-use.



Sustainability Outreach

Greywater Tech Talk

Natalie Kilmer hosted the latest in our series of Sustainability Tech Talks on greywater systems for homeowners. Focusing on the low-tech laundry-to-landscape greywater system, the Tech Talk educated homeowners on how to save water, time, and money by recycling gently used water from laundry machines and repurposing it to irrigate plants.

For more information on greywater, go to <http://greywateraction.org/content/about-greywater-reuse/>



Greywater irrigated landscape.

Sustainability Summit

Golden Gate National Recreation Area is currently preparing for its biennial Sustainability Summit, a day-long series of lectures and forums focused on educating park staff and partners

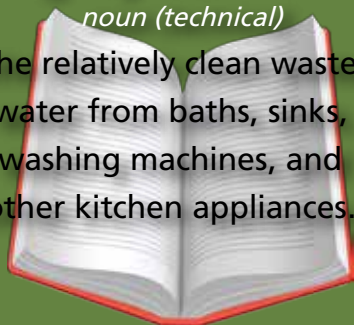
about the forefront of local and statewide sustainability. 2014's summit focused on renewable energy, LED lighting retrofits, and electric vehicles -- expect related and brand-new topics in the spring 2016 summit!



grey·wa·ter

noun (technical)

the relatively clean waste water from baths, sinks, washing machines, and other kitchen appliances.



**Golden Gate National
Recreation Area**

Fort Mason Building 101
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