Information and Public Comment Concerning Modifications to the Boundaries of the Owens Valley Groundwater Basin

December 9, 2015

Hosted by: *Inyo County and the Tri Valley Groundwater Management District*

Tonight's Agenda:

Presentation:

- California Sustainable Groundwater Management Act (SGMA)
- Process for revisions to Groundwater Basin Boundaries
- Potential change to the Owens Valley Groundwater Basin Boundaries

Forum for comments regarding basin boundary revisions

SGMA Goal: Sustainable Management of California's Groundwater Resources

The goal of SGMA is to achieve sustainable groundwater management in California. The legislation defines "sustainable groundwater management" as the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing an "undesirable result," which is defined as any of the following effects occurring throughout the basin:

- Chronic lowering of groundwater levels
- Significant and unreasonable reductions in groundwater storage
- Significant and unreasonable seawater intrusion
- Significant and unreasonable degradation of water quality
- Significant and unreasonable land subsidence
- Surface water depletions that have adverse impacts on beneficial uses of surface water

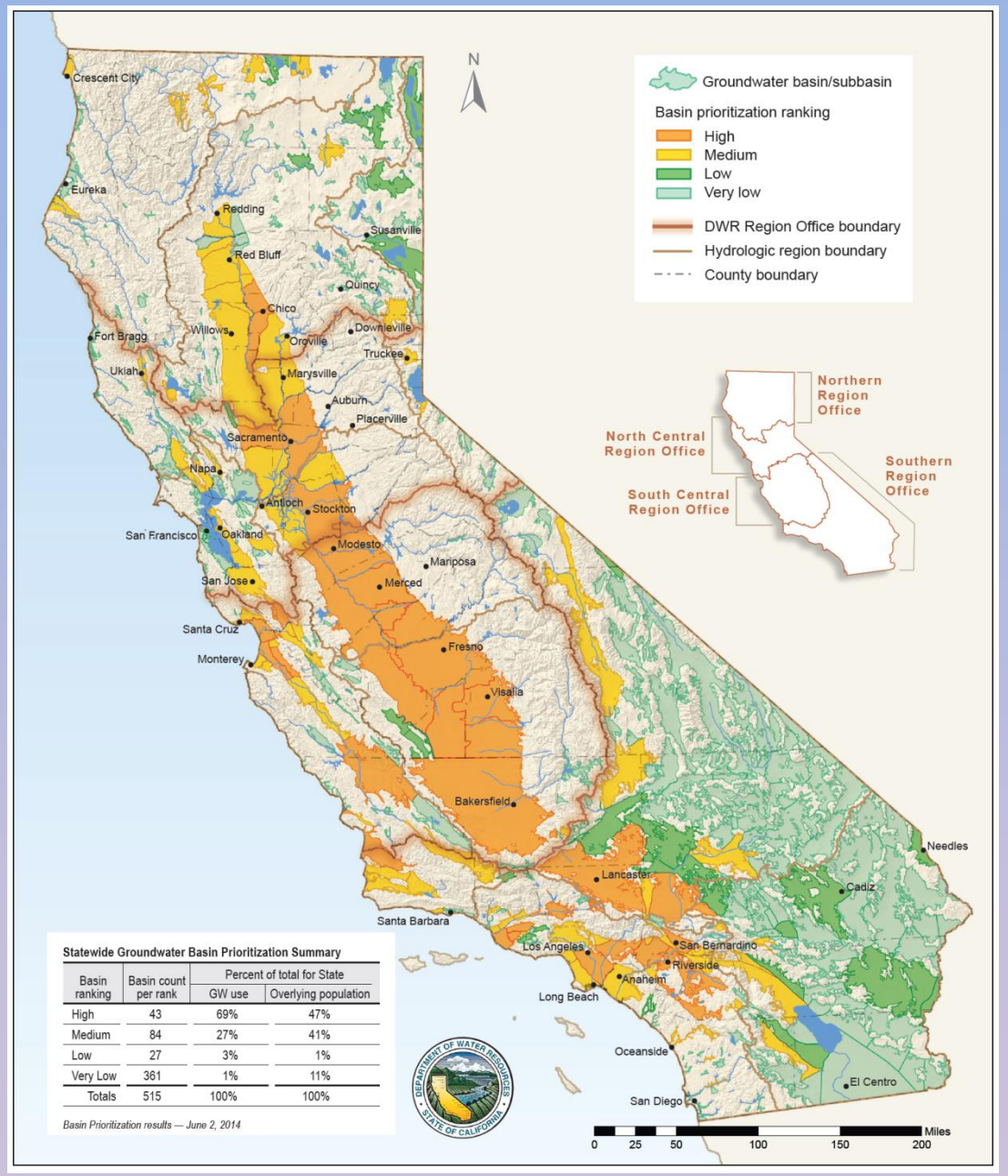
SGMA Strategy:

- Groundwater basins are the geographic management unit.

In medium and high priority basins:

- Local agencies form groundwater sustainability agencies, develop groundwater sustainability plans, and implement plans to manage groundwater

- If local agencies fail to form groundwater sustainability agencies, or develop and implement groundwater sustainability plans, State Water Resources Control Board implements interim plan

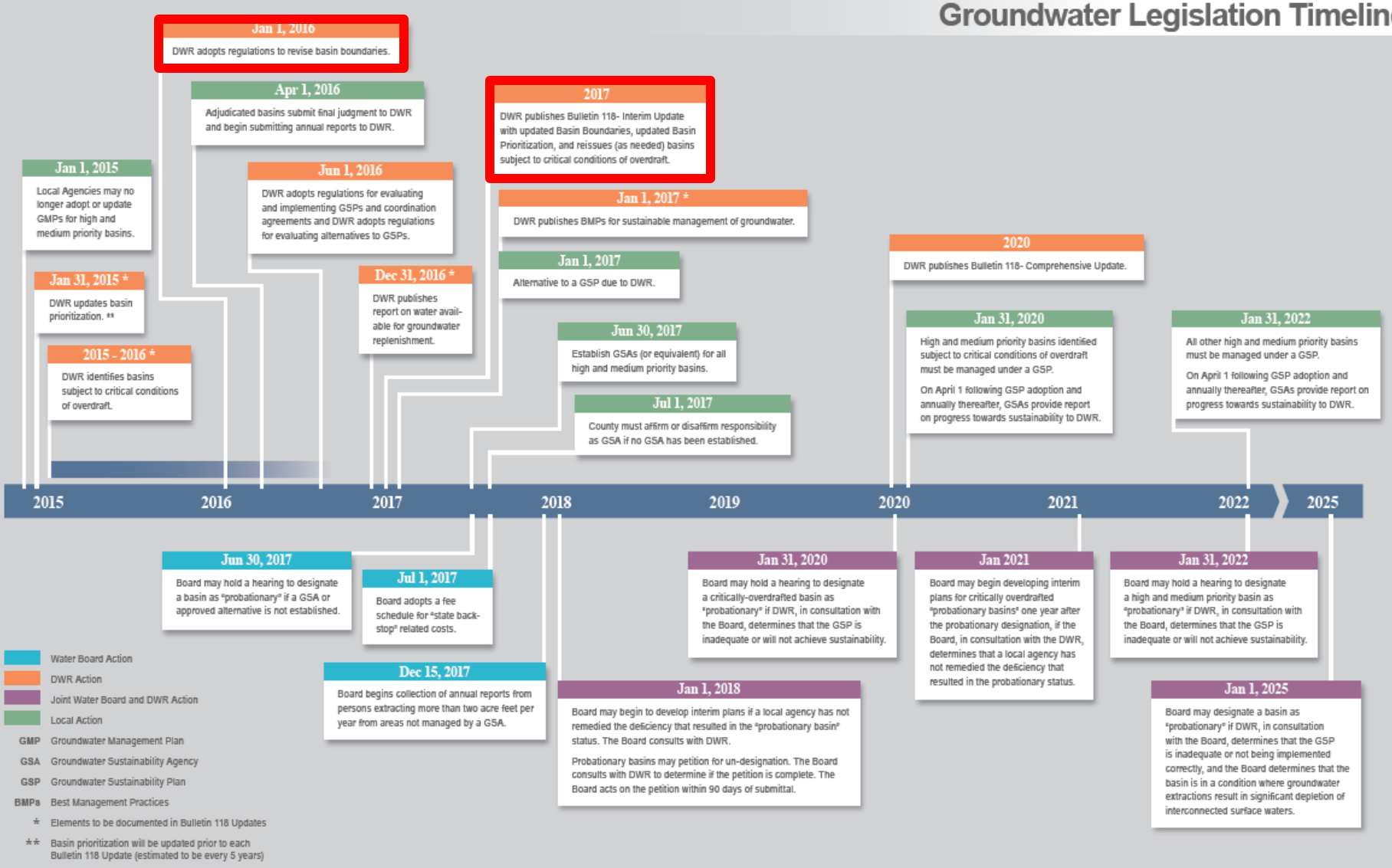


Subject of tonight's meeting

Key Steps in SGMA Implementation:

- Department of Water Resources establishes groundwater basin boundaries and priorities (2015 – 2016)
- Local agencies establish Groundwater Sustainability Agencies (GSA) (2017)
- GSAs adopt Groundwater Sustainability Plans (GSP) (2020 – 2022)
- GSAs implement GSPs (2022+)
- Sustainable management achieved (2040+)
- State Water Resources Control Board intervention with interim plan (when local agencies/GSAs fail any of the above)

Groundwater Legislation Timeline



October 2014

Groundwater Basins:

California Department of Water Resources Bulletin 118-Update 2003 describes 515 groundwater basins in California.

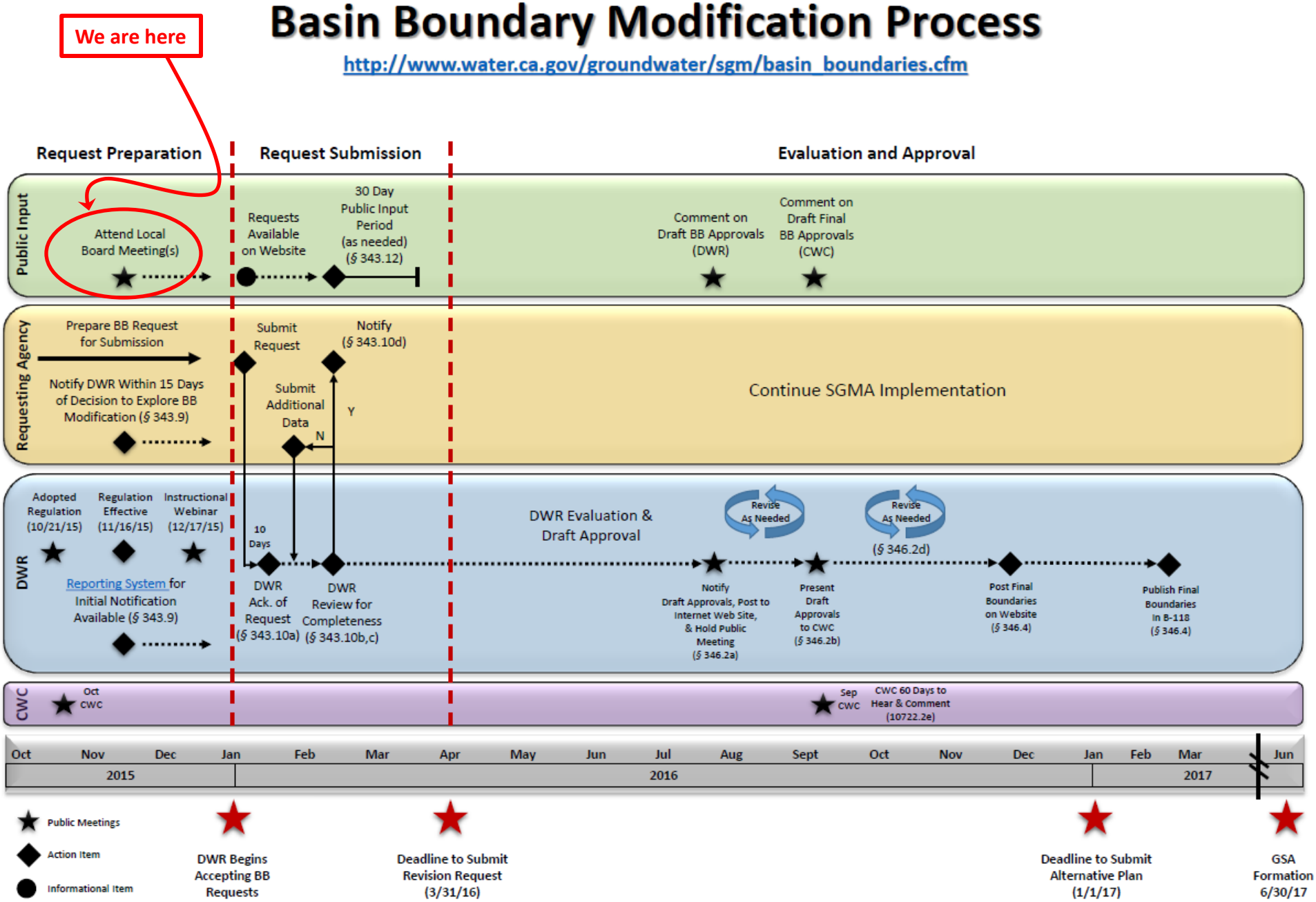
- A **basin** refers to an area specifically defined as a basin or "groundwater basin" in Bulletin 118, and shall refer generally to an aquifer or stacked series of aquifers with reasonably well-defined boundaries in a lateral direction, based on features that significantly impede groundwater flow, and a definable bottom, as further defined or characterized in Bulletin 118
- A **subbasin** refers to an area specifically defined as a subbasin or "groundwater subbasin" in Bulletin 118, and shall refer generally to any subdivision of a basin based on geologic and hydrologic barriers or institutional boundaries, as further described or defined in Bulletin 118.
- An **Aquifer** refers to a three-dimensional body of porous and permeable sediment or sedimentary rock that contains sufficient saturated material to yield significant quantities of groundwater to wells and springs, as further defined or characterized in Bulletin 118.

DWR assigns priority to each basin based on overlying population, total number of wells, number of public supply wells, irrigated acreage, reliance on groundwater, impacts to groundwater, impacts to surface water, and other relevant information.

DWR will consider requests for changes to basin boundaries based on whether proposed change will promote sustainable management and revise Bulletin 118 and basin priorities according to revised boundaries.

Basin Boundary Modification Process

http://www.water.ca.gov/groundwater/sgm/basin_boundaries.cfm



Based on Adopted Basin Boundary Regulations, Dates Subject to Change

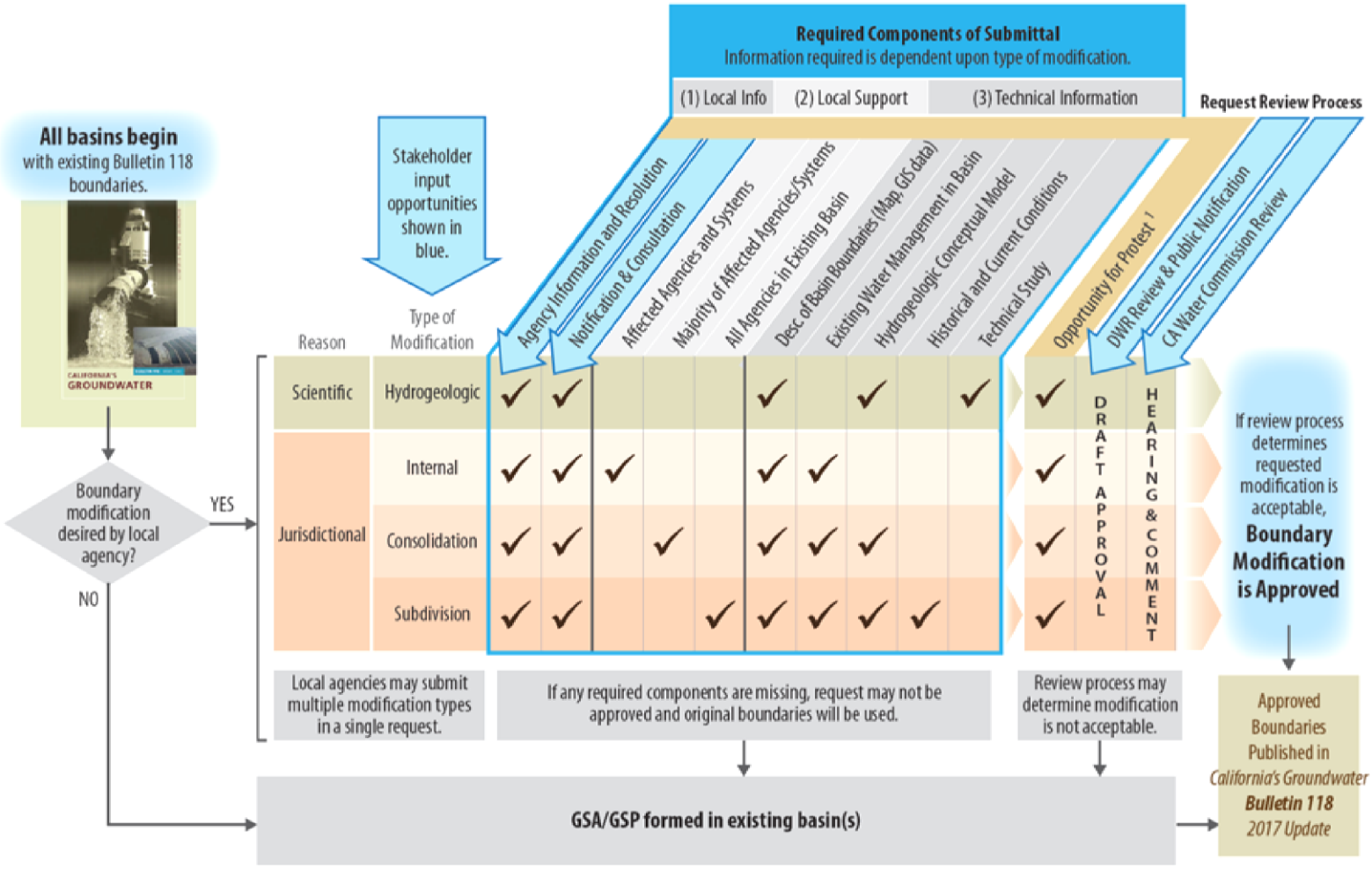
Requests may be scientifically or jurisdictionally based:

Scientific	Hydrogeologic
Jurisdictional	Internal
	Consolidation
	Subdivision

Scientific Modifications: Scientific-based modifications are those that are directly attributed to the hydrogeologic definition of the groundwater basin. These modifications require geologic and/or hydrologic evidence to support a boundary modification that will increase the likelihood of sustainable management of the groundwater basin.

Jurisdictional Modifications: Jurisdictional modifications are those which increase the likelihood of sustainable groundwater management by modification of basin boundaries to promote the implementation of the SGMA without limiting the ability of the basins or affected basins to manage groundwater sustainably. Jurisdictional modifications have three sub categories: internal, consolidation, and subdivision.

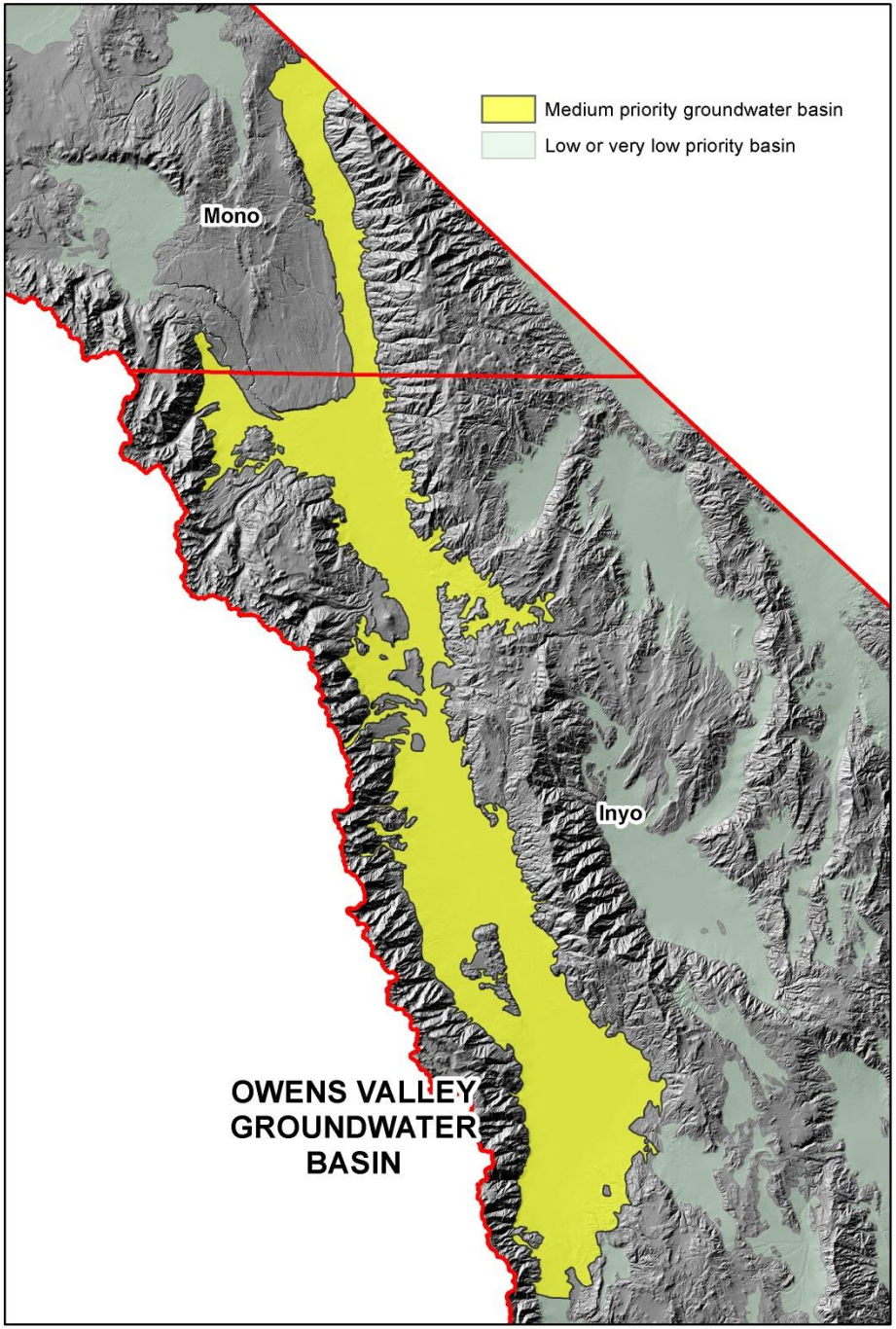
Basin Boundary Modification Process



[1] A protest submittal requires the same components as a boundary modification request, based on type of modification.

Owens Valley Groundwater Basin:

- 1,030 square miles
- Fault bounded between mountain blocks
- Alluvial, volcanic, and lacustrine material fills basin forming aquifers and confining layers
- ~250,000 acre-feet of recharge, mostly in Owens, annually highly variable with precipitation
- ~100,000 acre-feet of pumping, mostly in Owens, variable with LADWP operations
- 1,665 – 13,700 acre-feet of flow from Chalfant to Laws. Wide range, lower amount consistent with Laws conditions
- Water budgets for Tri Valley and Owens Valley have treated areas as independent units



UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

EXPLANATION

CENOZOIC

Pleistocene and Recent

Qvf — Clastic deposits
Mainly Recent alluvium, late Cenozoic lake beds, and moraines

Pleistocene

Qbt — Bishop tuff of Gilbert (1938)

Tarh — Rhyolite
Includes tuffs, flow rocks, and obsidian of Pleistocene and Pliocene (?) ages

Tba — Basalt and andesite
Include flow rocks and andesite tuffs and breccias of Pleistocene and Pliocene (?) ages

CRETACEOUS

Kgr — Granitoid rocks
Include quartz monzonite, granodiorite, diorite, and granite

PRE-CRETACEOUS

pKmv — Metavolcanic rocks

pKms — Metasedimentary rocks
Include some sedimentary rocks in the White and Inyo Mountains that are essentially unmetamorphosed

pTbr — Pre-Tertiary granitoid, metasedimentary, and metavolcanic rocks

Contact
Dashed where approximately located

Fault based on surface evidence
Dashed where inferred

Fault based on geophysical evidence
Queried where inferred

770 — Gravity contours
Dashed where inferred. Contour interval is 2 milligals; datum is complete Bouguer anomaly plus 1,000 milligals

Gravity low

Gravity station

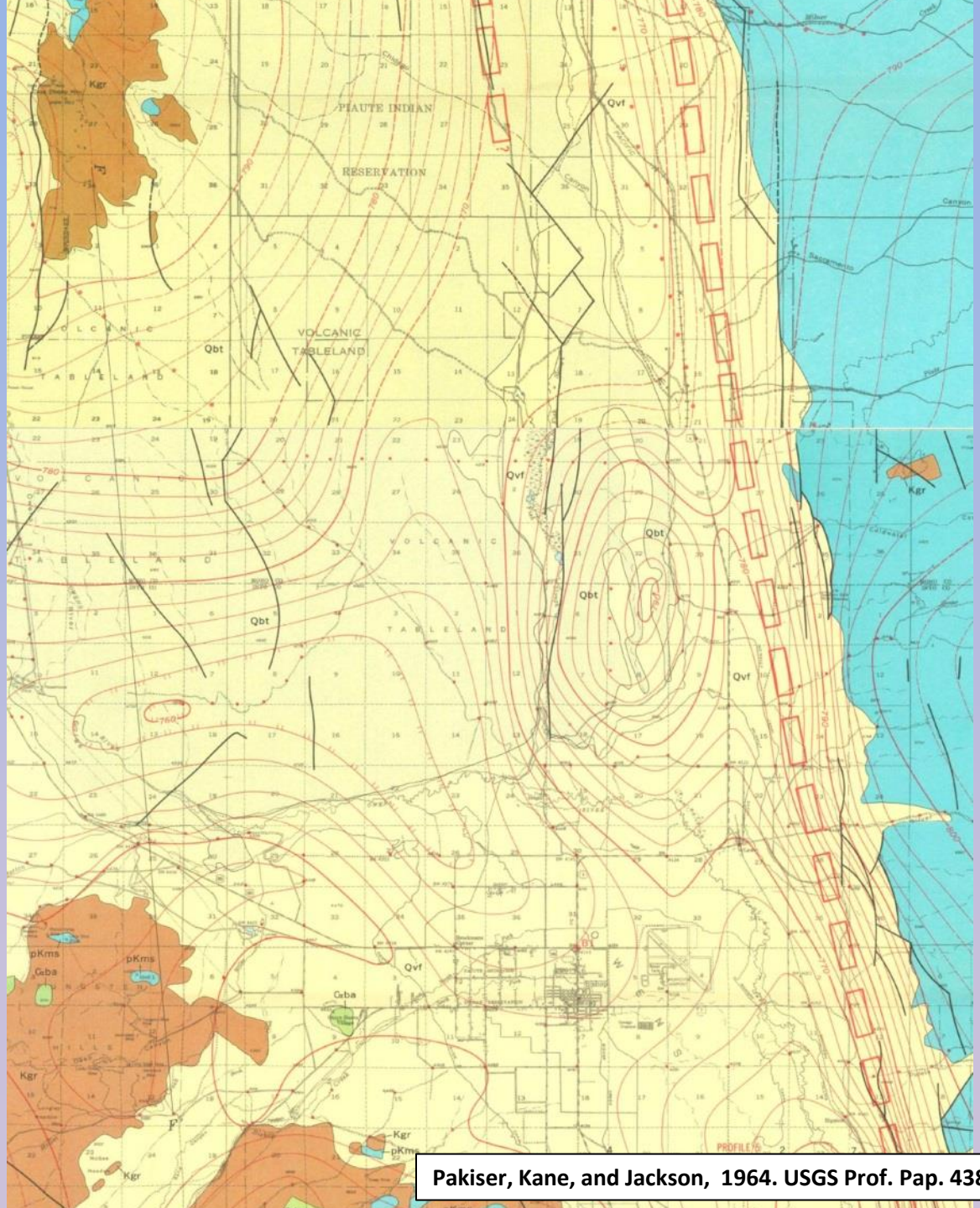
LB3 — Gravity base station

PROFILE 2 — Geophone spread

3 — Shot point

E —— E′ — Location of gravity profiles shown on figures 6–15

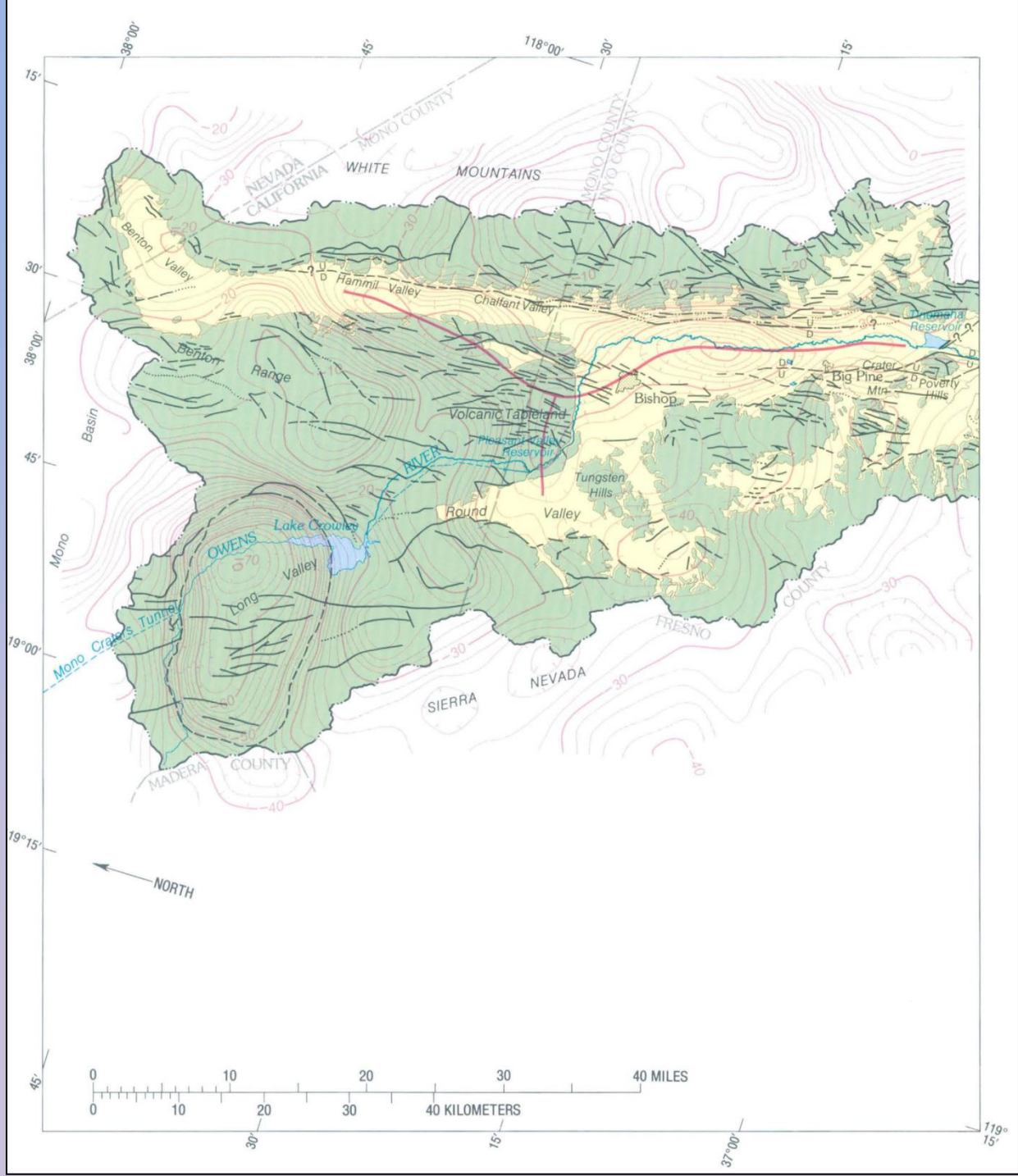
3300 — Seismic depth, in feet below surface, from California Institute of Technology



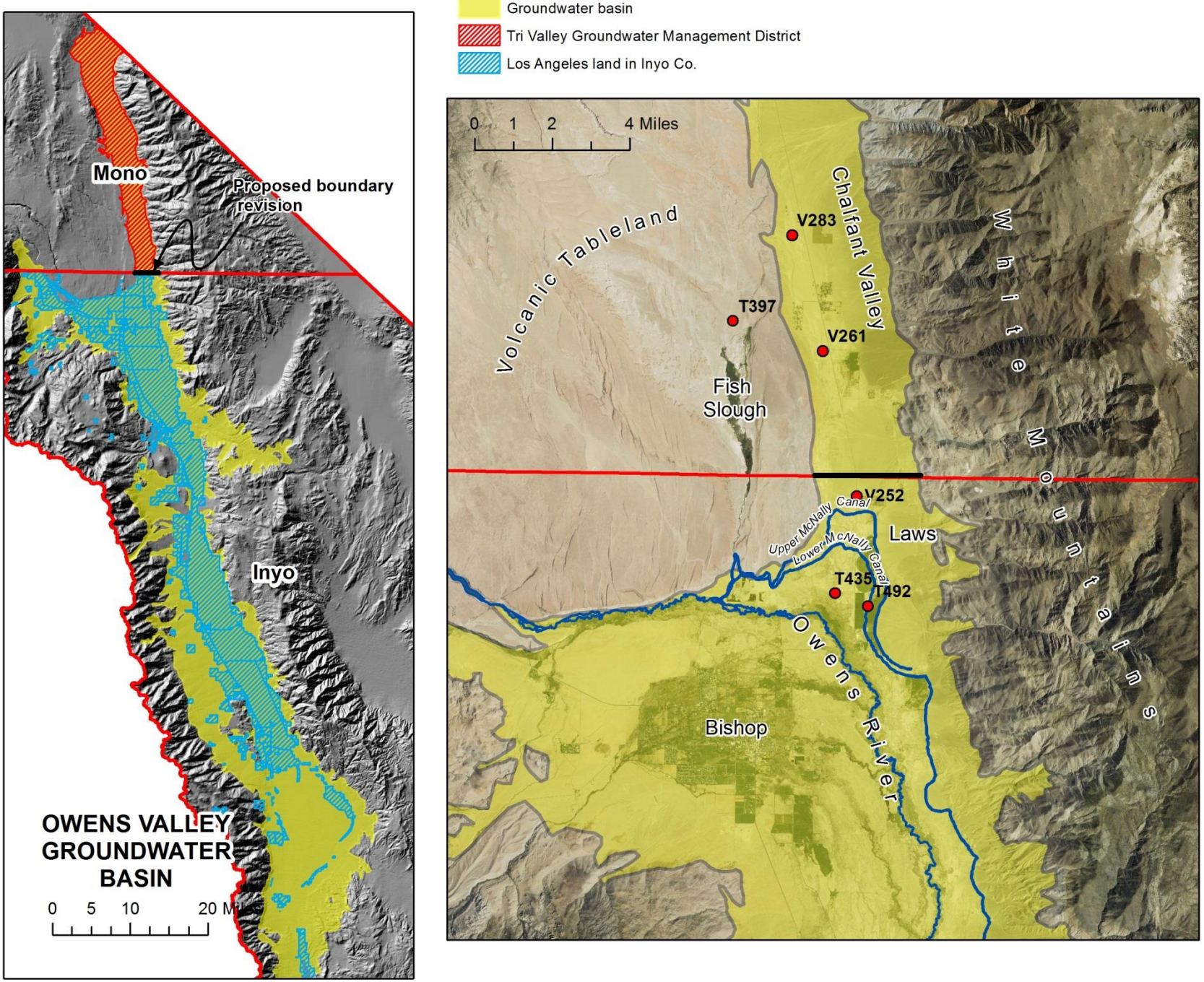
Pakiser, Kane, and Jackson, 1964. USGS Prof. Pap. 438

Groundwater Basin Geologic Structure

- Gravity data show groundwater flow barrier between Chalfant Valley and Laws
- The flow barrier directs west groundwater towards Fish Slough



Hollett et al., 1991,USGS Water Supply Pap. 2370-B


Groundwater basin
Tri Valley Groundwater Management District
Los Angeles land in Inyo Co.
Mono
Proposed boundary revision
Inyo
OWENS VALLEY GROUNDWATER BASIN
0 5 10 20 Mi
0 1 2 4 Miles
Volcanic Tableland
Chalfant Valley
White Mountains
V283
T397
V261
Fish Slough
V252
Upper McNally Canal
Lower McNally Canal
Laws
T435
T492
Owens River
Bishop

Conclusion

There is a viable basis for a scientifically-based request to modify the Owens Valley Groundwater Basin into two subbasins at the Inyo/Mono County line.

Such a division has the institutional expediency of separating the Tri Valley Groundwater Management District's jurisdiction from Inyo County's jurisdiction.

Next Step

Present material for consideration of boundary revision by Tri Valley and Inyo Boards, including comments submitted tonight

How to submit additional comments:

Written:

Inyo County Water Department
PO Box 337
Independence, CA 93526

Or

Mono County Community Development
PO Box 347
Mammoth Lakes, CA 93546

Electronic:

Inyo County Water Department
bharrington@inyocounty.us

Tri Valley Groundwater Management District
bcalloway@mono.ca.gov

Further Information:

Inyo County Water Department	http://www.inyowater.org
California Department of Water Resources	
SGMA:	http://www.water.ca.gov/groundwater/sgm/index.cfm
Bulletin 118:	http://www.water.ca.gov/groundwater/bulletin118/index.cfm
Groundwater Basin Boundaries:	http://www.water.ca.gov/groundwater/sgm/basin_boundaries.cfm
USGS Owens Valley reports:	
Owens Valley Hydrogeology:	http://ca.water.usgs.gov/owens/overview.html
	http://pubs.er.usgs.gov/publication/wsp2370B
Owens Valley Geology:	http://pubs.er.usgs.gov/publication/pp438
	http://pubs.er.usgs.gov/publication/pp470