



Memorandum

Date: July 13, 2020 TH Matter ID: 2977-001

To: STRGBA Groundwater Sustainability Agency (“GSA”) Member Agencies

From: Stacy Henderson

Re: Suggestions and Recommendations for STRGBA GSA’s Groundwater Sustainability Plan (“GSP”)

This Memorandum is submitted on behalf of my Clients, who are a number of farming families, residential and commercial customers of Modesto Irrigation District (“MID”).

Thankfully, the STRGBA GSA can learn from the efforts undertaken by the experts and member agencies in critically overdrafted basins which face conditions are far worse than those present in the Modesto Subbasin. As the GSA works to draft the GSP, we believe it is important that those involved in the process ensure this GSP is carefully drafted to recognize the unique conditions existing in the Modesto Subbasin, and, in particular, the fact that groundwater conditions, hydrology and geology vary significantly across the Subbasin. For example, in the area of the Subbasin where MID is located, groundwater on the west side is plentiful. The groundwater table is high in this area and requires significant pumping from shallow wells so crops can be grown. In addition, the groundwater table on the west side recovered very quickly during and following the recent drought. In contrast, the groundwater table on the east side of the Subbasin is much lower, requires the use of deeper wells to extract the groundwater, and continues to be depleted without replenishment.

The purpose of this Memorandum is to provide suggestions and recommendations for consideration by the GSA in its development of the initial Water Budgets and GSP. Our input is intended to assist in the creation of a balanced, realistic and reasonable operational structure for the use and management of groundwater within our Subbasin to ensure sustainability. Simply put, given the complexities of the Modesto Subbasin a “one size fits all” approach in the GSP will not work. Rather, the GSP should recognize the Subbasin’s unique conditions, and any required management actions and associated costs should be developed accordingly. We are thankful for the opportunity to work with the STRGBA GSA in developing the GSP, as it is an extremely critical document.

1. **Management Zones and Water Budgets**

We appreciate the information and proposal provided by Todd Groundwater during the July 8, 2020 GSA meeting identifying the proposed areas for Zone Budgets to be developed within the Modesto Subbasin. Using the information provided during the GSA meetings, as well as historical information about groundwater conditions underlying the MID service area in particular, we believe that ongoing groundwater management in the Subbasin should be tailored to the groundwater conditions within each distinct area in the Subbasin.

Because of the varied conditions which exist in many subbasins, GSAs have developed various methods to allow for separate management and operation based on location. SGMA allows GSAs to develop Management Areas to facilitate implementation of the GSP. Generally, a Management Area is an area within a subbasin for which the GSP may identify different minimum thresholds, measurable objectives, monitoring, projects and/or management actions based on differences in water use sector, water source type, geology, aquifer characteristics or other factors. However, the formal use of Management Areas triggers some burdensome and costly reporting requirements that may not be advantageous to the GSA. Management of the Modesto Subbasin using distinct objectives, criteria, projects, etc. based on the

conditions within the various areas of our Subbasin can be accomplished without the reporting requirements by using an alternative nomenclature such as “Water Zones,” “Management Zones,” “Subareas,” etc. For ease of reference in this Memorandum, we refer to these distinct areas within the Modesto Subbasin as Management Zones, recognizing that the ultimate term used by our GSA may differ in the future.

By creating Management Zones the GSA can maintain maximum flexibility over SGMA compliance because each zone will have the ability to implement projects and actions applicable to the relevant area. Management Zones also allow for local water accounting and management actions related to imports, exports, consumption, conservation and pumping appropriate for the relevant area, and for costs and expenses to be allocated accordingly. A number of GSPs developed for the critically overdrafted subbasins include the use of Management Areas. A few examples include the GSPs for the following: Chowchilla Subbasin,¹ Semitropic Water Storage District² and Eastern Tule.³ Other GSAs utilize sub-areas or management zones, including, but not limited to the North Kings GSA⁴ and the Kings River East GSA.

We believe it is both logical and consistent with the purpose and intent of SGMA for Management Zones to be developed within the Modesto Subbasin to account for the complexities and differences that exist. Todd Groundwater’s presentation identified a couple of distinct delivery areas for purposes of creating the initial Zone Budgets, which we believe is a reasonable starting point to establish Management Zones. However, given the variation in groundwater conditions within MID in particular, we believe there should be at least 2 Management Zones (and 2 areas for purposes of determining the initial Water Budgets) within MID’s boundaries.⁵ Generally, the groundwater to the west is high with Drainage Wells required to keep the rootzone from being saturated. In the eastern portion of MID, although the aquifer is still in good condition, groundwater is found at deeper depths. Based upon information provided by MID and produced by Todd Groundwater to date, we believe the Corcoran Clay boundary is a definitive method of separating the eastern and western portions of MID into 2 Management Zones (East and West). However, since the MID customers all use the exact same water source, we believe it is reasonable for all MID customers to be subject to the same management and operational costs.

Attached are the following exhibits for the GSA’s consideration:

- Exhibit 1 - Map of MID’s service area showing the location of MID’s existing Deep Wells and Drainage Wells. As shown on this map, MID’s Drainage Wells (which constitute approximately one-half of MID’s more than 100 wells) are concentrated on the west side of Hwy 99. The Drainage Wells “are used for water table control on the west side” of MID’s service area because the groundwater table is so high. Without being able to control the elevation the groundwater table on the west side via pumping from the Drainage Wells, “the soil conditions would be waterlogged and crops would not be able to be grown.”⁶ MID’s remaining approximately 50 Deep Wells supplement MID’s surface water supply in the canal distribution system.⁷
- Exhibit 2 - Map of the Modesto Subbasin groundwater level contours, which shows the groundwater levels west of Hwy 99 are relatively high at 20 – 30 feet.

¹ Chowchilla Subbasin’s January 2020 GSP can be viewed using the following link:

https://www.maderacountywater.com/wp-content/uploads/2019/12/ChowchillaSubbasin_GSP_201911205_clean-1.pdf

² Semitropic W.S.D.’s 2020 GSP can be viewed using the following link: <http://www.kerngwa.com/assets/semitropic-water-storage-district-gsa-management-area-plan.pdf>

³ Eastern Tule’s 2020 GSP can be viewed using the following link: <https://easterntulegsa.com/gsp/>

⁴ The portion of the North Kings GSA’s GSP discussing the use of sub-areas, can be viewed using the following link: <https://www.northkingsgsa.org/wp-content/uploads/2020/02/6-Projects-and-Management-Action-1.pdf>

⁵ This Memorandum does not purport to offer specific recommendations regarding how the individual conditions of each of the other 6 Member Agencies should be addressed in the GSP, as we have not sufficiently studied groundwater conditions and hydrology outside of MID.

⁶ See MID’s explanation of the District’s conjunctive use operation using the following link: <https://www.mid.org/water/gw/default.html>

⁷ *Id.*

- Exhibit 3 – Map of the Modesto Subbasin with Todd Groundwater’s proposed delivery areas for the development of Zone Budgets, with our recommendation for the division of MID’s service area into East and West Management Zones and Budgets. We believe the Management Zones shown in this map reasonably account for the areas within MID that have distinctive water source types, geology, and aquifer conditions.

Management Zones will allow for the development of appropriate requirements to address the vastly different conditions within the Subbasin and will avoid a broader Subbasin-wide approach that is not justified given the inconsistent conditions of the Subbasin, and MID’s service area in particular. Since groundwater sustainability concerns are not consistent throughout the Modesto Subbasin, it is appropriate for the sustainable yield, monitoring protocols, required projects, and management actions to be established with varying terms, conditions and expenses within the Subbasin. Management Zones allow this to occur.

As the GSA works to evaluate the modeling results, develop sustainability goals and criteria, identify management scenarios, and develop project requirements and parameters, we believe it is important for the GSA to ensure that distinct decisions are made for each of the Management Zones. While the GSA meetings have not yet focused on defining these terms with any specificity, we believe the designation of Management Zones is an integral step of the GSP development process and should be completed as soon as possible. That being said, we recognize that although a portion of the City of Modesto lies within the proposed West MID Management Zone, it would be reasonable for that area to be combined with the East MID Management Zone so all of the citizens of Modesto, who use the exact same water source, will be held to the same standards and subject to the same management and operational costs.

2. **Cost Allocation and Credits**

We understand that a number of GSAs in critically overdrafted basins have established initial fee structures based on acreage or groundwater use after meeting the Proposition 218 requirements, and that at least one GSA (Kings River East⁸) established a per acre-foot per year groundwater pumping fee under Proposition 26 guidelines. In many cases, these fees were established in order to generate revenue necessary to pay for the preparation of the GSP, which was reasonable given conditions within the Subbasins at issue and the lack of an alternative funding source.

We are very appreciative of the STRGBA GSA’s work to secure grants to fund preparation of our GSP as well as the installation of monitoring wells. We are also cognizant, however, that costs associated with implementation of the GSP, including, but not limited to, the costs associated with the development and implementation of required projects, monitoring, and continued management of the GSA following submittal of the GSP, must be funded.

As the GSA evaluates funding issues, we believe it is critical that management costs are allocated in a sensible manner. Ideally, costs would be allocated based upon the impact each Management Zone has on groundwater conditions within the Subbasin, as well as the projects, operations and management actions required for each Management Zone. If certain Management Zones do not have significant chronic lowering of groundwater levels and/or sustainability concerns, those areas should not have the same management costs as areas in need of projects and management actions to ensure sustainable use of groundwater in the future. Accordingly, we respectfully suggest the GSA consider establishing a “beneficiary pays” policy once the projects and management actions are further developed and implemented. Such a policy would require that projects are funded by the actual project proponent/beneficiary.

We also recommend the GSA consider other creative options related to the allocation of costs associated with addressing groundwater sustainability issues including, but not limited to, giving credits toward management costs or extraction limits within Management Zones, or even at the landowner or public agency level, for projects that have already been implemented at significant expense, giving individual credits to landowners who use flood irrigation or provide other means of recharging the groundwater basin and/or a banking program, etc. Recharge facilities/programs and banking programs, in particular, provide flexibility in the management of water supplies. The GSA should look to protect existing recharge and banking programs and incentivize the development of additional opportunities by public agencies and private landowners. The credits applied to these beneficial facilities, conditions, and programs should be formulated

⁸ The KREGSA’s Resolution No. 2018-02-01, adopting the groundwater fee, can be viewed using the following link: <https://kingsrivereast.org/wp-content/uploads/2018/02/2018-02-01-resolution.pdf>

to account for the measured benefits of reasonable and beneficial use of groundwater supplies, reduction for natural evaporative and operational losses, and should deter against undesirable results caused by over pumping which is not mitigated (e.g., by recharge).

As ideas are discussed, it is important to recognize all of the actions that have been taken to date within the Modesto Subbasin to address groundwater sustainability and the substantial costs associated with those efforts. A couple of important examples of projects that have occurred within MID and the City of Modesto are as follows:

- “The primary source of recharge in the Modesto Subbasin (60%) occurs through agricultural irrigation using surface water supplied by MID.”⁹ In addition to this incredible benefit contributed by MID’s irrigators, these irrigators have already spent millions of dollars implementing policies, procedures and projects to assist with groundwater sustainability in the Modesto Subbasin. For example, MID’s conjunctive use approach to providing water to its customers maximizes the use of available surface water and incorporates the use of groundwater primarily from the west side of MID’s service area, thereby strategically reducing the demands on the aquifer. As a direct result of these actions, overall, the groundwater table below MID’s service area is in balance and MID’s operation does not appear to be contributing to groundwater sustainability issues that exist elsewhere in the Modesto Subbasin. In addition, in 2020, MID completed construction of the main canal regulating reservoir (at a cost of approximately \$12 million), which MID can use for managed recharge projects in the future with minor modifications, and which assists the District in reducing operational spills, thereby keeping more surface water available for delivery to irrigators and for potential use by domestic users.
- The citizens of the City of Modesto, in partnership with MID, funded construction of the Modesto Regional Water Treatment Plant and the Plant’s 2016 expansion (the combination of which cost more than \$100 million). The Plant was constructed in response to the loss of recharge that occurred when agricultural land was converted to urban use. The water for Modesto’s citizens was previously supplied solely from groundwater. The increased urban demand (met by groundwater) resulted in a continually expanding and deepening groundwater ‘cone of depression’ in the Modesto urban area.”¹⁰ With the Plant, the City of Modesto has reduced its need for groundwater extraction by approximately one-half, saving approximately 67,000 acre-feet of groundwater per year.¹¹ As a result of the City’s diminished demand, groundwater levels have recovered by more than 40 feet in the local urban area.¹² In addition, the enforcement of the City’s mandatory water conservation efforts and metering requirements implemented by the City of Modesto should be recognized for its contribution to reducing the use of groundwater.

The STRGBA GSA would not be the first to appropriately allocate costs according to need and benefit. As just one example, the Paso Robles Subbasin’s GSP¹³ provides for project implementation “by willing entities” and also references a potential fee study for purposes of developing a groundwater pumping fee to cover the costs of implementing the regulatory programs described in the GSP. Such programs include costs related to monitoring and reporting, hydrogeologic studies, pumping reduction enforcement where necessary, and public outreach. Section 10.2 of the Paso Robles Subbasin GSP describes the plan to conduct focused public outreach and hold meetings to educate and solicit input on the proposed fee structure. We believe a similar effort should be made by the STRGBA GSA to give all who will ultimately be impacted by the GSP the opportunity to vet options and discuss the wide array of alternatives with the GSA.

⁹ See MID’s explanation of groundwater in the MID using the following link: <https://www.mid.org/water/gw/default.html>

¹⁰ *Id.*

¹¹ See MID’s summary of the Modesto Regional Water Treatment plant using the following links:

<https://www.mid.org/water/domestic/default.html> and <https://www.mid.org/water/gw/default.html>

¹² See MID’s summary of the Modesto Regional Water Treatment plant using the following link:

<https://www.mid.org/water/gw/default.html>

¹³ The Paso Robles Subbasin’s January 31, 2020 GSP can be viewed using the following link:

[https://www.slocounty.ca.gov/Departments/Public-Works/Forms-Documents/Committees-Programs/Sustainable-Groundwater-Management-Act-\(SGMA\)/Paso-Robles-Groundwater-Basin/Final-GSP/Paso-Basin-GSP.aspx](https://www.slocounty.ca.gov/Departments/Public-Works/Forms-Documents/Committees-Programs/Sustainable-Groundwater-Management-Act-(SGMA)/Paso-Robles-Groundwater-Basin/Final-GSP/Paso-Basin-GSP.aspx)

3. **Transfer Policies**

The GSP will necessarily have to impose restrictions on groundwater extraction for those areas where actions need to be taken for sustainability to be achieved. In contrast, in those areas where sustainability is not an issue, water may be available for transfer, especially in areas where groundwater water levels are high. We firmly believe the GSA should not attempt to restrict the ability of landowners to engage in both interbasin/Management Zone transfers or out of basin/Management Zone transfers. Rather, we believe it is appropriate for the GSA to consider developing a framework for providing credits for transfers of groundwater for beneficial use, and/or for carryover of unused groundwater allocations for use in drier periods.

As more information becomes available, and the modeling results are refined with the additional data gathered from the monitoring wells and information provided by the East side landowners, our suggestions may evolve accordingly. In the interim, we felt it important to ensure that our suggestions be provided as early in the GSP drafting process as possible. We thank you for the opportunity to provide our input for your consideration. We look forward to hearing your thoughts on our recommendations at an upcoming GSA meeting.

Modesto Irrigation District Irrigation Boundary Map - Ditchtender Areas -

EXHIBIT 1



- MID
 - Improvement District
 - Private roads
 - OID
 - MID
 - Improvement District
 - Private
 - City of Modesto
 - MID-Abandoned
 - Drains
 - Irrigation Boundary
 - County Lines
 - roads
- Deep Well
 - Drainage
- | Ditchtender Areas | |
|-------------------|--------|
| Area 1 | Area 2 |
| Area 3 | Area 4 |
| Area 5 | Area 6 |
| Area 7 | |

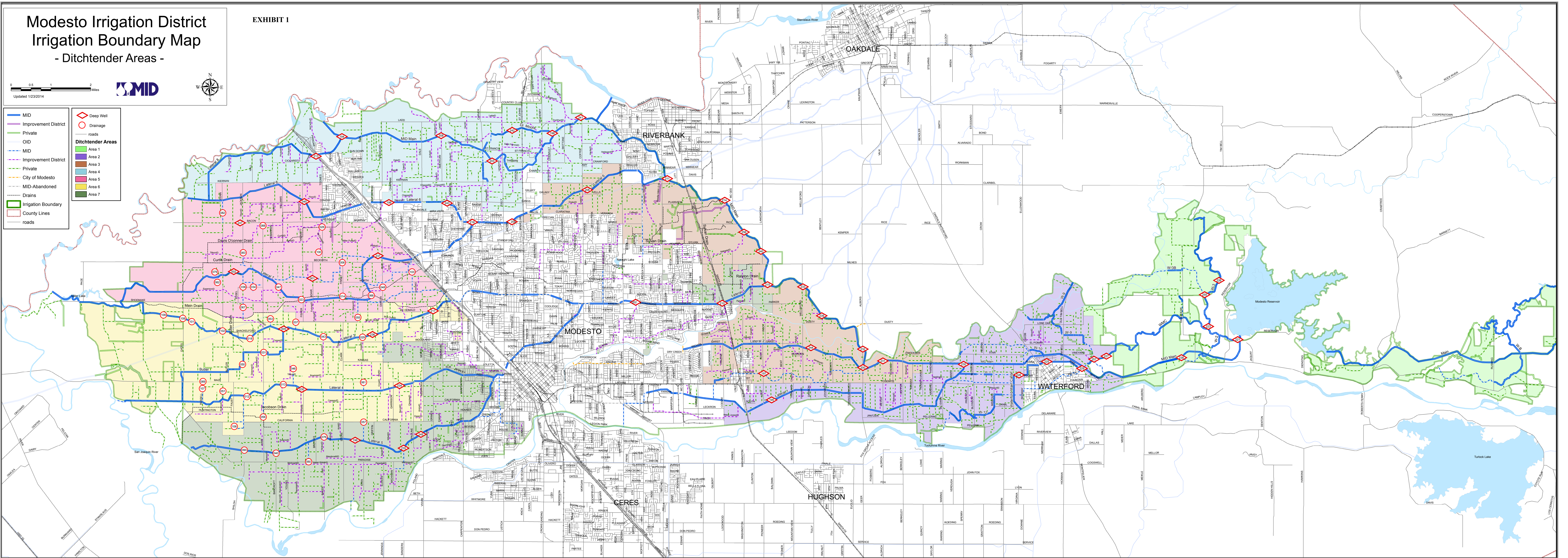


EXHIBIT 2

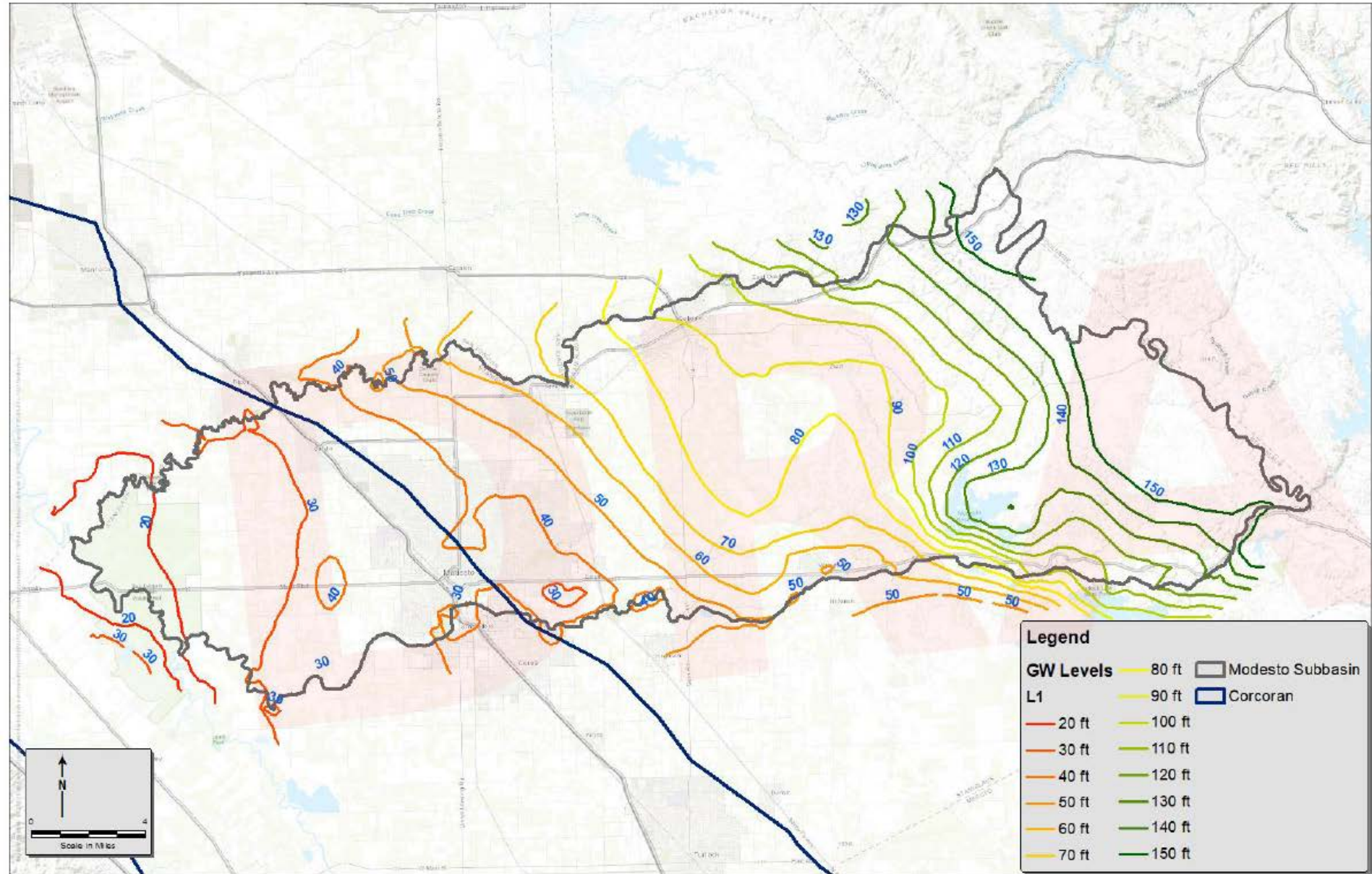


EXHIBIT 3

