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**BLUE COAST  
ENGINEERING**

**KITSAP COUNTY**

# **Sea Level Rise Vulnerability and Risk Assessment**

*formerly DCG/Watershed*



# Agenda

- Welcome & Introductions
- Project Overview
- Project Analyses & Outcomes
- Public Participation Plan
- Timeline
- Next Steps



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# Project Team



**Principal-in-Charge**  
DAN NICKEL



**Project Manager**  
JIM ROGERS



**Project Manager**  
ALEXANDRA PLUMB



**Outreach/Shoreline Planning**  
DONNA KEELER



**Outreach/Resiliency Specialist**  
CHUCK McDOWELL



**SLR Technical Lead**  
DAWN SPILSBURY



**Coastal Processes Lead**  
JESSICA COTE, PE  
(Blue Coast)



**GIS Mapping/Analyst**  
NATHAN BURROUGHS



**Coastal Processes Support**  
GREG CURTISS, PE  
(Blue Coast)



**Marine Engineering Lead**  
STEVEN ROBERT



# Project Purpose

## Identify

Identify assets with potential for loss of damage from sea level rise.

## Complete

Complete risk analysis and vulnerability assessment, based on mapping predictions to be decided by the TAC in July.

## Propose

Propose practical region-specific actions or projects, to address increased sea water interactions where appropriate.

# Approach

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- Mapping Development
- Community Engagement
- Audit of Existing Development Regulations and Policies
- Vulnerability and Risk Assessment Report

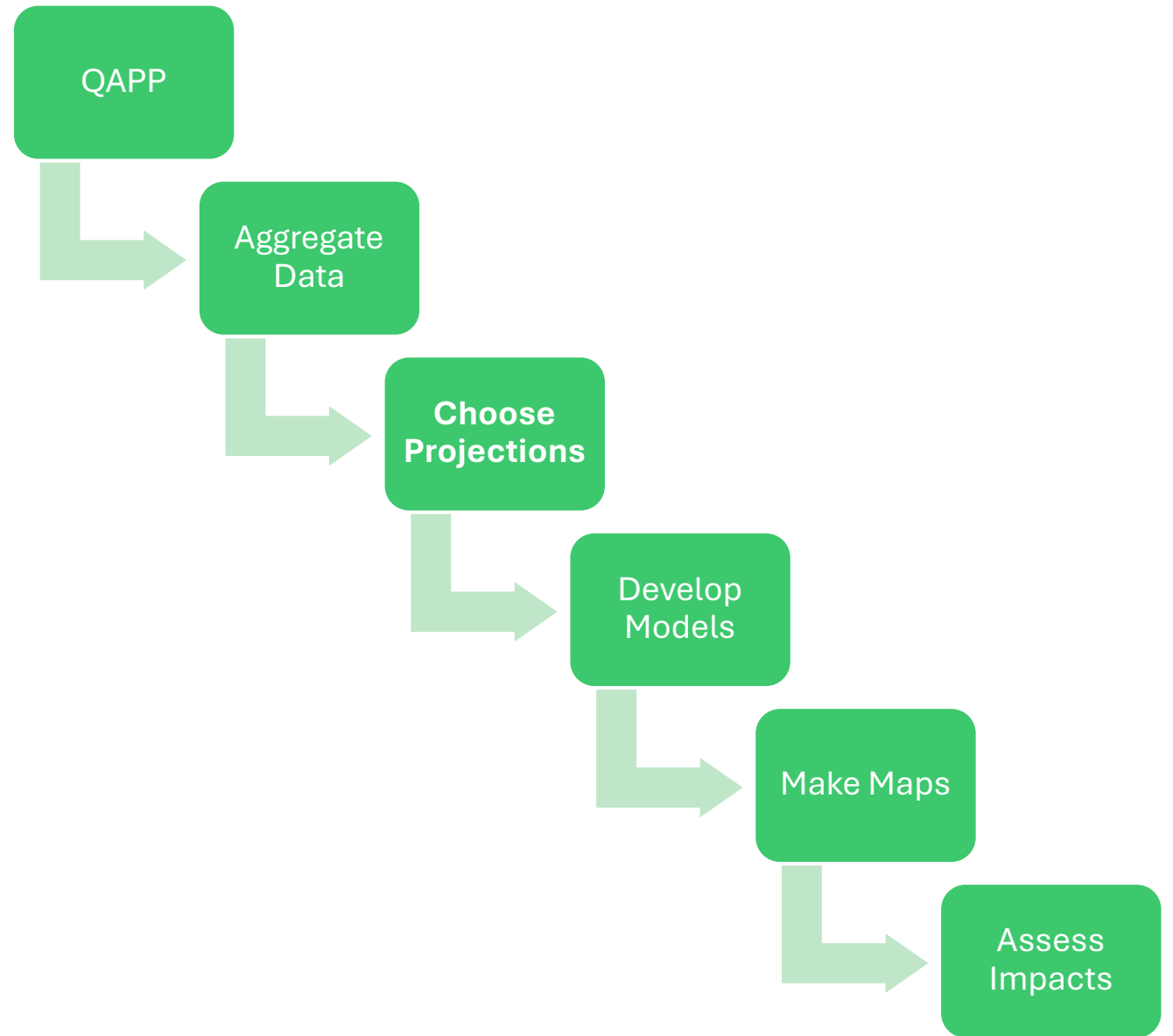


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# Project Analyses



# Map Development Overview



# Projections – What are they?

- How are Sea Level Rise (SLR) & flood levels estimated?
  - Probability Confidence
  - International predictions based on emissions
  - Tide gauge trends – MHHW and extreme flood
- Relative Sea Level Rise
  - Absolute SLR + Land Movement
- Confidence Intervals by year

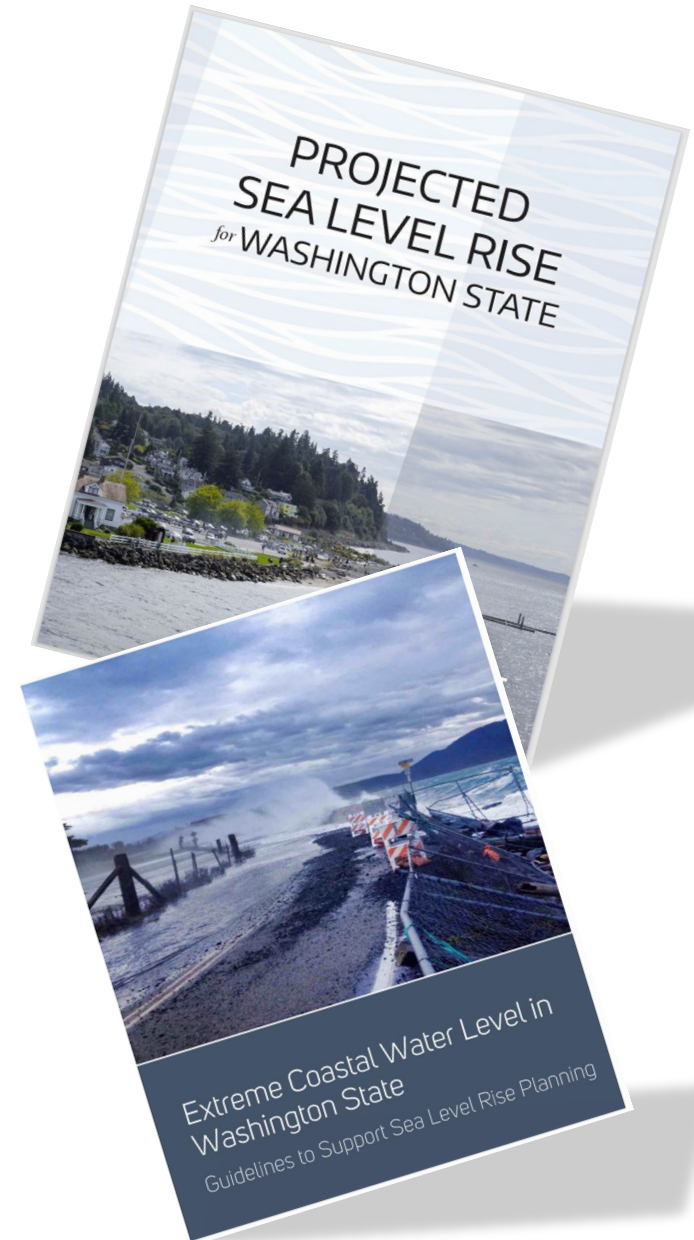


# Projections - Where do the levels come from?

- **2018 Report**
  - “Stillwater”, no wave run-up
- **2019 Report**
  - Extreme water levels seen by tide gauges

[Resilience Resource Library | Washington Coastal Hazards Resilience Network](#)  
([wacoastalnetwork.com](http://wacoastalnetwork.com))

[Washington Sea Grant - YouTube](#)



# Projections – What are the options

**1. RCP:** 4.5 or 8.5

**2. Timeframe:** 2050? 2060? 2100? Other?

**3. Certainty/Level of Risk:** 1% (less likely), 50%, 99% (very likely)? Something in between?



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# Next Steps = Modeling

## SLR:

1. Projections displayed over a DEM,
2. Intersect mapped resources with new tidal surfaces,
3. Quantify and rank impacts

## Wind-Wave:

- 1-D wind-wave hindcast on shoreline reaches w/ moderate to high wind-wave energy
- Estimate wind-wave runup using empirical methods

# Resources to be Assessed

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- Roads, Transportation
- Hospitals, Police Stations, Fire Depts
- Schools, Libraries
- Residences
- Historic and Cultural Resources
- Group A Wells, WWTPs
- Beach Access, Parks
- Wetlands, Estuaries

# **Audit of Existing Development Regulations and Policies**

- **Review applicable regulations and policies including the following:**
  - **Shoreline Master Program (SMP)**
  - **Flood Hazard regulations**
  - **Critical Areas Ordinance (CAO)**
  - **Comprehensive Plan**
- **Summary of recommended updates to applicable regulations and policies**

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# Community Participation



# Role of the Technical Advisory Committee (TAC)



ESTABLISH PROJECTIONS &  
PROVIDING INPUT ON MAPPING  
PRIORITIES



IDENTIFYING SPECIFIC AREAS OF  
CONCERN AND GAPS



INFORMING FUTURE CODE AND PLAN  
AMENDMENTS



CONSIDER AND UTILIZE FEEDBACK  
OBTAINED FROM THE PUBLIC  
MEETINGS IN DEVELOPING THE  
PRIORITIES, MAPS, AND STRATEGIES

# Community Engagement

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- **Public Engagement Plan**
- **Outreach Events**
  - Public Information Meetings
  - Planning Commission
  - Board of County Commissioners
- **Focused Outreach & Coordination**
  - Public Information Meetings
- **ArcGIS Storymap or Web map**

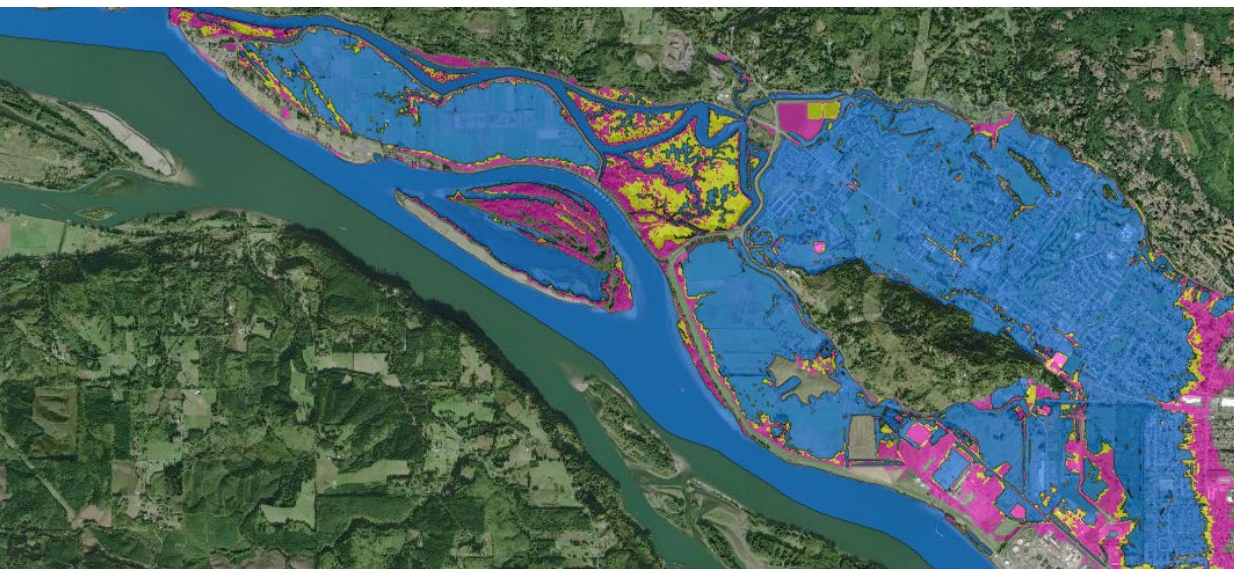
## Deliverables:

- Public Engagement Plan
- Draft outreach materials
- Final outreach materials
- Draft and Final ArcGIS StoryMap or similar Web Map

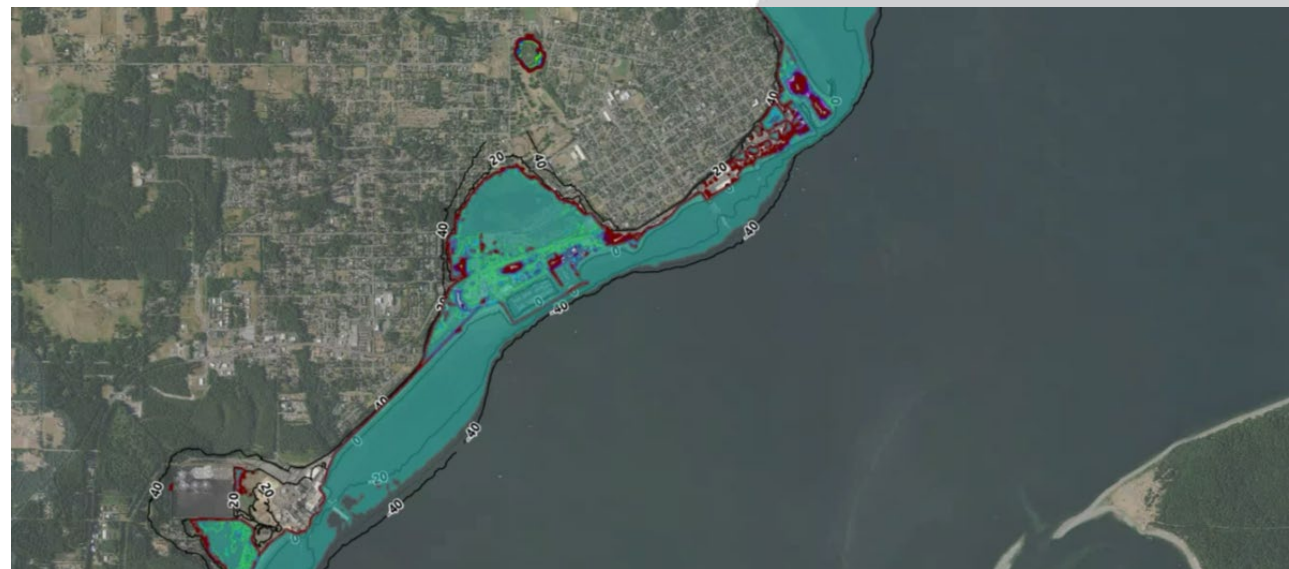


# StoryMap Example

[Pacific County SLR Story Map](#)



[Port of Port Townsend SLR Web Map](#)

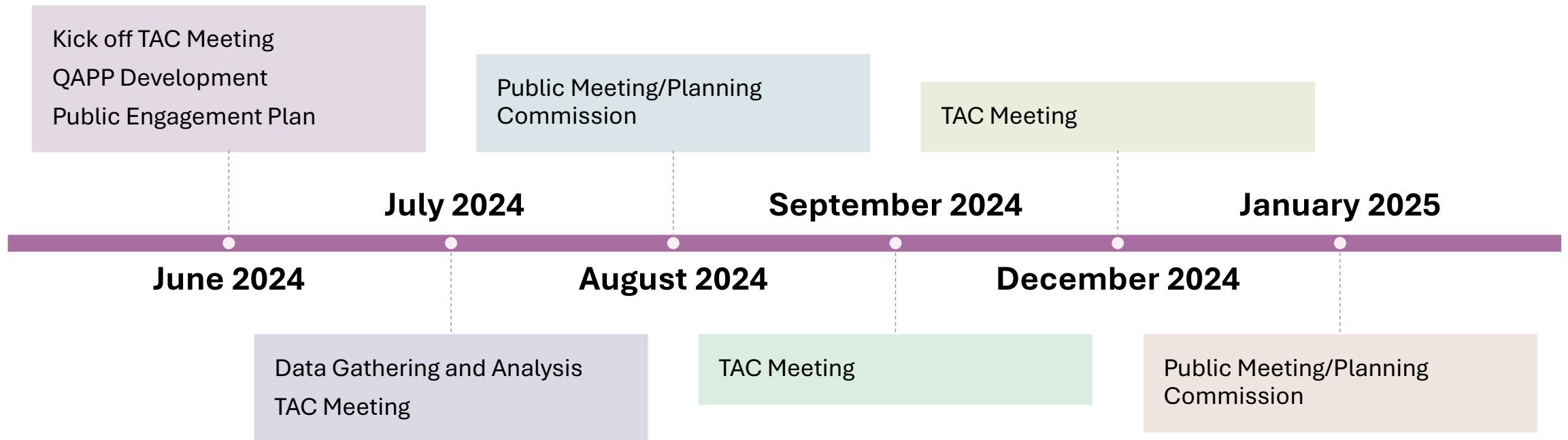


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# Next Steps



A serene marina scene at sunset. The sky is a mix of orange, yellow, and blue, with a dark forested hillside in the background. In the foreground, a wooden pier extends into the water, featuring a small, illuminated building with a sign that reads "Rokk". Several boats are docked at the pier, their lights reflecting on the calm water. The overall atmosphere is peaceful and quiet.

# Questions