



Volume 4 /  
Summer 2017

Wind Turbines  
Installed in Phase II  
at Crissy Field



Venco T-100



Omniflow OM



## New Wind Turbines Spin at the Crissy Field Center



The Golden Gate National Parks Conservancy has installed 4 new wind turbines at the Crissy Field Center, continuing a pilot project to assess the effectiveness and durability of vertical axis wind turbines in urban areas. Urban settings have different challenges than traditional wind farms, with obstructions such as trees and buildings affecting the air flow around the turbines.

The Hawaii Natural Energy Institute sponsored this project as well as the original pilot project in 2012, collecting data on wind speed and production of the turbines.

Staff at the Crissy Field Center will also conduct a second wildlife impact study to ensure that birds and bats are not injured.

For more information, including a video of the turbines in action, visit <http://tiny.cc/WindTurbines>



## LED Lights Brighten the Baker Barry Tunnel

The Baker Barry Tunnel in the Marin Headlands has new LED lighting to reduce energy consumption and improve safety. This tunnel lighting was previously the second largest energy consumer in the park.

This project replaced 237 high pressure sodium luminaires with LED fixtures and light sensors that turn off automatically when no cars or bikes are in the tunnel. Replacing the lighting system reduces maintenance and energy costs while increasing safety for bikers and visitors. Cracks in the tunnel were also filled with pressure grout to prevent water

from intruding.

This project is another example of the Golden Gate National Recreation Area's commitment to reducing our carbon footprint and addressing climate change.



Baker Barry Tunnel



New LED lights save energy and provide better visibility



## Featured Projects

# Sea Level Rise Studies Underway at 3 Park Sites

## Adaptation Planning Kickoff at Stinson Beach

Golden Gate took the first step this summer in a long-term planning process for sea level rise adaptation at Stinson Beach. A graduate student from UC Berkeley worked closely with park staff to lay out priority management goals for the site, key resources, and climate and non-climate stressors to consider in an upcoming vulnerability assessment.

Climate change will impact park resources through increased flooding from the ocean due to sea level

rise, more intense storm events, and more flooding from Easkoot Creek that runs along the back side of the property. Hotter temperatures inland will likely bring more people to the beach, straining the park's capacity.

The Park will use the vulnerability assessment and subsequent adaptation plan as decision tools to improve resiliency and facilitate better management of resources at the site.



The projections from *Our Coast, Our Future* compare the current conditions at Stinson Beach (left) with the potential inundation during a 20-year storm event with 2.5 feet of sea level rise (right). 2.5 feet is about the average projection for sea level rise by 2100 according to the most recent update from the state of California.

Source: [Ourcoastourfuture.org](http://Ourcoastourfuture.org)

## Visualizing Sea Level Rise at Crissy Field

Golden Gate National Recreation Area has installed exhibits at Crissy Field and Rodeo Lagoon, designed to depict how a range of sea level rise scenarios would affect the sites. The exhibits use a pole marker to provide a locally-focused way for visitors to envision the future at a site that they are connected to, and therefore feel more motivation to engage in solutions to address climate change. The poles mark sea level elevations under different projections.

A third panel without the marker pole will be installed at Fort Point in the near future.

Crissy Field Sea Level Rise Exhibit





## Principles of Adaptation Planning:

### PROTECT

Protect the existing resource with both 'hard' or soft' design strategies. Rip-rap is an example of a hard strategy, and wetland restoration is an example of soft.

### RETREAT

Remove buildings or hard infrastructure, and replace with natural amenities like wetlands which are more resilient to sea level rise over time.

### ADAPT

Adapt the asset (i.e. a building), to be resilient to sea level rise. Adapting the first floor of the building to be floodable during extreme high tide events is one example.

### ACCESS

Reroute pedestrian access to new locations as needed, to provide access to the cultural, recreational and natural assets of the park.

## Multi-Agency Planning Effort at Ocean Beach

San Francisco's Ocean Beach faces challenges from ongoing erosion and sea level rise. The urban planning organization SPUR led an extensive interagency and public process to develop the Ocean Beach Master Plan in 2012. The plan lays out a comprehensive vision to address sea level rise, protect infrastructure, restore coastal ecosystems and improve public access.

The Ocean Beach Master Plan and Implementation Studies are made possible by the State Coastal Conservancy, the San Francisco Public Utilities Commission and the National Park Service.



For more information: [www.spur.org/featured-project/ocean-beach-master-plan](http://www.spur.org/featured-project/ocean-beach-master-plan)

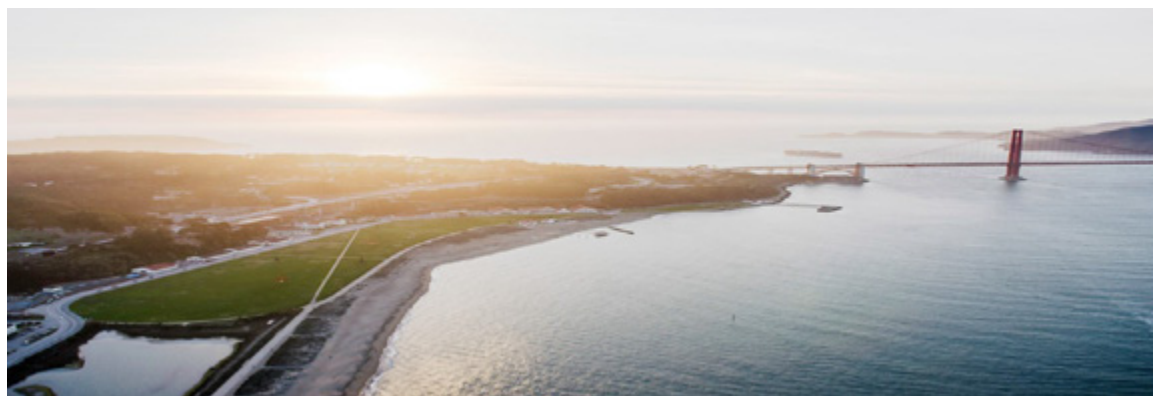
## Community Weighs in on Adaptation Strategies at Crissy Field

A grant from the Coastal Conservancy supported a community workshop and report on the future of Crissy Field under different sea level rise scenarios. Workshop attendees learned about the science of climate change and sea level rise and were able to view projections for sea level rise at Crissy Field. Participants then engaged in a hands-on activity overlaying various adaptation tools onto 3-foot or 6-foot sea level rise scenarios.

The report includes maps of the resources impacted under different scenarios as well as the results of the workshop. The workshop was a collaboration of the Golden Gate National Parks Conservancy, the National Park Service, and the Presidio Trust.

To learn more visit

<https://tinyurl.com/crissySLR>





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**In The Field**

**Grounds Crews Green Their Equipment**

Staff at Muir Woods have raised the bar in reducing greenhouse gas emissions and improving visitor experiences through modifying maintenance actions.

The grounds crew started a pilot project to move from gas to battery powered chainsaws, leaf blowers, and weed whackers. Key benefits include reduced noise levels that make the woods a quieter experience for both wildlife and park visitors. With the noise reduction from the new equipment, some work can now be done during the previously restricted bird nesting season.

The new battery powered equipment also reduces overall pollution and gas spillage. Overall these new tools

have shown to be an effective and sustainable alternative to gas-powered equipment, and the crew at Muir Woods is always willing to show the power of the new tools.



**Grounds Crews at Muir Woods show off their battery powered equipment**

**Education and Outreach**

**BayCLIC Website goes live!**

The Bay Area Climate Literacy Impact Collaborative (BayCLIC) provides support for all out-of-classroom educators, from park rangers to docents, who are passionate about climate education and action. Representing over 30 of the most prominent environmental institutions in the Bay Area, BayCLIC addresses the biggest needs of educators interested in speaking about

climate change but lacking resources. This group provides climate education tools, connects educators to climate science resources focused on our local ecosystems, and uses the collective power of membership to spur behavior change. To access resources, learn more about BayCLIC, or join the collaborative for free, visit [Baycliv.org](http://Baycliv.org)

