Time to Act –
Adapting to Climate Change in Whatcom County
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Urban Drainage & Sea Level Rise: Adapting Seattle

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Context

- Mitigation vs. Adaptation
- Seattle Climate Action NOW
- GHG Inventory
- Adaptation and Water Supply

Urban Drainage

Climate Change

Primary interest: changes in precipitation

- Uncertainty in model projections
- Spatial and temporal resolution

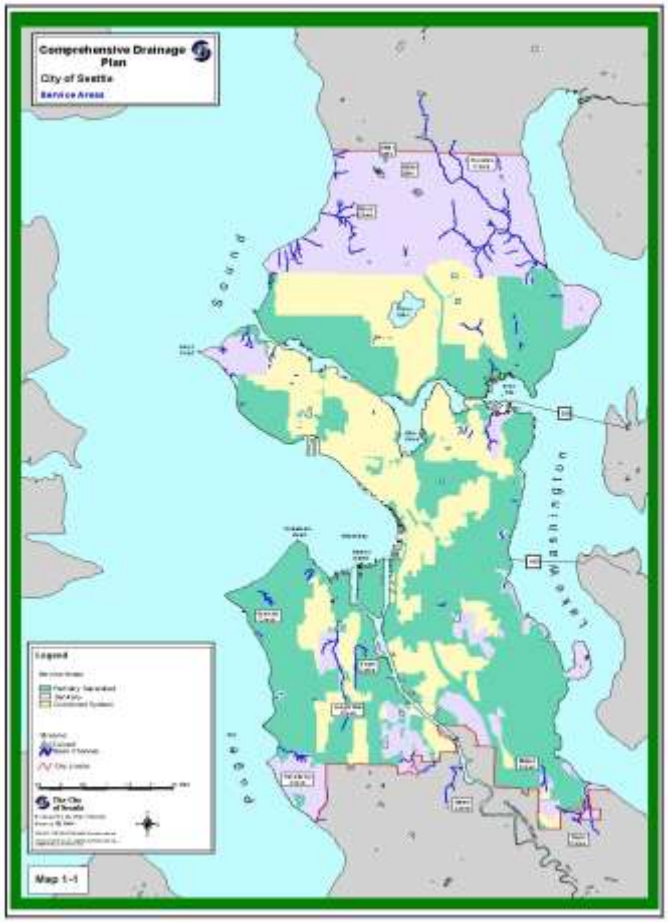
2009 Washington Climate Change Impacts Assessment

- Produced by UW Climate Impacts Group (UWCIG) in partnership with Washington State University and Pacific Northwest National Laboratory
- Stormwater Infrastructure chapter
- Generally projections for increases in extreme high precipitation (Rosenberg et al, 2009)

SPU's Approach to Urban Drainage Adaptation

- Bottom-up, no regrets
- Identify operational adjustments
- Support applied research
- Identify high priority impacts areas
- Collaborate
- Experiment
- Build internal capacity

Seattle's Drainage and Wastewater System



System Drivers:

- Combined Sewer Overflow (CSO) and Stormwater Permit Compliance
- Sediment cleanup
- Urban flooding

Urban flooding:

- Historic system design to 25yr event
- Significant life, safety, and property impacts in '04, '06, and '07

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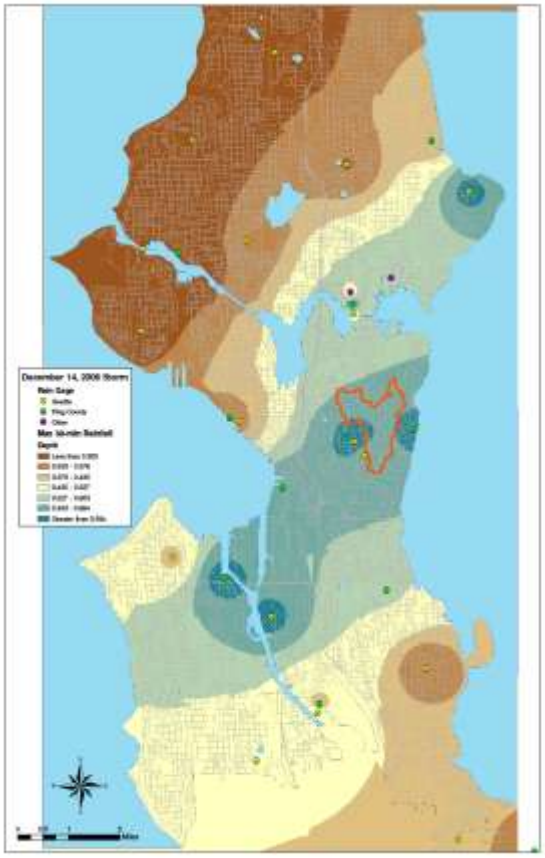
Green Stormwater Infrastructure

Flood Prone Mapping

Historic Precip Analysis



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Operational Adjustments & Capacity Building

System Operations and Planning Analysis (SOPA)

- Weather forecasting services
- Performance monitoring
- Operations and planning

Storm Observers

- Staff deployed to known problem areas ahead of storm
- Boots on the ground to identify potential problems

Improvements to Operations Control Center

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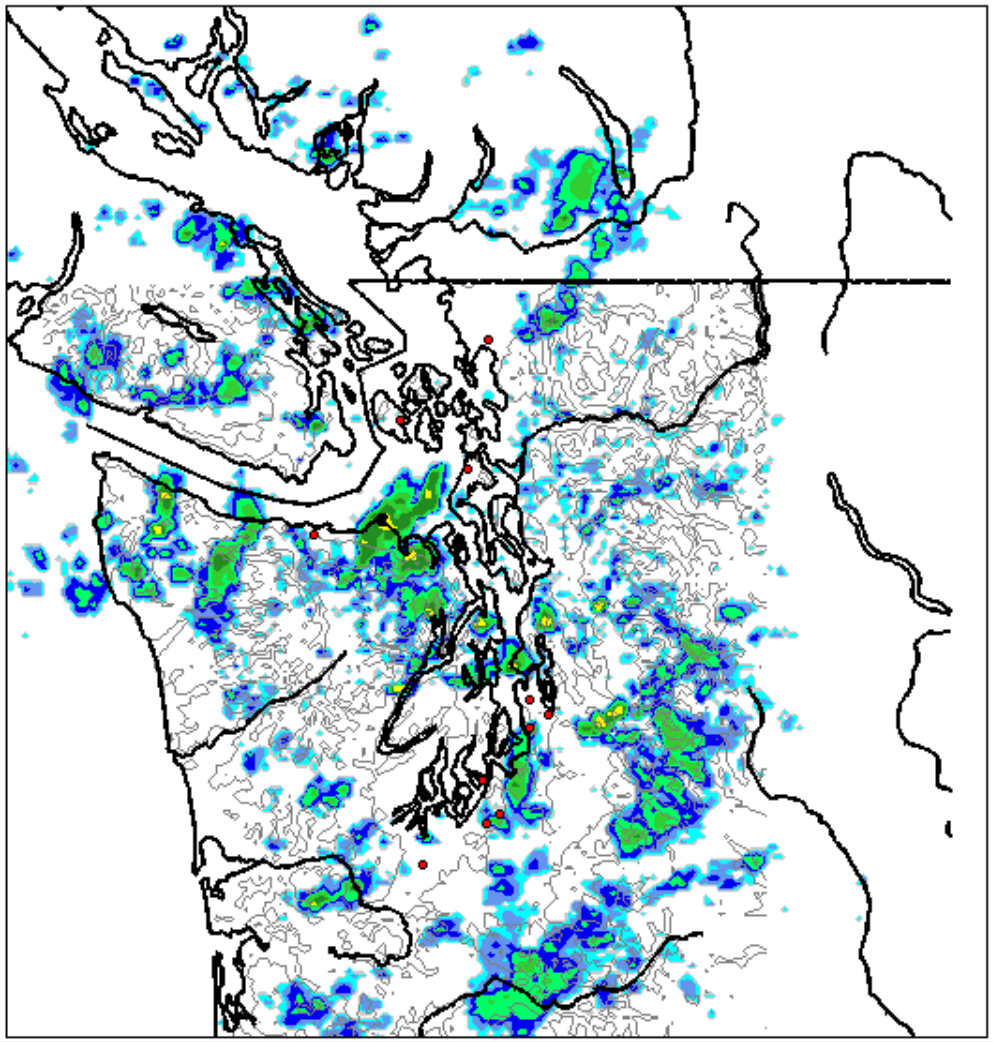
Seattle RainWatch

products | verification | abou

radar reflect. | instant. precip | 1hr pcp | 6hr pcp | 12hr pcp | 24hr pcp | 48hr pcp | 1hr pcp FCST | radar reflect. FCST

zoom level: full domain | greater metro | local metro

Camano Island Radar (Valid: 2011-04-06 13:42 Local)



Zoom level:

full domain | greater metro | local metro

Start animation:

Animation Speed:

Faster Slower fps: 4

Time (UTC):

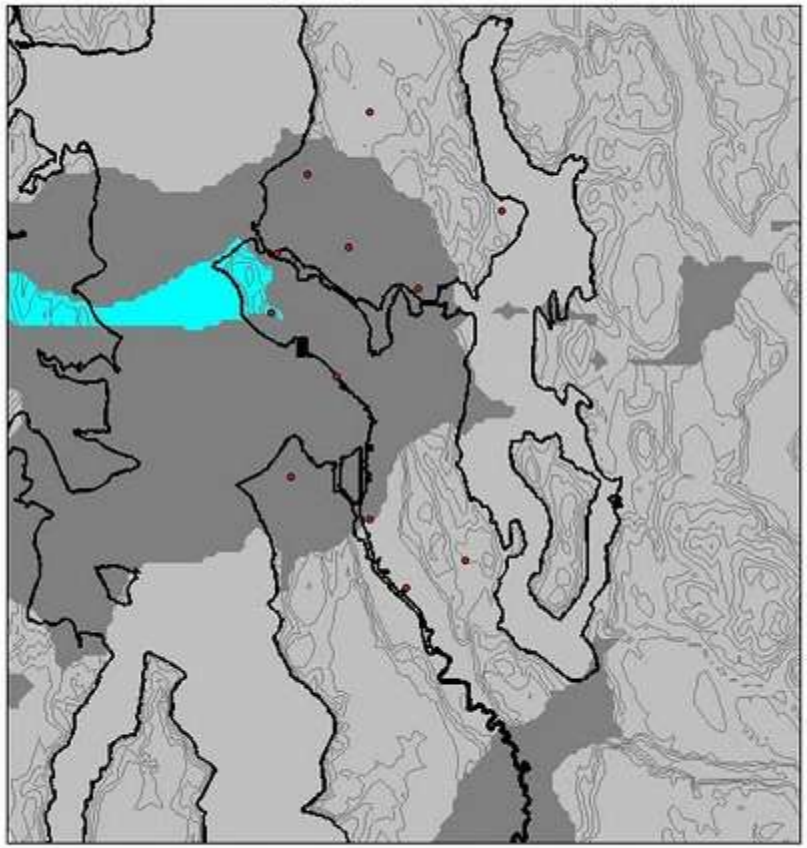
04/06/2011 20:42 UTC

Time (local):

04/06/2011 13:42 PDT

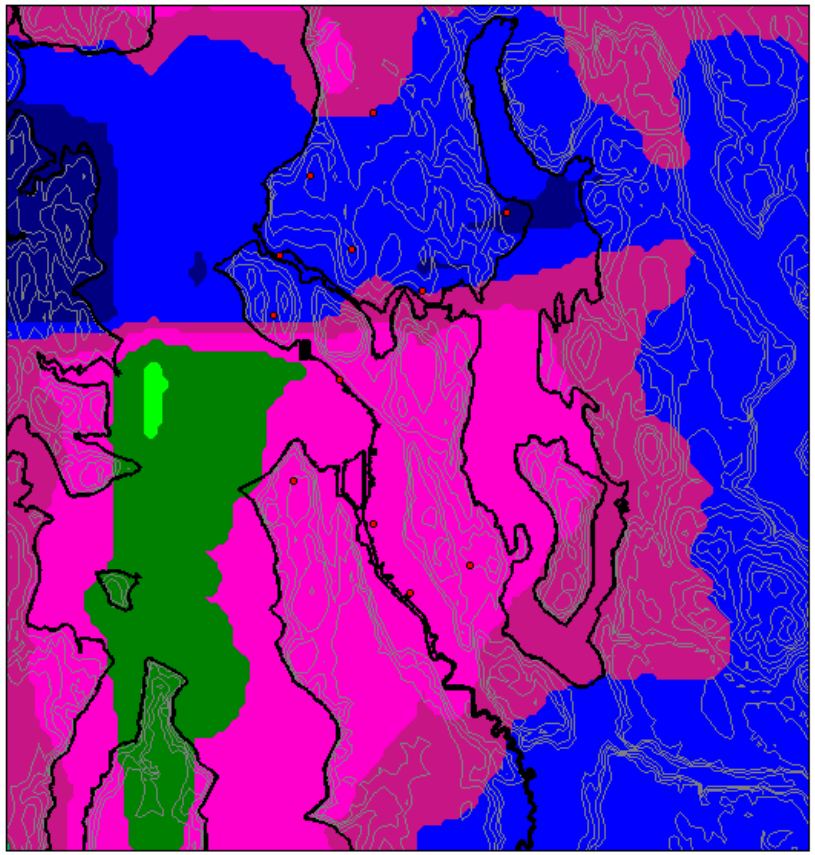

2020
Sullivan-Palatek
WATER
GMC

1 Hr. Precip Total (Valid: 2010-12-08 21:59 Local)



total in

24 Hr. Precip Total (Valid: 2010-12-12 12:01 Local)



total in

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Sea Level Rise

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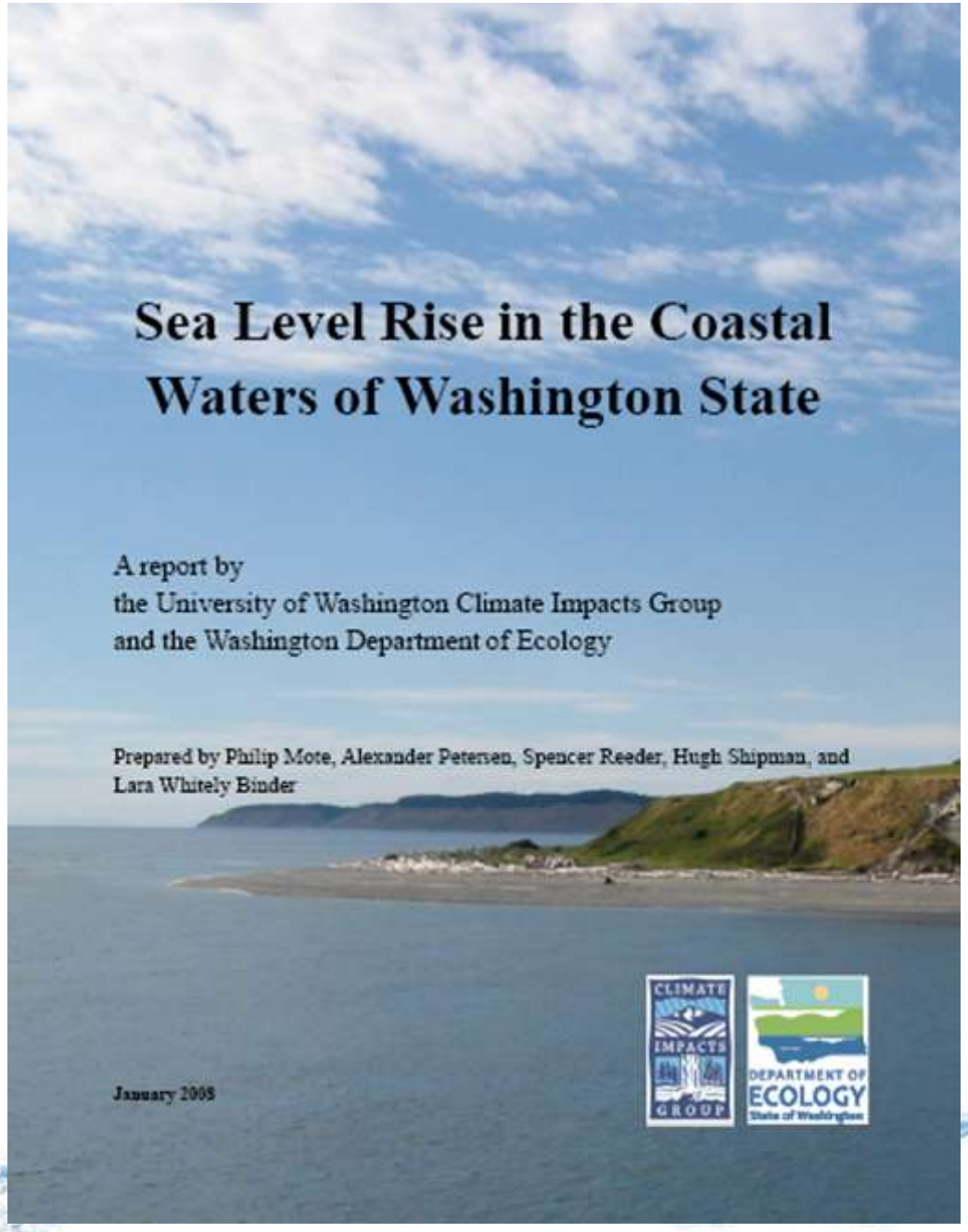
SPU's Approach to Sea Level Rise Adaptation

- Global
- Local
- Best Available Science
- GIS
- Decision Making
  - SPU Drainage and Wastewater
  - SPU Asset Management
  - Others Citywide



Best Available Science

- Locally modified IPCC AR4
- Estimates for 2050 & 2100
- Low, Medium, High

- Storm surges
- Highest tide on record

- SLR BC 2008
- Tsunami Studies
- Rahmstorf 2007, 2009
- NAS 2012
- IPCC AR5 2013

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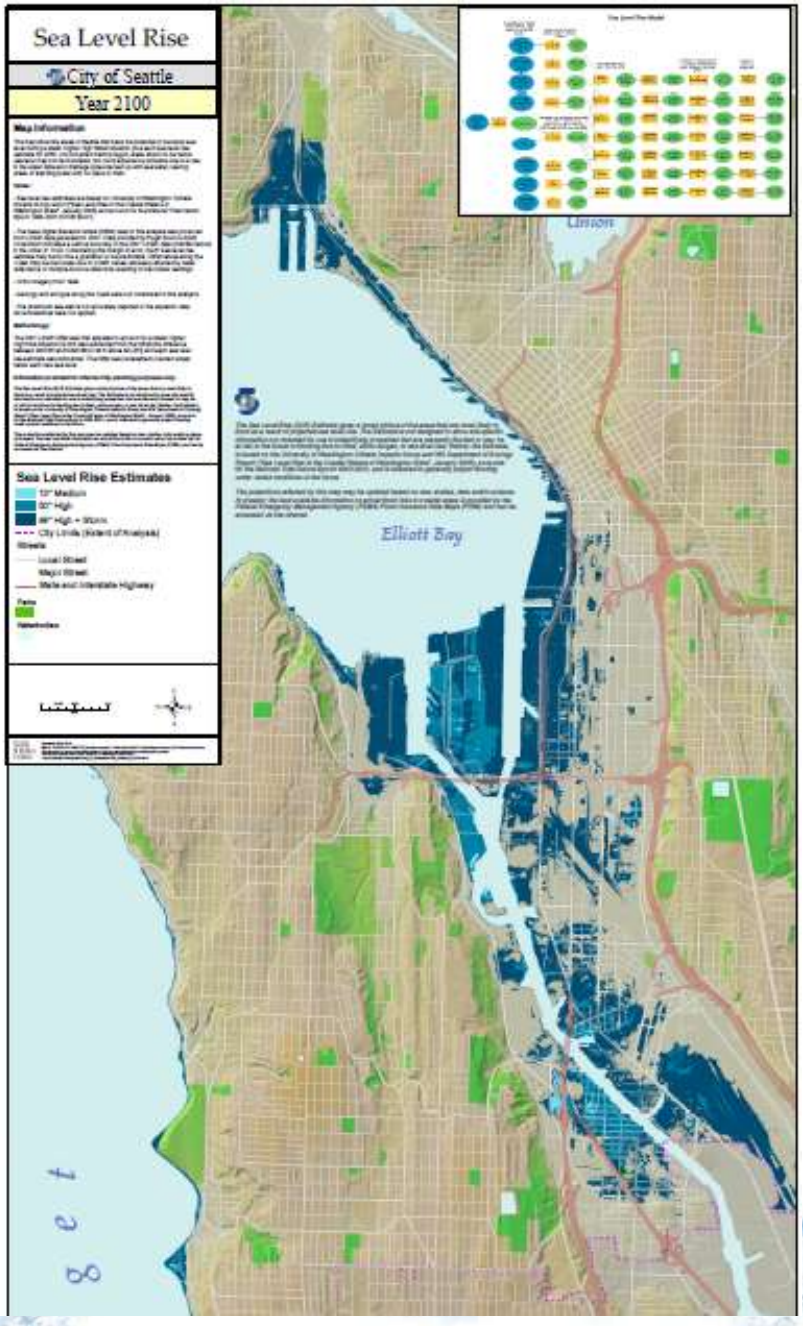

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Thank You