

Water Resources and Development Management Plan 2024 Update

PAG Water Supply-Demand Imbalance (SDI) Subgroup Meeting 1
July 17, 2024





Reminder:

We are looking forward to a productive meeting; please consider – **it is a virtual meeting.**

- Remote collaboration meetings can be challenging and frustrating – please be patient and flexible. If you are having technical difficulties, please chat with Rebecca Guo (EDWA) or email Rebecca.Guo@edcgov.us.
- Meetings WILL NOT be recorded.
- Please use hand-raise functions if you wish to speak.
- Please use Chat for your questions and comments if you prefer.
- Feedback: Orit Kalman @ kalmanorit@gmail.com





Meeting Objective

Establish common understanding of the process and assumptions for the updated Water Supply-Demand Imbalance Analysis for the West Slope.

Note: Water Supply-Demand Imbalance (SDI) Subgroup was established under the Plan Advisory Group (PAG), which was established under the Countywide Plenary for Water for the WRDMP24 effort.





TIME	AGENDA ITEM	PRESENTER
10:00	Welcome and Introductions	Orit Kalman, Facilitator
10:05	Opening Remarks and WRDMP24 Schedule	Rebecca Guo, EDWA, General Manager
10:10	Recap: Water Supply-Demand Imbalance Analysis in 2019 WRDMP Q&A	Yung-Hsin Sun, Sunzi Consulting Orit Kalman, Facilitator
10:30	Proposed Approach for Water Supply-Demand Imbalance Analysis for WRDMP24 Q&A	Ibrahim Khadam, Khadam Consulting Orit Kalman, Facilitator
10:55	Next Steps	Rebecca Guo, EDWA, General Manager
11:00	Adjourn	





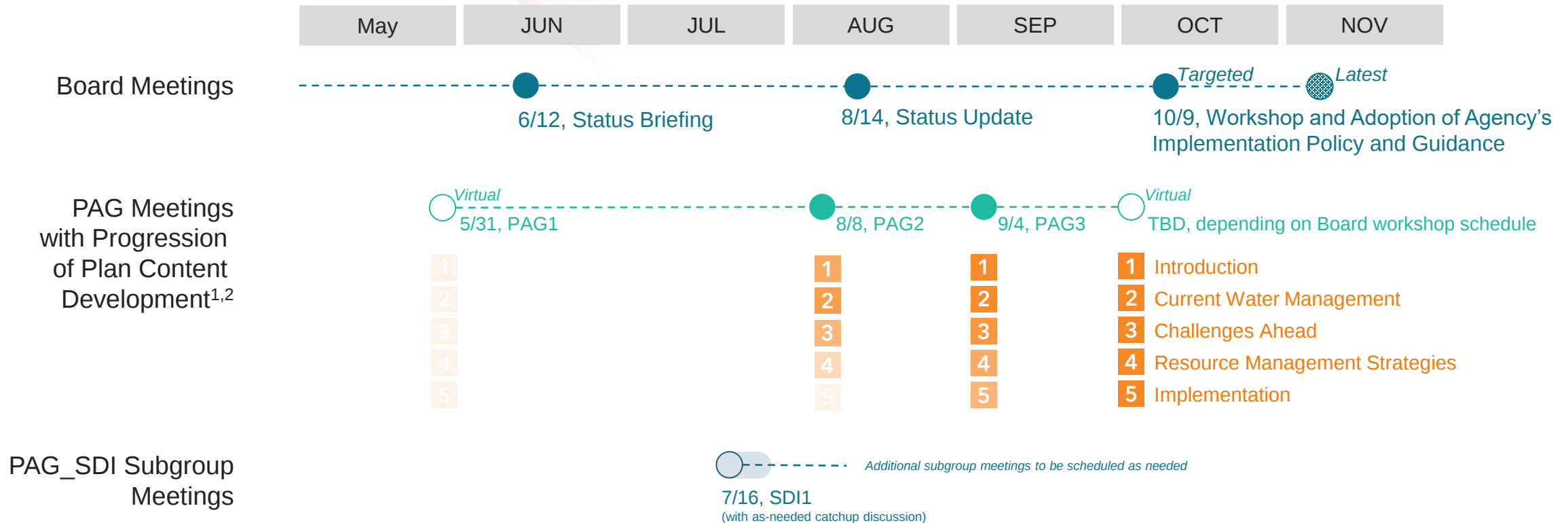
Apple Hills Vineyard (Credit: Yung-Hsin Sun, Sunzi Consulting)

Opening Remark and WRDMP24 Schedule

Rebecca Guo, General Manager, El Dorado Water Agency



Planning Schedule (Subject to Change)



Notes:

1. As-needed topic-specific meetings will be scheduled with subject matter experts within and outside of the PAG to support content development. The PAG will be informed about these meetings and the results will be incorporated into the draft plan.
2. For every review cycle, the PAG will review the current draft of the plan in its entirety.





Horsetail Falls near Twin Bridge, El Dorado County (Stock photo used with permission from El Dorado Water Agency)

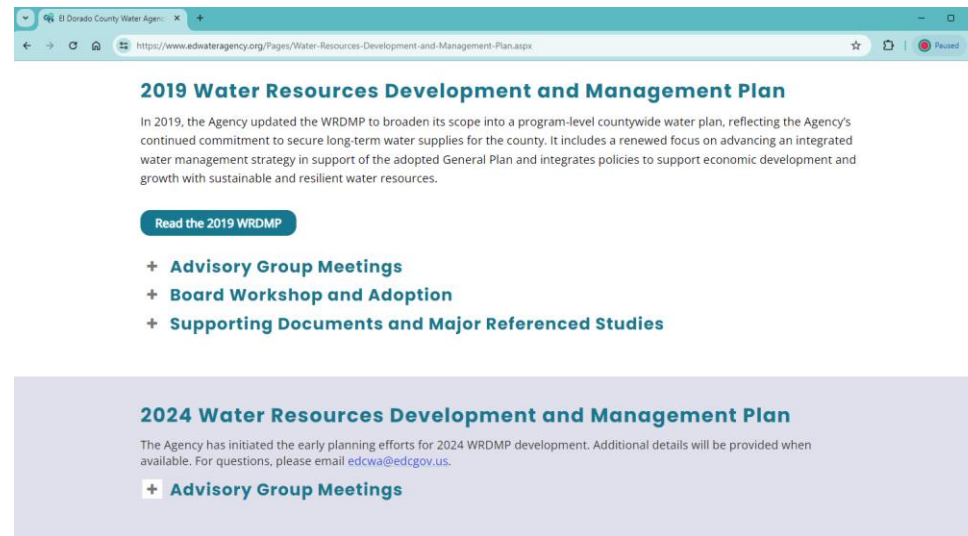
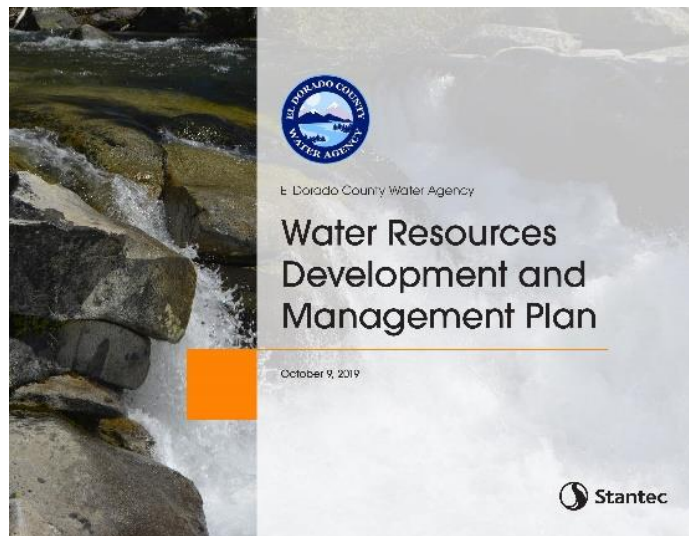
Recap: Water Supply-Demand Imbalance Analysis in 2019 WRDMP

Yung-Hsin Sun, Sunzi Consulting



2019 WRDMP

- A modernized countywide water plan that is consistent with EDWA's charge provided by 1959 El Dorado Water Agency Act and meets the requirements of County's Ordinance No. 5096 and its MOU with EDWA.
 - An outcome of broad collaboration from 10/2018 through 10/2019
 - Aiming at long-term sustainable water management for fulfilling the vision of County General Plan
 - EDWA's Board adopted policies and guidance in 10/2019 for the Agency's implementation.
 - Collective implementation respecting individual's roles and responsibilities in water resource management
 - EDWA as countywide water resource management agency and the representative for the OCA areas.
 - See [EDWA's website](https://www.edwateragency.org/Pages/Water-Resources-Development-and-Management-Plan.aspx) for supporting documents and engagement records



<https://www.edwateragency.org/Pages/Water-Resources-Development-and-Management-Plan.aspx>

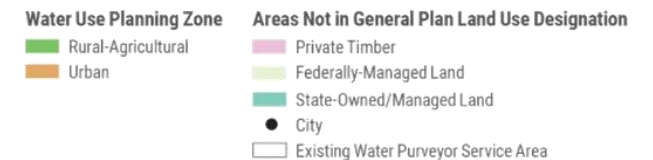
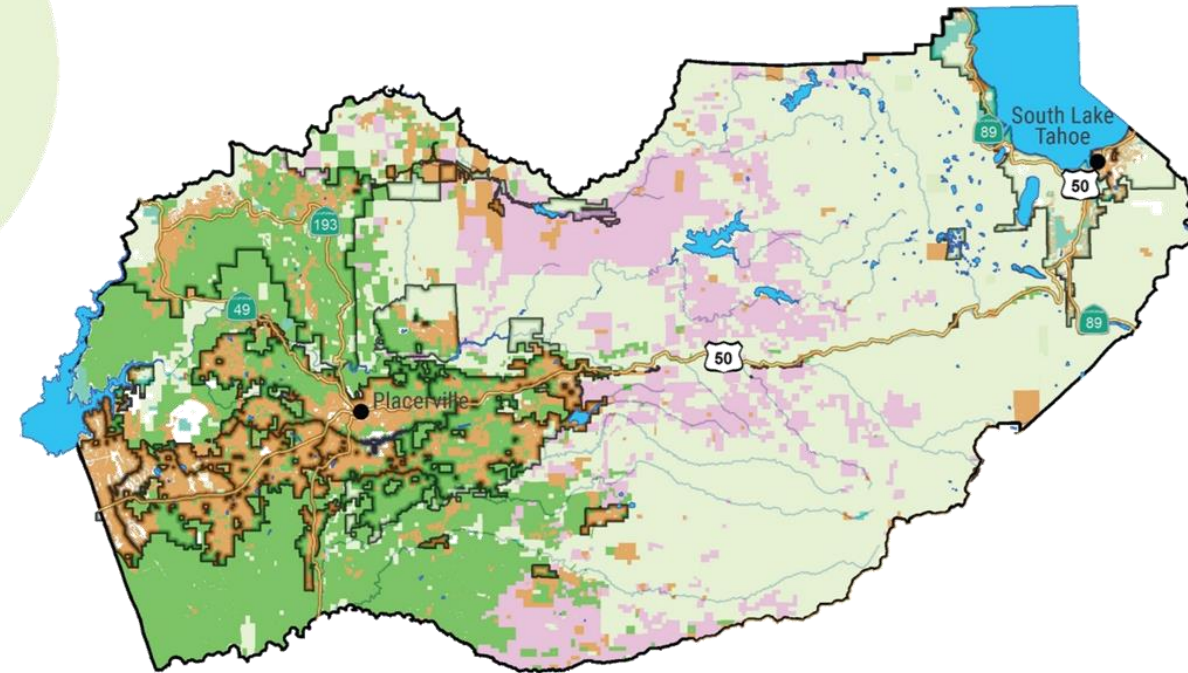
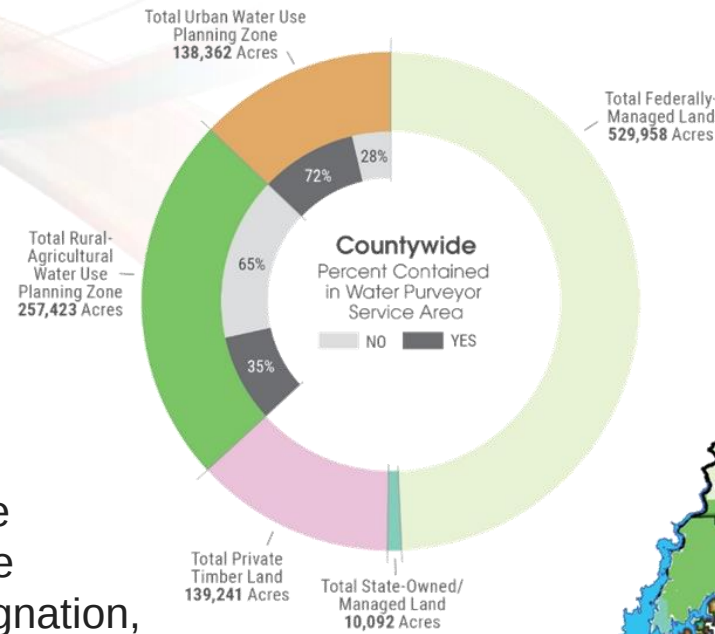


Water Use Planning

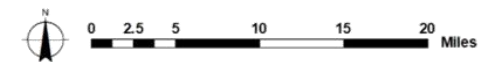
The water use planning zone delineation in the West Slope was based on land use designation, zoning ordinance, and policy of County General Plan (circa 2019).

Not all the water use planning zone areas in the West Slope are within existing service areas of public water purveyors. Those areas are called Other County Areas (OCA).

The Tahoe Basin was handled separately and managed in consistent with plans of Tahoe Regional Planning Agency.

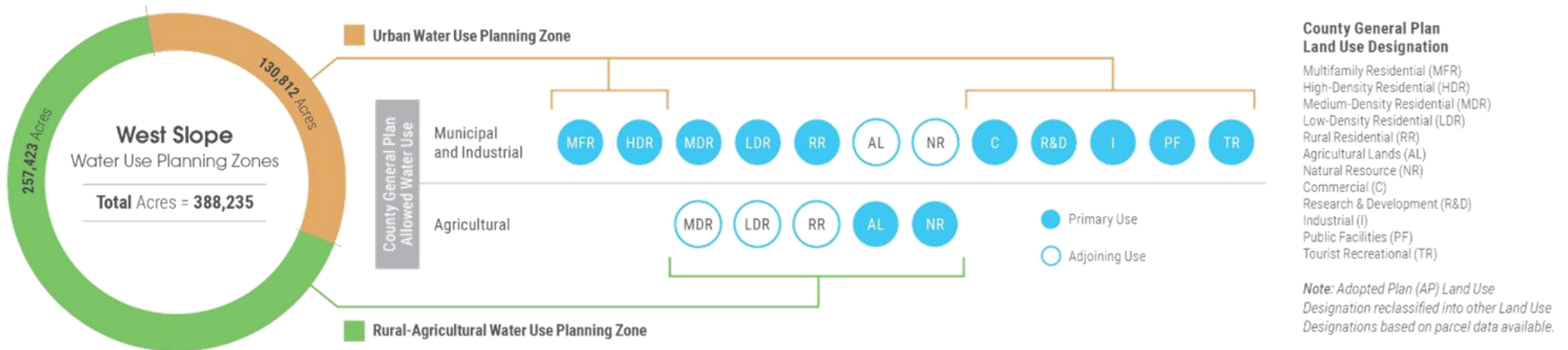


Source of parcel information; County of El Dorado, March 2019



Water Use Planning Zones

- Terminology created for the WRDMP long-term water use planning purposes.
- Multiple meetings with County planning staff and Agricultural Commissioner to set up rules for certain water use may or may not be present.

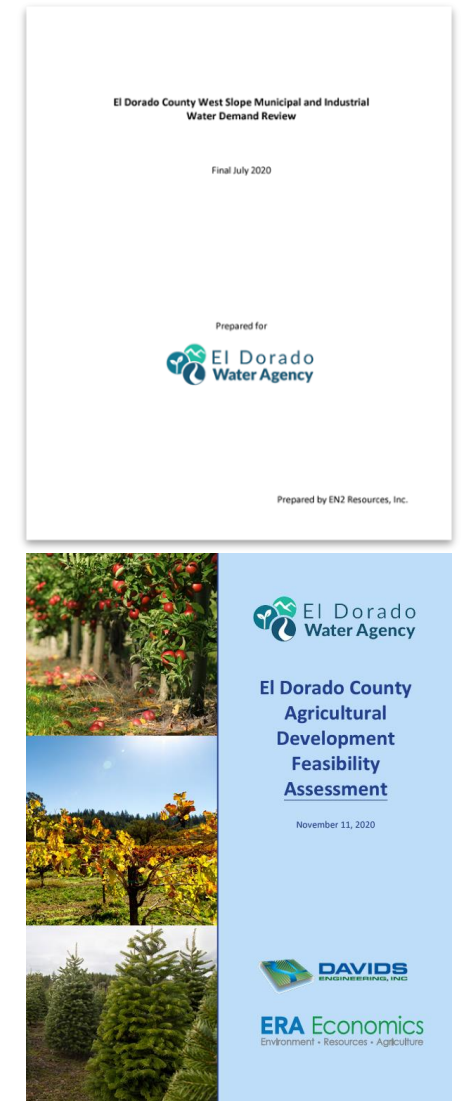


See EDWA Website: [Water Supply Planning Zone Delineation](#), [March 12, 2019. Land Use Meeting #1](#), and [May 24, 2019. Land Use Meeting #2](#).

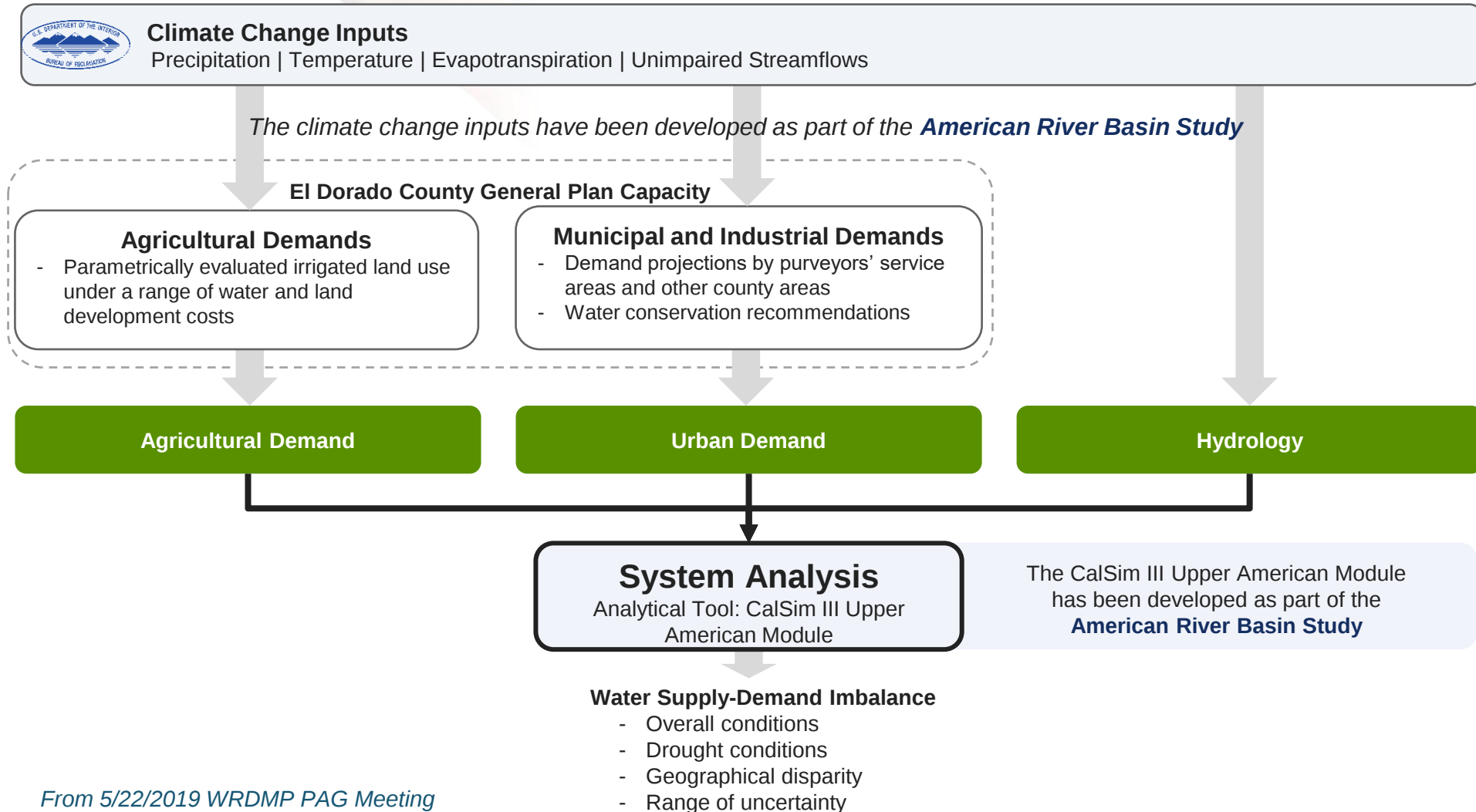


Quantification of Future Demands

- Demand level: Capacity level of the General Plan with an anticipated schedule for development > 50 years.
- M&I demand estimate:
 - Approach:
 - Budget-based demand estimate per efficient urban water use standards provided by 2018 Water Conservation and Drought Planning Legislation (i.e., SB 606 and AB 1668).
 - Based on applicable General Plan policy (e.g., community center designation and population cap), and water purvey-specific policy, where appropriate (e.g., EID's small farm program).
 - Documentation: [El Dorado County West Slope Municipal and Industrial Water Demand Review](#) (EN2, 2020)
- Agricultural demand estimate:
 - Approach:
 - Opportunity assessments beyond existing development based on physical suitability and market-informed crop cultivation choices, and applicable General Plan policy (e.g., agricultural district designation).
 - Demands adjusted to anticipated climate change (from the American River Basin Study) and anticipated efficiency requirements and acceptable deficit irrigation during drought.
 - Documentation: [El Dorado County Agricultural Development Feasibility Assessment](#) (Davids Engineering and ERA Economics, 2020).

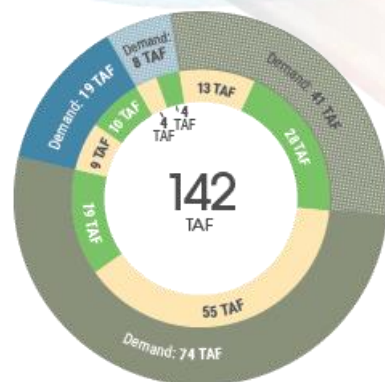


Water Supply-Demand Imbalance Assessment



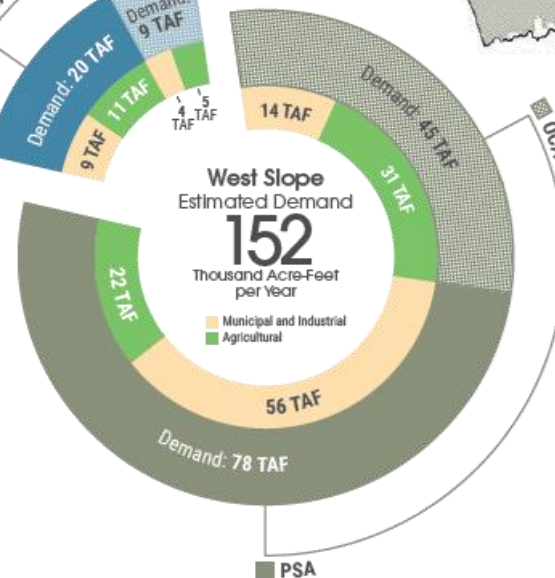
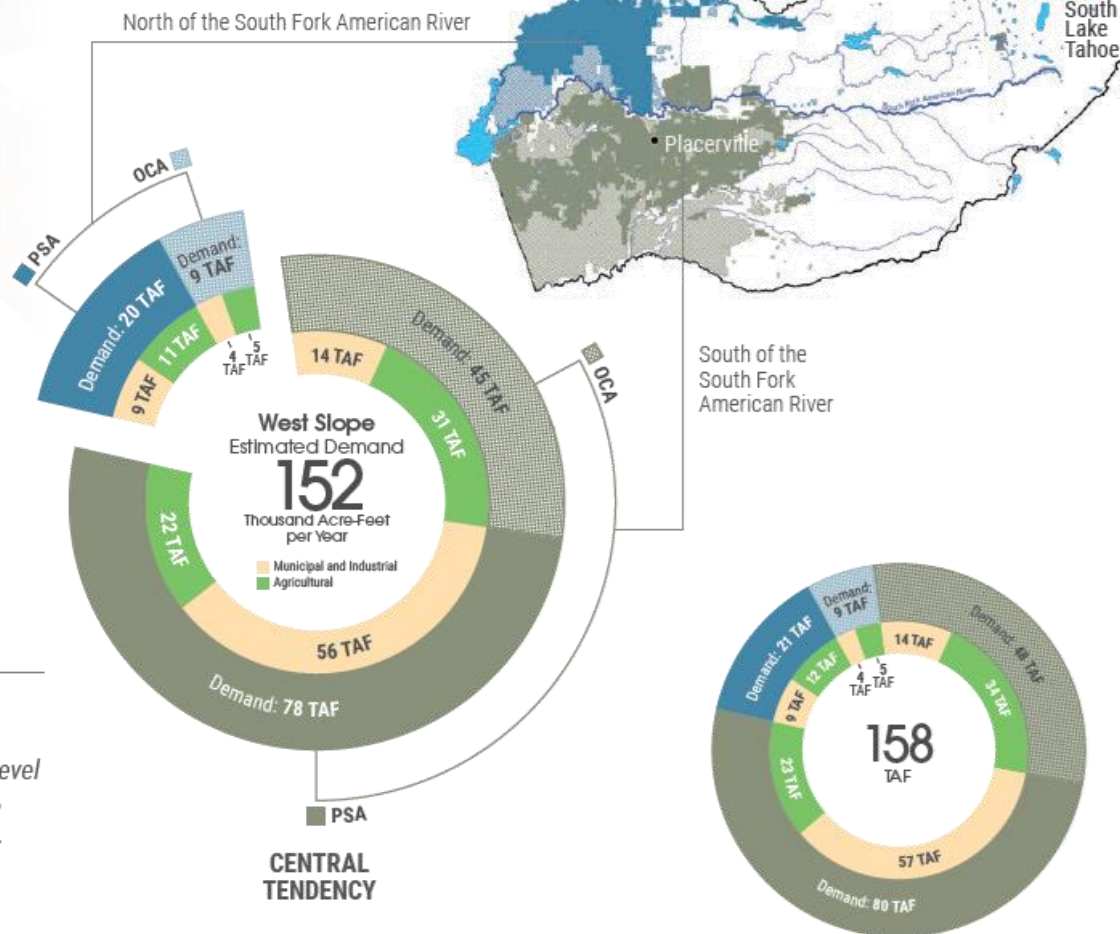
From 5/22/2019 WRDMP PAG Meeting



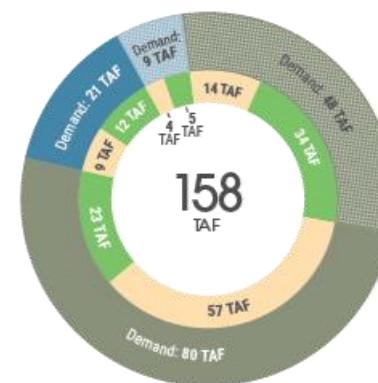


WARM-WET TENDENCY

The projected water demand associated with the economic activities and way of life at the capacity level envisioned in the County of El Dorado General Plan is assumed to be realized by 2070. The preliminary results from ongoing economic-based agricultural development opportunity and municipal and industrial demand review incorporates considerations of foreseeable demand management practices, technology advancement, and regulatory changes. The climate change also affects agricultural demands and municipal and industrial outdoor demands.



CENTRAL TENDENCY



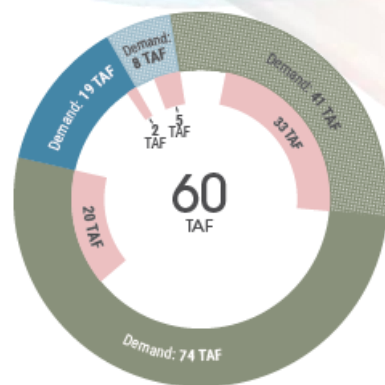
HOT-DRY TENDENCY

Key

OCA = Other County Area
PSA = Purveyor Service Area
TAF = Thousand Acre-Feet

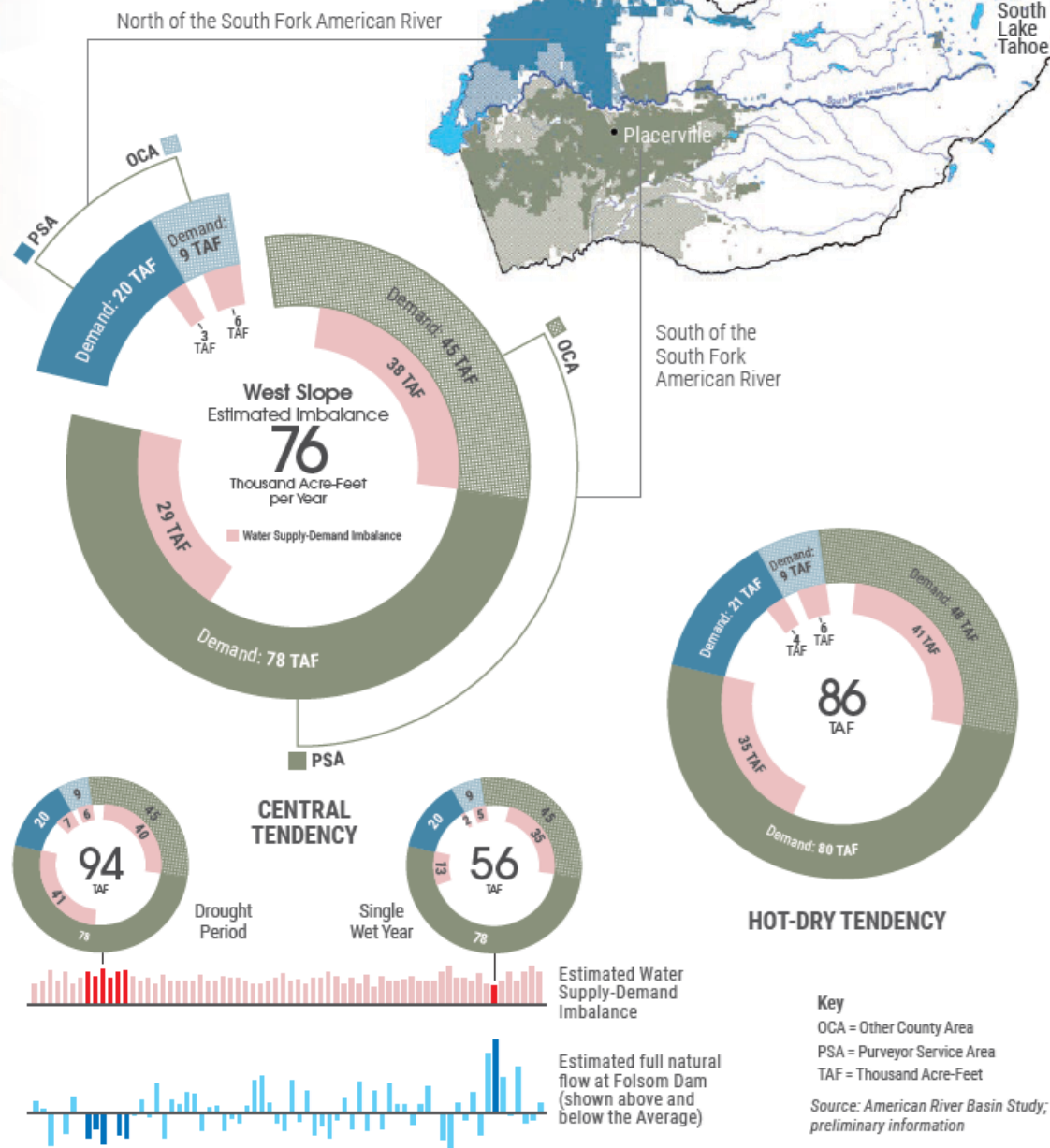
Source: West Slope Demand Review;
preliminary information





WARM-WET TENDENCY

The preliminary results from applying the demand projection and climate hydrology in 2070 suggest a significant water supply-demand imbalance, especially during drought conditions, based on existing facilities and operations. Additional adaptation strategies are required for sustaining the socioeconomic conditions and way of life in the West Slope.





Recap: Water Supply-Demand Imbalance Analysis in 2019 WRDMP

- Q&A





Placerville Old Town Center (Credit: Yung-Hsin Sun, Sunzi Consulting)

Proposed Approach for Water Supply-Demand Imbalance Analysis for WRDMP24

Ibrahim Khadam, Khadam Consulting



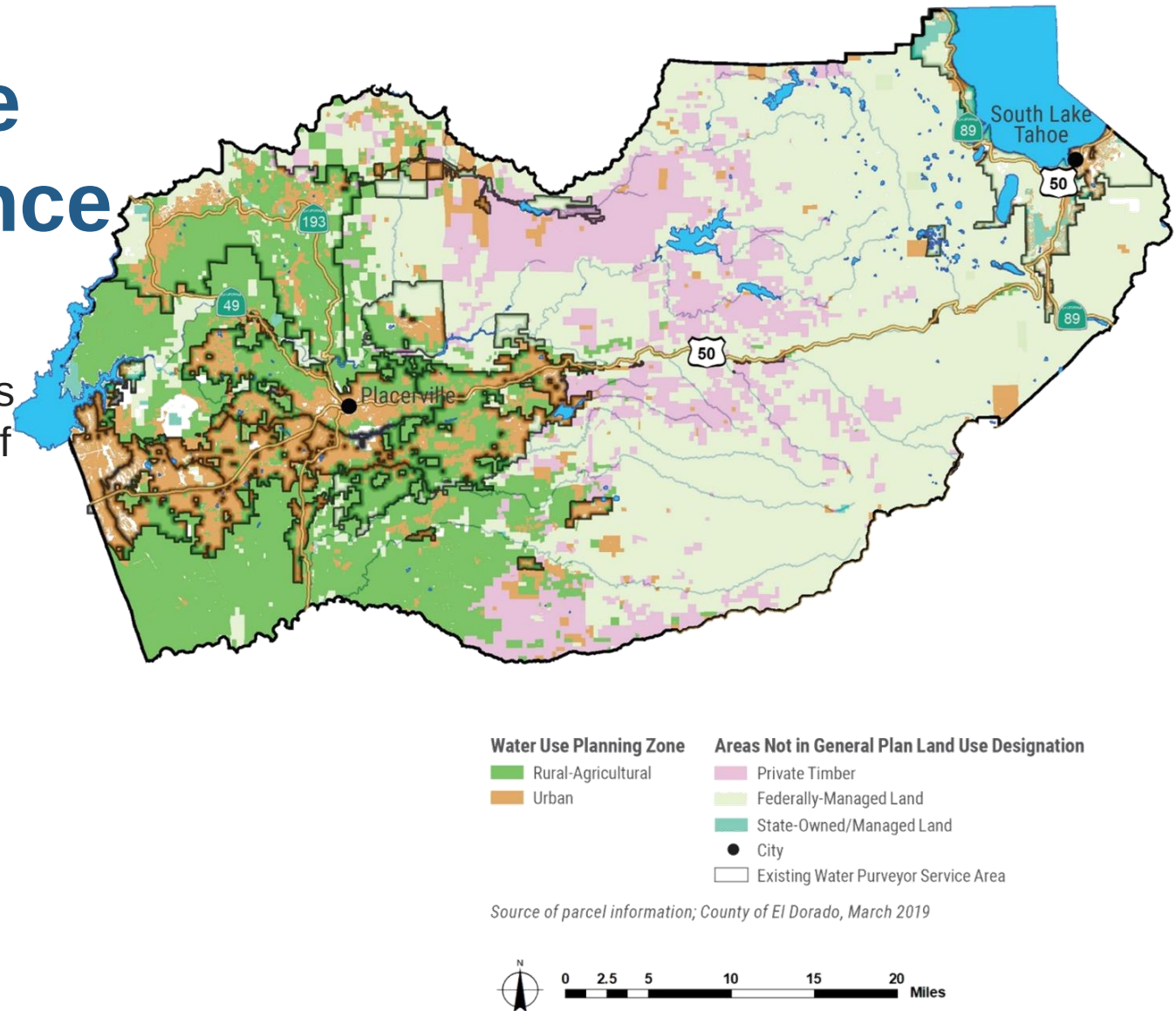
Proposed Approach

- Review of changes from 2019 WRDMP:
 - Changes in land use since 2019.
 - Review of M&I water demands
 - Review of agricultural water demands
- Proposed supply-demand imbalance assessment approach



Changes in Land Use In the West Slope Since 2019

- Subject to further review, initial GIS analysis showing 1,555 parcels (1.4%) with a total of 19,593 acres (1.7%) with varying levels of changes in land use or zoning designation.
 - 867 parcels with a different land use designation
 - 688 parcels retaining the same land use designation with changes in zoning.
- Changes are minor with potentially limited effects on overall water demand estimates.
 - To engage County Planning and Agricultural Commissioner for further review and confirmation.



Review of M&I Water Demands

- On July 3, 2024, the State Water Board adopted the regulation to “*Make Conservation a Way of Life*”, that implements the long-term efficient urban water use standards, variances, and performance measures, as required by the 2018 Water Conservation and Drought Planning Legislation (SB 606 and AB 1668).
 - Subject to review by Office of Planning and Research, the regulation will become effective in January 2025.
- The M&I demand estimate used in 2019 included considerations for anticipated implementation of water conservation requirements outlined in the 2018 legislations. The estimate include the specific budget for each of following water uses:
 1. Residential indoor water use
 2. Residential outdoor water use
 3. Commercial, industrial, institutional water use (all uses; beyond the Dedicated Irrigation Meter use in the law)
 4. Water loss
 5. Other allowable uses (similar to the concept of variances in the law).



Review of M&I Water Demands

- The M&I water demands developed for the 2019 WRDMP is broadly consistent with the adopted regulation of “*Make Conservation a Way of Life.*” However, detailed review of assumptions used for the different water budget components will be warranted.
 - For the 2024 WRDMP, we identified the residential indoor demand factor as a key assumption to be updated. Detailed review of other components of the M&I water budget will be conducted in future WRDMP updates because of schedule constraints.
 - Residential indoor demand factor used in the 2019 WRDMP was 50 gallons per capita daily (gpcd) after 2030 in the 2018 legislation, which was modified by SB 1157 of 2022 to 42 gpcd; that is, **an overall 16% reduction**.
 - The corresponding decrease in total M&I demand for the West Slope ranges from 3.5% to 3.7% under different climate scenarios.
- **Recommendation:** Use the M&I demand in 2019 WRDMP with the adjustment for residential indoor water use only.



Review of Agricultural Water Demands

- The 2019 WRDMP update developed agricultural demands that reflected:
 1. Agricultural land use designation and land suitability to identify the maximum developable footprint
 2. Economic viability of specialty crops in the West Slope for crops placement
 3. Future climate changes effects on crop water demand
- As discussed earlier, there are minor changes in parcel land use designations from 2019.
- EDWA is currently in the process of conducting field validation of the crop demand factors used in the 2019 WRDMP. However, it is anticipated that these activities will not be completed until the spring of 2025.
- **Recommendation:** Use the agricultural demand in 2019 WRDMP as is without changes.

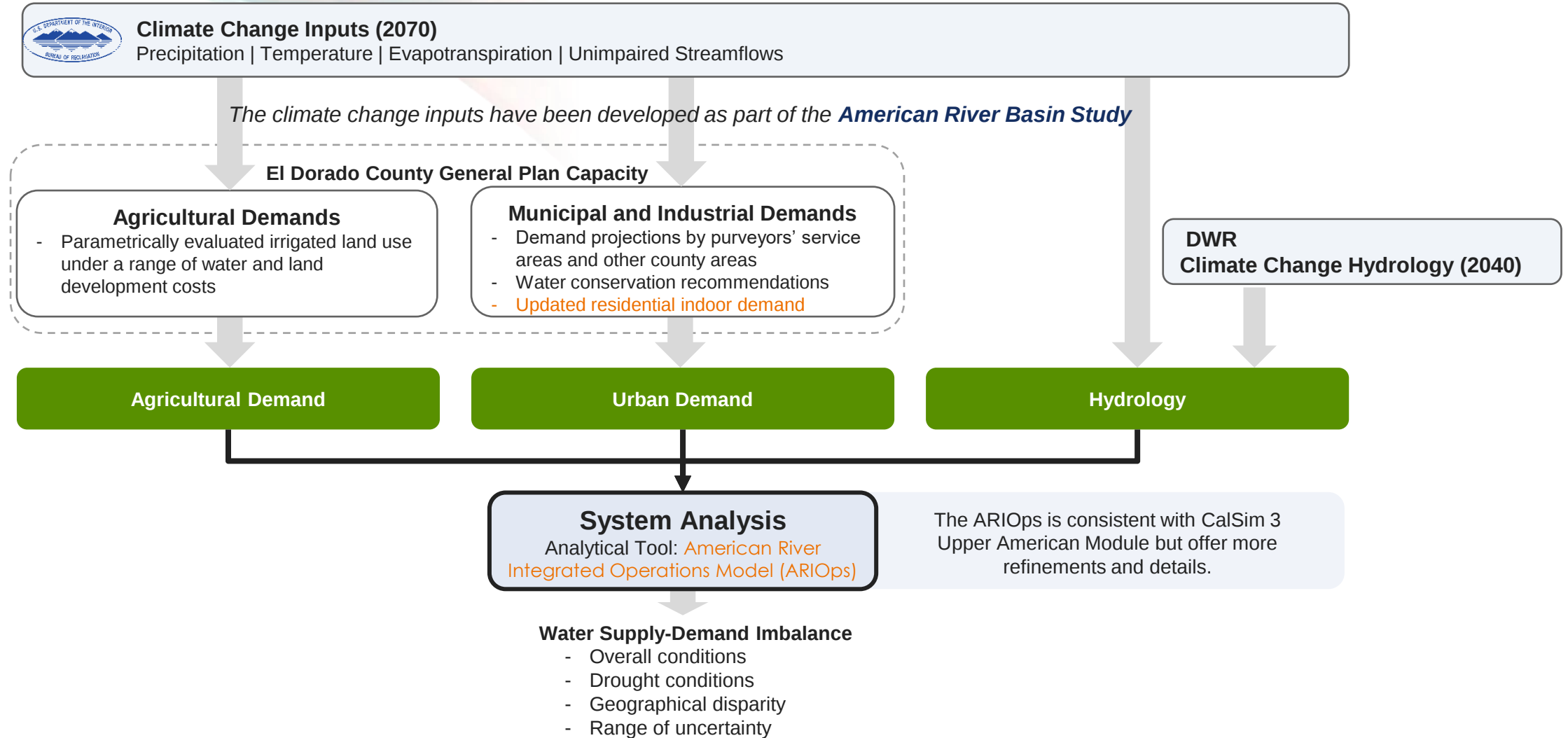


Effect of Lowered Residential Indoor Demand Standard

Water Budget Categories	Land Use Capacity Water Budget (acre-feet)			
	Historical Hydrology	2070 Climate Change Regime		
		Warm-Wet	Central Tendency	Hot-Dry
2019 Demand Estimates using 50 gpcd for Indoor Residential Demand				
Residential Indoor Water Budget	18,910	18,910	18,910	18,910
2019 Total M&I Demand for West Slope	81,410	83,417	85,499	86,473
Demand Estimates using 42 gpcd for Indoor Residential Demand				
Residential Indoor Water Budget	15,885	15,885	15,885	15,885
% Change in Residential Indoor Water Budge	16%	16%	16%	16%
Revised Total M&I Demand for West Slope	78,384	80,391	82,473	83,447
% Change in Total Water Demand	3.7%	3.6%	3.5%	3.5%

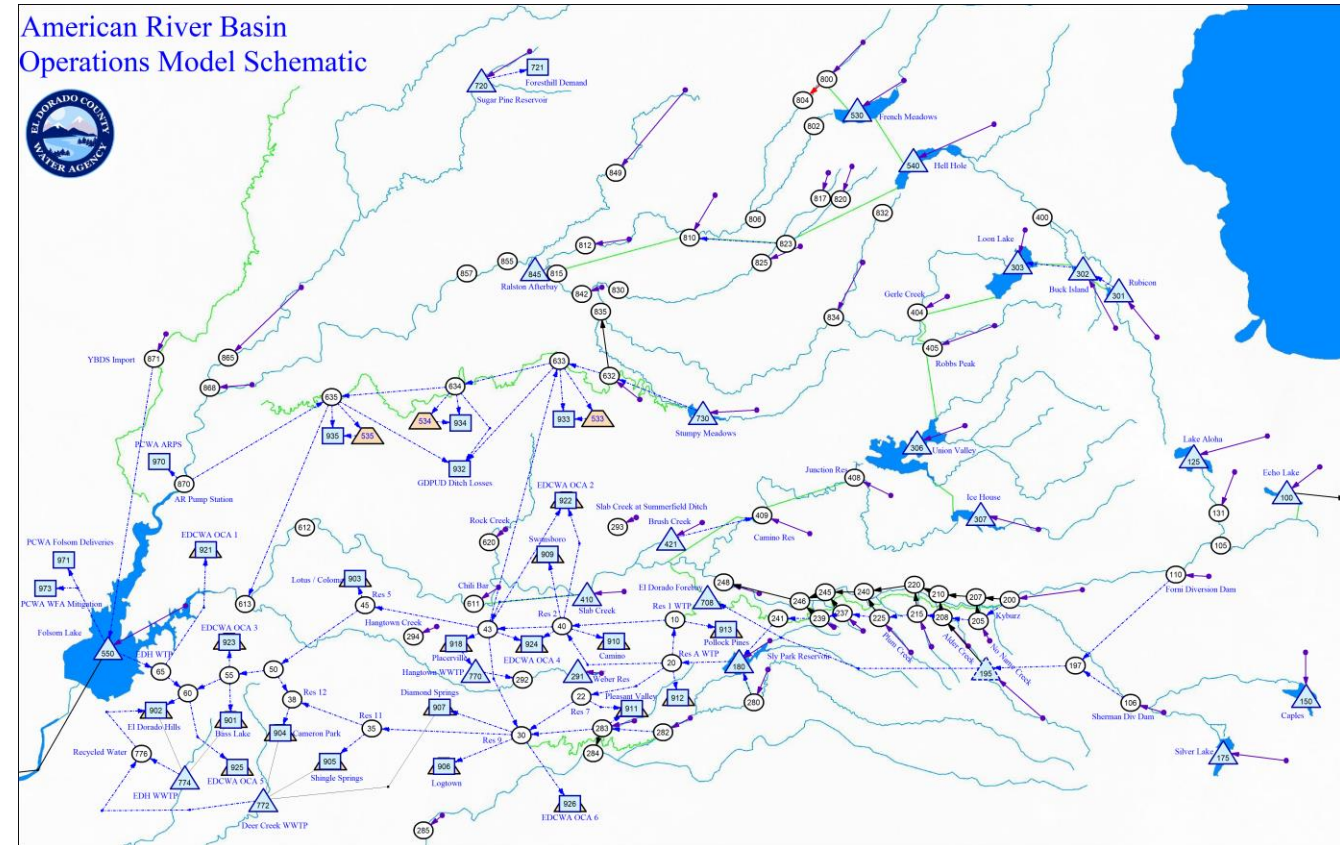


Assessment of Water Supply-Demand Imbalance



Assessment of Water Supply-Demand Imbalance

- Analysis will use the American River Integrated Operations Model (ARIOps).
 - Best up-to-date representation of operations on the upper American River watershed including the South Fork American River facilities and operations.
 - Daily timesteps for simulation of water operations and power generation.
 - 94-year simulation period (water years 1922 to 2015).
- 4 climate scenarios: 2040 Central Tendency, 2070 Central Tendency, 2070 Hot-Dry, 2070 Warm-Wet (from the American River Basin Study).



Assessment of Water Supply-Demand Imbalance

- Aggregated estimated demands into 10 demand areas for accounting purposes and consistent with water purvey's general practice

Description	
DA 1	EID El Dorado Hills
DA 2	EID Western Region
DA 3	EID Eastern Region
DA 4	GDPUD - Below Auburn Lake Trails WTP
DA 5	GDPUD - Between Auburn Lake Trails WTP and Lake Walton
DA 6	GDPUD – Above Lake Walton
DA 7	OCA outside of existing purveyors' boundaries north of the SFA
DA 8	OCA's south of the SFA, north of HWY 50
DA 9	OCA's south of the SFA, south of HWY 50, west of HWY 49
DA 10	OCA's south of the SFA, south of HWY 50, east of HWY 49

OCA = Other County Areas





Proposed Approach for Water Supply-Demand Imbalance Analysis for WRDMP24

- Q&A





Loon Lake (Photo credit: Yung-Hsin Sun, Sunzi Consulting)

Next Steps

*Rebecca Guo, General Manager, El Dorado Water Agency
Orit Kalman, Facilitator*





Next Steps

- Catchup meeting(s) with partners that cannot make it today
- Incorporate input for the approach of water supply-demand imbalance analysis
- Conduct the water supply-demand imbalance analysis and synthesize the outcome for discussion and inclusion in the plan
- Schedule next meeting

