

Nevada Spring Thaw Flooding Analysis



Nevada citizens protecting Nevada

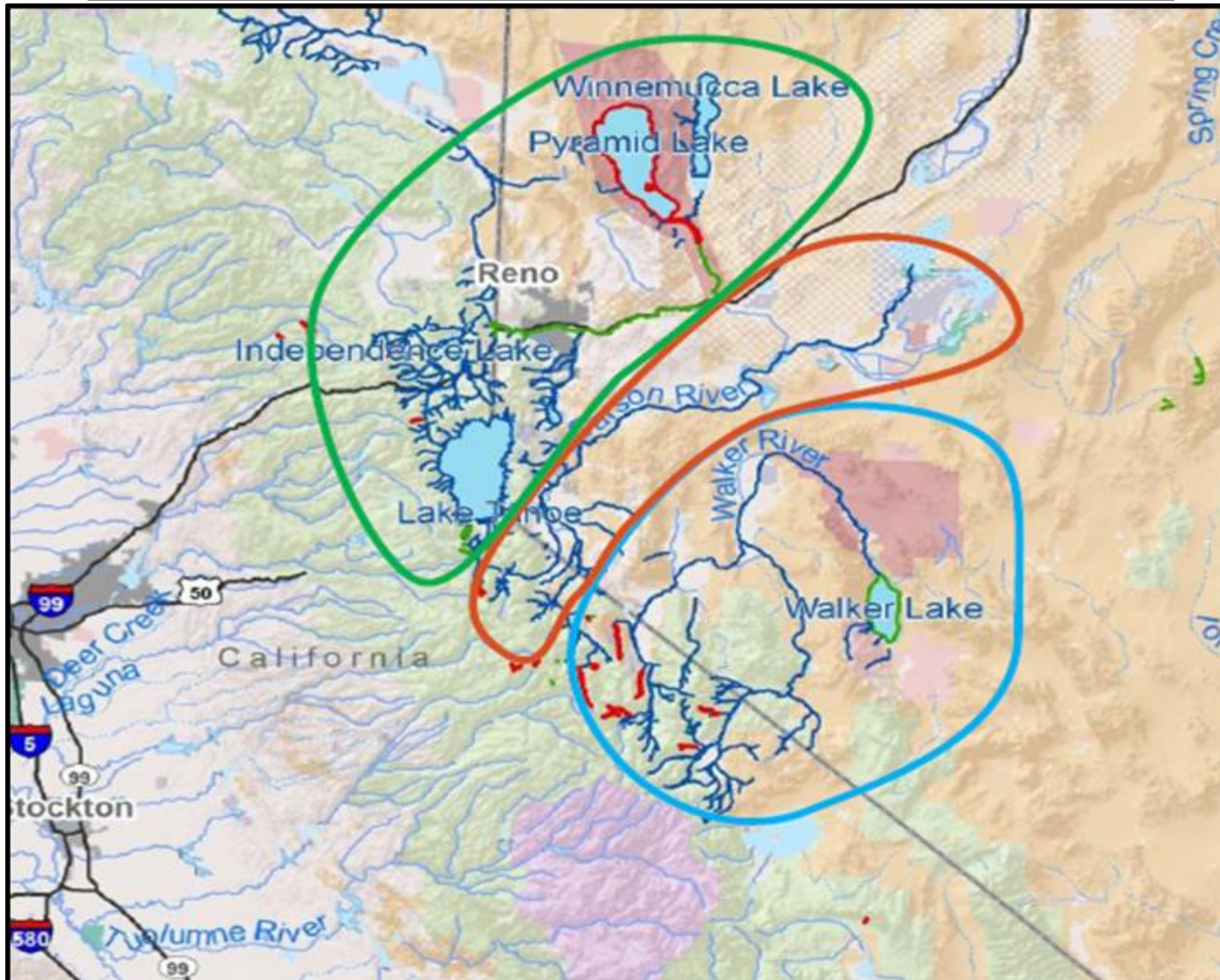


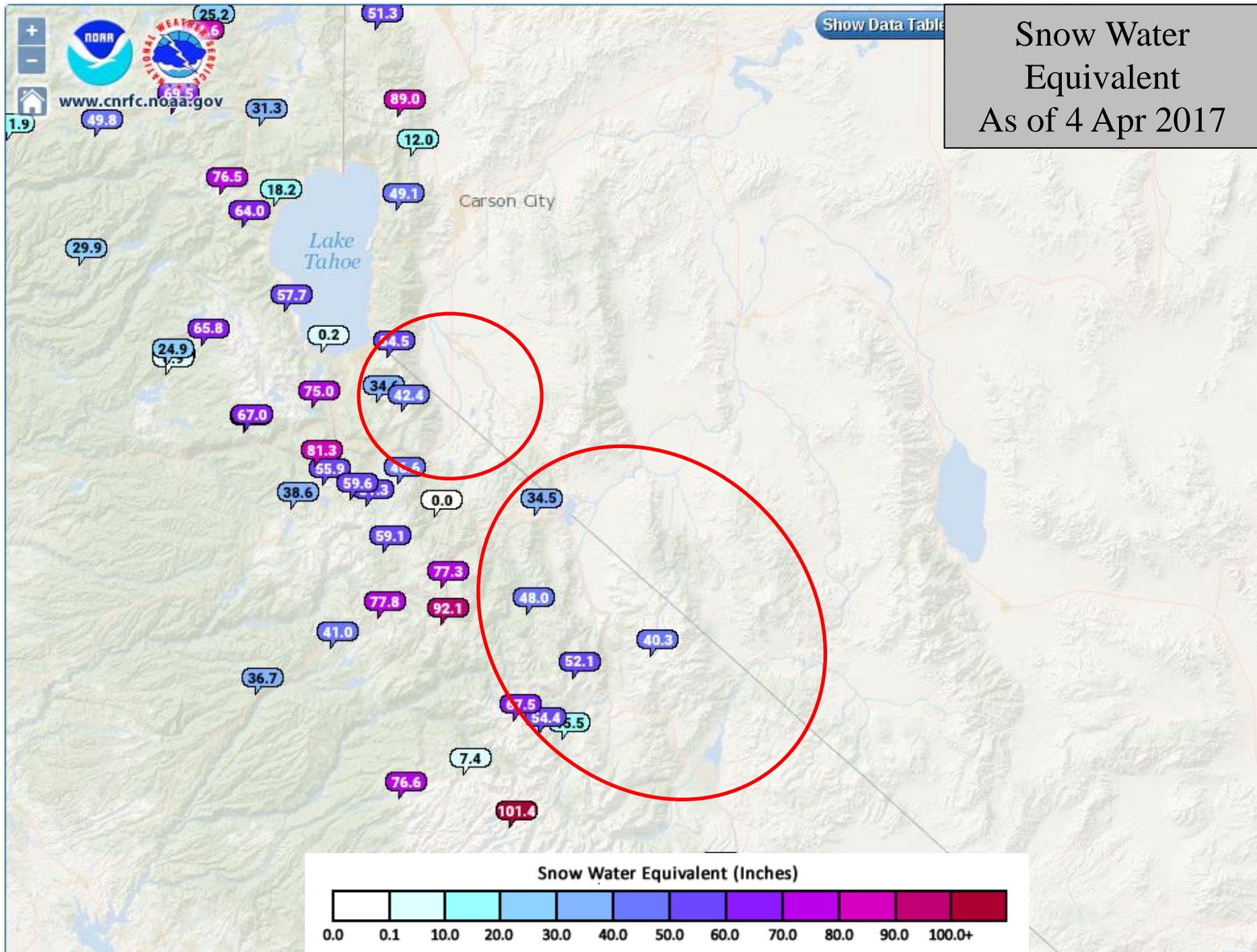
Agenda

- Operating Environment/Area of Interest
- Current Situation
 - Snow Pack / Water Totals
- Probable Scenarios/Impacts
 - Walker River Scenario
 - Carson River Scenario
 - North Valley
 - Washoe Valley
- Questions



Area of Operations







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How much water is in the snow pack?



Walker Basin:

640,000 acre ft. or 208 Billion Gallons.

This is enough water to fill the Empire State Building 753 times.

Carson Basin:

736,000 acre ft. or 239 Billion Gallons.

This is enough water to fill the Empire State Building 866 times.



WALKER RIVER BASIN Time Series Snowpack Summary **Based on Provisional SNOTEL data as of Apr 10, 2017**

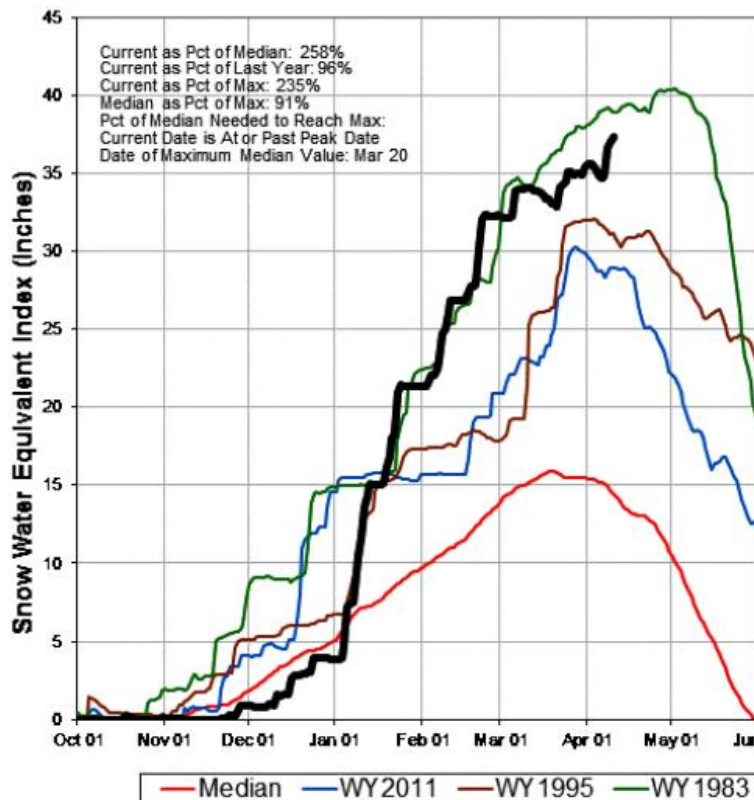


Current as Pct of Median: 258%
 Current as Pct of Last Year: 96%
 Current as Pct of Max: 235%
 Median as Pct of Max: 91%
 Pct of Median Needed to Reach Max:
 Current Date is At or Past Peak Date
 Date of Maximum Median Value: Mar 20

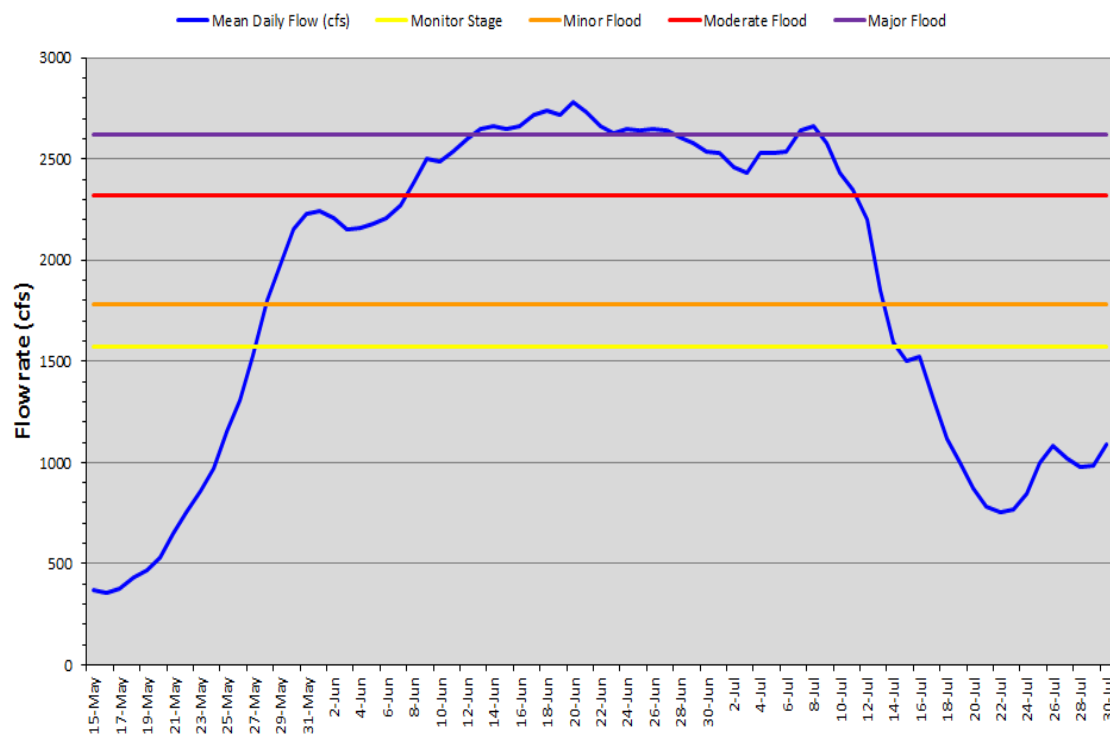
Based on longest term sites

Virginia Lakes Ridge
 Sonora Pass
 Loddell Lake
 Leavitt Meadows

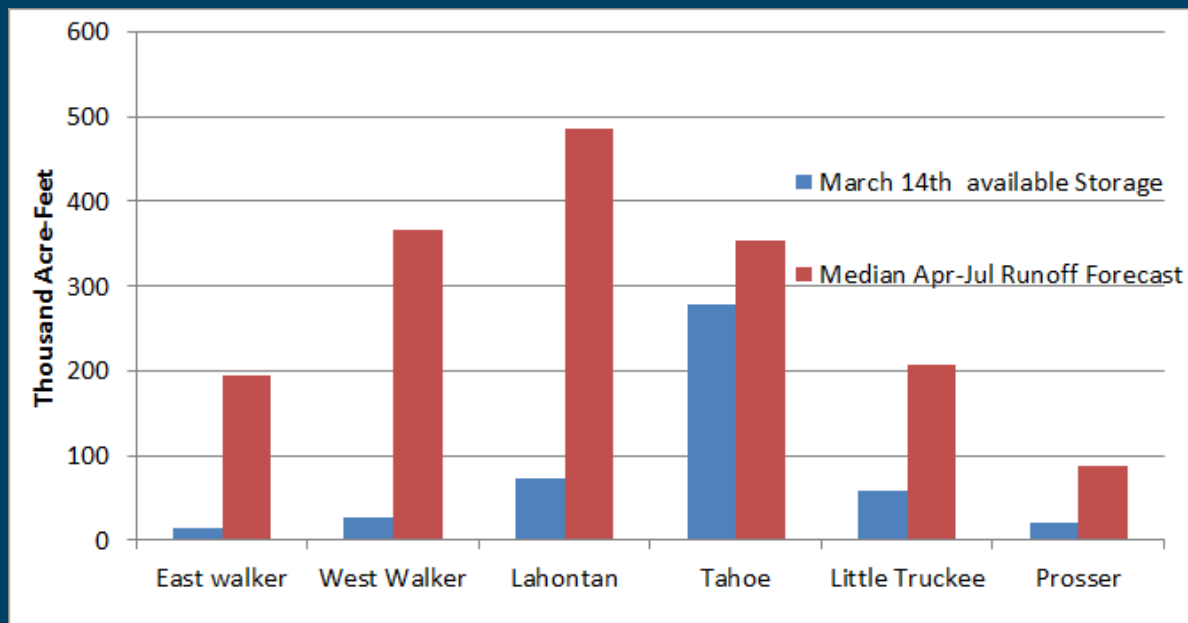
Doesn't include
 Leavitt Lake
 Monitor Pass



1983 Snowmelt Flood Walker River at Mason

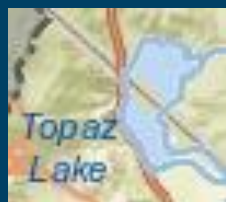


Reservoir Space vs What's Coming...



Reservoirs - will help reduce flooding downstream, but due to expected runoff volume and reservoir capacities, they will not eliminate downstream flood risk.

***Snowmelt equals 5x Topaz and Bridgeport or 47x the Weber Reservoir



Reno National Weather Service
Forecasting for the Sierra and western Nevada since 1905



Walker River Basin Scenario

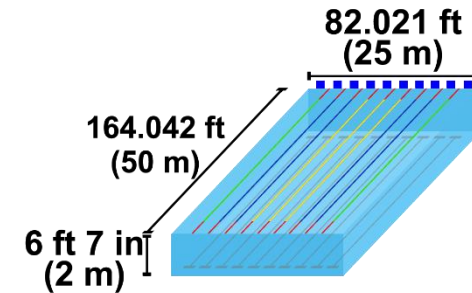


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What does 1,000 CFS look like?



Olympic Pool



Volume: 660,000 US gal

**25m x 50m x 2m= 2,500 m³
or 88,000 Cubic Feet**

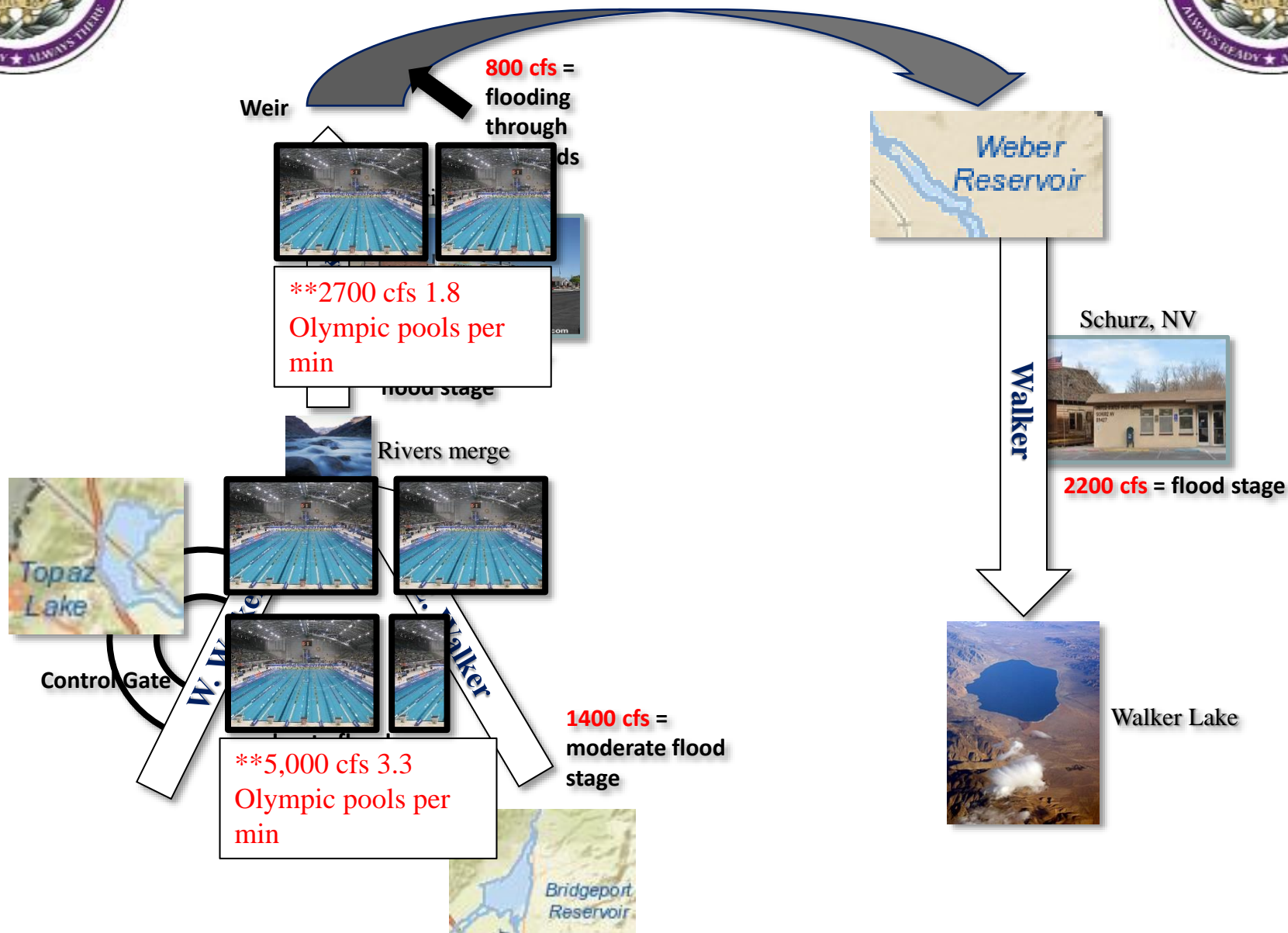
**At a rate of 1,000 CFS, an Olympic sized pool
would be filled in 1 minute 28 seconds.**

**Over the period of 24 hours a rate of 1,000 CFS
would fill 981 Olympic Pools**



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Walker River Basin





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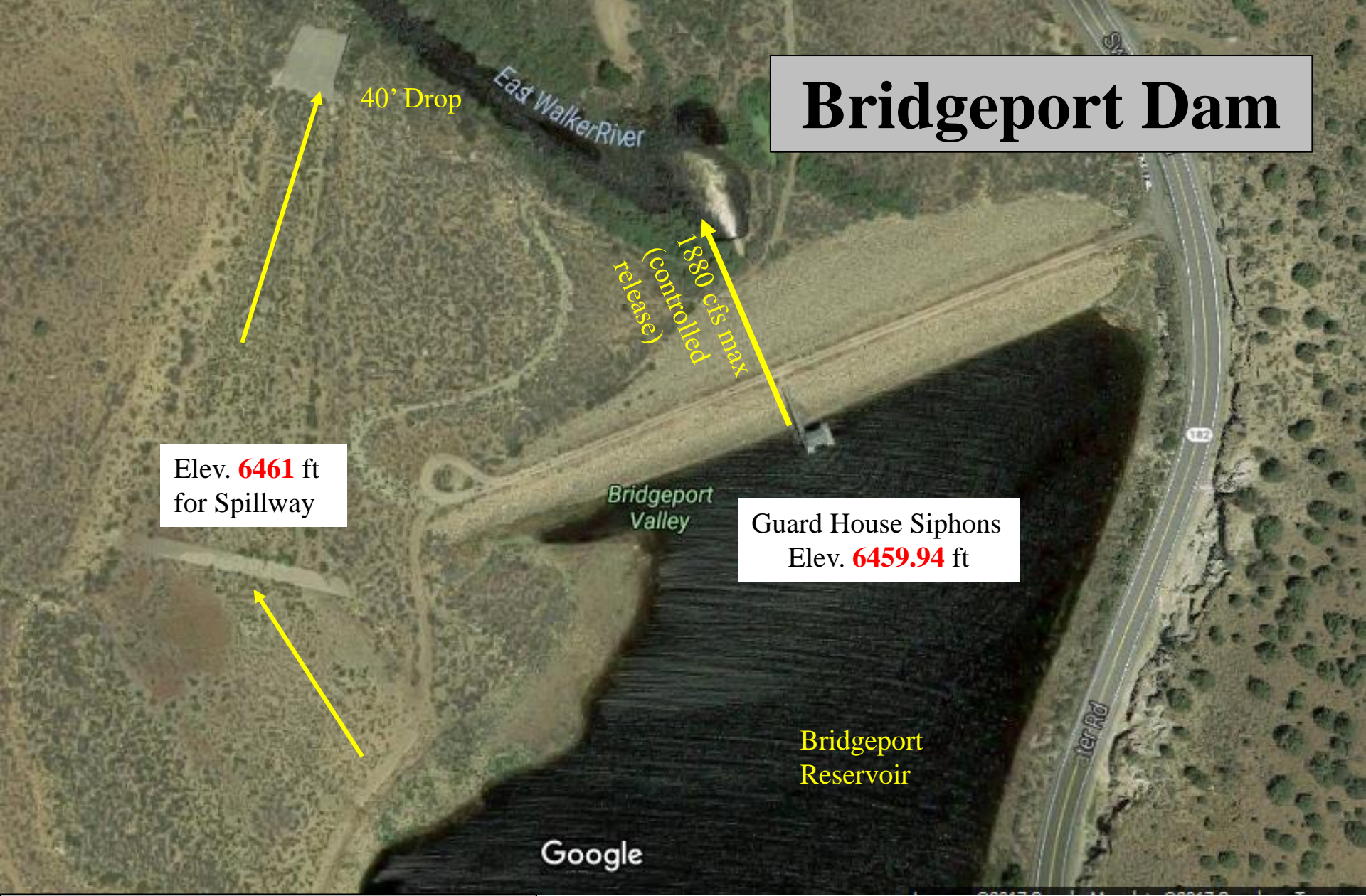


Topaz Lake

- Topaz full = uncontrolled river flow into Smith & Mason Valleys
- Yerington Flooding
 - Major flood stage
 - May through July



Bridgeport Dam



40' Drop

1880 cfs max
(controlled
release)

Elev. **6461** ft
for Spillway

Guard House Siphons
Elev. **6459.94** ft

Bridgeport
Reservoir

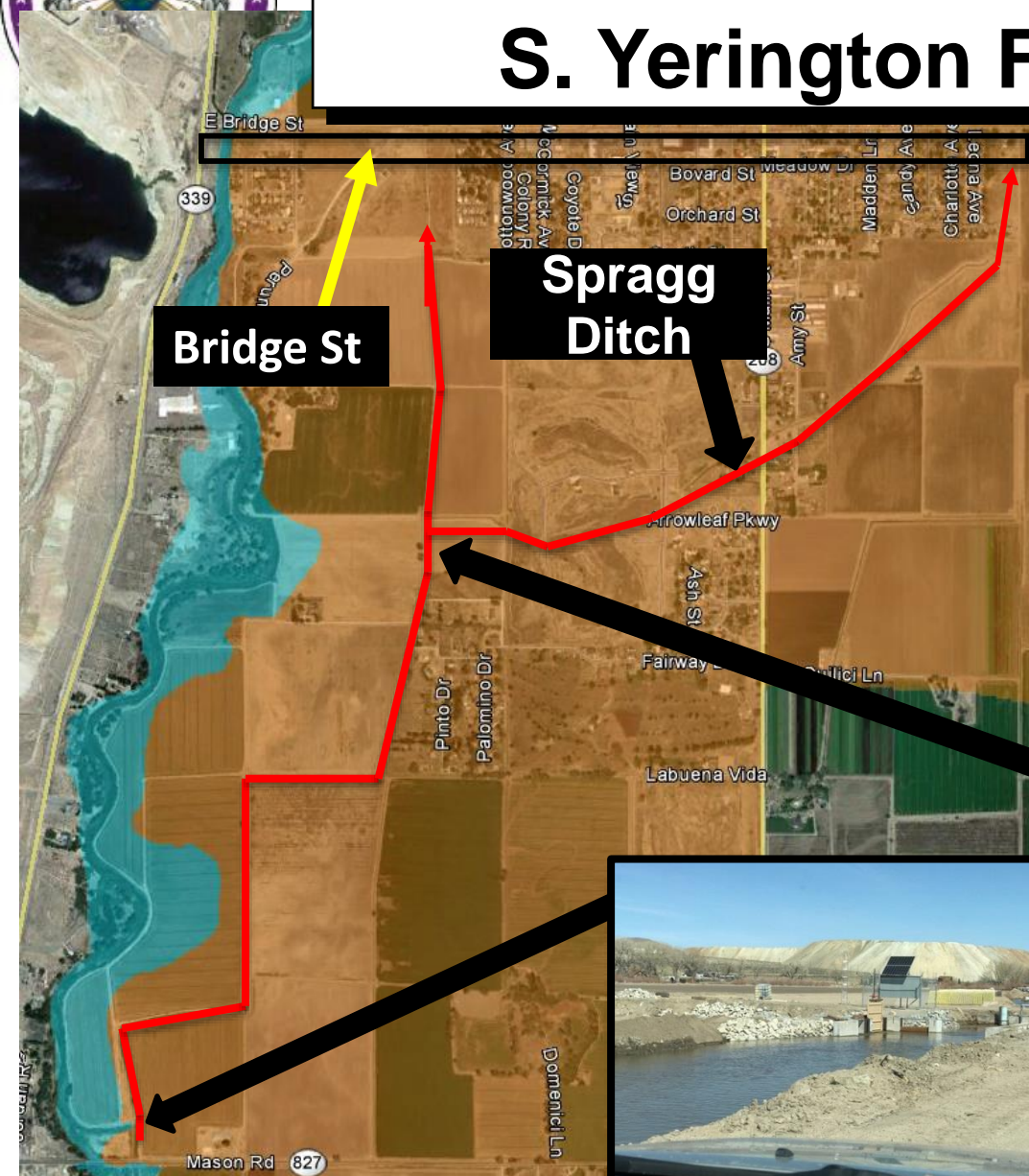
Google

Considerations

1. Spillway use could result in erosion



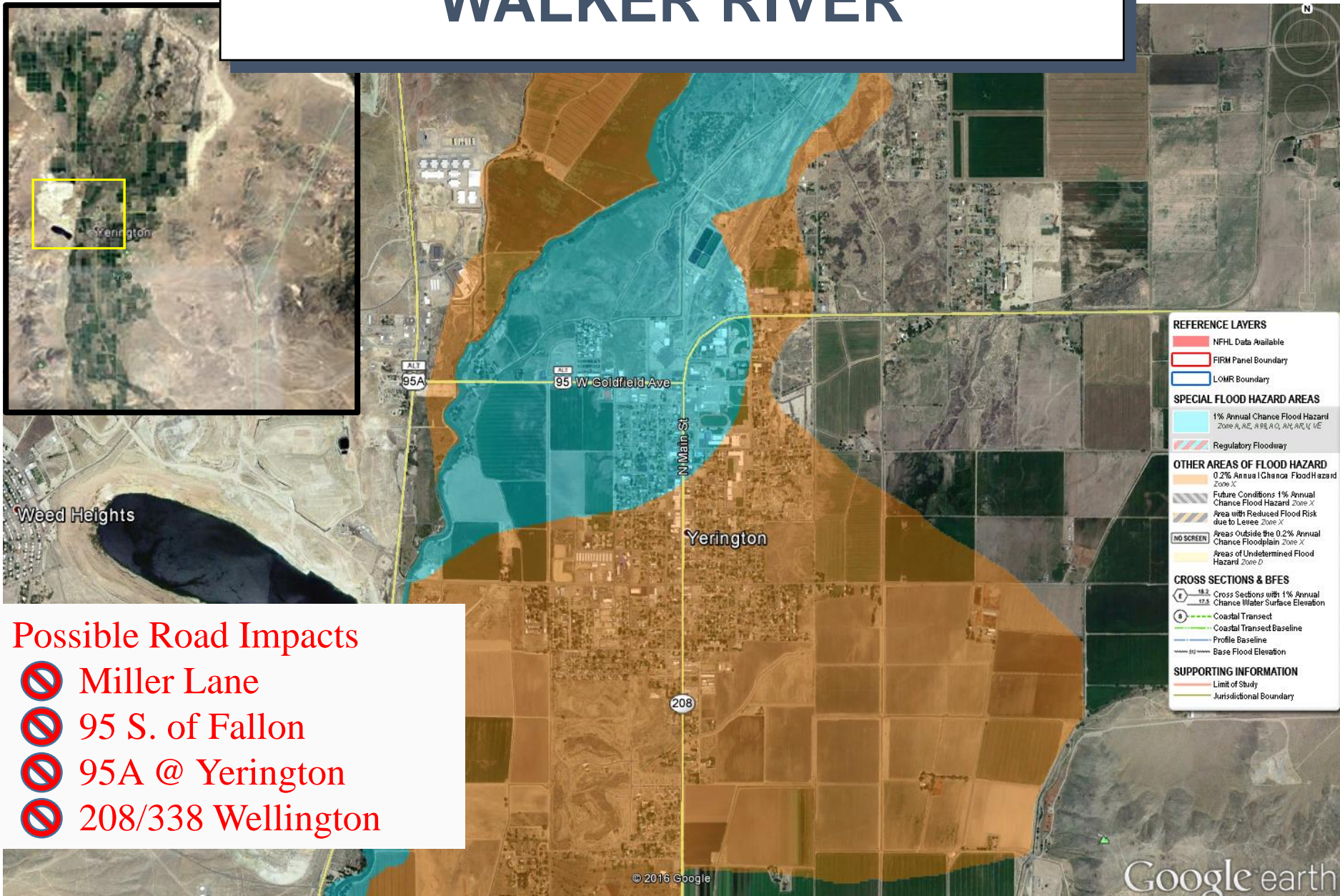
WALKER RIVER S. Yerington Flooding



- 1997 Mason Flooding
- Recommended Mitigation:
Shut down Spragg Ditch prior
to prevent flooding

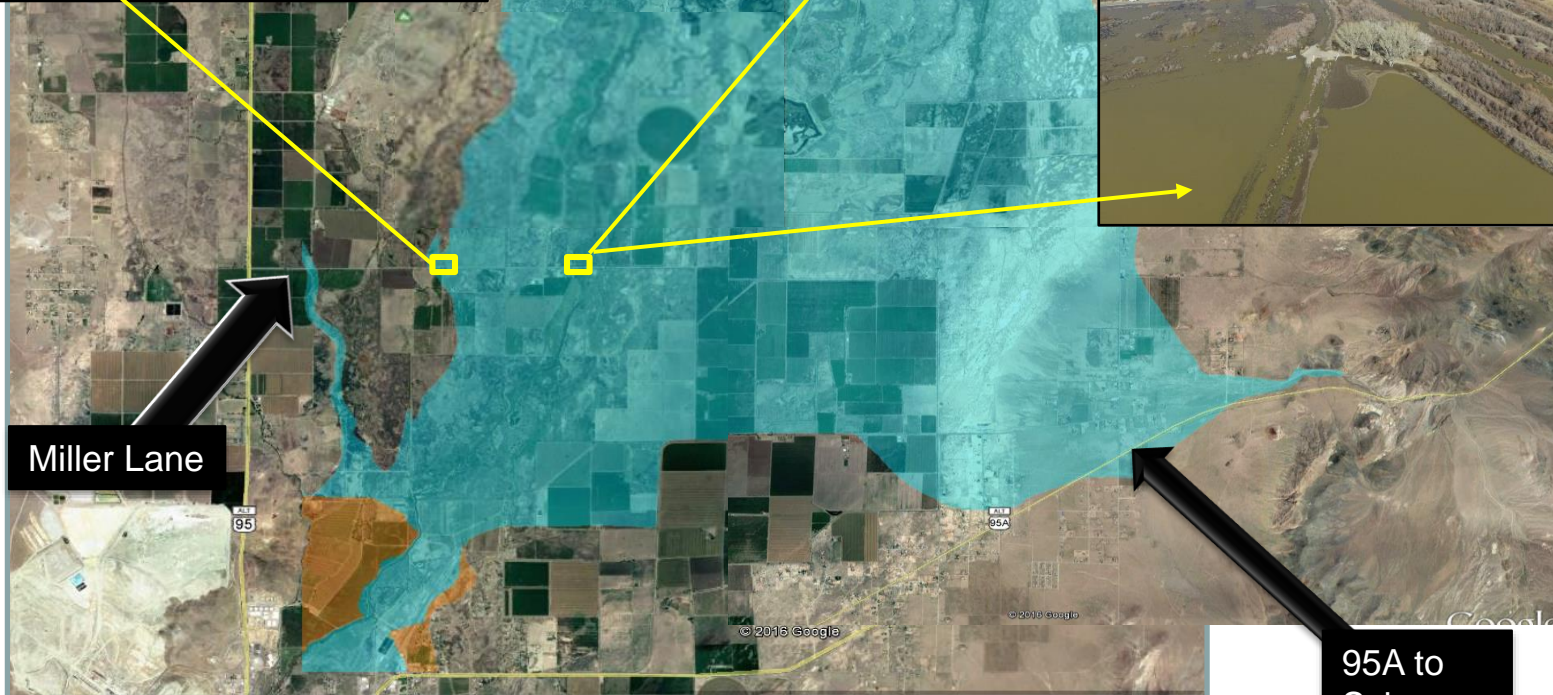


WALKER RIVER





Walker River N. Yerington

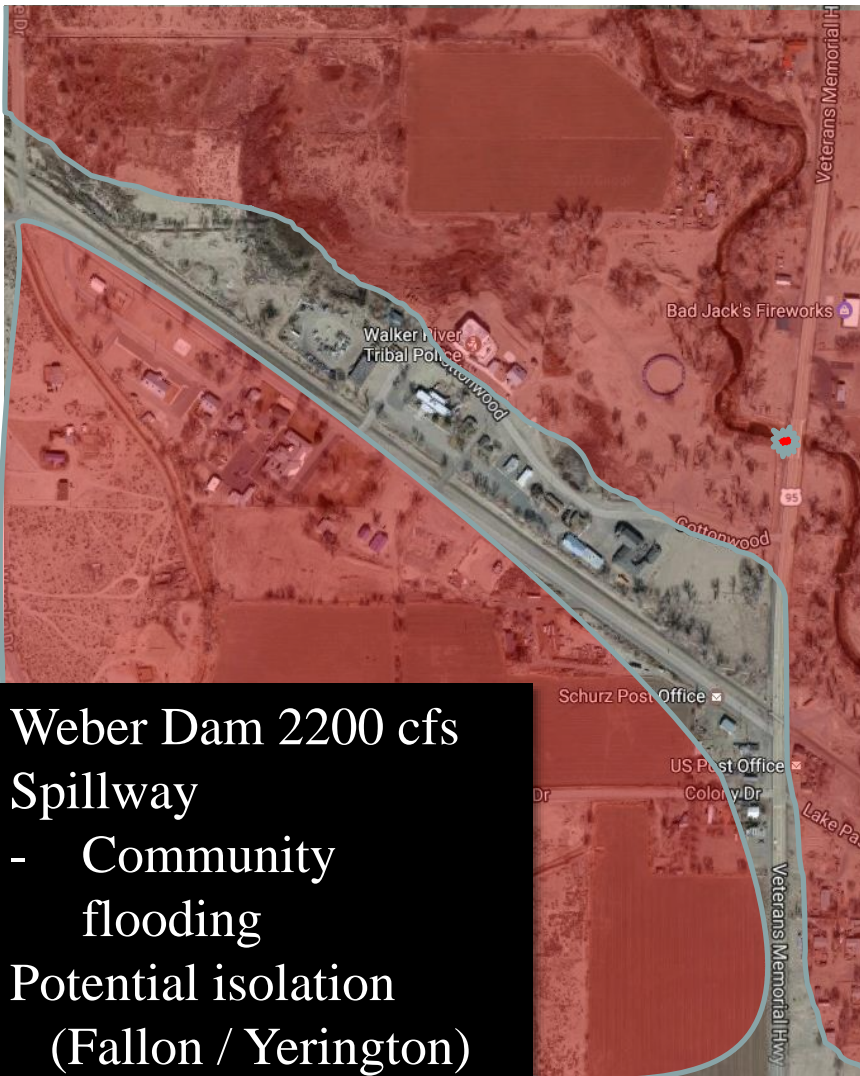


Miller Lane

95A to
Schurz



Schurz



⚙️ = bridge (Schurz, NV)

Weber Dam 2200 cfs
Spillway
- Community
flooding
Potential isolation
(Fallon / Yerington)

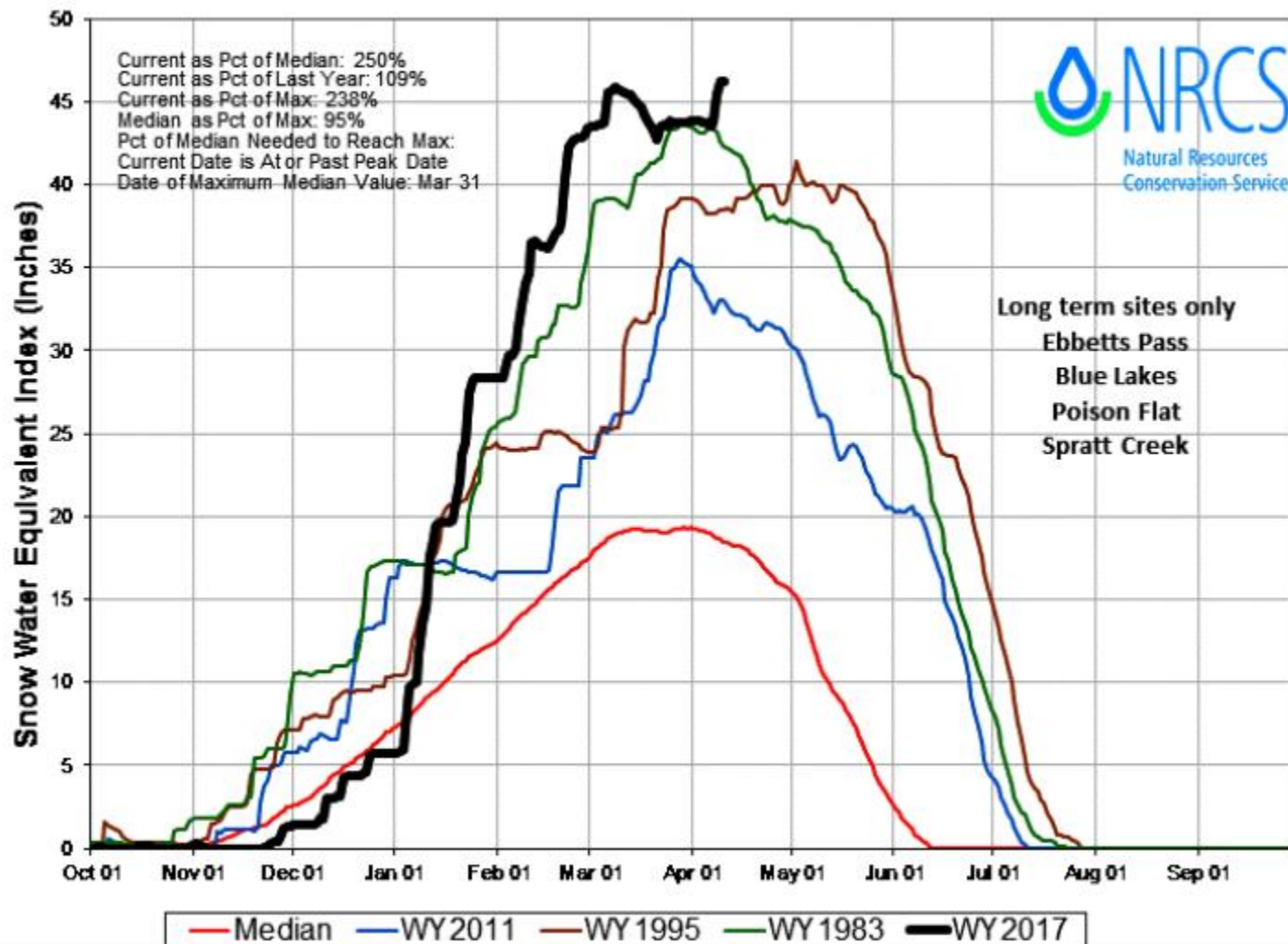


Carson River Basin



Carson Basin

CARSON RIVER BASIN Time Series Snowpack Summary **Based on Provisional SNOTEL data as of Apr 10, 2017**





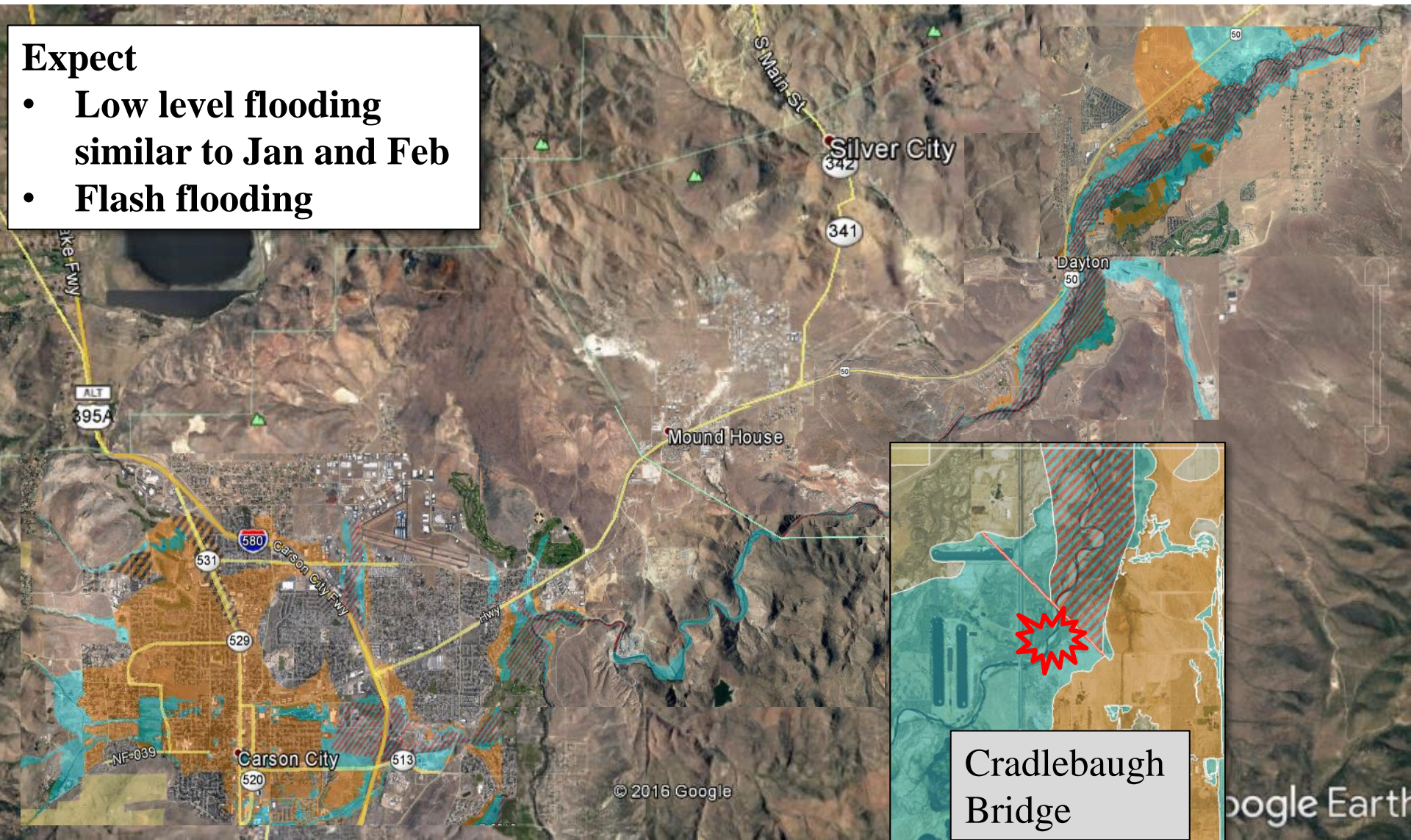
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Carson Basin

Expect

- Low level flooding similar to Jan and Feb
- Flash flooding



Cradlebaugh
Bridge

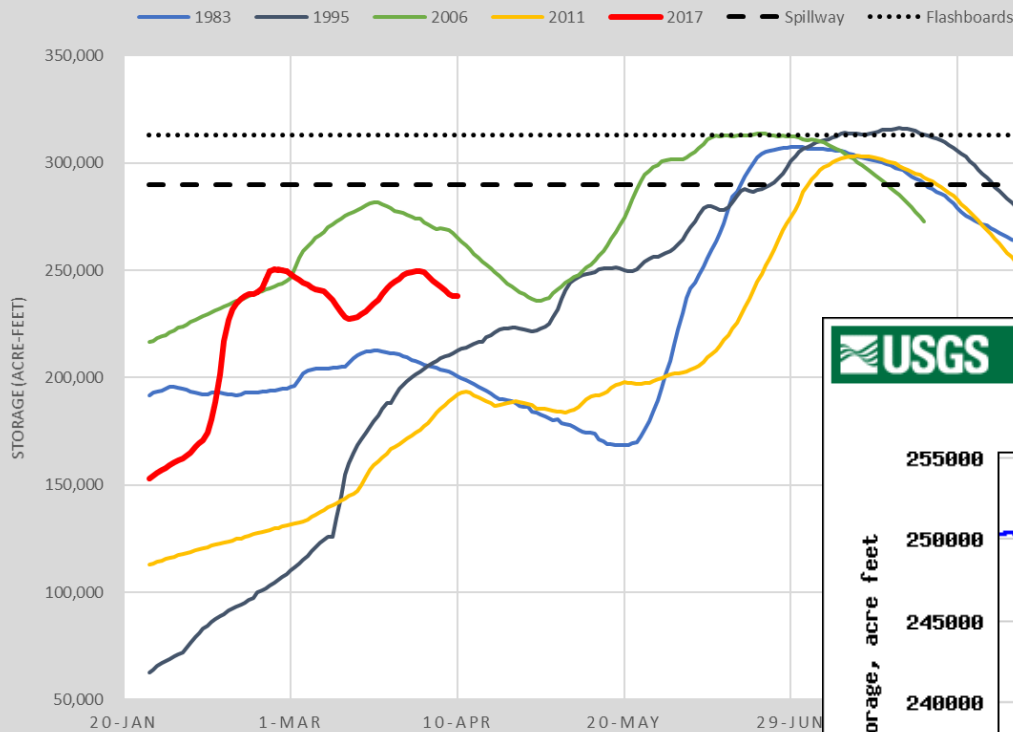


Lahontan Dam Situation

P W R E

PRECISION
WATER RESOURCES ENGINEERING

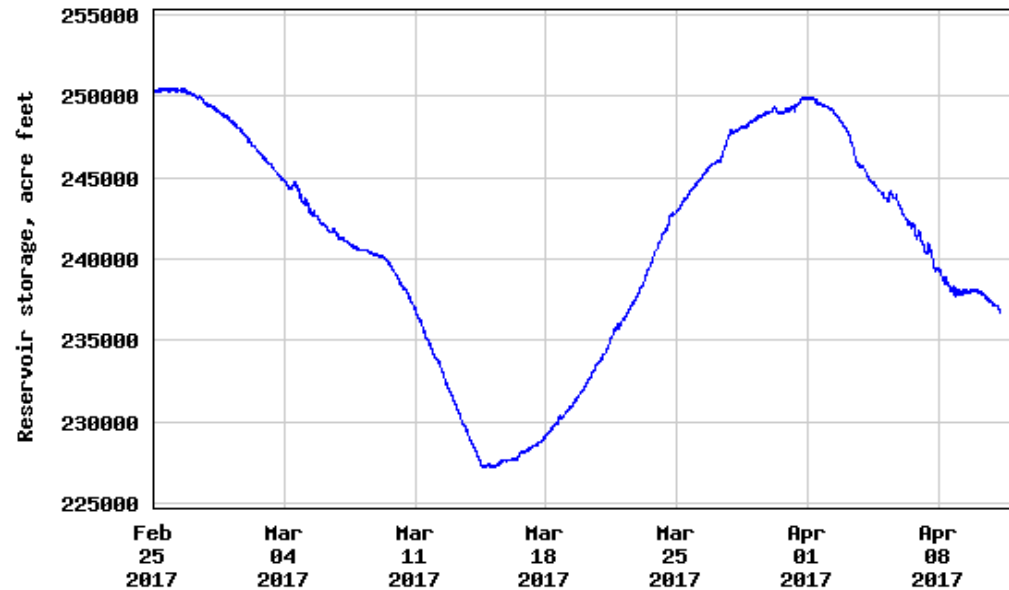
LAHONTAN STORAGE



- Cresting spillway is still possible

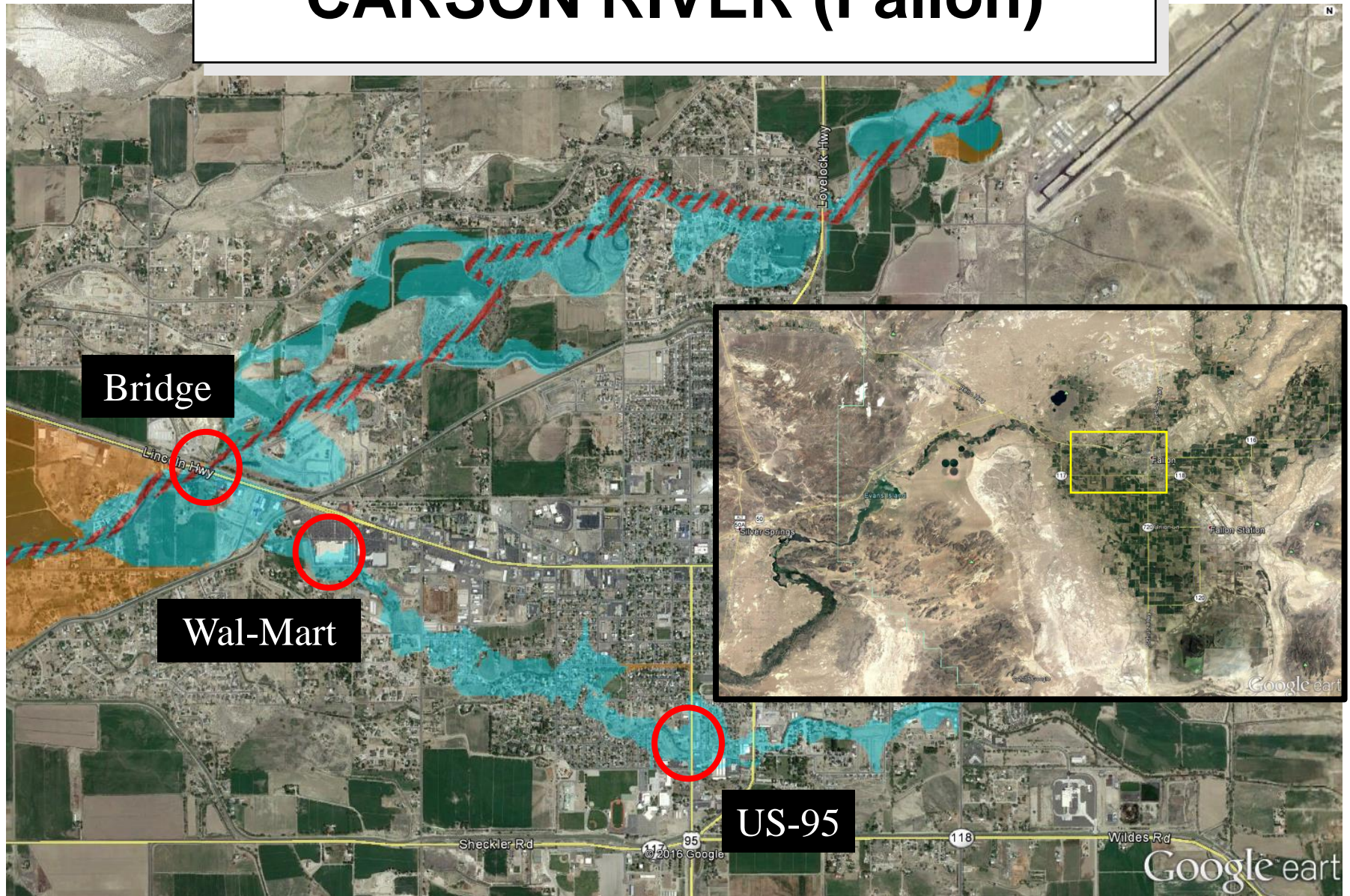


USGS 10312100 LAHONTAN RES NR FALLON, NV



----- Provisional Data Subject to Revision -----

CARSON RIVER (Fallon)



TCID and Churchill Mitigation



- US 95 and 50 culverts
- Berm construction
- New Ditch
- HESCOs

HWY 95
Elev. **3918**

Fallon Indian
Reservation
Fallon Paiute
Shoshone
Reserve

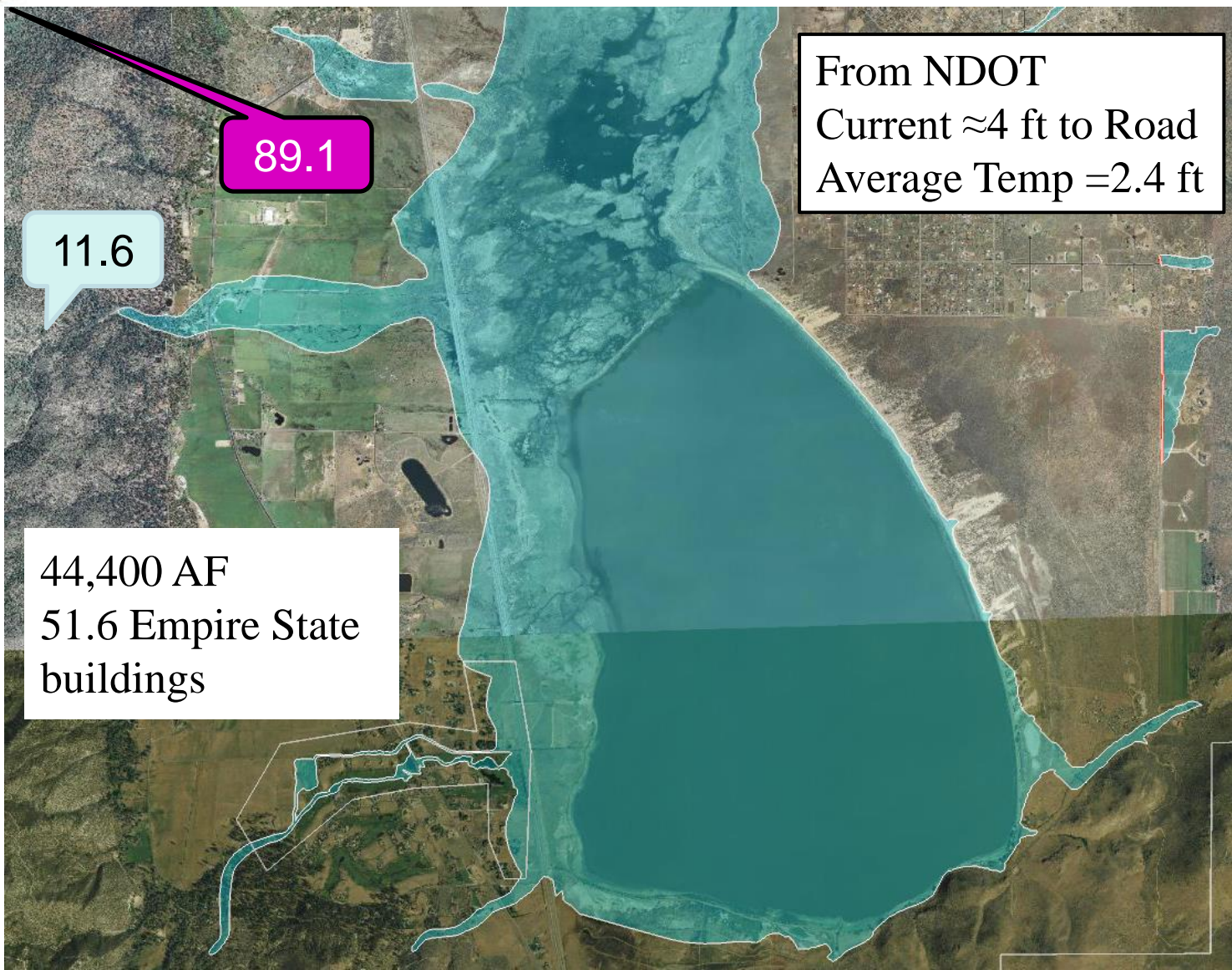




Washoe Valley Situation



Washoe Valley (I-580)





North Valley Situation



Silver Lake



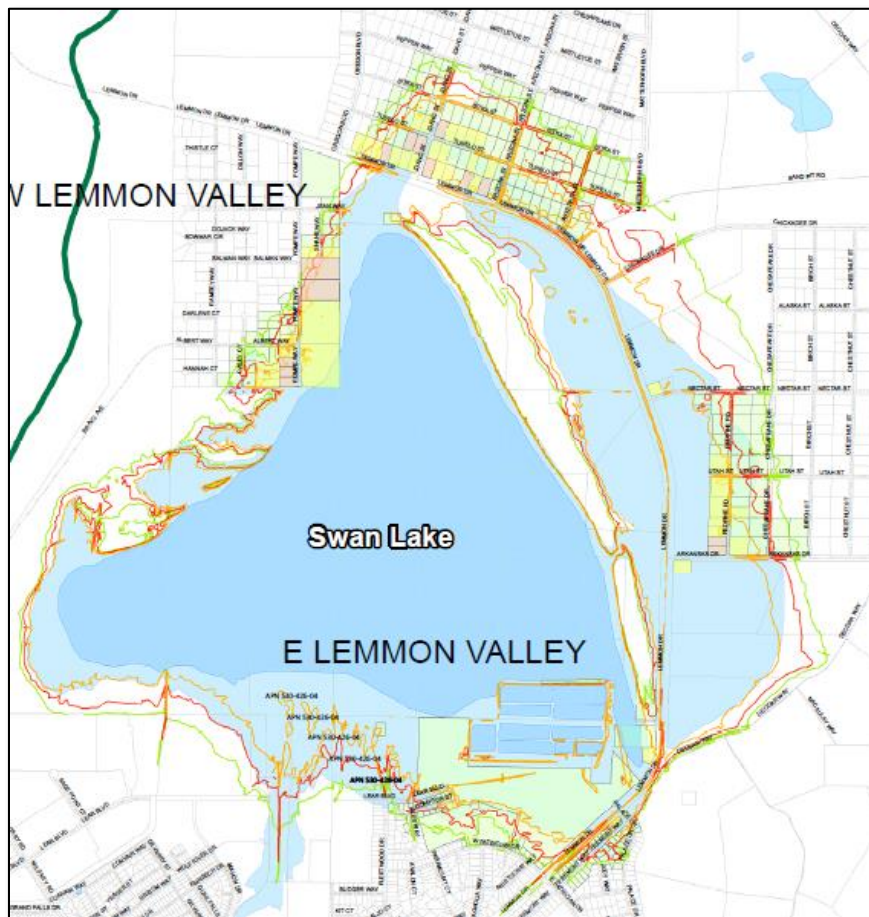
USGS estimates 2,100 acre ft. of water on Peavine Peak.

This will raise the water level three feet in Silver Lake.

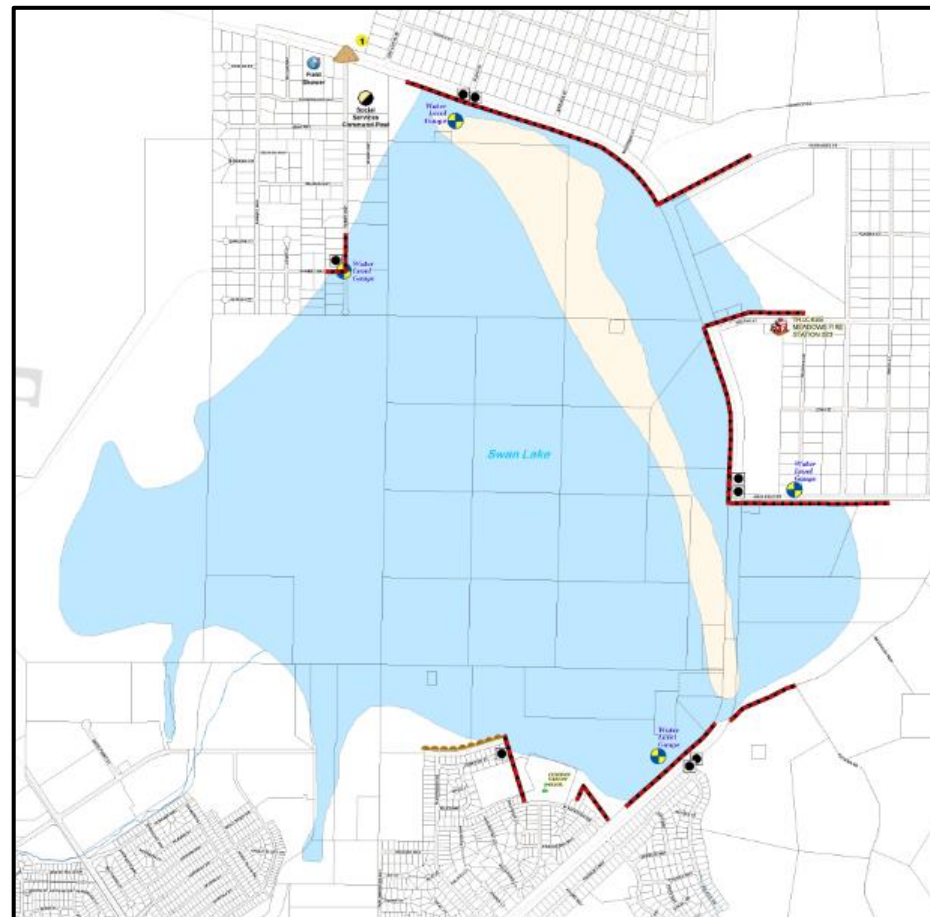


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Swan Lake



- Elev=4922 Water Level on 2/22/2017
- Elev_4924
- Elev_4926



Questions



Nevada citizens protecting Nevada