2022 Indio Subbasin Alternative Plan Update

Tribal Workgroup #7
SUMMARY

October 20, 2021 at 10:00 am – 12:00 pm
Virtual Meeting

Tribal Workgroup and Supporting Members	Groundwater Sustainability Agencies (GSAs)
• Jennifer Ruiz, Cabazon Band • Guarav Rajen, Augustine Band • Margaret Park, Agua Caliente Band • Dr. Patrick Taber, Bureau of Indian Affairs	• Ashley Metzger, DWA • Ryan Molhoek, DWA • Katie Evans, CVWD • Mark Krause, DWA • Melanie Garcia, CVWD • Reymundo Trejo, IWA • Michelle Tse, IWA • Steve Bigley, CVWD • Zoe Rodriguez del Rey, CVWD
	Consultant Team • Iris Priestaf, Todd Groundwater • Maureen Reilly, Todd Groundwater • Rosalyn Prickett, Woodard & Curran • Vanessa De Anda, Woodard & Curran

Welcome and Introductions

Ms. Rosalyn Prickett, Woodard & Curran, greeted participants as they joined the call. Ms. Prickett welcomed everyone to the workshop and reviewed how to use the virtual GoToMeeting platform. She then reviewed the meeting objectives and provided an overview of the Workgroup timeline over the two-year planning period. She noted that this is the final SGMA Tribal Workgroup meeting specific to the *2022 Indio Subbasin Alternative Plan Update* (*Alternative Plan Update*) before submittal to the State in December 2021.

Alternative Plan Status

Ms. Iris Priestaf, Todd Groundwater, presented an overview of the *Alternative Plan Update*. Ms. Priestaff reviewed the methods in which people have been engaged, which included seven public workshops, seven SGMA Tribal Workgroups, a website with monthly updates, and regular email announcements and updates. The four GSAsare developing the *Alternative Plan Update* for the Indio Subbasin (Subbasin) and areas that are, or are likely to be, supplied groundwater from the Subbasin.

The importance of supplemental supply to alleviate groundwater overdraft has been noted for decades. The water supply portfolio includes capture and recharge of stormflows, completion of the Coachella Canal, acquirement of State Water Project (SWP) contracts, and use of recycled water.

Ms. Priestaf reviewed the *Alternative Plan Update* goal: "To reliability meet current and future water demands in a cost-effective and sustainable manner". She also reviewed the refined objectives being included in and guiding the development of the *Alternative Plan Update*, including a new 7th objective: "Reduce vulnerability to climate change and drought impacts". Plan implementation has resulted in significant groundwater levels increases regionally and cumulative groundwater storage increases across the Subbasin.

Workgroup comments and questions included the following:

- The history of the Valley presented in Sections 1.1 and 1.2 starts late. USBR has historical surveys of Coachella Valley available online that describe the Valley as a mesquite forest. The surveys also show numerous wells and thousands of people living in the Valley. The mesquites, which hold water in the ground, were cut down for agriculture. We should question the existence of golf courses in the area given the limited precipitation.

Groundwater Conditions and Sustainable Management

Ms. Priestaf presented an overview of the Subbasin and groundwater flows, noting that it extends from the San Gorgonio Pass Subbasin to the Salton Sea. Groundwater flow moves downhill through the Subbasin supplying wells and discharging into the Salton Sea.

Ms. Priestaf presented an overview of undesirable results for six sustainability indicators, which are all addressed in the *Alternative Plan Update* and listed below. A minimum threshold (MT) is a numeric value used to define undesirable results.

Groundwater Levels

Undesirable results include significant and unreasonable reduction in the long-term viability of domestic, agricultural, municipal, or environmental uses, and impacts to relatively shallow wells, including small water systems and private drinking water supply wells. Hydrographs in the *Alternative Plan Update* show declining groundwater level trends in the Subbsain from the 1990s to around 2009. As such, the MTs have been defined as the historical lows measured at 57 Key Wells in around 2009 with no reported shortages. An undesirable result has been defined to occur when the MT is crossed in five consecutive low-season monitoring events in at least 25% of wells across the Subbasin.

Groundwater Storage and Land Subsidence

The MTs for groundwater levels have a strong correlation with, and are therefore a proxy for, the groundwater storage and land subsidence sustainability indicators. The change in groundwater storage indicated declines between 1987 to 2009, and reversal of overdraft and increase of storage in 2009. This correlates with the change of groundwater levels seen across the Subbasin around 2009. Since then, there has been an increase of about 840,000 AF in storage that can be used during periods of drought. Similarly, the Subbasin experienced up to 2 feet of land subsidence between 1995 to 2010 correlated with groundwater declines due to groundwater pumping. Stabilization and uplift have been documented in the Subbasin since 2010 with increasing groundwater levels.

Groundwater Quality

The GSAs are tracking numerous water quality constituents. Large water systems meet all drinking water standards, but small water systems and domestic wells may be affected by some constituents like nitrate from multiple sources and naturally occurring hexavalent chromium and arsenic. The GSAs are coordinating with community representatives and domestic systems to ensure access to high-quality water. The *Alternative Plan Update* provides a comprehensive assessment of groundwater quality that incorporates an extensive discussion of eight constituents of concern,

including maps, cross-sections, and time concentration plots. As an example, Ms. Priestaf presented a map showing total dissolved solids (TDS) concentrations in the Subbasin to provide an overview of groundwater quality. The map shows TDS concentrations are below the recommended levels in the majority of the Subbasin, but higher concentrations are found along the Subbasin boundaries and near the Salton Sea. The *Alternative Plan Update* resulted in an improved basis to study the rate and level of increased salt in groundwater from all sources. Coordination with the Coachella Valley Salt and Nutrient Management Plan (CV-SNMP) will start in 2022.

Seawater Intrusion

The Subbasin is bounded by one end of the Salton Sea, which is distinguished by salinity that is twice that of the ocean and increasing, and decreasing surface water levels and shoreline. Seawater intrusion is a consequence of overdraft and is therefore closely tracked by the GSAs. Numerical modeling indicates there was net inflow from the Salton Sea into the Subbasin from 1997 to 2014 and a net outflow from the Subbasin to the Salton Sea since 2015. Seawater intrusion has been reversed.

Interconnected Surface Water and Groundwater Dependent Ecosystems (GDEs)

The *Alternative Plan Update* reviewed the Coachella Valley Multiple Species Habitat Conservation Plan and other documents for protected species, performed a desktop analysis of polygons provided by DWR's Natural Communities Commonly Associated with Groundwater (NCCAG), conducted a field survey of 13 sites, and mapped potential GDEs. The analysis found that 5% of the evaluated sites were probable GDEs that partially rely on surface water or snowmelt, 89% of the evaluated sites are probable non-GDEs that include agricultural fields and drainages, uplands, and dry washes, and 6% are playa wetlands that depend on agricultural drain flows and occur along the Salton Sea exposed seabed. This analysis is included in an appendix to the *Alternative Plan Update*.

Workgroup comments and questions included the following:

- Looking at slide 33, how is seawater intrusion reversed? You noted that aquifer levels were lowest in 2009, but this reversed in 2015.
    - Seawater intrusion was reversed through replenishment, source substitution, and water recycling, which caused groundwater levels to increase throughout the Subbasin. Increasing groundwater levels pushes seawater out.
- Why is there is a 6-year gap between increased groundwater levels and reversal of seawater intrusion? Does the groundwater replenished at the GRF ultimately end up at the Salton Sea?
    - The model looks at the hydraulic head at the Salton Sea. Because there are higher hydraulic levels, the seawater is pushed out.
- Should the Plan be looking at increasing nitrate and TDS trends instead of the fact that the constituents are below the thresholds? If you look at the system as a whole, TDS may increase over time upgradient of the Subbasin.
    - The *Alternative Plan Update* includes a lot of information on TDS and nitrate trends for wells in the Subbasin. Water quality will be further discussed in the CV-SNMP that is currently underway.
- The Plan needs to give additional thought to GDEs. Additional resource areas in the canyon and the playa supplies natural vegetation.
    - The GDEs assessment consisted of a robust desktop analysis and field verification. The desktop analysis looked at NCCAG and other data sources to identify GDEs, though, through areal mapping, many areas were screened out. A wetland biologist also analyzed the sites within the Valley to verify the desktop analysis.

Water Demands and Supplies

Ms. Prickett presented the demand forecast for 2020 to 2045. The demand forecast was based on 11 geographic units and considered projected land uses, conversion of agricultural lands, historical water use, and conservation trends. Demands were forecasted for municipal, golf, agricultural, and other uses. Municipal demands relied on regional growth projections provided by the Southern California Association of Governments (SCAG), land use inventories, unit demand factors, projected water loss, and adjustment factors (i.e., conservation savings estimates). Forecasted demands for agriculture considered existing agriculture and projected conversions of idle land to urban land uses, and forecasted demands for golf considered market trends and three proposed new golf courses. Other demands included fish farms, duck clubs, polo/turf, and potential surf parks. Total water demand is expected to increase approximately 8% between 2020 to 2045 with urban demands increasing with urban growth and agricultural demands decreasing as a result of land conversions.

Ms. Prickett presented the supply portfolio for the Subbasin, which includes groundwater, SWP exchange water, Colorado River water, recycled water, surface water, and other supplies. There is an estimated 10% increase in anticipated future supplies accounting for planned projects. Climate change is anticipated to reduce available water projections by up to 40,000 AFY. The total available and planned supplies are presented in the *Alternative Plan Update*.

There were no Workgroup comments.

Numerical Model, Plan Scenarios, and Projects and Management Actions (PMAs)

Ms. Priestaf presented the updates to the groundwater model. The calibration hydrographs show that the actual and simulated data points align, and therefore this model is deemed to accurately simulate shallow and deep groundwater levels in the Subbasin. The model can be used to predict future water level and storage changes under different inflow and outflow scenarios for 50 years into the future. The model presents a forecast of future drain flows, Salton Sea flow, and water budget conditions. Calibration hydrographs and simulation hydrographs are available in the *Alternative Plan Update*.

Ms. Prickett reviewed the simulation results from the five Plan scenarios. The results of the Baseline scenarios are not realistic because additional projects are already planned by the GSAs. However, the Baseline scenarios provide a comparison of future conditions with and without climate change/drought. The additional three scenarios simulate the implementation of 5-year (i.e., near-term) projects, future projects, and/or expanded agriculture.

The model incorporates climate change assumptions. For local inflow, the Baseline scenario uses long-term hydrology and previously estimated annual recharge volumes. The climate change scenarios use repeated historical conditions only for the period 1995-2019 that include multiple droughts. Additionally, the availability of imported water for direct delivery and groundwater replenishment was reduced consistent with reduced SWP deliveries in the past 14 years as a result of legal, environmental, and drought conditions, and with potential reductions in CVWD's Colorado River water supply if Lake Mead reservoir levels continue to decline, as stipulated in the Lower Basin Drought Contingency Plan.

Ms. Prickett presented the differing suites of projects and management actions (PMAs). The GSAs established priorities in the selection of PMAs, which are broken down into four categories: Water Conservation, Water Supply Development, Source Substitution and Replenishment, and Water Quality Protection. The Plan scenarios reflect varying water supplies and suite of PMAs. The PMAs have varying assumptions of total supply availability and the timeframe in which these supplies will be available. The *Alternative Plan Update* includes supply graphics showing how much water will be available and where the water will flow. The simulation results show that the Baseline scenarios will likely result in a negative cumulative change in storage and will not achieve Subbasin sustainability.

In comparison, the three project scenarios show an increasing cumulative change in groundwater storage and groundwater levels. Therefore, it is concluded that the 5-year PMAs are needed to achieve a supply-demand balance in the Subbasin. Additional future PMAs will be needed for reliability in the face of climate change and uncertainty with future water supplies and demands.

Workgroup comments and questions included the following:

- The model works great regionally. Can you pull out a prism for the Augustine Band showing what is going into and out of the Tribe's boundaries? Also, is everything grouped to one production well per square mile? How accurate are the estimates if they are lumped into one well?
    - The way the numerical model works is that all groundwater pumping in a cell is grouped as one point. This is a regional model that is meant to simulate groundwater in the Subbasin, not locally. Local models require a smaller grid size and data at a more refined spatial scale. This model can be used to look at inflows and outflows for the Tribe, but need to remember that this is a regional model with a wide grid cell.

Plan Evaluation and Implementation

Ms. Prickett presented the implementation activities that the GSAs will employ as part of the *Alternative Plan Update*. Implementation activities include, but are not limited to, GSA program management, monitoring programs, tribal coordination, stakeholder outreach, and annual reports. The GSAs have established a list of priorities, listed in the *Alternative Plan Update*, that will guide the implementation of PMAs.

Ms. Prickett presented the key takeaway from the *Alternative Plan Update,* which is that with the implementation of the PMAs, the three project scenarios have adequate supplies to meet the projected demand forecast. The water budgets for the three project scenarios show that each scenario has an average inflow higher than outflow, which will result in a cumulative increase in groundwater storage. The *Alternative Plan Update* demonstrates that the GSAs can meet the established goal and the Subbasin can be sustainable. The GSAs will continue to monitor trends in demand and supply availability and implement the PMAs as needed.

There were no Workgroup comments.

Next Steps

Ms. Priestaf presented the next steps for the *Alternative Plan Update*. The Draft *Alternative Plan Update* can be downloaded at http://www.indiosubbasinsgma.org/. Public comments are due on October 29, 2021. Comments should be submitted via email to IndioSubbasinSGMA@woodardcurran.com. The GSAs will review all comments submitted and incorporate revisions as appropriate. The Final *Alternative Plan Update* will be prepared and released for adoption by the GSA governing bodies in early December. The GSAs will submit the *Alternative Plan Update* to the State for review and approval before January 1, 2022.

Other Planning Efforts

Ms. Zoe Rodriguez del Rey, CVWD, provided updates on the *Salt and Nutrient Management Plan* (SNMP). The Monitoring Program Workplan was approved by the Regional Board in February 2021. The SNMP Development Workplan was submitted to the Regional Board in May 2021 and was presented to the Regional Board on September 14, 2021. The Regional Board approved the SNMP Development Workplan on October 4, 2021. The GSAs will coordinate over the next six months to select a consultant for technical support and outreach and to begin implementing the SNMP

Development Workplan. The GSAs are working collaboratively to implement the Monitoring Program Workplan and the Development Workplan.