

# Modeling Subsidence in the Central Valley

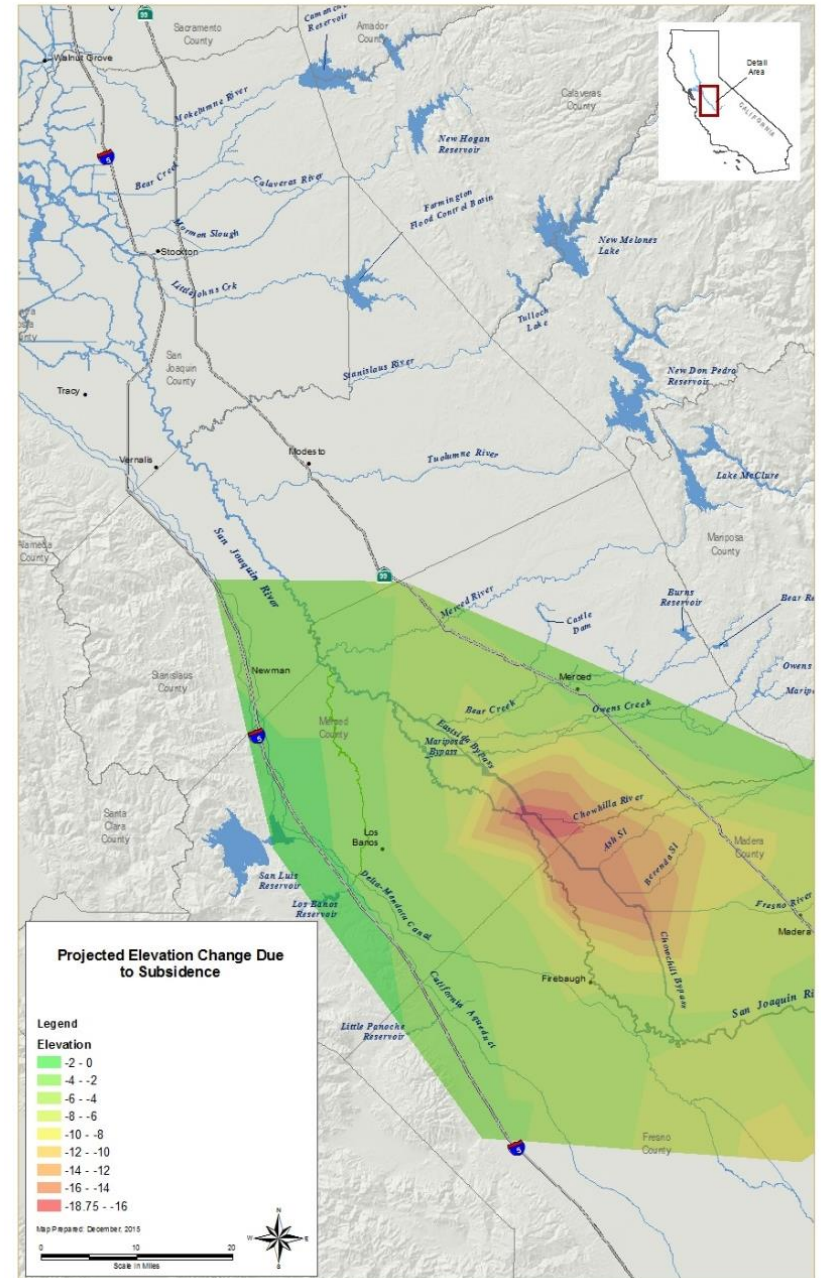
Evaluating Current and Future Impact on  
Flood Risk



ch2m.<sup>SM</sup>

# Projected Subsidence

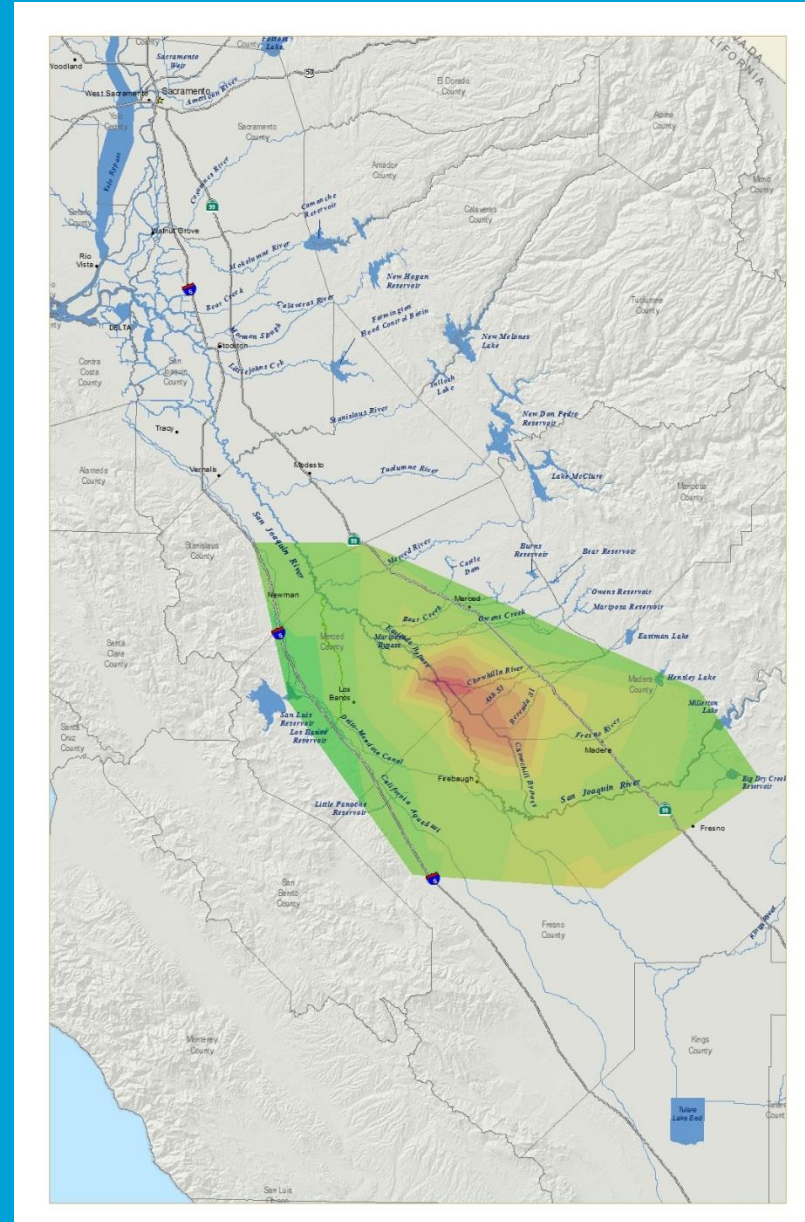
- DWR study - based on measured rates of subsidence
- Projected to 2062-mid level projection
- Variable throughout the San Joaquin Basin - most impact on Eastside Bypass near Sand Slough Diversion Structure



# Goals of Hydraulic Analysis

## Evaluate:

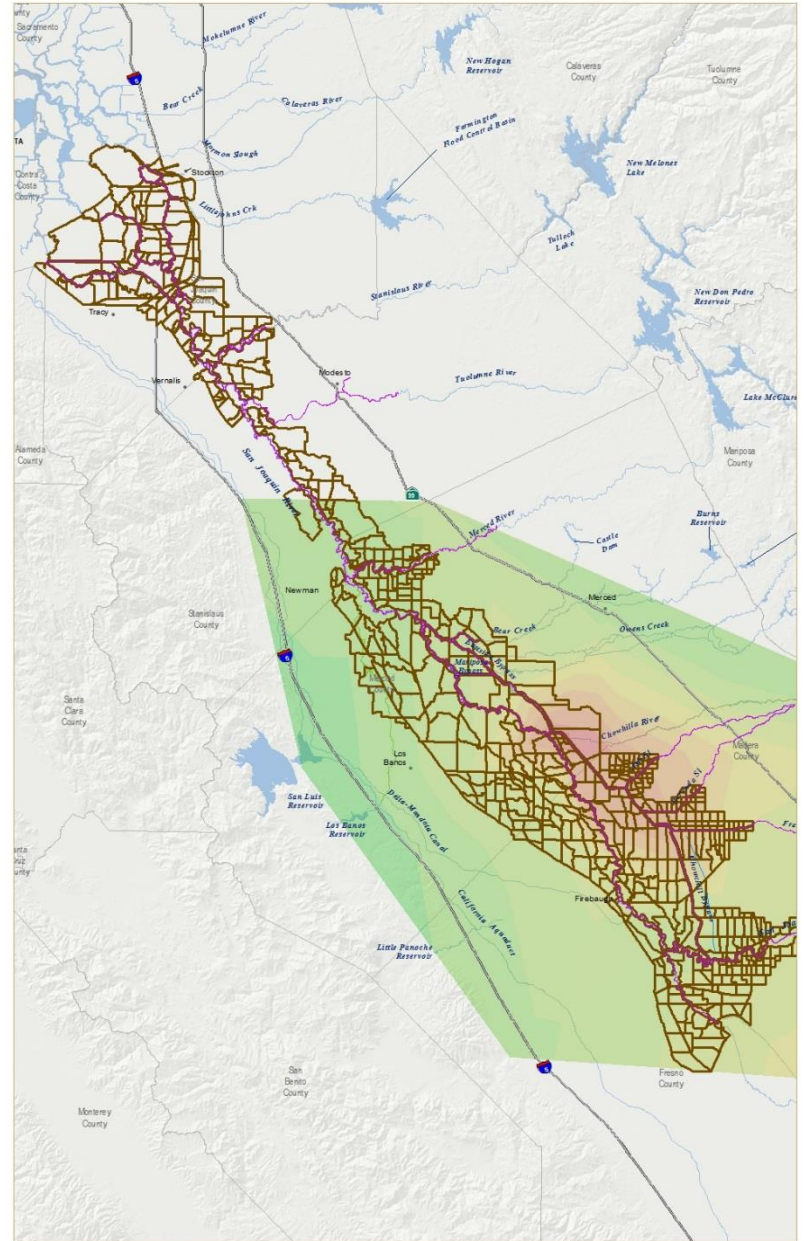
- Conveyance capacity
- Changes to flood inundation
- Changes to timing-flow delivery



# Methods

Two investigations:

1. CVFPP flow delivery model
2. CVFED HEC-RAS model



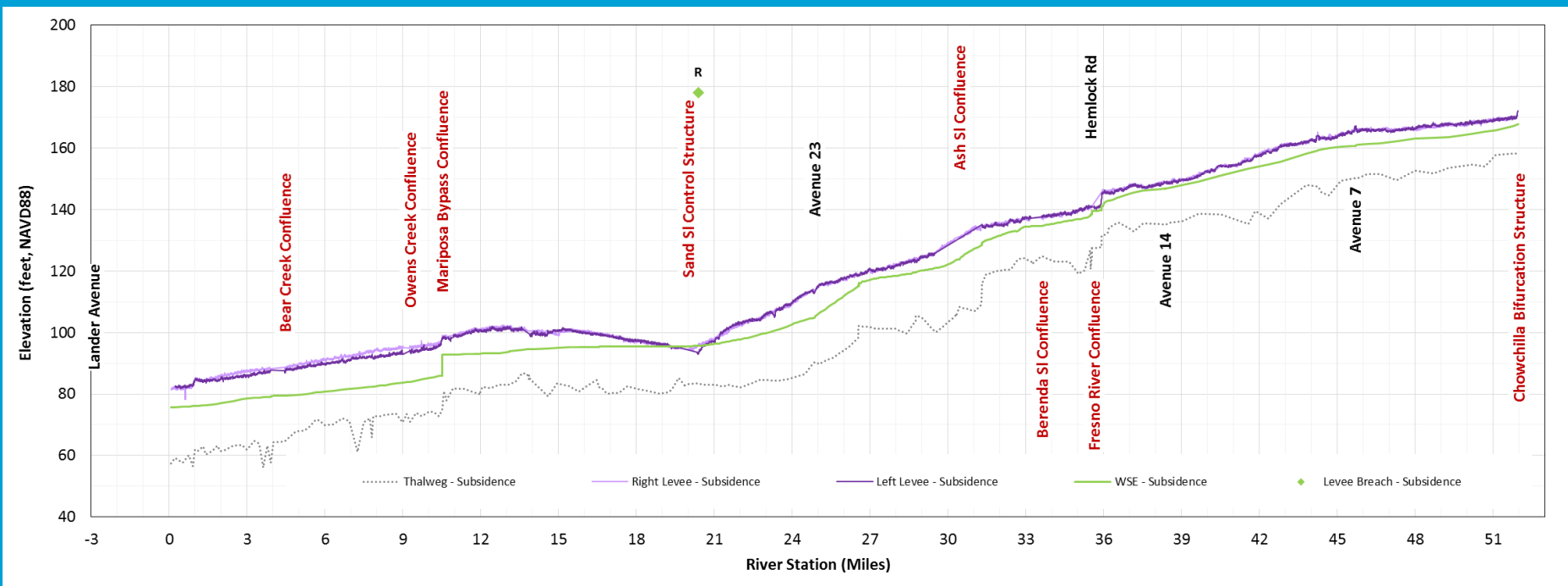
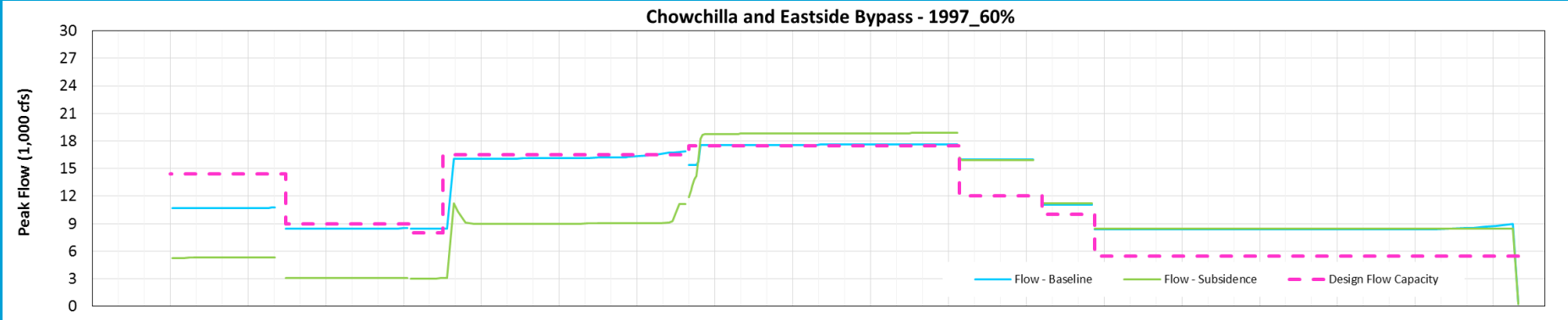




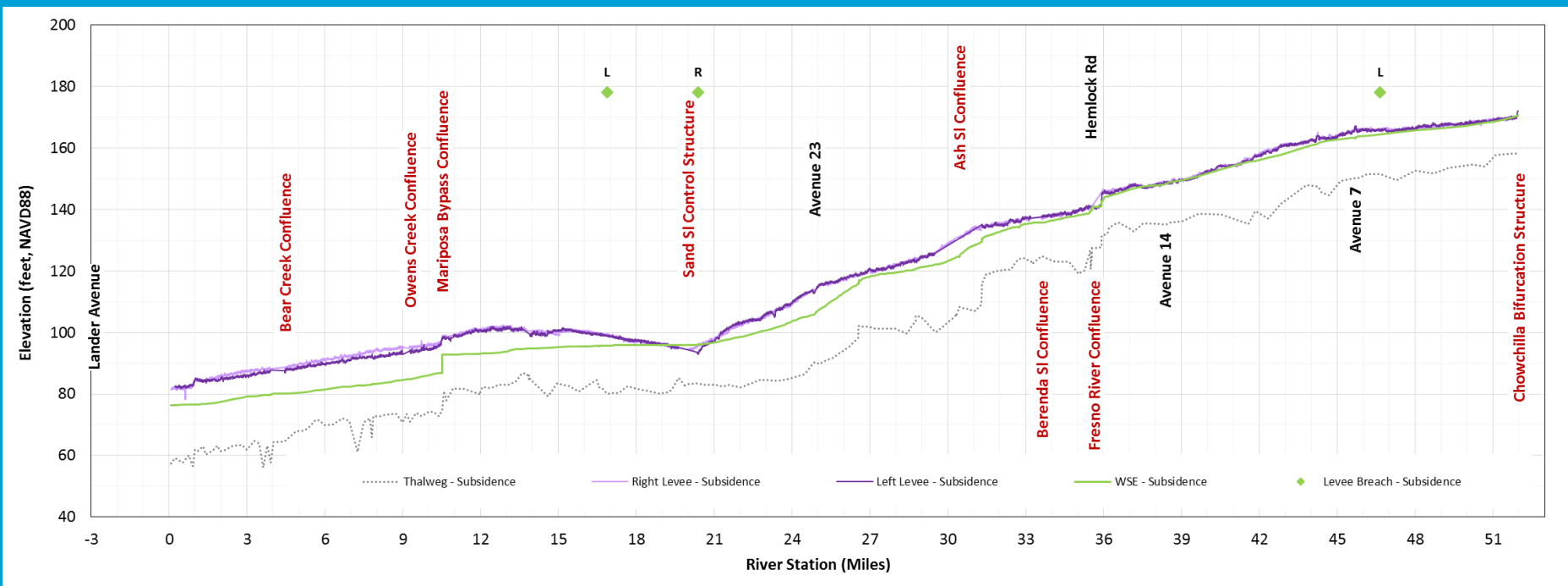
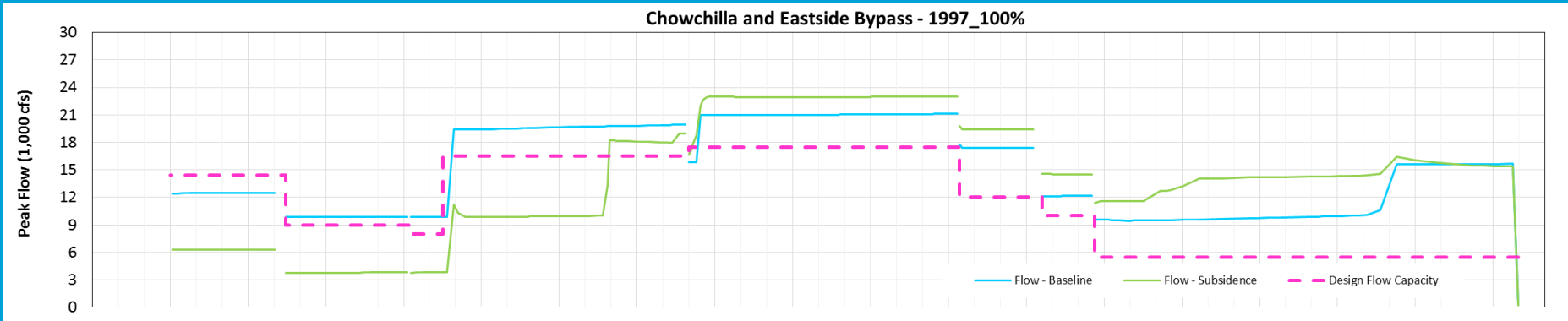
# CVFPP flow delivery model Results

- Decreased conveyance in Eastside Bypass from Sand Slough Control Structure to Mariposa Bypass
- Increased overbank flooding in Upper and Mid SJR Basin in three events studied
- Slight attenuation of flows in lower system

# Eastside Bypass: 60% of 1997 event

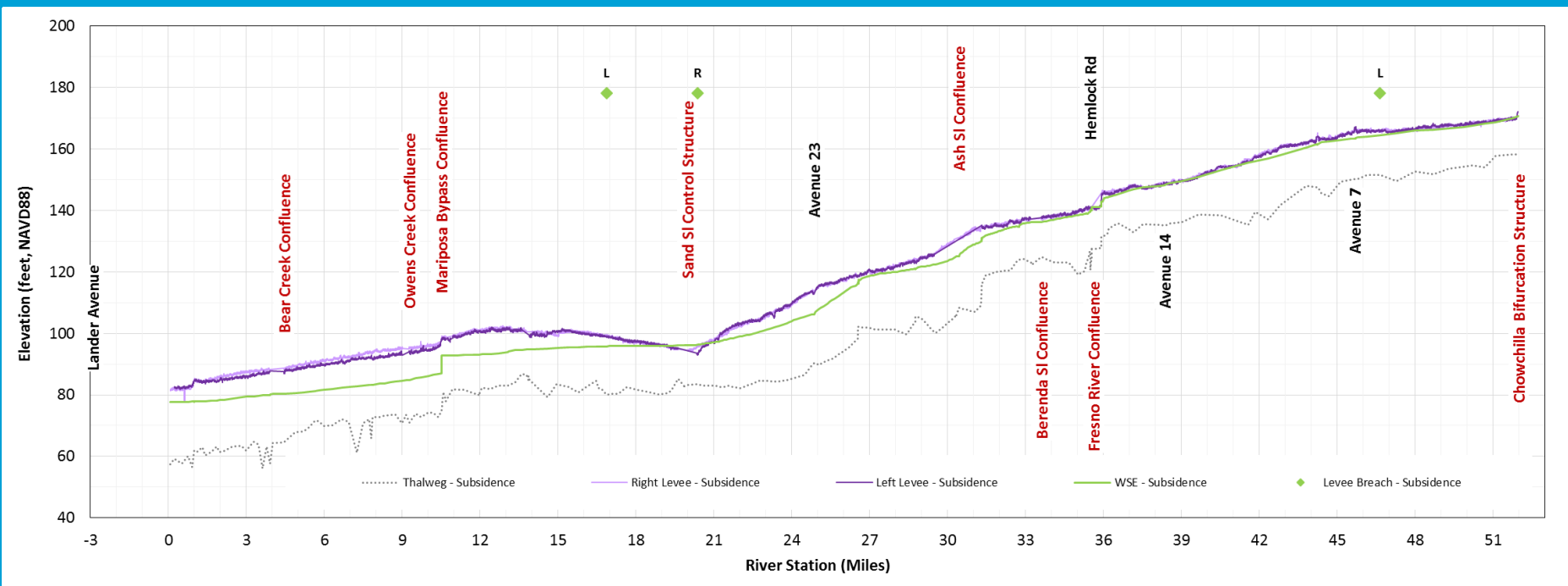
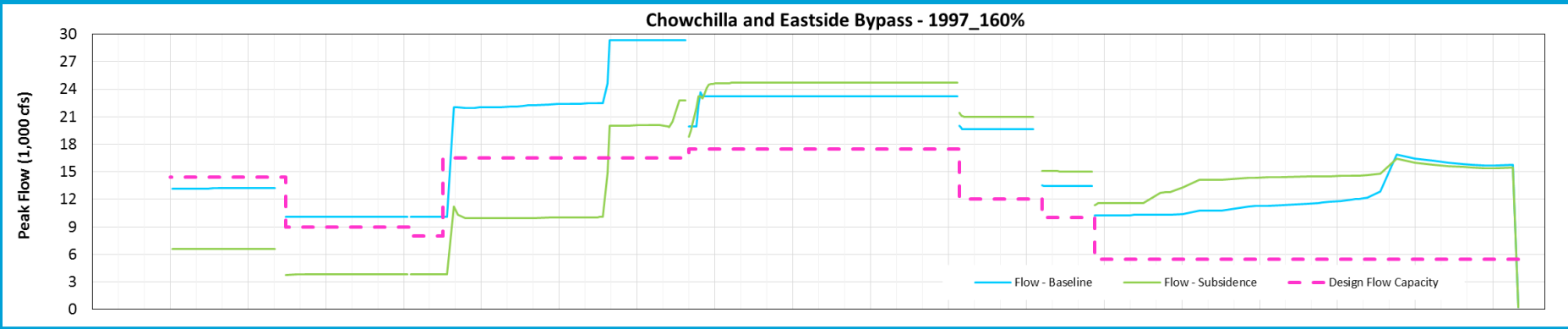


# Eastside Bypass: 100% of 1997 event

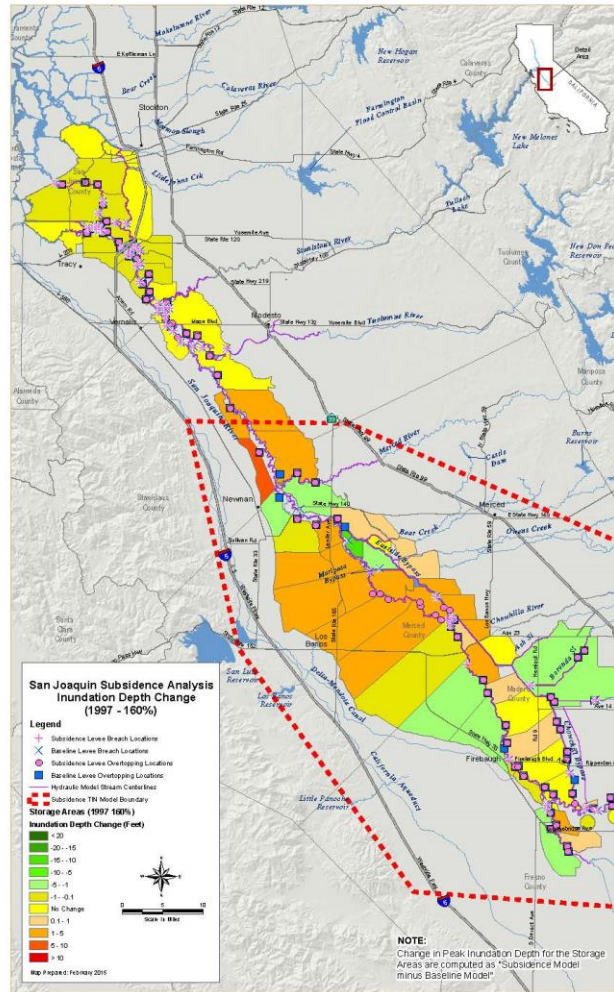




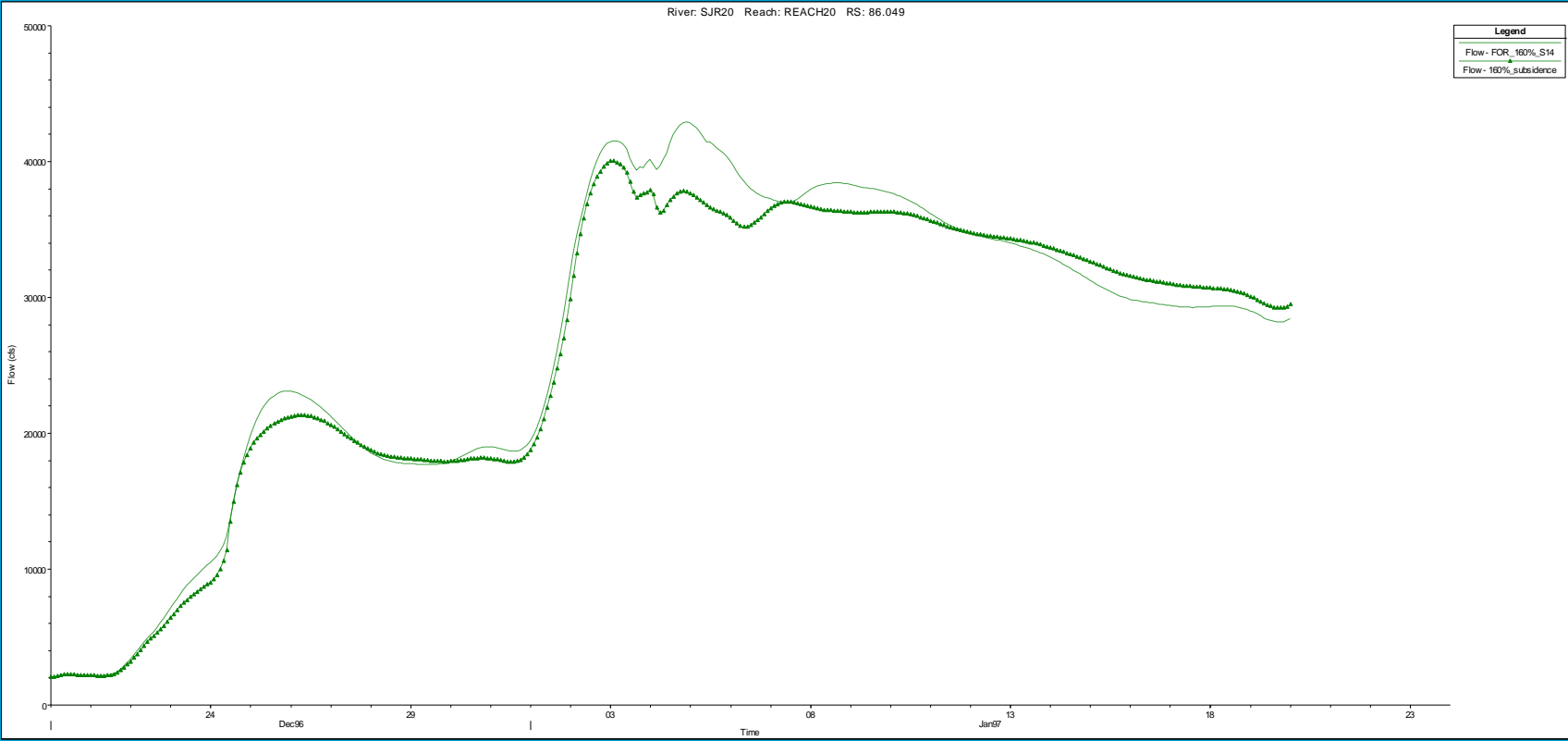
# Eastside Bypass: 160% of 1997 event



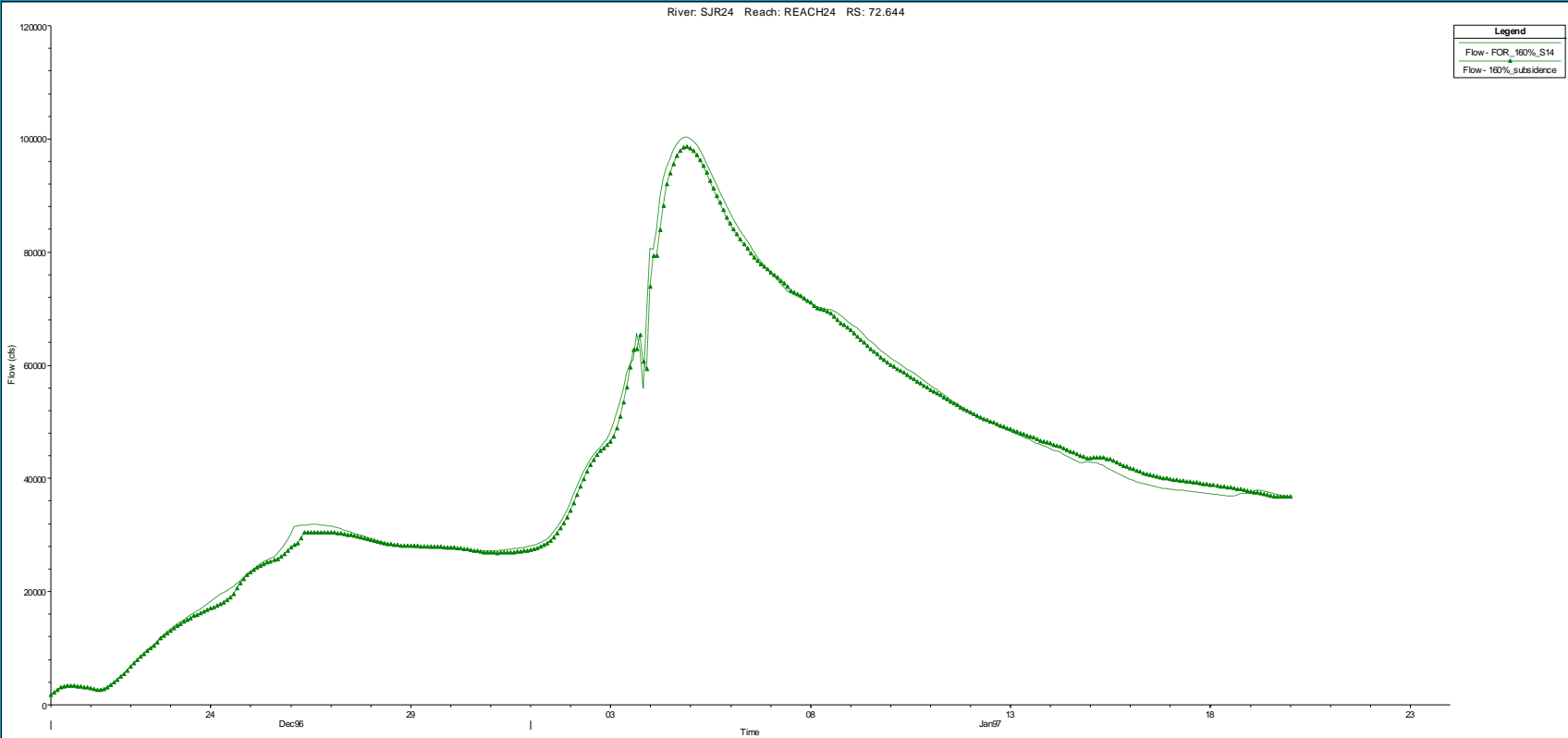
# Overbank Flooding



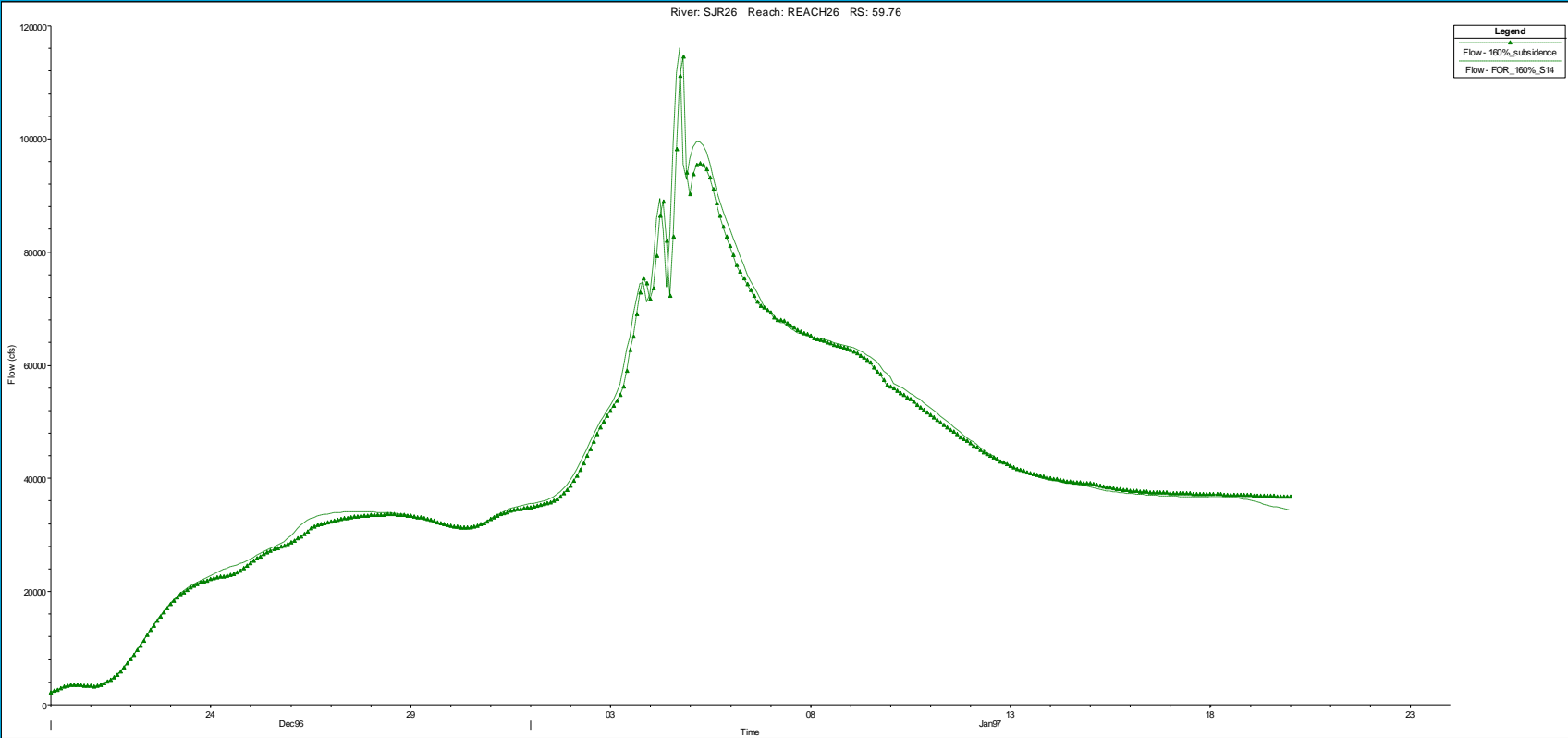
# Flow upstream of confluence with Tuolumne River



# Flow upstream of confluence with Stanislaus River



# Flow downstream of confluence with Stanislaus River

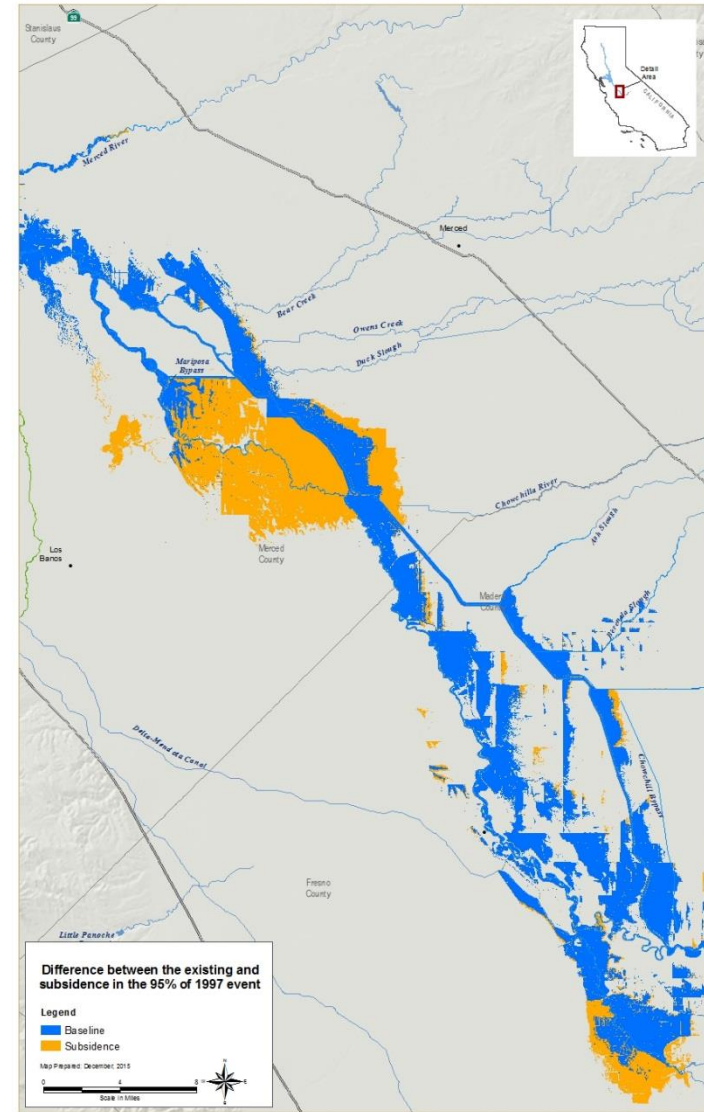




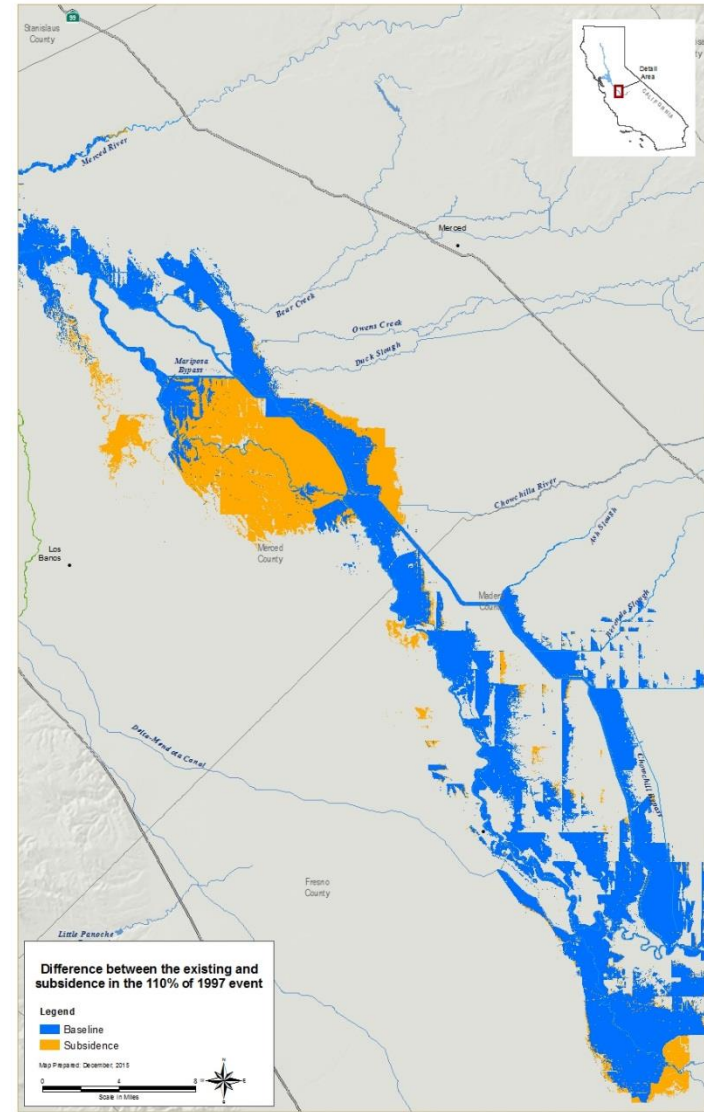


# CVFED HEC-RAS model Results

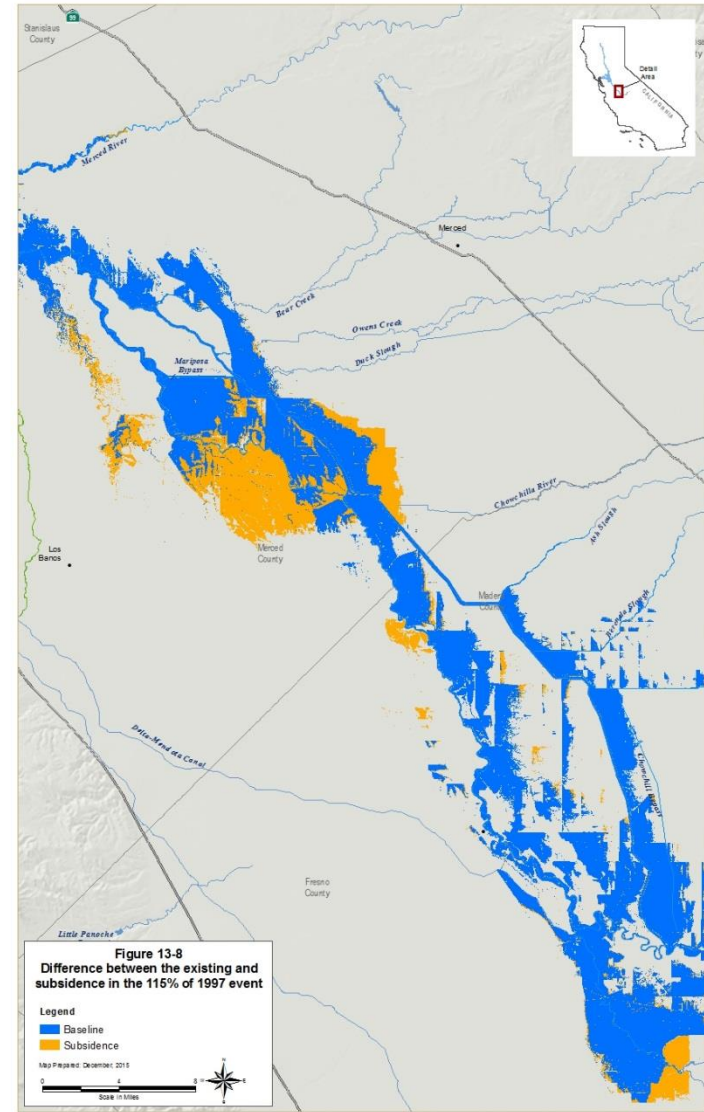
- Decreased conveyance in Eastside Bypass from Sand Slough Control Structure to Mariposa Bypass
- Increased overbank flooding in Upper and Mid SJR Basin in three events studied
- 95% of the 1997 event



110% of 1997 event



115% of 1997 event



# Thank You

## Questions



**ch2m.**<sup>SM</sup>