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### ter plan recommendations

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- ove 2
- ove 3
- ove 4
- ove 5
- ove 6

### ster plan implementation strategy

- luations + cost/benefit analysis
- each process
- sary + sources
- dix
- cal memoranda

# project team

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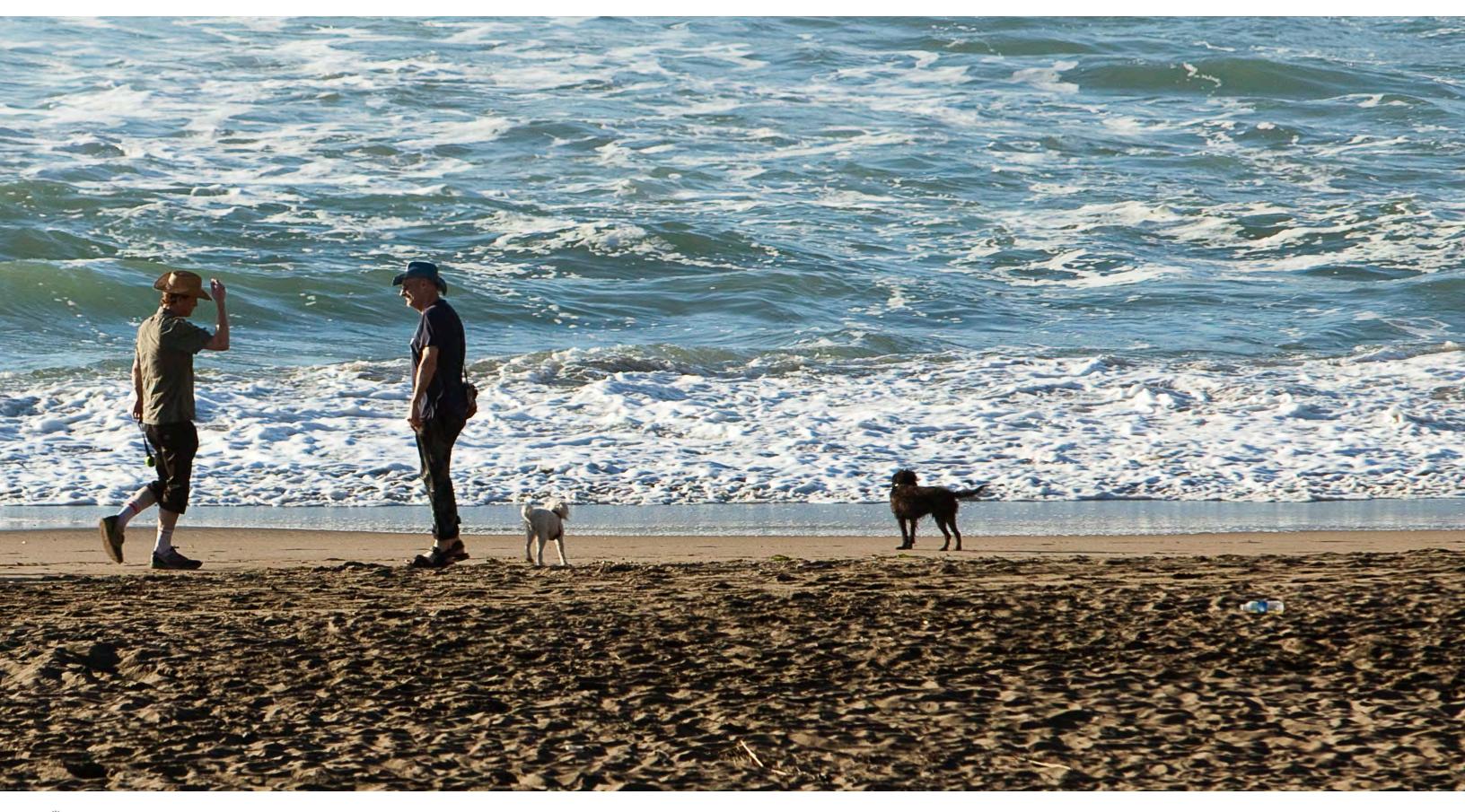
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# acknowledgements

## steering committee



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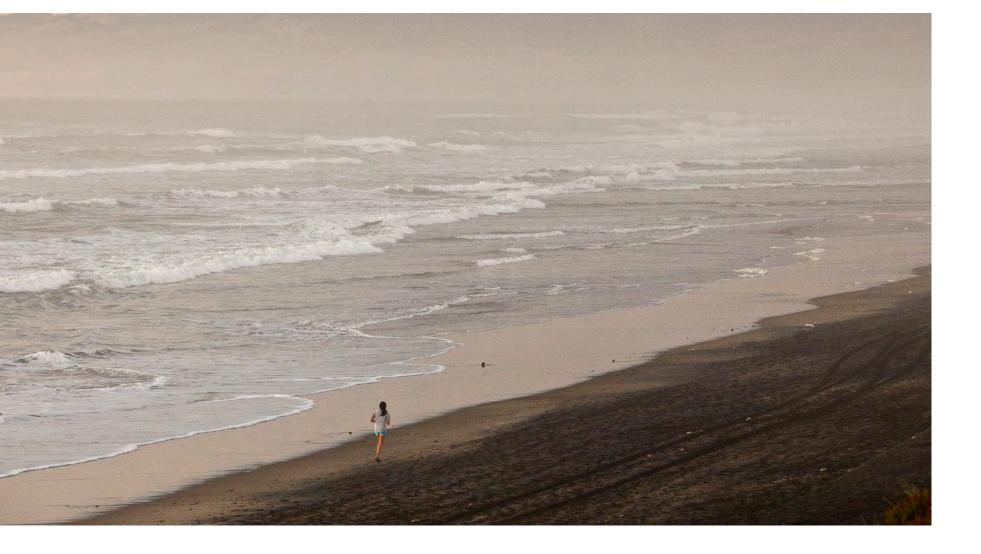
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- Dilip Trivedi, Moffatt & Nichol
- **Laura Tam**, SPUR
- Petra Unger, AECOM

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### chapter

This document presents recommendations for the management and protection of San Francisco's Ocean Beach, 3.5 miles of beach and rugged coastline that is a National Park, a popular urban open space, the site a major infrastructure complex, and a beloved San Francisco landscape. This process, lays out a wide range of complex challenges and charts a course for a more sustainable future in the context of complex jurisdictional challenges, severe erosion, a diverse population of beach users and points of view, and the looming challenge of climate-induced sea level rise. It is the result of a robust public process, in which a wide range of stakeholders and the public participated over an 18-month period. Several earlier efforts brought attention to the ongoing issues at Ocean Beach. This document is intended to translate that energy into implementable actions by the responsible agencies.

**SPUR** with AECOM | ESA PWA | Nelson\Nygaard | Sherwood Design Engineers | Phil G. King Ph.D.

# executive summary

# executive summary

### seven focus areas

The complex issues facing Ocean Beach are addressed through seven Focus Areas, each of which is described in some detail. In summary, they are as follows:

### 1. ecology

Ocean Beach is a National Park and supports important natural resources, including two threatened birds. Its nonnative dunes have restoration potential.

#### 2. utility infrastructure

A major complex of wastewater infrastructure is located at Ocean Beach, and protects coastal water quality. Large stormwater/wastewater transport structures are under the great highway and subject to erosion hazards.

#### 3. coastal dynamics

Ocean Beach is the visible portion of a much larger coastal sediment system. Erosion problems will worsen with climate-related sea level rise, and will need to be managed through a variety of approaches.

#### 4. image and character

Ocean Beach has a wild, rugged character and a unique culture and history. Improvements should retain and draw upon these qualities.

#### 5. program and uses

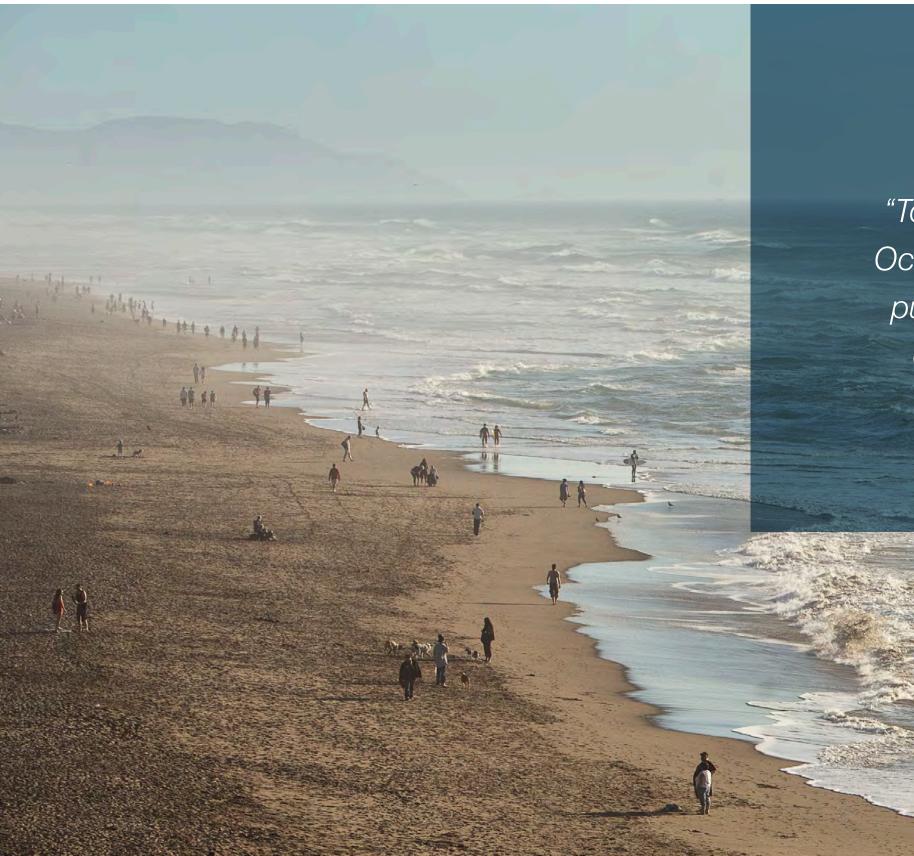
Ocean Beach is used in a variety of ways, from birdwatching to surfing to dog-walking, that can come into conflict, and should be managed to benefit everyone.

#### 6. access and connectivity

Ocean Beach links a wealth of open spaces and is transitrich, but key gaps and some problematic street configurations could be improved to welcome all users, especially bikes and pedestrians.

#### 7. management and stewardship

Though visitors experience a single place, a host of different Federal, State and local agencies are responsible for different aspects of Ocean Beach, without a common vision.



"To knit the unique assets and experiences of Ocean Beach into a seamless and welcoming public landscape, planning for environmental conservation, sustainable infrastructure and long-term stewardship"

# overall project goal

# executive summary



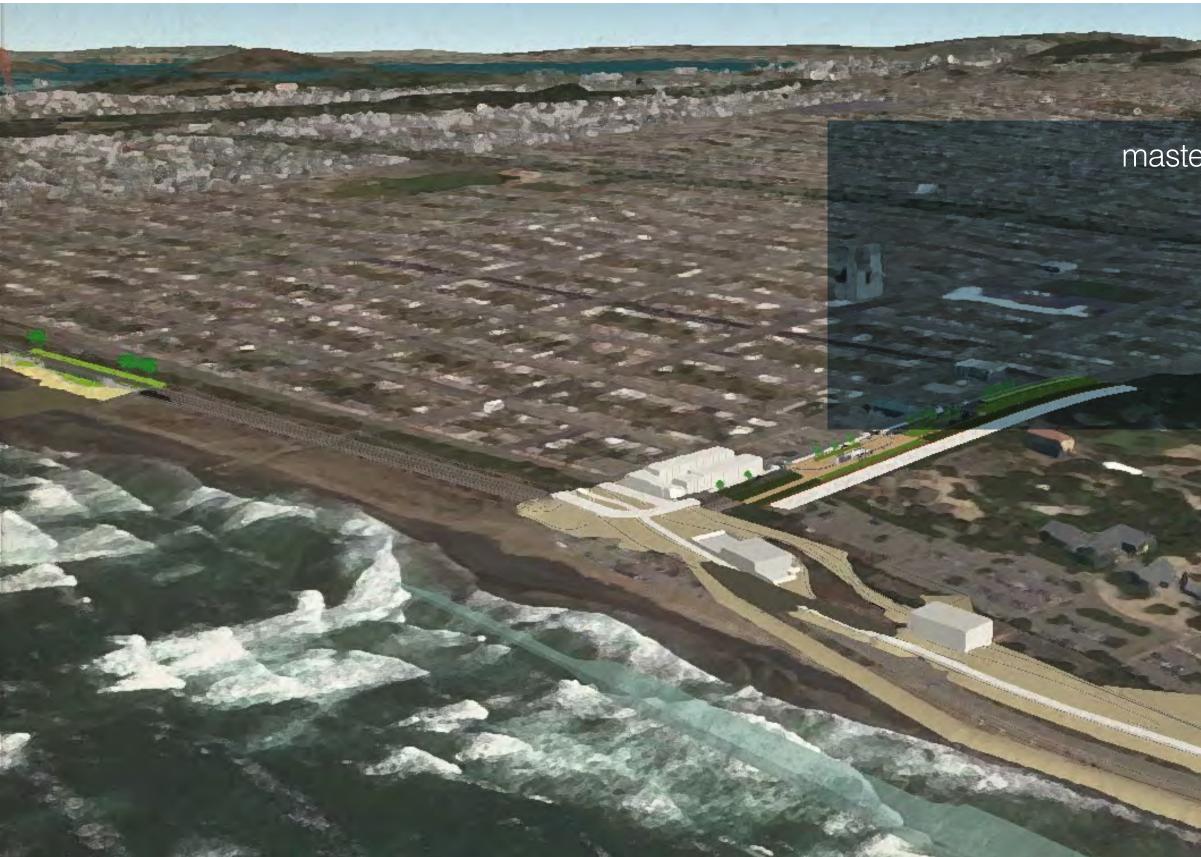
### test scenarios

The Ocean beach Master Plan team developed four Test Scenarios, to model the outcomes of very different approaches to managing Ocean Beach through 2100. These Test Scenarios organized technical analysis and tested a wide variety of ideas from stakeholders and the public. Test Scenarios are not proposals or alternatives. They were as follows:

- A. Maximum Habitat
- B. Maximum Recreation
- C. Maximum Green Infrastructure
- D. Maximum Infrastructure

### evaluation criteria

Evaluation criteria were developed in consultation with OBMP Planning Advisory Committee to evaluate outcomes of Test Scenarios and Plan Recommendations.



## master plan aerial view

## executive summary

### plan recommendations: six key moves

These six "Key Moves" outline the Ocean Beach Master Plan's major recommendations. Each includes many individual recommendations, more than forty in all. They are organized by three geographical reaches as indicated, and will be implemented incrementally over a period of decades.

### assumptions

- Analysis to 2100 horizon
- Recommendations to 2050
- Ongoing monitoring + adaptive management
- Re-evaluation in 2030

### south reach: south of sloat boulevard

key move 1 sloat and skyline

- with a coastal trail

- road

### key move 2 introduce a multi-purpose coastal protection/restoration/access system

- elements

- Placed sand
- toward higher ground
- ecological functions



## reroute great highway behind the zoo via

• Close the Great Highway South of Sloat Boulevard, replace

 Reconfigure Sloat Boulevard and key intersections to create a safer, more efficient street

• Consolidate street parking, the L-Taraval terminus, and bicycle access along the south side of Sloat

Reconfigure Zoo's parking lot for access via Skyline and Zoo

• Incrementally dismantle the Great Highway and parking lots, allow erosion to proceed inland

• Protect the Lake Merced Tunnel in place with a gradient of

• A low-profile hard structure, covered with...

• A dynamic revetment, or cobble berm, covered with...

• Allow storm surges to wash over the Tunnel and dissipate

• Restore and revegetate the surface to allow recreational and

middle reach: lincoln- sloat

### key move 3 reduce the width of great highway to provide amenities / managed retreat

- Narrow the Great Highway from 4 lanes to 2 South of Lincoln
- Use the current Southbound lanes for parking pockets, restrooms, signage etc
- Introduce a multi-use promenade west of the road
- Between amenities, allow dunes to migrate inland over the road and transport box

### key move 4 middle reach beach dune restoration

- Sand nourishment via Army Corps of Engineers along southern end of Middle Reach
- Phased native dune restoration in key locations: especially at Lincoln, Vicente
- Sand ladders and modular boardwalks provide access while limiting impact

### north reach: lincoln to 48th avenue

#### key move 5 implementation actions better connection between golden gate park & beach SPUR has received additional funding from the State Coastal Conservancy and • Tighten and reconfigure O'Shaughnessy Seawall parking lot matching agencies to pursue to improve pedestrian conditions, bike access and traffic implementation of Plan circulation recommendations through the following • Introduce permeable paving, amenities, and appropriate projects: vegetation to create a more welcoming, attractive space • Retain events capacity and historic character 1. Ongoing Implementation Leadership and Coordination kev move 6 bicycle + pedestrian improvements north 2. Circulation and Access Study of balboa 3. Joint Coastal Management Framework • Narrow Great Highway and Point Lobos Avenue (from 4 to 2 lanes) 4. Joint Open Space Management Plan • Introduce physically separated bikeway with connections to Land's End and beyond



ocean beach master plan



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