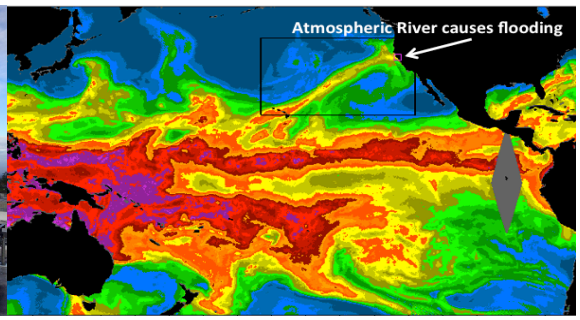


AQPI: IMPROVED STORM MONITORING AND PREDICTION FOR THE BAY AREA

Improved monitoring and prediction of precipitation in the San Francisco Bay region can enhance public safety through early warning and storm tracking when hazardous weather events come onshore.

MONITORING AND FORECAST NEEDS

Emergency, public utility, and water resource managers require accurate and timely precipitation information to make decisions regarding public safety, infrastructure operations, and resource allocations.

Standard weather radars located in mountainous terrain can be blocked or overshoot precipitation falling in the San Francisco Bay region. Also, current numerical forecast models do not have the resolution to capture the details in rainfall needed to drive hydrologic, hydraulic, and hydrodynamic models needed by decision makers. These challenges will be exacerbated by future sea level rise, more extreme weather events and increased vulnerabilities.

THE SOLUTION: AQPI

The Advanced Quantitative Precipitation Information (AQPI) System is a $19M regional project recently awarded to NOAA and collaborating partners by the California Department of Water Resources through Prop. 84. Sonoma County Water Agency is the local sponsor. The AQPI System will provide both improved observing capabilities and a suite of numerical forecast models to produce accurate and timely information for a variety of user needs. The resulting information will support decision making to secure water supplies, mitigate flood risks, minimize water quality impacts to the Bay from combined sewer overflows, and have improved lead-time on coastal and Bay inundation from severe storms like Atmospheric Rivers (ARs).

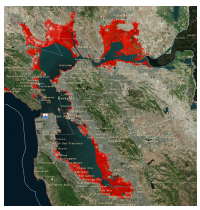
KEY FEATURES OF AQPI

- Five new, state-of-the-art radar systems to improve monitoring of precipitation offshore and within the Bay region.
- High resolution preciptiation forecasts.
- Coastal flooding, storm surge, and tributary streamflow forecasts.

ANTICIPATED BENEFITS

The AQPI System can aid water managers in securing water supplies while mitigating flood risk and minimizing potential water quality impacts to the Bay from storm runoff and combined sewer overflows. The AQPI system can be expected to provide benefits exceeding costs by a ratio of at least 4:1. These benefits accrue through:

- Avoided flood damage costs from early warnings.
- Forecast-based operations to maximize reservoir capture for water supply and fisheries flows.
- Minimization of water quality impacts from combined sewer.
- Enhancement of public safety for the various transportation modes (pedestrian, highways, marine and airports).



Map of San Francisco Bay region showing areas (red) prone to shallow flooding (map courtesy of NOAA Digital Coast).

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