

# Newport Bay

Orange County

## Site Description

Newport Bay is in Orange County within the City of Newport Beach. Public Trust lands granted to the County of Orange are located throughout upper Newport Bay and select portions of lower Newport Bay. Upper Newport Bay, extending north of the Pacific Coast Highway, covers an area of approximately 1,000 acres, a large portion of which is designated as county tidelands. The majority of upper Newport Bay is wide and shallow, forming intertidal habitat areas such as mudflats and coastal wetlands, with short stretches of sandy beach and bulkheads that front developed shoreline. Tidelands within lower Newport Bay surround areas of residential and commercial development. Bulkheads and attached recreational boating infrastructure make up the majority of tideland shoreline in lower Newport Bay except for a small sandy beach area adjacent to the Newport Beach Harbor Patrol building.

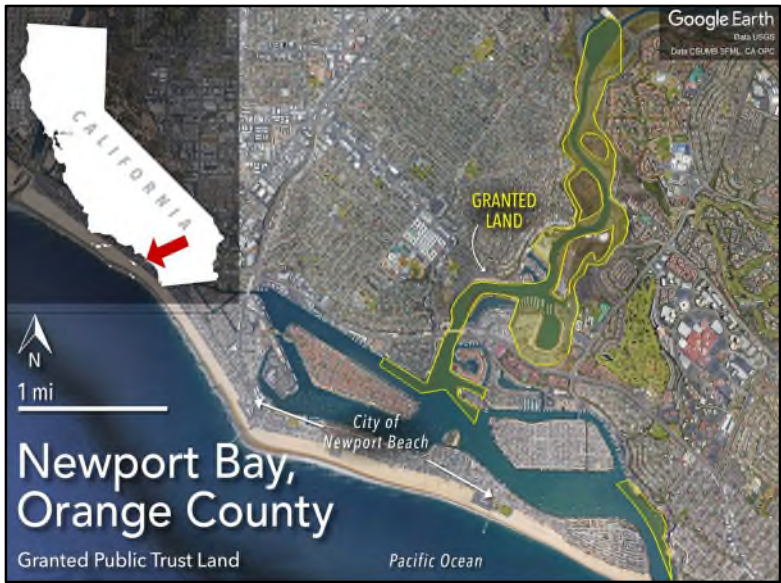


**Granted Land Type:**  
Smaller Harbor/Marina  
with Recreational  
Amenities or Natural  
Assets

### Public Trust Uses

*Primary Uses:* Commerce,  
Navigation

*Secondary Uses:* Recreation,  
Environmental Stewardship



**Coastal Hazards considered:**  
tidal inundation, wave run-up, storms (annual, 20-year, 100-year), shoreline erosion

**Modeling system used for mapping:**  
CoSMoS

**Sea level rise scenarios/elevations**  
[LINK TO FULL ASSESSMENT](#)

Vulnerable Public Trust Resources	
Built Facilities	Marinas/Docks, Parking Lots, Streets/Walkways, Restrooms, Bulkhead Wall, Commercial Areas, Storm Drain and Wastewater Utilities
Natural Assets	Parks, Beaches

# Other Economic Vulnerabilities

County of Orange tidelands generate revenue through rents and concessions as well as fees paid for parks and recreation services. Total county tideland revenue was greater than \$4 million in financial year 2016–2017, accounting for most of the overall tideland revenue. Newport Dunes Marina and Resort represents the largest individual source of revenue at approximately \$3 million. County of Orange tidelands contain approximately 17 acres of sandy beach area, resulting in a total annual service flow of approximately \$975,000 based on EPA non-market service valuations and adjustments to 2019 dollars using Consumer Price Index values. Sea level rise is projected to significantly reduce this sandy beach area over time.



Living shoreline concept designed to protect inland areas from sea level rise

## Proposed Adaptation and Mitigation Measures

### Protect

Protective devices can potentially be employed along coastal parking lots and access points within the study area to mitigate sea level rise impacts. Seawalls or other additional shoreline protection can be used to address projected flood impacts within resources such as Newport Sea Base and the Newport Dunes Marina parking lots. Revetments can be implemented to reduce sea level rise impacts to the Newport Dunes Resort and the Newport Aquatic Center, or nature-based strategies, such as living shorelines (pictured above) can be employed to protect structures without further hardening existing shorelines.

### Accommodate

Parking lots and other coastal access resources can be elevated using fill or other methods to offset increased water elevations and maintain the current height of the shoreline relative to sea level. Accommodation strategies for boating infrastructure, including any floating docks, access gangways, and guide piles, are linked to the structural design tolerance for high water levels. Temporary or permanent flood-proofing retrofits and improvements to stormwater infrastructure can also be employed to reduce the impacts and recovery time following flood events.

### Retreat

Retreat measures are most feasible for resources that have open space located landward at higher elevations, such as the Newport Dunes Marina parking lot, where inland auxiliary parking and boat storage could potentially serve as relocation destinations. Sandy beach areas can also retreat landward through natural processes as water elevations rise if open space is made available. Because boating infrastructure depends on proximity to the shoreline, retreat strategies may be necessary to account for potential shoreline migration over long-term sea level rise scenarios. Although limited, there is some topographic variation within County of Orange tidelands that provides opportunity for the relocation of high-value, long-term upland development to higher ground.

### Recreation and Coastal Access—Sea Level Rise Vulnerability

Recreational and coastal access resources within the study area have a low overall vulnerability to short-term sea level rise hazards, due in large part to limited hazard exposure, with only select areas of Newport Sea Base and the Newport Harbor Patrol projected to become flooded under a 0.8- or 1.6-foot sea level rise scenario. These areas are more vulnerable to long-term sea level rise hazards. Non-storm flood projections under a 4.9-foot sea level rise scenario cover significant areas of these resources, and **only limited areas remain available with 6.6 feet of sea level rise**. Any areas subject to frequent non-storm flooding are likely to experience a significant decline in public utility as access becomes disrupted on a regular basis.

## Anticipated Costs of Sea Level Rise (millions)\*

	Current	2030 (9.6 in.)	2050 (19.2 in.)	2100 (58–79 in.)
Assets at Risk or Repair and Replacement Costs				
Losses in Non-Market Value		\$0.136/year	\$0.214/year	\$0.572–\$0.766/year
Cost of Adaptation				

\* Information was not presented in this report on costs for the years 2030, 2050, and 2100.