

Arcata Sea Level Rise Vulnerability Assessment and CIP Adaptation Plan

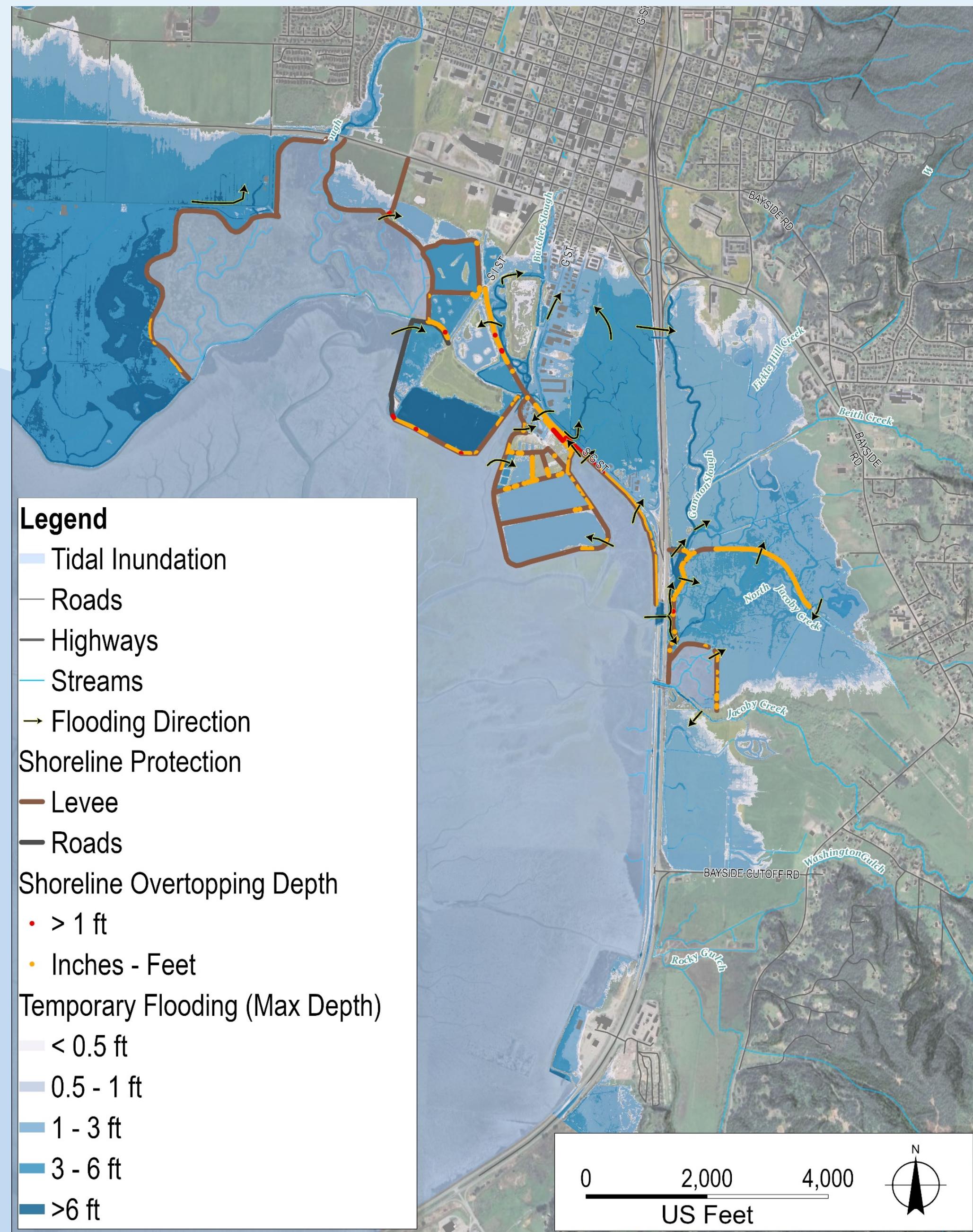
Tide Elevations (Figures of 11.1 ft Tide)

Tidal Condition	Likelihood (% Chance per Year)*			
	2024	2055	2075	2105
peak 9.5 feet	67%	1-6/year	>1/Month	Daily
peak 10.0 feet	15%	1-6/year	>1/Month	Daily
peak 10.7 feet	1%	32%	1-6/year	Daily
peak 11.1 feet	<0.2%	10%	67%	>1/Month
peak 11.7 feet	<0.2%	0.8%	10%	>1/Month
peak 12.7 feet	<0.2%	<0.2%	<0.2%	1-6/year
peak 13.7 feet	<0.2%	<0.2%	<0.2%	10%

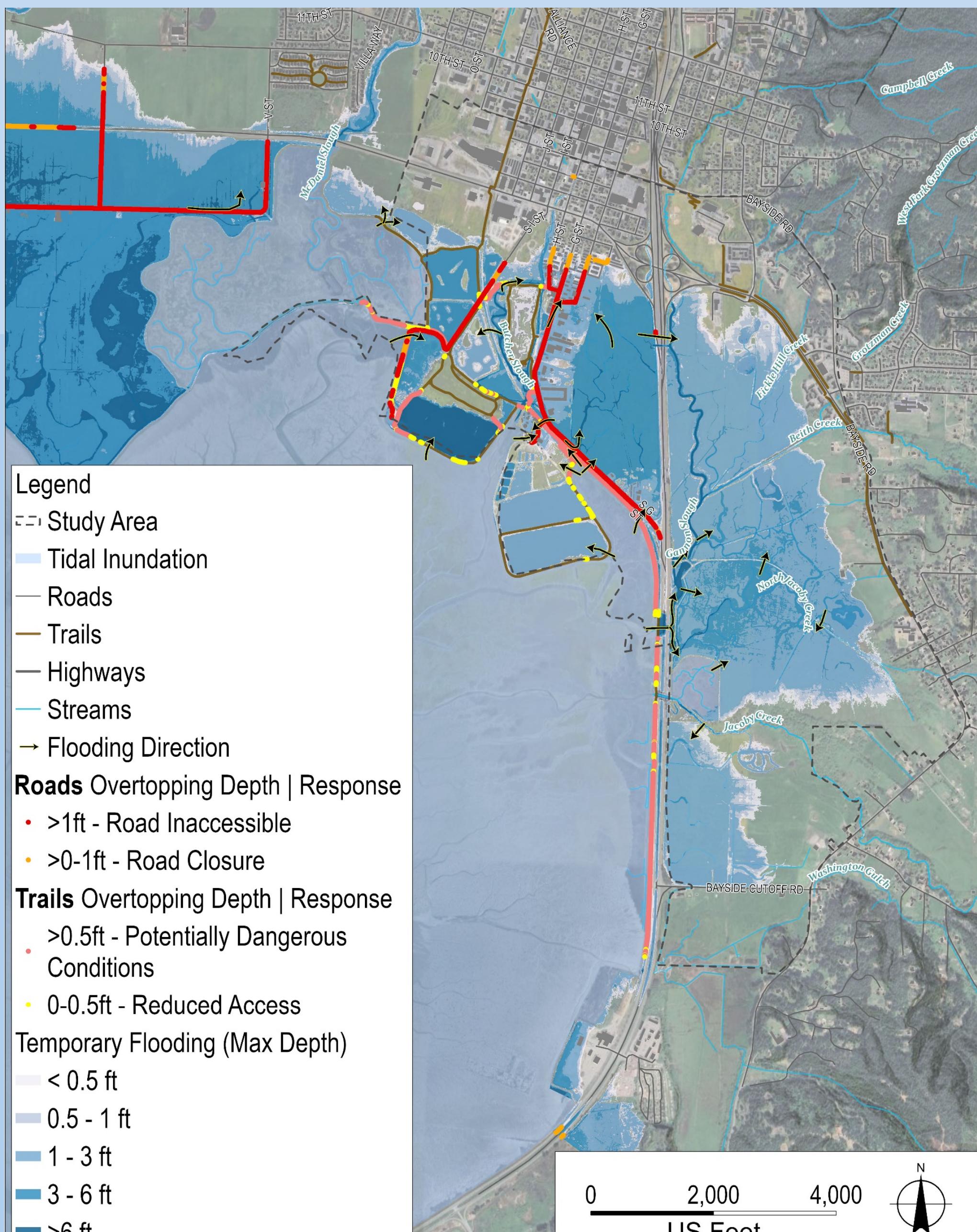
*Likelihood based on existing likelihood and Ocean Protection Council 2024 Intermediate Sea Level Rise projection and Cal-Adapt Medium Emissions Scenarios



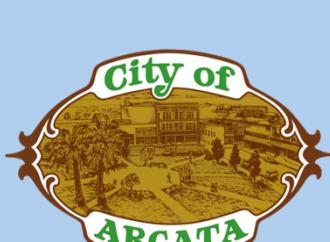
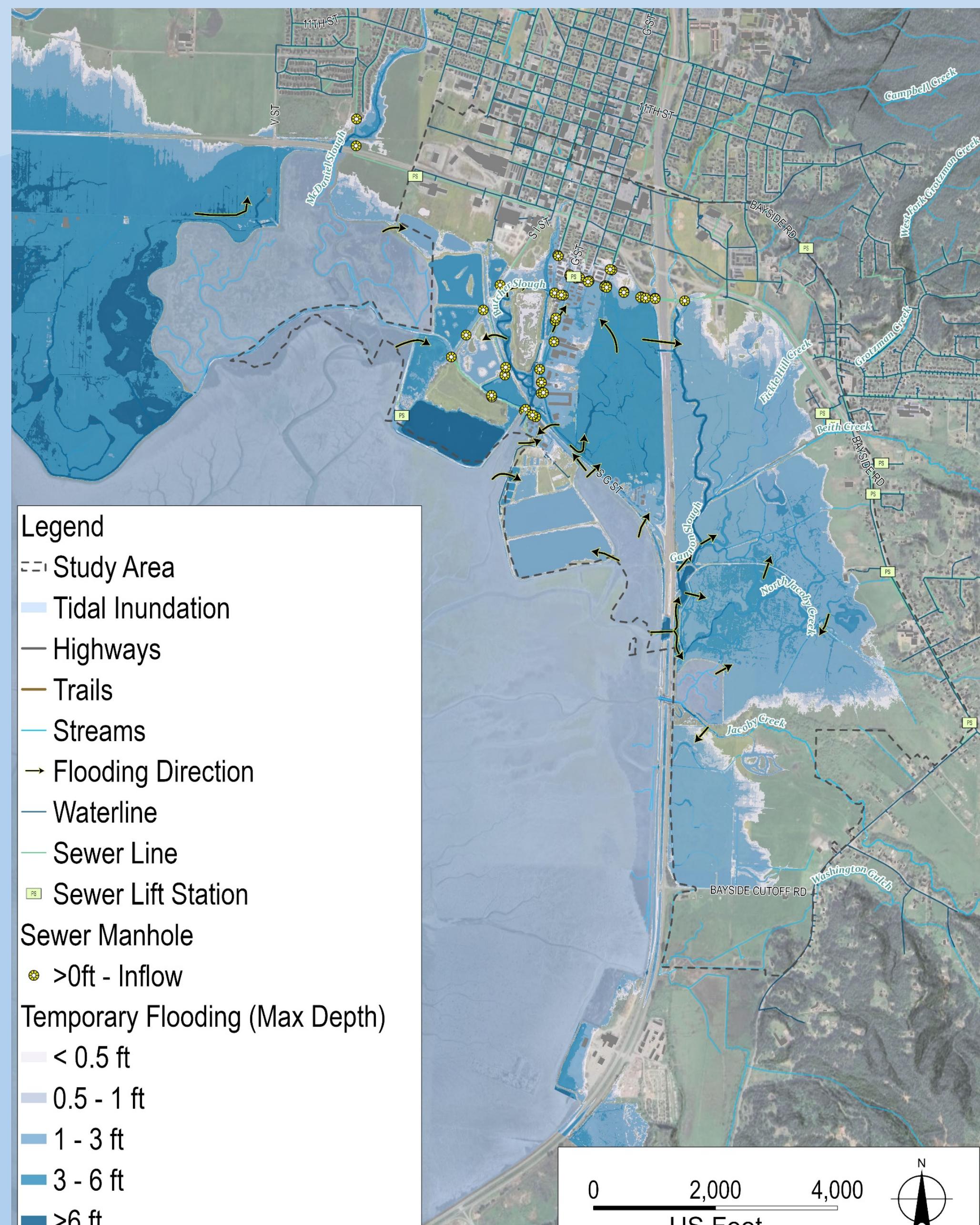
Shoreline Impacts



Transportation Impacts



Collection System Impacts



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Likelihood Scale	Description
Almost Certain	Multiple times per year
Very Likely	50-99.9% Annual Chance (2- to 1-yr recurrence)
Likely	4-50% Annual Chance (25- to 2-yr recurrence)
Unlikely	2-4% Annual Chance (50- to 25-yr recurrence)
Very Unlikely	0.2-2% Annual Chance (500- to 50-yr recurrence)
Almost Unprecedented	0.2% or Less Annual Chance (greater than 500-yr recurrence)

Consequence Scale	Description
Insignificant	Easily manageable within typical operations and maintenance
Minor	Minimal impact, easily manageable with some additional maintenance/staff time required
Moderate	Manageable impact, some effort required to address.
Major	Noticeable impact, requires significant effort to manage
Severe	Significant impact, challenging to manage, requiring additional resources
Catastrophic	Severe impact, potentially unmanageable even with additional resources

Shoreline Protection Overtopping (Ocean Protection Council Intermediate Sea Level Rise Scenario Risk Assessment)						
Impact: Potential Failure	Threshold	Consequence	Year Risk Rating			
			2024	2055	2075	2105
Agricultural Areas East of Hwy 101	11.1 ft Tide	Moderate: Manageable impact, potential repair, limited additional resources required				
AMWS/ South I Street	11.1 ft Tide					
South G Street	11.1 ft Tide	Major: Noticeable impact, requires significant effort to manage, requires significant repair, additional resource required				
AWTF	11.7 ft Tide					

AWTF Flooding (Ocean Protection Council Intermediate Sea Level Rise Scenario Risk Assessment)						
Impact: Treatment, Operations, Service, Overflows	Threshold	Consequence	Year Risk Rating			
			2024	2055	2075	2105
Essential Facilities						
Generator Building	10.7 ft Tide					
Pond Pump Station and Pump Station No.1	11.4 ft Tide	Moderate: Disruption of access, flooding enters structure, potential overflows to sensitive areas				
Emergency Pond Pump Station	11.9 ft Tide					
Electrical Building	13.3 ft Tide					
Enhancement Wetlands Pump Station	14.9 ft Tide					
Headworks Lower Grit Pump Area	10.7 ft Tide					
UV & Chlorine Contact Basins	15.7 ft Tide	Major: Flooding disrupting operations, reduced treatment effectiveness				
Primary Clarifier No.2	16.7 ft Tide					
Headworks Top Deck	22.4 ft Tide					
Generator Building Electrical Equipment	12.4 ft Tide	Severe: Flooding damaging backup power, replacement required				
Electrical Equipment for Essential Facilities	14 ft Tide	Catastrophic: Flooding damaging electrical infrastructure, failure of treatment capabilities reconstruction required				
Headworks Electrical Equipment	24 ft Tide					

