



New Mexico

Regional Water Planning Boundaries

May 2017 Discussion White Paper

The Interstate Stream Commission (ISC) recently completed a round of updates to the regional water plans based on the 16 regions shown in Figure 1. While soliciting feedback from stakeholders in the regions, some regions suggested that the boundaries for the water planning effort should be on watersheds. This white paper examines the pros and cons for basing the boundaries on watersheds and provides a link for stakeholders to voice their opinion.

Background

At the outset of the water planning effort in 1987, regional water planning areas began to emerge. Jurisdictions seeking funding, whether a county, city, water board, or water commission, could define their planning region for their proposed planning study. Thus, the boundaries originated from the ground-up, and not through a state-wide analysis or comprehensive approach. By January of 1993, the New Mexico Interstate Stream commission (ISC) had funded 22 water planning regions shown in Figure 2 (Water Dialogue, 1993a). In September of 1993, the ISC brought together a “Strawman Working Group” (comprised of fourteen volunteers from Clovis, Anton Chico, Quemado, Roswell, Window Rock, Aztec, Santa Fe, Edgewood and Albuquerque) to address a variety of issues, including how boundaries should be defined (Water Dialogue, 1993b). The working group acknowledged the importance of “areas with hydrologic, economic, cultural and political relationships in common.” No guidelines for defining a region were proposed by the group which felt instead that “the communities in each region should be consulted. “ However, to address some areas that were “orphaned”, as the working group described them, and perhaps to simplify the boundaries, 14 planning regions were proposed by this working group (Water Dialogue, 1993b). By November of 1996, ISC identified 16 water planning regions (Water Dialogue, 1996) that are almost the same as the boundaries used in the most recent update of the regional water plans (2016-2017). The boundaries of the 16 water planning regions follow some watershed boundaries and some county borders (**Error! Reference source not found.**).

Recommendations to the State in Regional Water Plans

During the recent update, four of the 16 regions recommended that the state re-evaluate water planning boundaries. The recommendations were based on a variety of issues:

- Because the Village of Cloudcroft straddles the divide between the Tularosa Basin and the Hondo Basin, Region 5, Tularosa-Sacramento-Salt Basin (ISC, 2016) recommended that the state “evaluate geographical boundaries of existing water planning regions to identify areas where it may be appropriate to adjust boundaries based on local considerations (e.g., a water system or community that is separated into two different planning regions).”

- Region 6 Northwest New Mexico (ISC, 2017) recommended that the state “ensure appropriate regional boundaries and focus planning locally with the stakeholders who are best suited to collaborate in certain areas. For example, the Northwest New Mexico Water Planning region has east-side and west-side issues. Future planning efforts should recognize those differences and allow for more localized planning. Consider renaming Region 6 since Northwest New Mexico Water Planning Region does not accurately reflect the geographical boundaries of the region. This region does not include San Juan County, which covers the northwestern corner of the state.”
- In 2003, Region 11 Lower Rio Grande northern boundary extended to Elephant Butte Dam, which coincided with the NMOSE’s Lower Rio Grande surface water basin. The boundary for the latest round of planning included only Dona Ana County. One of this region’s key recommendations to the state is to “conduct water planning on a water basin level as opposed to 16 political regions” (ISC, 2017).
- Region 15 Socorro-Sierra: One of the Key recommendations to the state is “review of regional water planning boundaries” (ISC, 2016).

Information from “Lesson’s Learned”

New Mexico First, under contract with ISC, conducted two meetings with stakeholders from different planning regions on *Lesson’s Learned: Bridging the gap between regional and state water planning*. The meetings were held for stakeholders to provide feedback on the regional water planning process. At the meeting in La Joya on February 28, 2017, one of the takeaway messages was that planning based on watershed boundaries, was widely supported. The group acknowledged that the watersheds should not be too big, and that the geology and interconnection between watersheds must be considered, along with political practicalities, but that the watershed approach would help bridge the urban and rural divide. It was also suggested that the state consider two tiers of watersheds for defining the planning boundaries; a mid-level region and upstream-downstream planning region.

Factors for Consideration in Defining Regional Water Planning Boundaries

Water Planning has a variety of purposes, which often includes improving the understanding of water resources and securing water supply for the future demands. An important component of water planning is about people and their use of the water and the policy and political decisions that address the water future. Thus, defining the boundaries of water planning regions must consider a combination of factors:

1. Legal Boundaries-The ISC and OSE administer water based on a variety of factors that have implications for water planning, for example:

- a. Interstate compacts on eight streams in the state (defined in part by the HUC 1¹ and HUC 2 boundaries shown in Figure 1) impact the storage and diversion of water supplies.
 - b. The OSE administers water rights based on declared groundwater basins (shown in Figure 3).
2. Funding/Fiscal Agent-The planning efforts through 2013, involved ISC, Bureau of Reclamation and other sources funding the planning efforts that were led by each region. In order for a planning region to receive funding, a public entity within the stakeholder group volunteered to serve as a fiscal agent. Thus, each region is best served by a local existing government entity willing to provide the coordination services for planning. Political-Decision makers/elected officials are instrumental in the implementation of strategies for addressing each region's water supply problems, thus it is advantageous to have boundaries that reflect the jurisdiction of county/city/state officials. Figure 4 shows the County, Tribal and Legislative Boundaries in New Mexico.
3. Hydrology-Water flows on the surface along topographic gradients and in the ground along hydrologic gradients that may or may not reflect the overlying topography.
 - a. Water Use Data is compiled by the New Mexico Office of the State Engineer (OSE) by both County and Watershed (HUC 1 and HUC 2) and specific areas that have some overlap with HUC 8 watersheds. Parsing this data into the water planning regions is very time-consuming.
 - b. The U.S. Geologic Survey, through its National Water Use Information Program (USGS, 2017), compiles water use information for the United States and is working to standardize the effort by all states. One of the baseline goals is to identify the County, HUC 8 watershed and aquifer from which the water is withdrawn. Figure 5 shows the Counties, the eighty-five HUC 8 watersheds and aquifers in New Mexico. The OSE is currently evaluating the options of modifying the boundaries currently used for defining water use. Thus, if future water planning boundaries coincided with HUC 8 watershed boundaries, estimating water use and water supply would be much more straightforward than the current approach.
 - c. Many of the aquifer boundaries have not been mapped, either horizontally or vertically. The New Mexico Bureau of Geology and Mineral Resources, through its Aquifer Mapping Program, is working on defining aquifer boundaries within the state. Some of the aquifers extend beyond the boundaries of several HUC 8 watersheds, thus division by HUC 8 alone may not reconcile all hydrologic accounting issues. Figure 5 shows some of the aquifers in New Mexico that have distinct boundaries that have been mapped.

Stakeholder Input

This white paper provides information to facilitate the discussion of revising the water planning boundaries. Figure 6 shows that the HUC 8 watersheds and the Senate District Boundaries have very

¹ HUC is an acronym for Hydrologic Unit Codes with a sequence of numbers that identify the watershed (USGS, 2017b).

little in common. Figure 7, 8 and 9 present three attempts to reconcile the hydrologic issues described above for an easier summation of information and future planning effort. The boundaries also need to factor in cultural similarities, land use, economic interest and the size and distance for stakeholders to participate in regional water planning meetings. For example, from a hydrologic perspective, the HUC 8 drainages within the Gila River could form a separate water planning region, yet no communities with a population of 1000 or greater reside in this geographic boundary, which may create a problem for leadership within the region, thus the Gila is combined with the Mimbres-Playas-Animas HUC 8s.

The three examples serve only to solicit comment. Many options are possible. Version 1 and 2 shows the Rio Puerco as part of Middle Rio Grande and Version 3 includes the Rio Puerco with the Western Rio Grande Region. Versions 1 and 3 includes the Santa Fe Area with the Middle Rio Grande, but Version 2 splits the Middle Rio Grande into an Upper Middle and Middle Rio Grande. Versions 1 and 3 include the Gila watershed as part of the Southwest Region and Version 2 separates the Gila watershed. The Upper Pecos and Middle Pecos are modified in Version 3 to reduce the size of the Middle Pecos Region.

Let us know your thoughts on this proposal and suggestions for revisions. Please complete the survey by June 15, 2017: <https://www.surveymonkey.com/r/RWP-Boundaries>

Acknowledgements:

This white paper was prepared by Amy C Lewis, Hydrologist, in consultation with ISC and OSE Staff. Appreciation to Conci Bokum for review of historic Water Dialogue Newsletters.

Figure 1. New Mexico Water Planning Regions 2017.

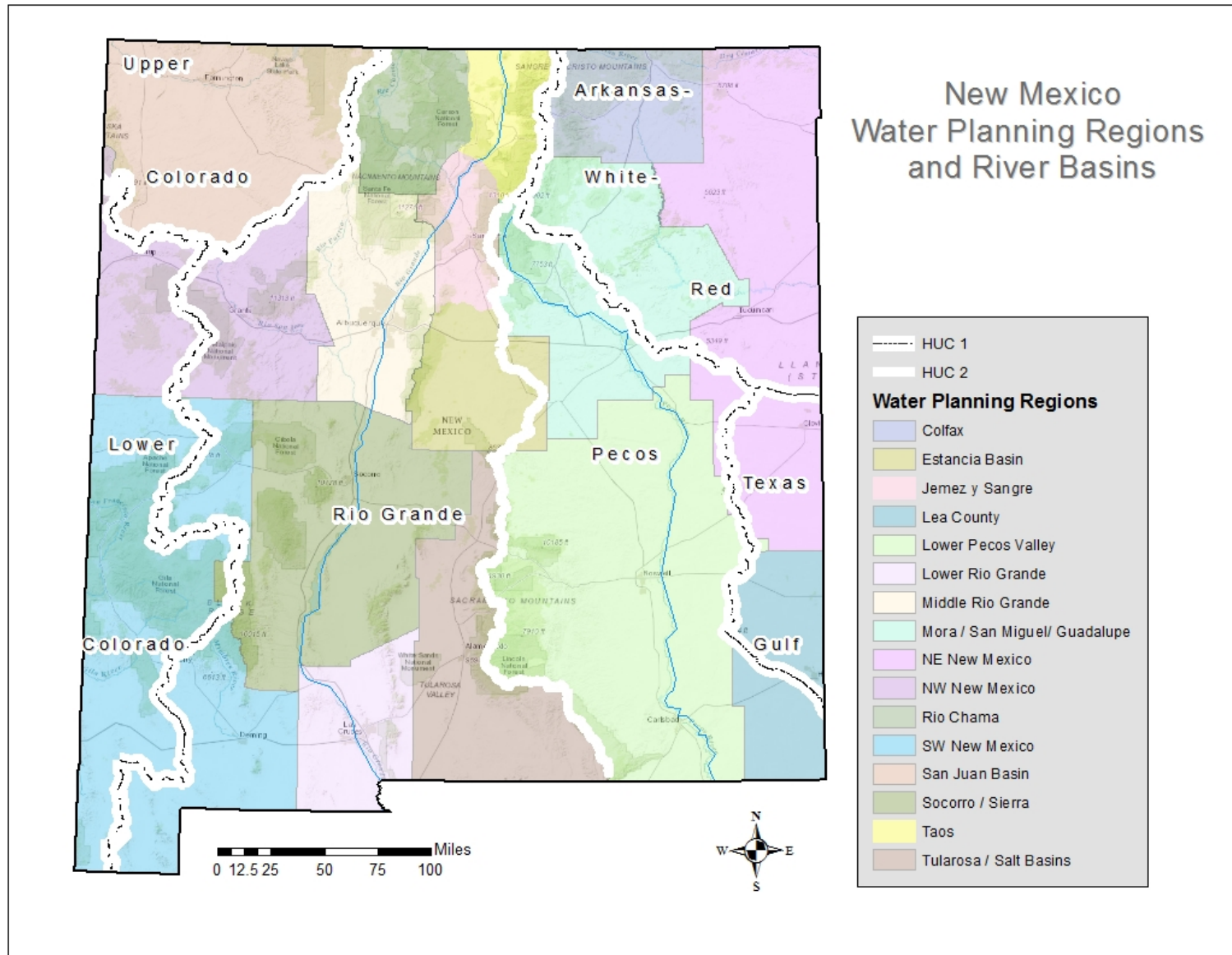
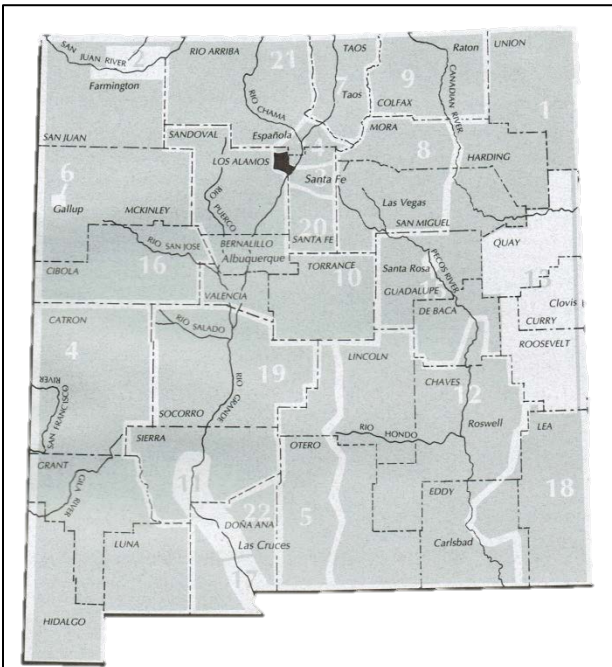
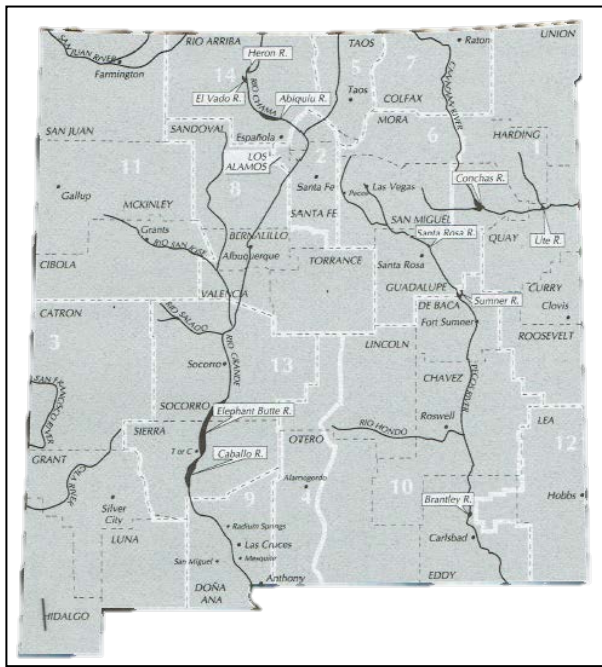


Figure 2. Water Planning Boundaries from 1993 to 1996.



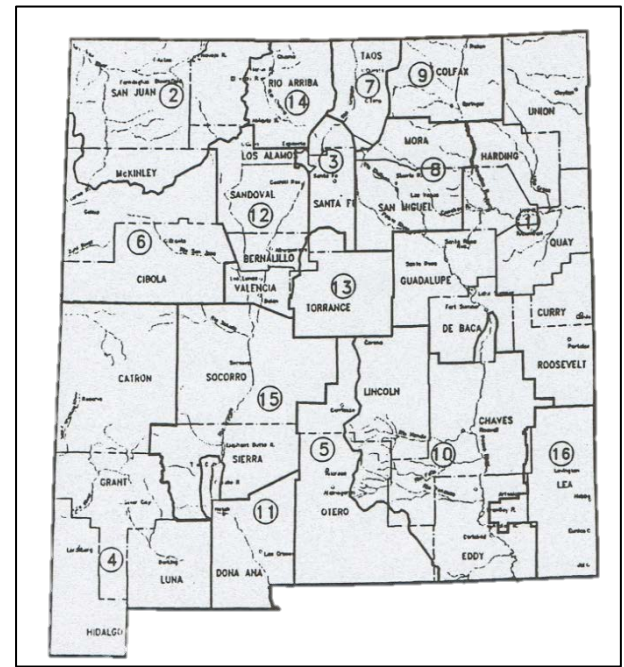
22 Regions

January, 1993 (Water Dialogue, June, 1993)



14 Regions

September, 1993 (Water Dialogue, Oct, 1993)



16 Regions

October, 1996, (Water Dialogue, Nov, 1996)

Figure 3. Declared Groundwater Basins and HUC 8 Watersheds.

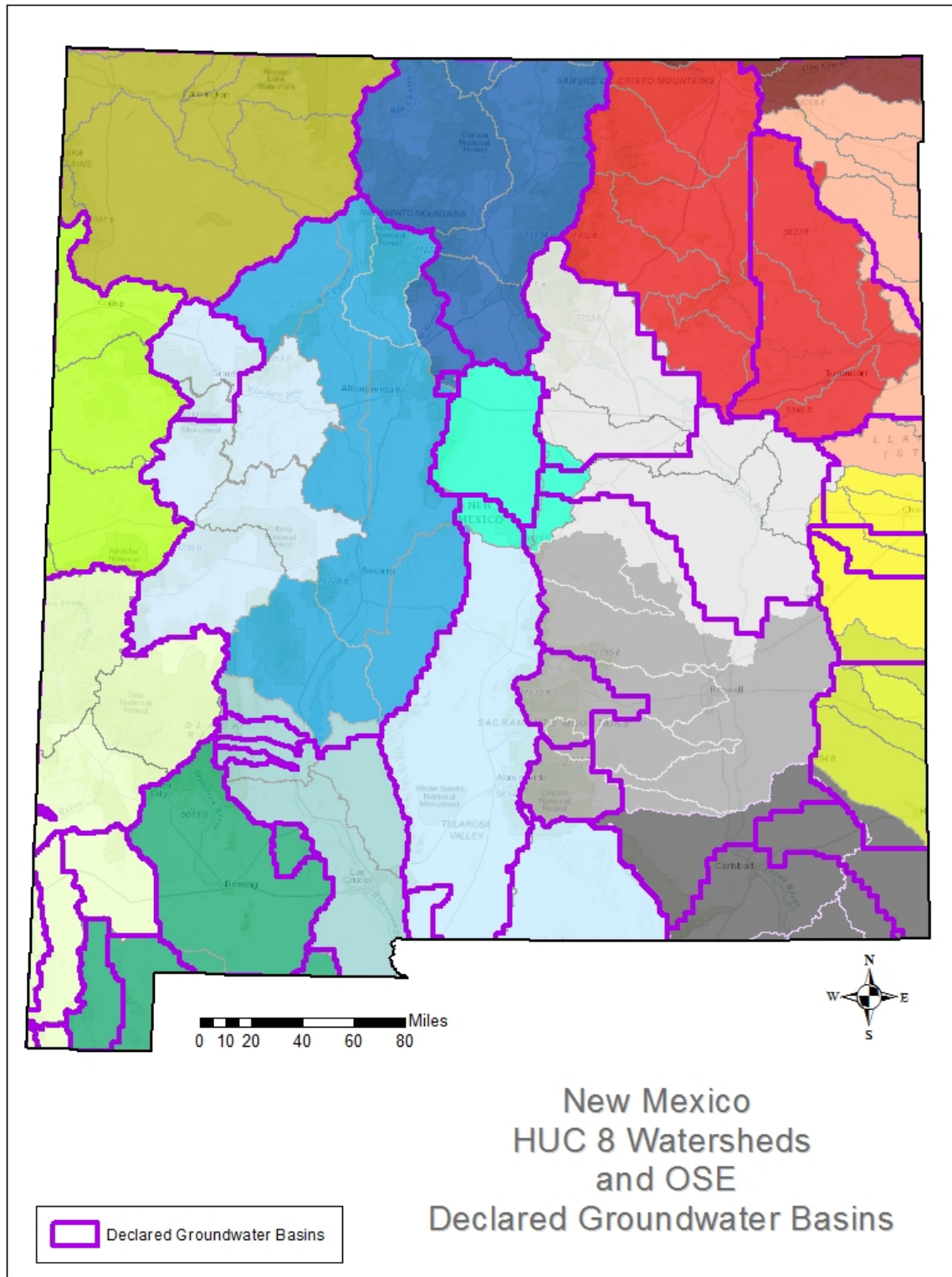


Figure 4. New Mexico Senate Districts, Council of Governments, Counties and Tribal Boundaries.

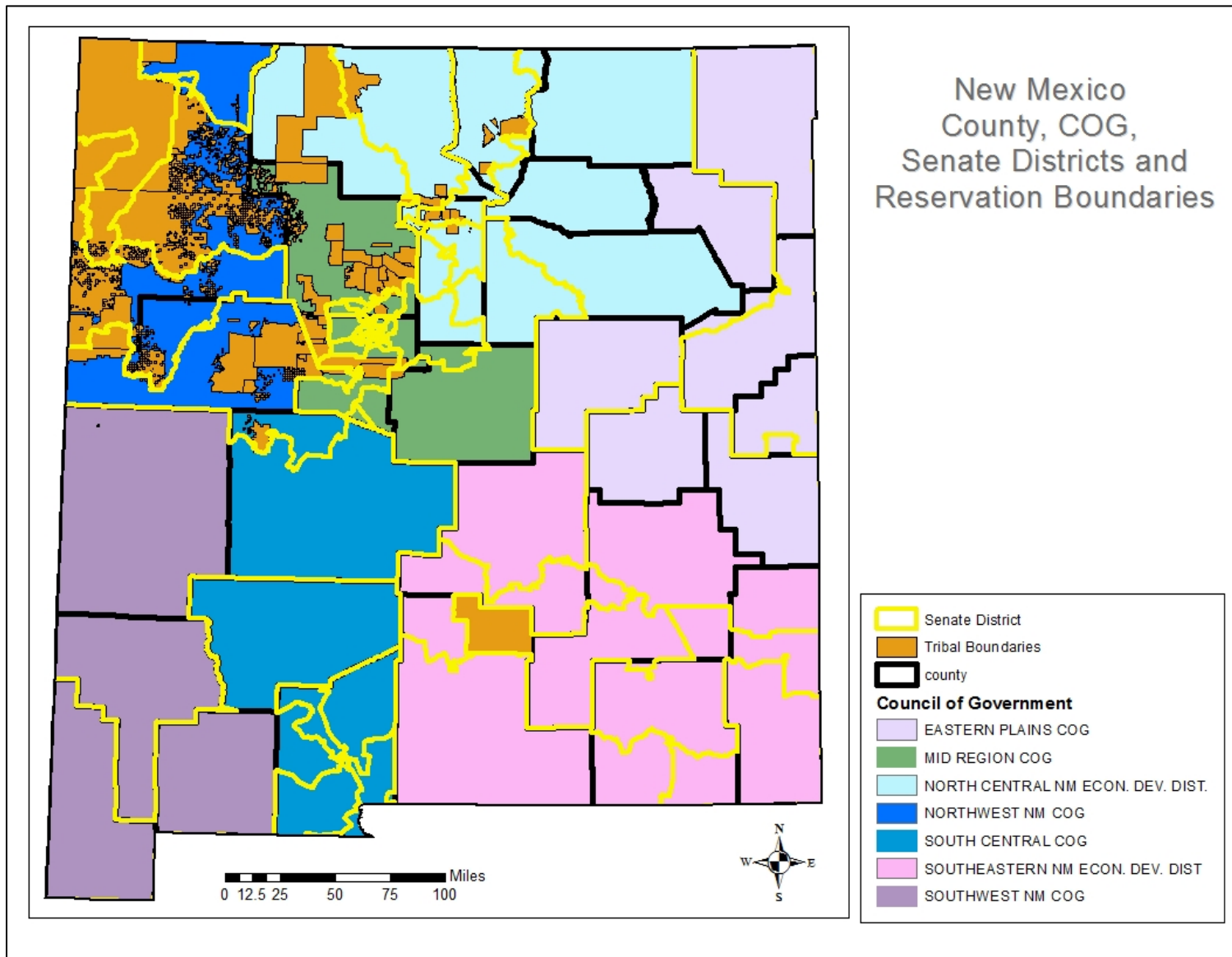


Figure 5. HUC 8 Watersheds and aquifers (OSE, 2016)

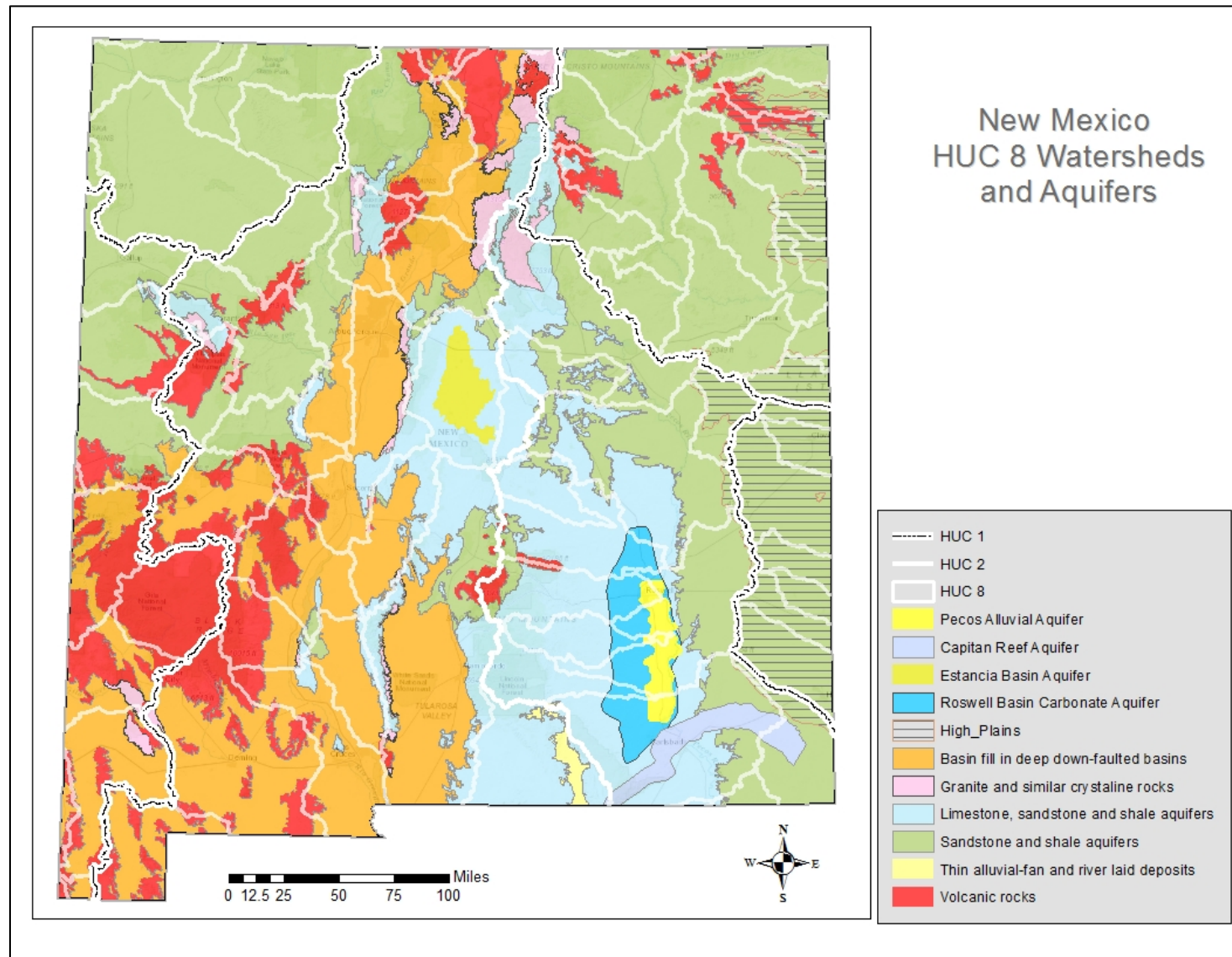


Figure 6. Senate Districts and HUC 8 Watersheds showing the lack of commonality between hydrologic and political boundaries.

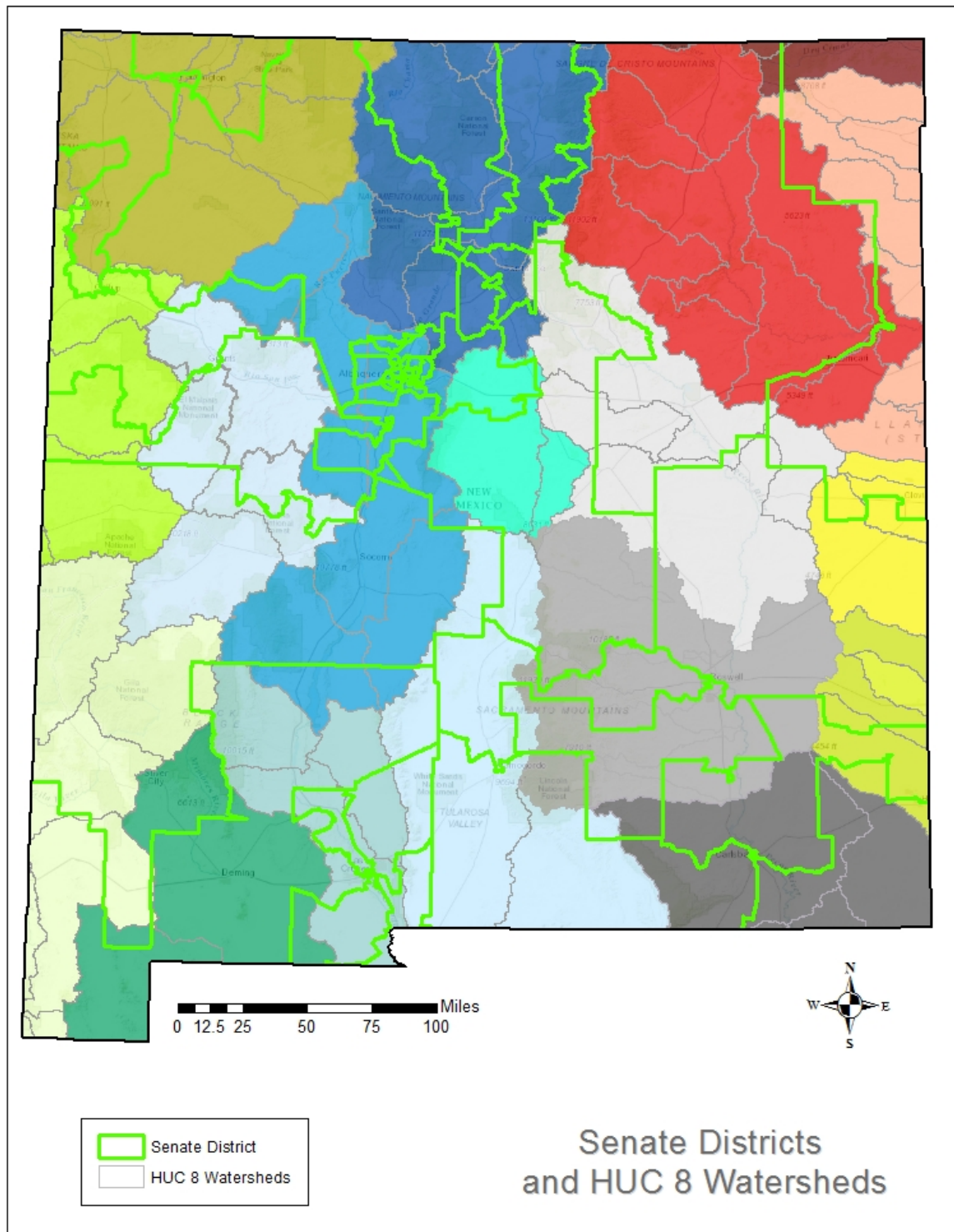


Figure 7. Possible Regional Water Planning Boundaries-Version 1.

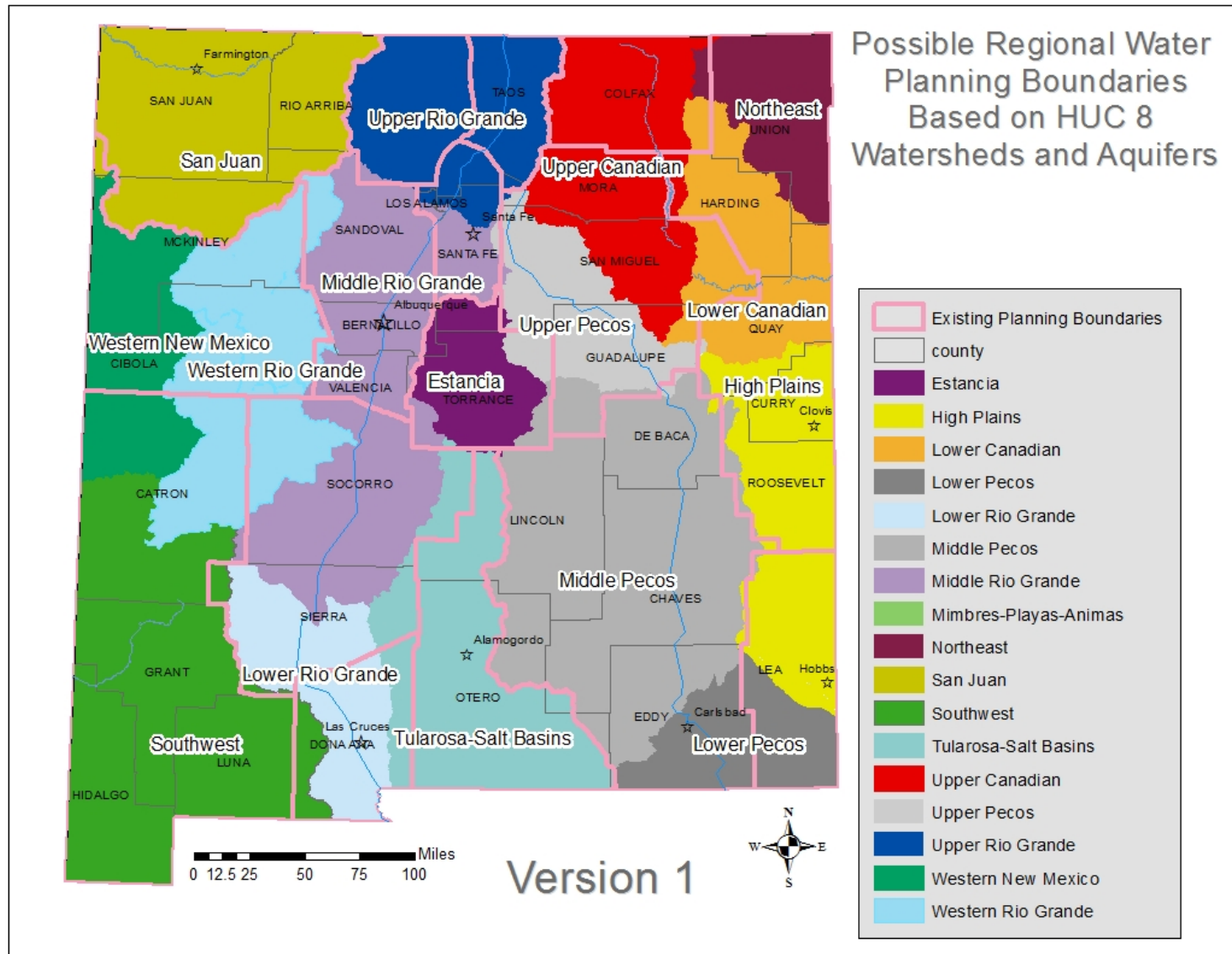


Figure 8. Possible Regional Water Planning Boundaries Version 2.

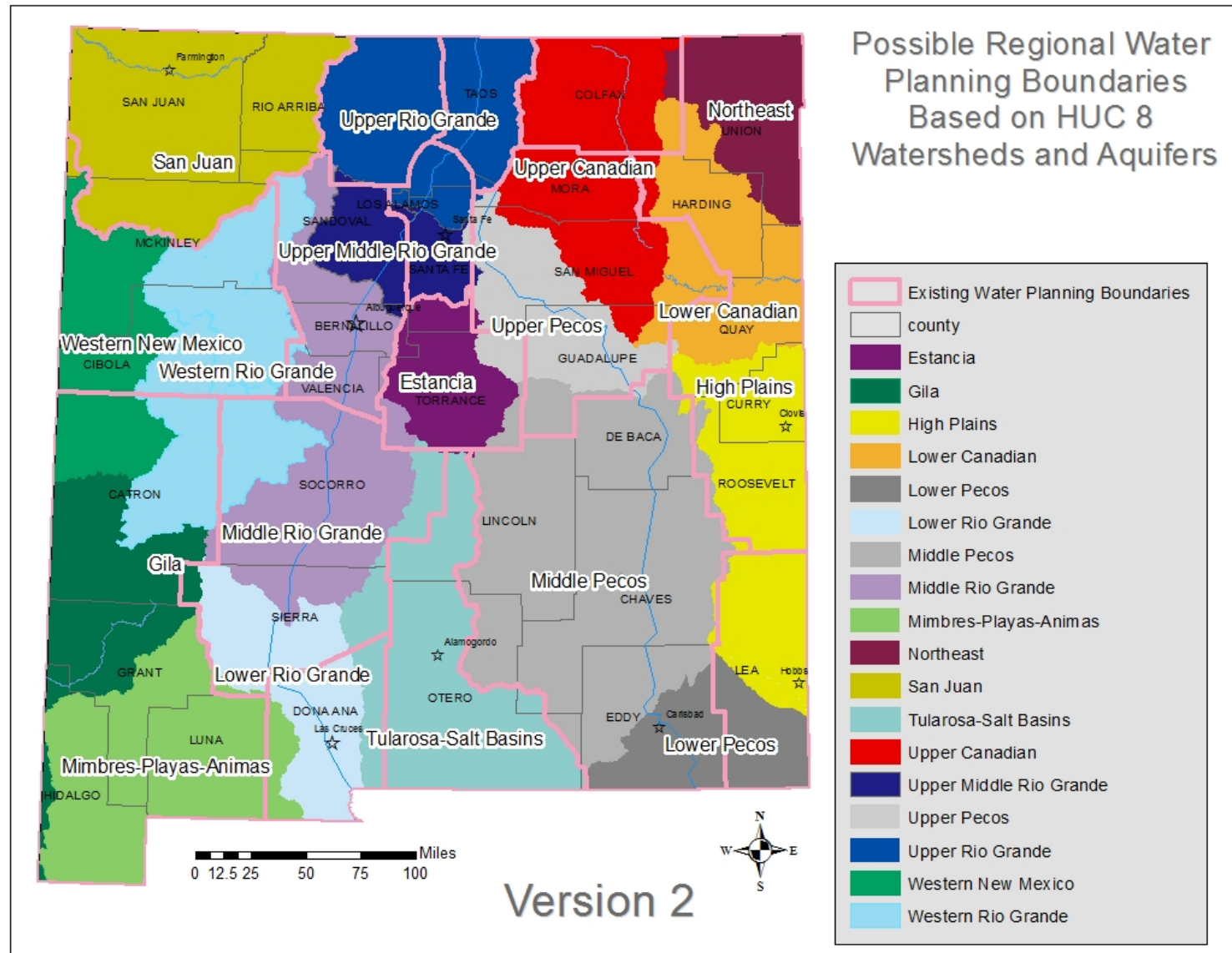
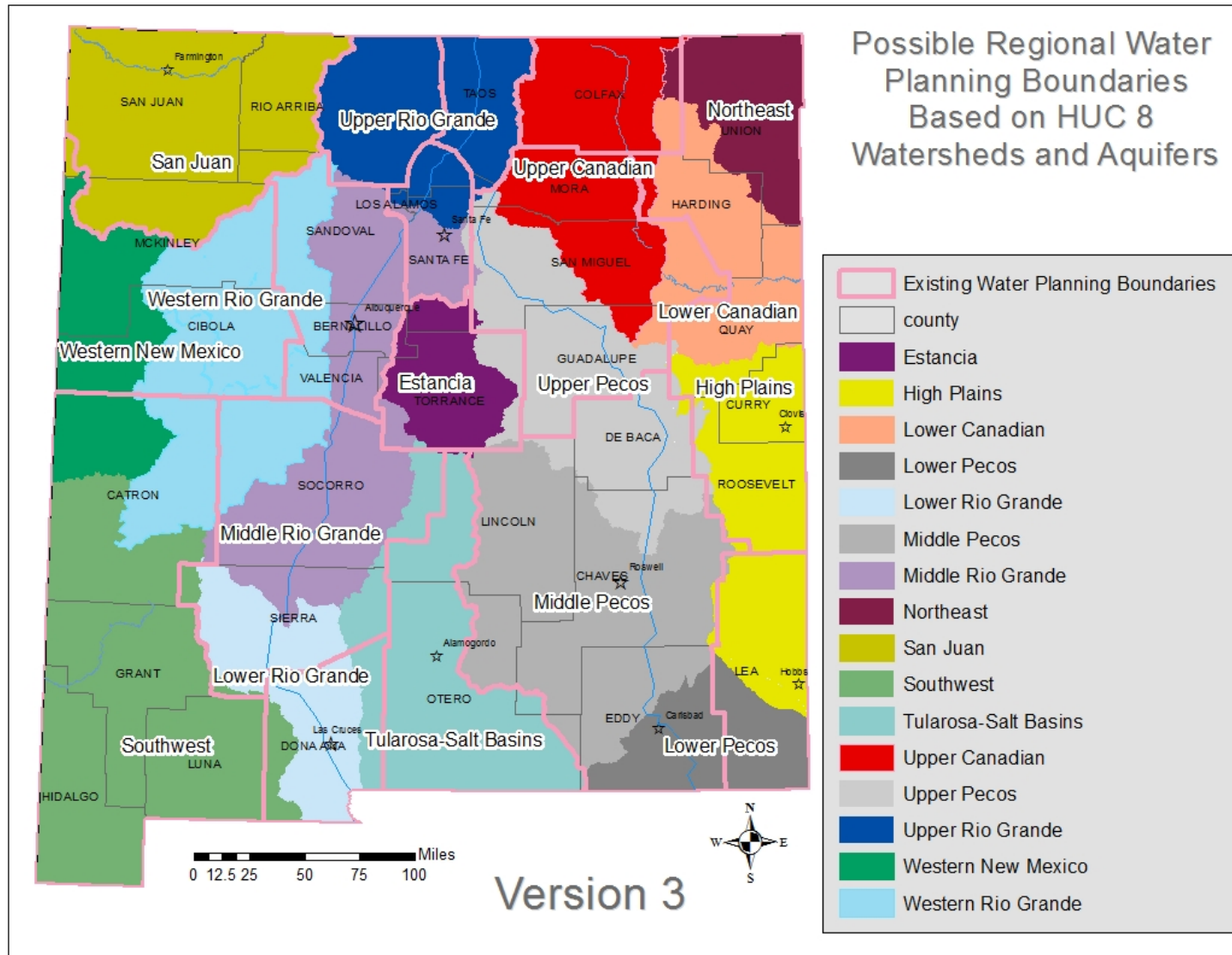


Figure 9. Possible Regional Water Planning Boundaries Version 3.



References:

ISC, 2016-2017. Regional Water Plans available at:

http://www.ose.state.nm.us/Planning/regional_planning.php

OSE, 2016. GIS files of aquifer boundaries sent to Amy Lewis from Junko Boat, OSE Water Use and Conservation Bureau on 2/25/2016.

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Water Dialogue, 1993b. "Notes from the Orphanage". Published by the New Mexico Water Dialogue Volume 1, Number 3. October 1993.

Water Dialogue, 1996. "Future on a Shoestring". Published by the New Mexico Water Dialogue. November 1996.

USGS, 2017a. Summary of Baseline Standards for Water-Use Data.

<https://water.usgs.gov/wausp/wudr/baseline-summary.html>

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