



City of Trinidad Draft Climate Change Vulnerability and Adaptation Responses

Dagan Short and Brendan Byrd

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Presentation Outline

- ✓ Introduction and Purpose
- ✓ Studies Reviewed
- ✓ Regional Climate Change Overview
- ✓ Vulnerabilities
- ✓ Adaptation Strategies



Introduction

Purpose

- Update City's Local Coastal Program (LCP)
- Perform Climate Change Vulnerability Assessment to determine climate change impacts and adaptation measures to use within LCP

Climate Change Analysis Method

1. Gather regionally relevant climate change data
2. Review data to determine likely range of impacts
3. Identify areas at risk to climate change impacts
4. Identify adaptation strategies to mitigate impacts



Primary Studies/References Reviewed

1. Humboldt Bay: Sea Level Rise, Hydrodynamic Modeling, and Inundation Vulnerability Mapping (***Northern Hydrology and Engineering***)
2. Climate Change Projections for Caltrans District 1 Climate Change Pilot Study (***ESA***)
3. Cal-Adapt (***California Energy Commission***)
4. Sea Level Rise for the Coasts of California, Oregon, and Washington (***National Research Council***)
5. Tectonic Land Level Changes and Their Contribution to Sea Level Rise, Humboldt Bay Region, Northern California (***Cascadia Geosciences***)



Climate Change Overview

How is climate change predicted?

- Global Circulation Models (GCMs)
 - Used to mathematically predict energy and mass movement on global scale

Emissions Scenarios

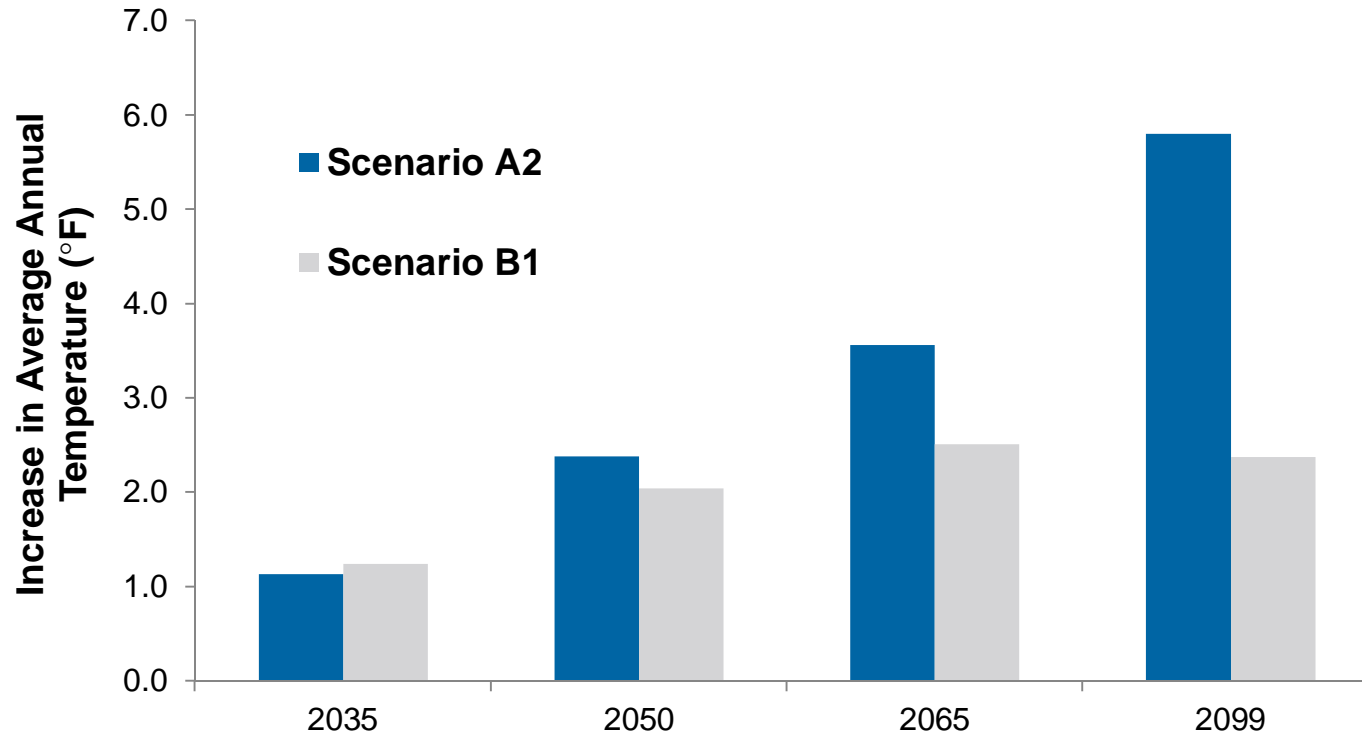
- A2 – High Emissions (“worst-case”)
- B1 – Low Emissions (“best-case”)

Common Impacts Modelled

- Global warming, sea level rise, precipitation



Global Warming



Sea Level Rise

Contributing Factors

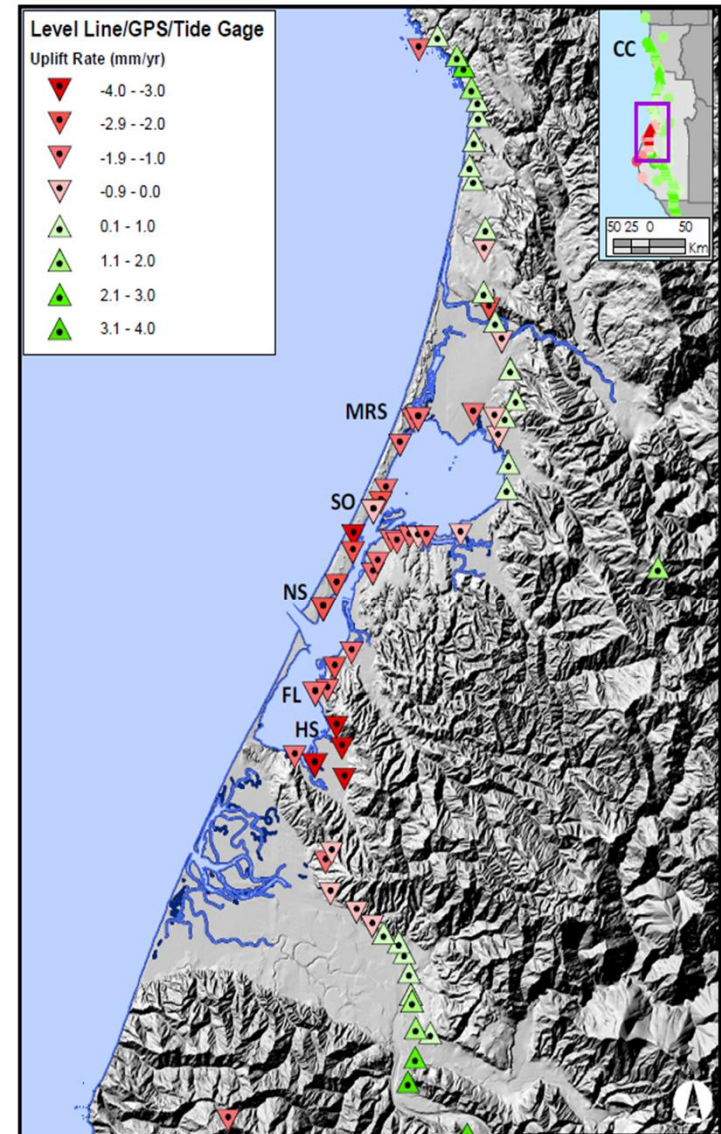
- Vertical Land Movement (VLM)
- Change in Mean Sea Level (MSL)

Vertical Land Movement

- ~1 mm/year upward
- Based on first order leveling data

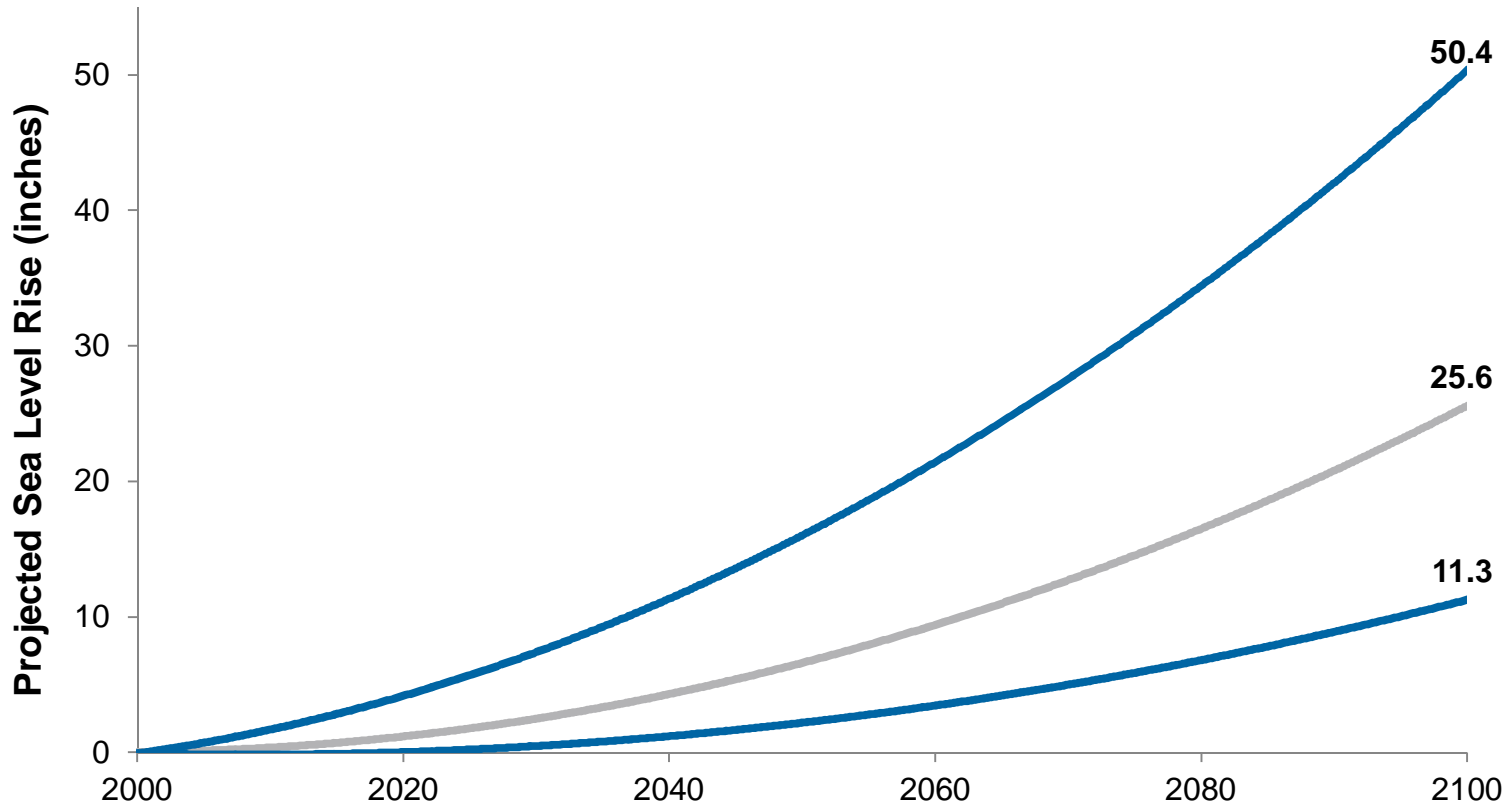
Sea Level Rise

- 2030: 1.6 – 8.3 inches
- 2050: 4.3 – 18.1 inches
- 2100: 15.3 – 54.3 inches

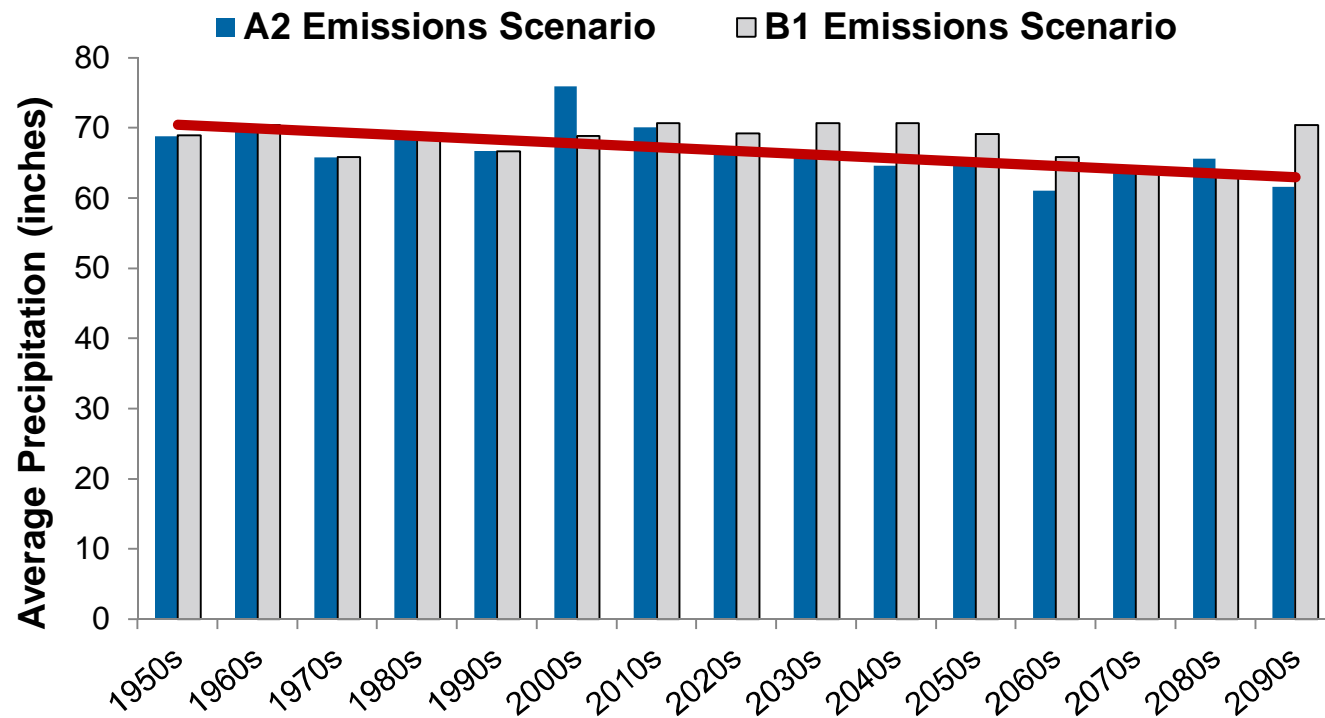


Vertical land movement (Patton et al, 2014).

Sea Level Rise Continued



Precipitation

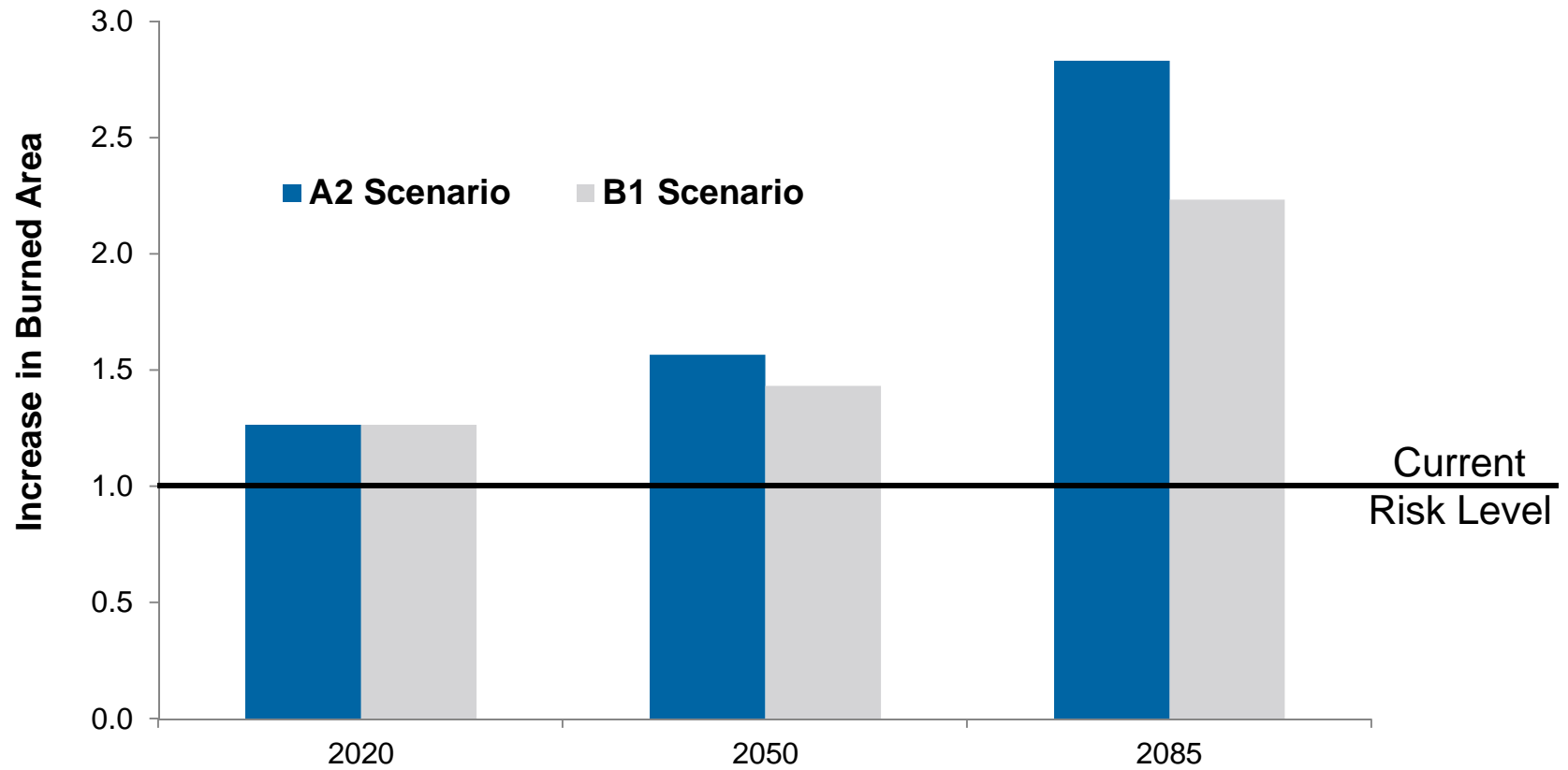


Additional Impacts

- Decreased fog (estimated 33% decrease past century)
- Increased rain intensity (large storm events)



Wildfire



Vulnerabilities/Impacts

Global Warming

- Increased outdoor water demand

Sea Level Rise

- Public beaches
- Coastal bluffs
- Trinidad harbor

Precipitation

- Water supply (quality and quantity)
- Older/undersized stormwater infrastructure

Wildfire

- Increased wildfire vulnerability



Adaptation Strategies

Adapt/prepare for climate change by:

- Establishing mapped hazard zones
- Establish shoreline management plan
- Control stormwater runoff and pollution
- Limit new development in hazard areas
- Develop plans to remove or relocate threatened structures
- Foster efforts to better understand impacts of sea level rise
- Promote fire-safe communities
- Evaluate water treatment system performance
- Plan to replace loss of recreational access
- Increase water conservation
- Continuing climate change evaluations





Questions?

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