King County
Protecting Our Waters
Doing our part on rainy days

King County Addressing Climate Change

Engineering and Planning Subcommittee
Metropolitan Water Pollution Abatement
Advisory Committee
August 3, 2017

Heavy Precipitation in King County

- **Initiated study with the University of Washington in 2015**
- **Funded by King County's Water and Land Resources Division, WTD and Dept. of Ecology**
  - Grant amount $250,000

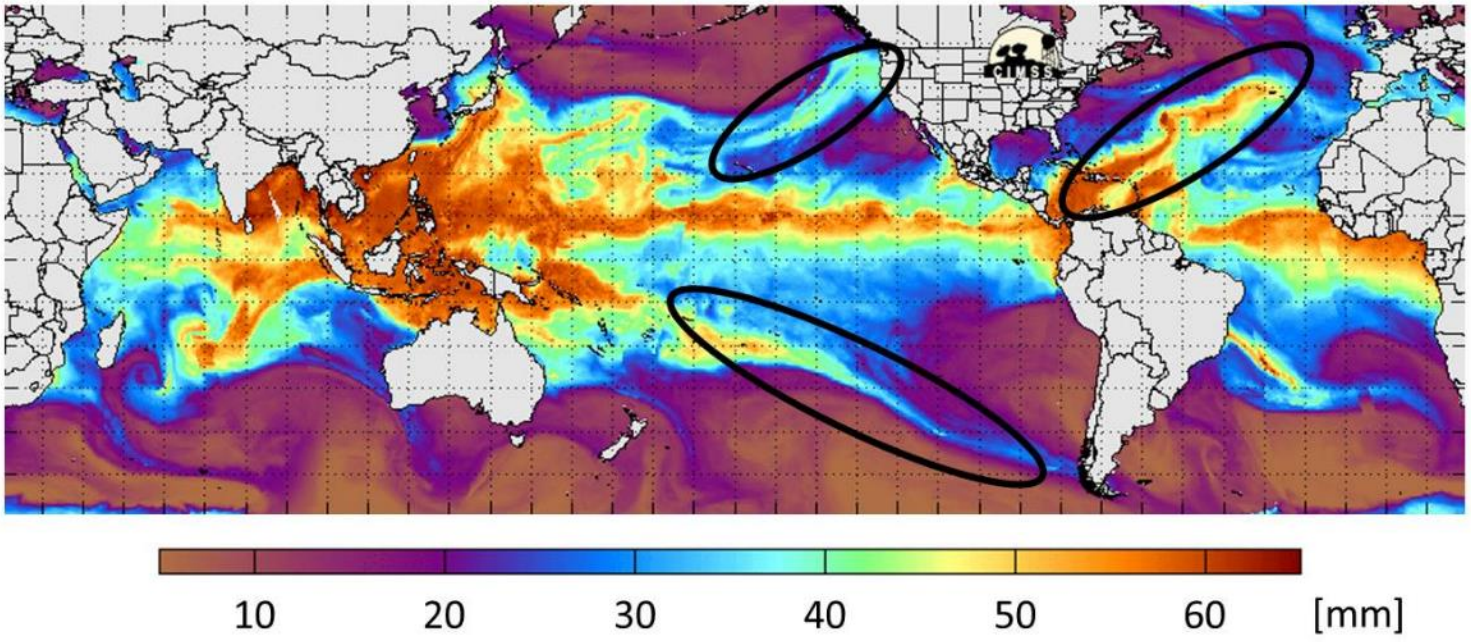
New rainfall records this winter

- **Most rain from October – April**
  - 45 inches
- **Most days with measurable amount of rain from October - April**
  - 144 days

Nearly all heavy rain events in the Pacific Northwest stem from Atmospheric Rivers

Total Precipitable Water (TPW)

(SSMI/AMSRE)



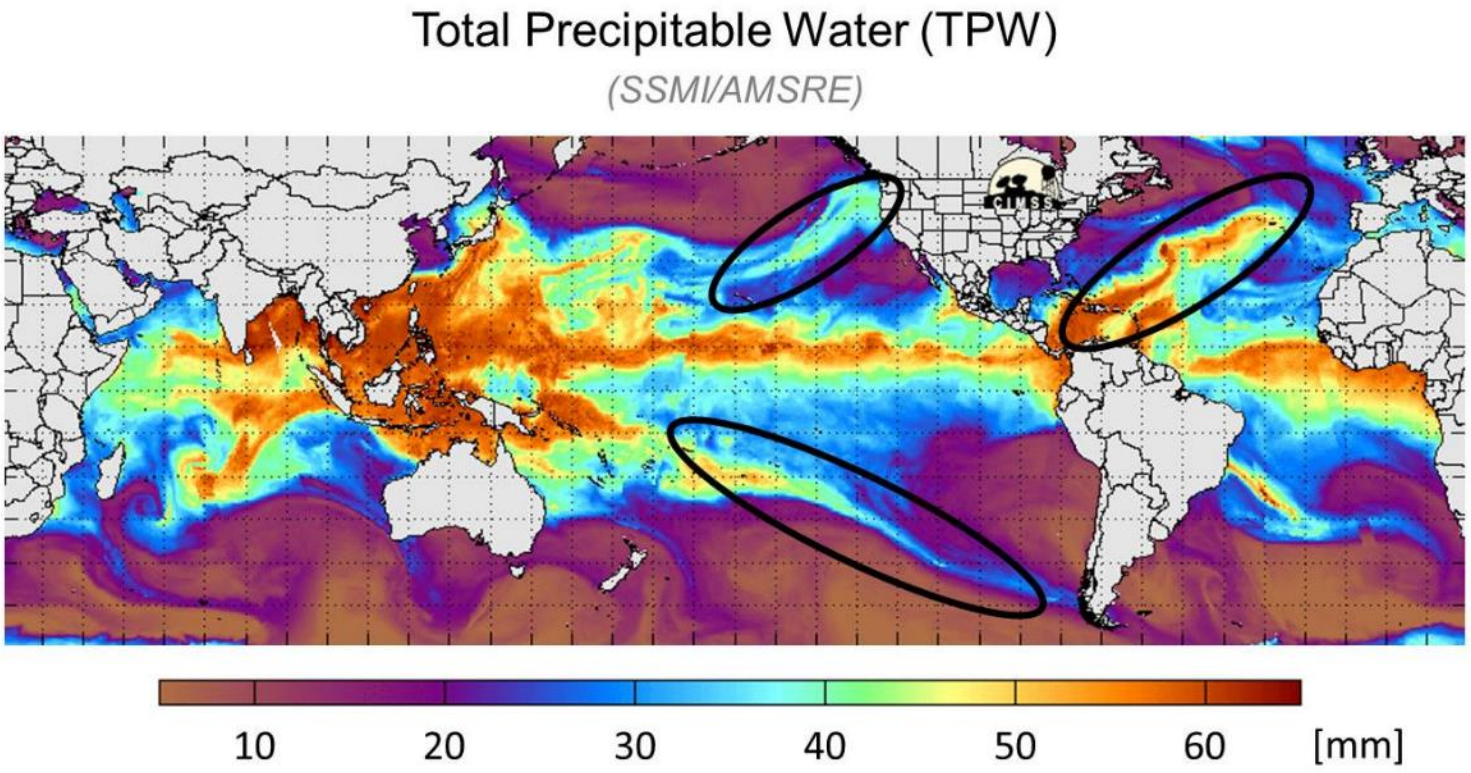
Over 60 years of weather data are used in wastewater and stormwater design

- **Used for sizing combined sewer overflow control projects**
- **Used for sizing and designing stormwater infrastructure**
- **Updated routinely with latest weather data**

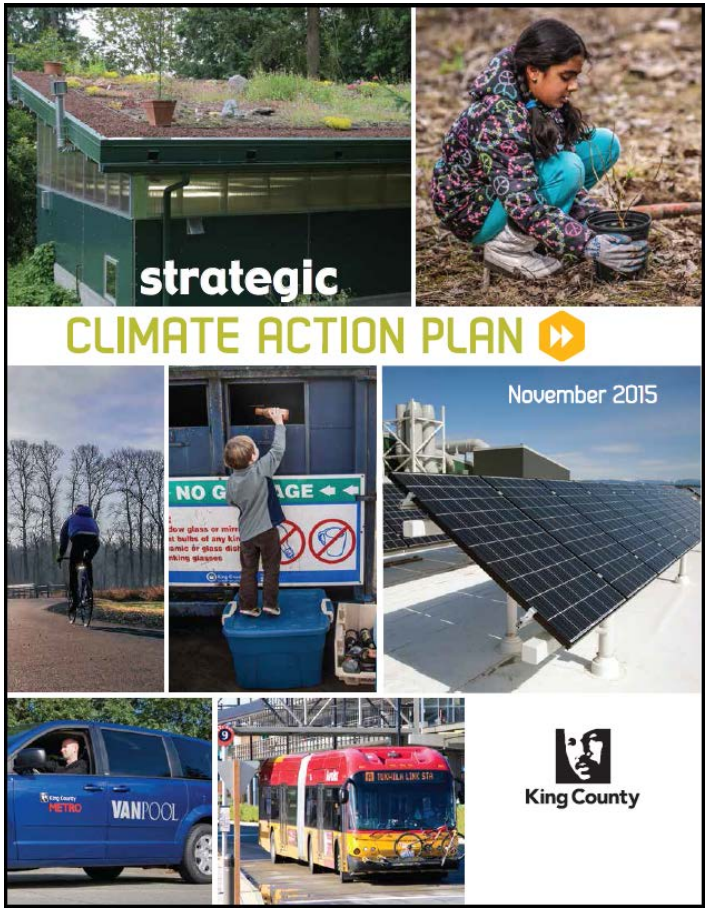
What about the future?

- **Want to be prepared for future weather, not just past weather**
- **Need to meet legal requirements**
  - Mimic natural hydrology with stormwater management – assess full hydrograph, not just a design storm
  - Less than an average of 1 untreated combined sewer overflow event per year per site based on a 20-year average

Research shows that atmospheric rivers are projected to be 22% more intense by the 2080s



Wastewater designs to account for climate change



Wastewater conveyance system modeling will assess impacts of climate change

- **Compare system flows in combined sewer area for historic vs climate-impacted rainfall data**
- **Review different peak flows at different future time periods**
- **Discuss findings in 2018 Long-term Control Plan Update**

Uncertainties

- **Only modeling two scenarios**
- **Prefer using ensemble of multiple scenarios and models**
- **10 more available by late 2018 early 2019**
- **Compounding uncertainties by linking models**

Planning Considerations

- **Life of facility vs timing of change**
- **Cost of addressing now vs later**
- **Confidence in projections**
- **Data are not perfect but best available**

Questions?

- For more information, please contact:

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