

Heron's Head

Subarea 4-5



Subarea Description

Heron's Head (Subarea 4-5) consists primarily of Heron's Head Park, providing public access to the waterfront in the otherwise industrial neighborhood and wetlands offering ecological value. Despite being zoned as industrial area, and originally created as a rock-fill breakwater to protect the south side of Pier 96, the 22-acre Heron's Head park now includes salt marsh habitat, ecosystem restoration activities, walking paths, bird watching, and environmental education and stewardship activities. Critical Infrastructure in this subarea include the EcoCenter, an educational community center, and one of PG&E's nine San Francisco substations, the 110 – 161 kilovolt Hunters Point Substation.

This shoreline within this subarea is primarily an embankment that is fronted by marsh or varying degrees of rock protection.

The primary pathways of flooding are from overtopping over broad stretches of mostly natural shoreline along the northern edge of Heron's Head Park and along the India Basin Shoreline to the south of this subarea. The wetland area at Heron's Head Park and the India Basin Shoreline already experience regular inundation during high tides today.



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Assets and Landmarks



Transportation

1. Muni Station (Heron's Head)



Utilities

Power

2. Hunters Point PG&E Substation



Open Space and Ecology

Open Space

3. Bay Trail / Blue Greenway
4. Heron's Head Park

Timing of Exposure: Assets and Landmarks


Assets/Landmarks	Flood Scenario	Equivalent Events	Timing				
			USACE Low	USACE Inter.	OPC Most Likely	USACE High	OPC 1-in-200
Utilities							
<ul style="list-style-type: none"> Hunter's Point Substation (PG&E) (Power) 	84" (13.5 ft. NAVD)	High tide + 84" SLR	>2150	>2150	>2150	2121	2100
		100-YR + 43" SLR	>2150	>2150	2104	2083	2069
Transportation							
<ul style="list-style-type: none"> Muni Station (Heron's Head) 	>108"	--	--	--	--	--	--

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Timing of Exposure: Assets and Landmarks

Assets/Landmarks	Flood Scenario	Equivalent Events	Timing				
			USACE Low	USACE Inter.	OPC Most Likely	USACE High	OPC 1-in-200
 Open Space and Ecology							
<ul style="list-style-type: none"> Heron's Head Park 	12" (7.5 ft. NAVD)	High tide + 12" SLR	>2150	2070	2047	2038	2034
		1-YR + 0" SLR	Today	Today	Today	Today	Today
<ul style="list-style-type: none"> Bay Trail / Blue Greenway 	24" (8.5 ft. NAVD)	High tide + 24" SLR	>2150	2112	2070	2059	2051
		5-YR + 0" SLR	Today	Today	Today	Today	Today

Timing of Exposure: Subarea

Adaptation Focus	Shoreline Type	Flood Scenario	Return	Timing				
				USACE Low	USACE Inter.	OPC Most Likely	USACE High	OPC 1-in-200
Immediate	--	--	--	--	--	--	--	--
			--	--	--	--	--	--
Tipping Point	Berm / Embankment	36" (9.5 ft. NAVD)	High tide + 36" SLR	>2150	2144	2091	2074	2063
			50-YR + 0" SLR	Today	Today	Today	Today	Today
Long Term >2050	Berm / Embankment; Engineered	84" (13.5 ft. NAVD)	High tide + 84" SLR	>2150	>2150	>2150	2121	2100
			100-YR + 43" SLR	>2150	>2150	2104	2083	2069

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Flood Progression

Substantial Flood Risk (Tipping Point)



Long-Term Flood Risk (>2050)




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The following describes the progression of potential extreme tide and sea level rise flooding, along with a brief discussion of the assets that will be impacted within Subarea 4-5.

Flood Scenario	Assets	Consequences				
		USACE Low	USACE Int.	OPC Most Likely	USACE High	OPC 1:200
High tide + 12" SLR	1-YR + 0" SLR	Today	Today	Today	Today	Today
Water Level Elevation: 7.5 ft. NAVD88		Open Space and Ecology Heron's Head Park is already inundated during high tides – this is a 22-acre thriving wildlife habitat that attracts more than 100 bird species a year. It is unknown if the wetlands will continue to keep up with sea level rise by accreting sediment and organic matter. If the wetlands do not keep up with sea level rise, they may drown, creating a significant habitat loss for the city.				
High tide + 24" SLR	5-YR + 0" SLR	Today	Today	Today	Today	Today
Water Level Elevation: 8.5 ft. NAVD88		Open Space and Ecology The Bay Trail / Blue Greenway at Heron's Head Park begins to experience inundation, significantly reducing public access across most of the park.				
High tide + 36" SLR	50-YR + 0" SLR	Today	Today	Today	Today	Today
Water Level Elevation: 9.5 ft. NAVD88		Open Space and Ecology The Bay Trail / Blue Greenway at Heron's Head Park begins to experience direct inundation with overtopping over several portions of the cycling and pedestrian trail, significantly reducing public access across most of the park.				
High tide + 48" SLR	100-YR + 7" SLR	2085	2046	2031	2024	2023
Water Level Elevation: 10.2 ft. NAVD88	--	--	--	--	--	--

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Flood Scenario	Assets	Consequences				
		USACE Low	USACE Int.	OPC Most Likely	USACE High	OPC 1:200
High tide + 52" SLR	100-YR + 11" SLR	2135	2065	2043	2035	2031
Water Level Elevation: 10.8 ft. NAVD88		--	--			
High tide + 66" SLR	100-YR + 25" SLR	>2150	2114	2071	2060	2052
Water Level Elevation: 12.0 ft. NAVD88		--	--			
High tide + 77" SLR	100-YR + 36" SLR	>2150	2143	2091	2074	2063
Water Level Elevation: 12.9 ft. NAVD88		--	--			
High tide + 84" SLR	100-YR + 43" SLR	>2150	>2150	2103	2082	2069
Water Level Elevation: 13.5 ft. NAVD88						
 Utilities The Hunters Point PG&E Substation has shoreline adjacent facilities at the southern end of the subarea that will be inundated.						
High tide + 96" SLR	100-YR + 55" SLR	>2150	>2150	2125	2096	2078
Water Level Elevation: 14.5 ft. NAVD88		--	--			

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Flood Scenario	Assets	Consequences				
		USACE Low	USACE Int.	OPC Most Likely	USACE High	OPC 1:200
High tide + 108" SLR	100-YR + 67" SLR	>2150	>2150	2145	2107	2087
Water Level Elevation: 15.5 ft. NAVD88	--	--	--			



Adaptation Focus: Tipping Point



Shoreline Characteristics	Shoreline Overtopping					Timing of Impact (100-YR)				
	Classification	Avg. Elev.	Avg. Depth (ft)	Max Depth (ft)	Length (ft)	%	USACE Low	USACE Inter.	OPC Most Likely	USACE High
Berm / Embankment	9.3 ft. NAVD	0.2	0.3	1,000	14.9%	Today	Today	Today	Today	Today

Flood Pathways

- Overtopping occurs at the trail near the tip of Heron's Head Park, resulting in inundation of the Bay Trail / Blue Greenway.

Shoreline Focus

- Initial adaptation measures could focus on this portion of the Bay Trail to allow for continue use of the trail.

Adaptation Considerations

- Adaption measures should allow the shoreline protection to be increased over time for higher sea level rise scenarios.



Adaptation Focus: Long-Term >2050



Shoreline Characteristics	Shoreline Overtopping					Timing of Impact (100-YR)				
	Classification	Avg. Elev.	Avg. Depth (ft)	Max Depth (ft)	Length (ft)	%	USACE Low	USACE Inter.	OPC Most Likely	USACE High
Berm / Embankment; Engineered	11.4 ft. NAVD	2.0	4.5	4,995	74.4%	>2150	>2150	2104	2083	2069

Flood Pathways

- Overtopping occurs at the trail near the tip of Heron's Head Park, resulting in inundation of the Bay Trail.
- Overtopping of the India Basin shoreline inundates the landward area behind the shoreline, including the location of the PG&E Hunter's Point Substation
- Overtopping of the India Basin shoreline also results in inundation of the adjacent open space park and a small portion of Subarea 4-3.

Shoreline Focus

- Adaptation measures should focus on the trail along Heron's Head Park to maintain its current function, and along the India Basin shoreline adjacent to the Hunters Point PG&E Substation. This stretch of shoreline currently has some degree of engineered shoreline protection (rip rap).

Adaptation Considerations

- Adaptation measures for this scenario will also reduce flood risk to Subarea 4-3.
- Higher water levels above this scenario will result in inundation spreading into the Subarea 4-2.