
GSP Stakeholder Committee

Stakeholder Committee Meeting – December 17, 2018

Image courtesy: Veronica Adrover/UC Merced



Agenda

- Welcome, Introductions, and Agenda Review
- Presentation by Woodard & Curran on GSP development
 - Next Steps in GSP Development
 - Water Allocation Frameworks
 - Other Updates
- Public Outreach Update
- Interbasin Coordination Update
- Public Comment on Items not on the Agenda
- Next Steps and Next Meeting

Image courtesy: Veronica Adrover/UC Merced

Stakeholder Committee Meeting Agreements

Guidelines for successful meetings

- Civility is required.
 - Treat one another with courtesy and respect for the personal integrity, values, motivations, and intentions of each member.
 - Be honest, fair, and as candid as possible.
 - Personal attacks and stereotyping are not acceptable.
- Creativity is encouraged.
 - Think outside the box and welcome new ideas.
 - Build on the ideas of others to improve results.
 - Disagreements are problems to be solved rather than battles to be won.
- Efficiency is important.
 - Participate fully, without distractions.
 - Respect time constraints and be succinct.
 - Let one person speak at a time.
- Constructiveness is essential.
 - Take responsibility for the group as a whole and ask for what you need.
 - Enter commitments honestly, and keep them.
 - Delay will not be employed as a tactic to avoid an undesired result.

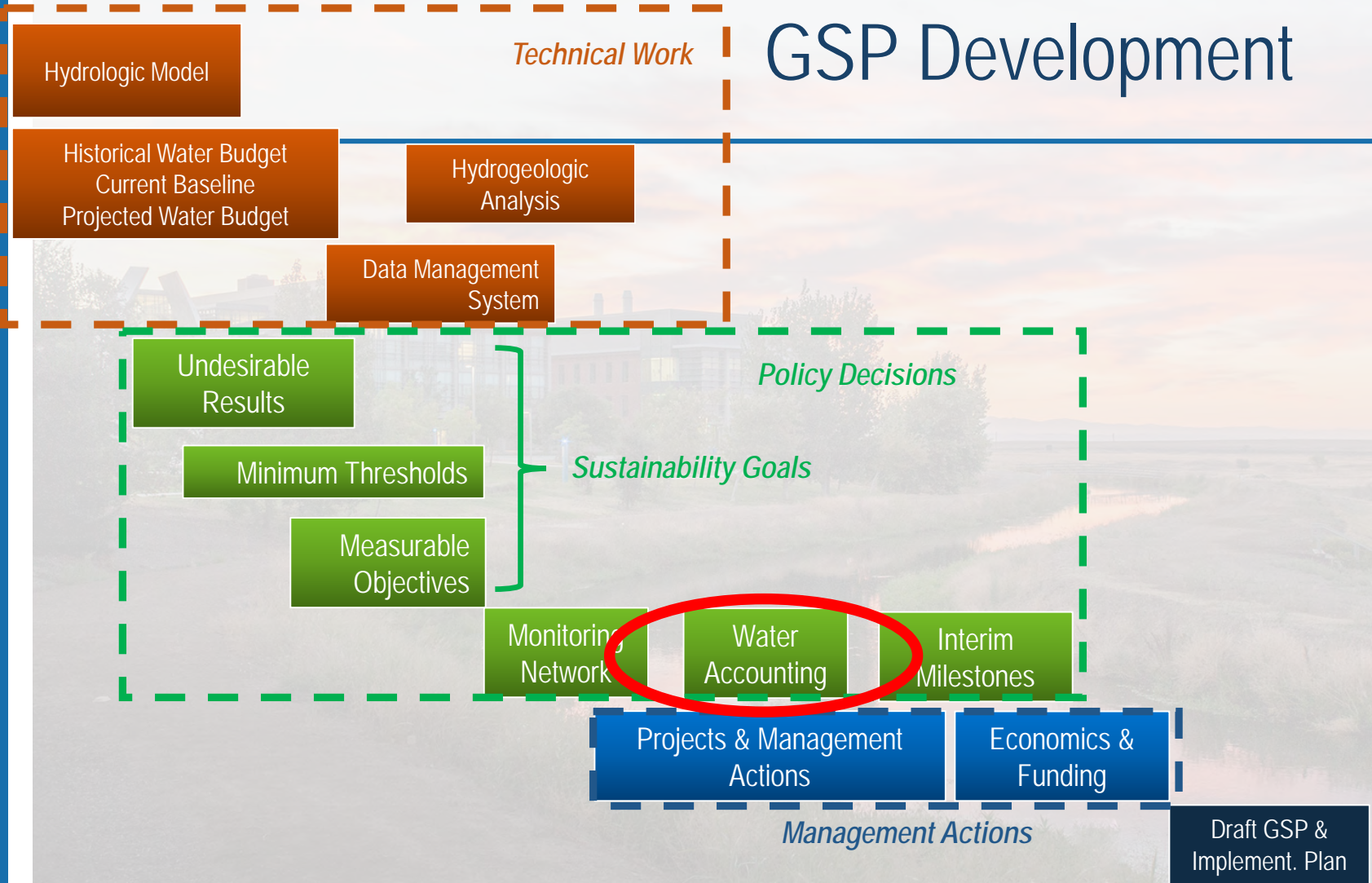
Image courtesy: Veronica Adrover/UC Merced



Next Steps in GSP Development

Image courtesy: Veronica Adrover/UC Merced

GSP Development



Jun 2018 Jul 2018 Aug 2018 Sep 2018 Oct 2018 Nov 2018 Dec 2018 Jan 2019 Feb 2019 Mar 2019 Apr 2019 May 2019 Jun 2019 Jul 2019

Image courtesy: Veronica Adrover/UC Merced

Next Steps: Hydrogeologic Conceptual Model

- Requested comments by Nov 30
- Received written comments from TIWD and SHE
- Received verbal comments from Maxwell Norton at SC meeting
- Comments were combination of technical input and feedback on organization/readability. Currently reviewing and evaluating how to best address.

Merced Subbasin Groundwater Sustainability Plan Hydrogeologic Conceptual Model Draft

November 2018

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Water Allocation Framework

Image courtesy: Veronica Adrover/UC Merced

Decision-Making Timeline

Focus for Today

November	December	January	February	March	April
<ul style="list-style-type: none"> CC and SC discuss potential allocation approaches 	<ul style="list-style-type: none"> CC recommends preliminary allocation approach to GSA Boards 	<ul style="list-style-type: none"> GSA Boards consider recommended allocation approach 	<ul style="list-style-type: none"> GSA Boards approve allocation approach 		
<ul style="list-style-type: none"> CC and SC consider values around approach to Ps&MAs 	<ul style="list-style-type: none"> CC and SC consider potential Ps&MAs to meet needs 	<ul style="list-style-type: none"> CC identifies recommended Ps&MAs 	<ul style="list-style-type: none"> CC considers changes to Ps&MAs 	<ul style="list-style-type: none"> CC recommends Ps&MAs to GSA Boards 	<ul style="list-style-type: none"> GSA Boards consider / approve Ps&MAs
		<ul style="list-style-type: none"> CC and SC review benefits / impacts of Ps&MAs and make necessary adjustments 	<ul style="list-style-type: none"> CC considers changes to thresholds and objectives CC considers need for management areas 	<ul style="list-style-type: none"> CC recommends thresholds, objectives, and management areas to GSA Boards 	<ul style="list-style-type: none"> GSA Boards consider / approve thresholds, objectives, and management areas

Key Points from CC November 26 Discussion

- Explicitly address prescriptive rights
- Base allocations on currently irrigated acres in basin and develop approach to bring on users currently not exercising GW rights in the future
- Need agreement on date range for prescriptive period and / or historical use determination
- Develop timeline for implementation
- Group asked for more info on what enforcement remedies are available to GSAs
- Look at Mojave adjudication as an example of how to handle transferable rights

Image courtesy: Veronica Adrover/UC Merced

Allocation Framework Discussion

- Under SGMA, GSAs have authority to establish groundwater extraction allocations
- SGMA and GSPs adopted under SGMA cannot alter water rights

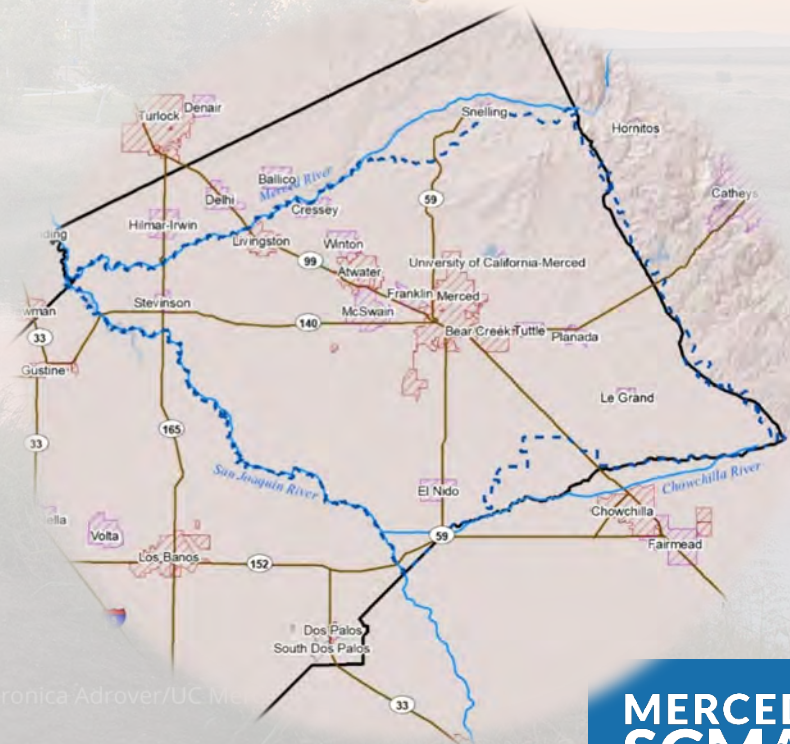


Image courtesy: Veronica Adrover/UC Merced

Pumping Allocations under SGMA

- SGMA grants a GSA broad authority to establish groundwater extraction allocations:
 - Impose spacing requirements on construction of new wells (Wat. Code § 10726.4(a)(1))
 - Impose reasonable operating regulations on existing wells (Wat. Code § 10726.4(a)(1))
 - Regulate, limit, or suspend extractions from wells (Wat. Code § 10726.4(a)(2))
 - Regulate, limit, or suspend construction of new wells, enlargement of existing wells, or reactivation of abandoned wells (Wat. Code § 10726.4(a)(2))
 - Authorize temporary and permanent transfers of groundwater extraction allocations (Wat. Code § 10726.4(a)(3))
 - Establish rules to allow carry-over of unused groundwater extraction allocations (Wat. Code § 10726.4(a)(4))
 - Otherwise establish groundwater extraction allocations (Wat. Code § 10726.4(a)(2))



GSA Enforcement Remedies

- Delinquent Fees
 - Interest at 1% per month on delinquent fee amount and 10% penalty
 - Order a cease of extraction of groundwater until delinquent fees are paid after a public hearing (with 15-day advance notice of public hearing)
 - Adopt resolution requesting collection of fees in the same manner as ordinary municipal ad valorem taxes
- Excess Groundwater Extraction Penalties
 - Subject to civil penalty not to exceed \$500/af extracted in excess
- Violations of rule, regulation, ordinance, or resolution adopted
 - if person fails to comply within 30 day after being notified of violation
 - liable for civil penalty up to \$1,000, plus \$100 for each additional day on which violation continues
- GSA may bring action to superior court to determine violation occurred and to impose penalty

Groundwater Water Rights in Overdrafted Basins

Overlying (or “Correlative”) Rights

“Overlying rights are used by the landowner for reasonable and beneficial uses on land they own overlying the subbasin from which the groundwater is pumped”

Prescriptive Rights

“...(a groundwater right acquired adversely by appropriators)...If a pumper extracts water for a non-overlying use from an overdrafted basin, the right may ripen into a prescriptive right if the basin overdraft is notorious and continuous for at least five years.”

Source: *Groundwater Pumping and Allocations under California's Sustainable Groundwater Management Act*, Environmental Defense Fund, July 2018

Rights to Groundwater Imported to a Subbasin

“Water for which a credit is derived is water from outside the watershed or water which is captured that would have been otherwise lost to the subbasin and which is recharged into the groundwater basin...Assuming no prescriptive rights have attached to imported water used to recharge a basin, the imported water generally belongs solely to the importer, who may extract (even if the basin is in overdraft) and use or export it without liability to other basin users....”

Source: *Groundwater Pumping and Allocations under California's Sustainable Groundwater Management Act*, Environmental Defense Fund, July 2018

Examples of Allocation Methods

Method	Description	Advantages	Disadvantages
Pro Rata Allocation per Overlying Acre	Divides available groundwater proportional to property size	<ul style="list-style-type: none"> Recognizes correlative nature of groundwater rights Simple in approach and calculation 	<ul style="list-style-type: none"> Creates inequities for those who have invested in use of groundwater Ignores legal limitations on use
Pro Rata Allocation per Irrigated Overlying Acre	Allocates each irrigated acre a specific quantity of groundwater	<ul style="list-style-type: none"> Acknowledges existing pumping Simple in approach and calculation 	<ul style="list-style-type: none"> Does not consider unexercised groundwater rights Does not recognize historic use Ignores legal limitations on use
Allocation Based on Fraction of Historic Pumping	Allocates water based on historic groundwater use	<ul style="list-style-type: none"> Potential to reduce conflict among existing pumpers 	<ul style="list-style-type: none"> Requires data re historic use (not always available) Ignores correlative nature of groundwater rights Ignores disproportionate impacts on basin
Comprehensive Allocation Method	Allocates groundwater based on CA law to extent practical and preserves relative priority of water users	<ul style="list-style-type: none"> Consistent with CA groundwater law Best chance of surviving judicial scrutiny 	<ul style="list-style-type: none"> Complicating and time-consuming Requires substantial stakeholder engagement

Sustainable Yield

Sustainable yield is “the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing an undesirable result.”

Image courtesy: Veronica Adrover/UC Merced

Sustainable Yield Analysis Groundwater Budget

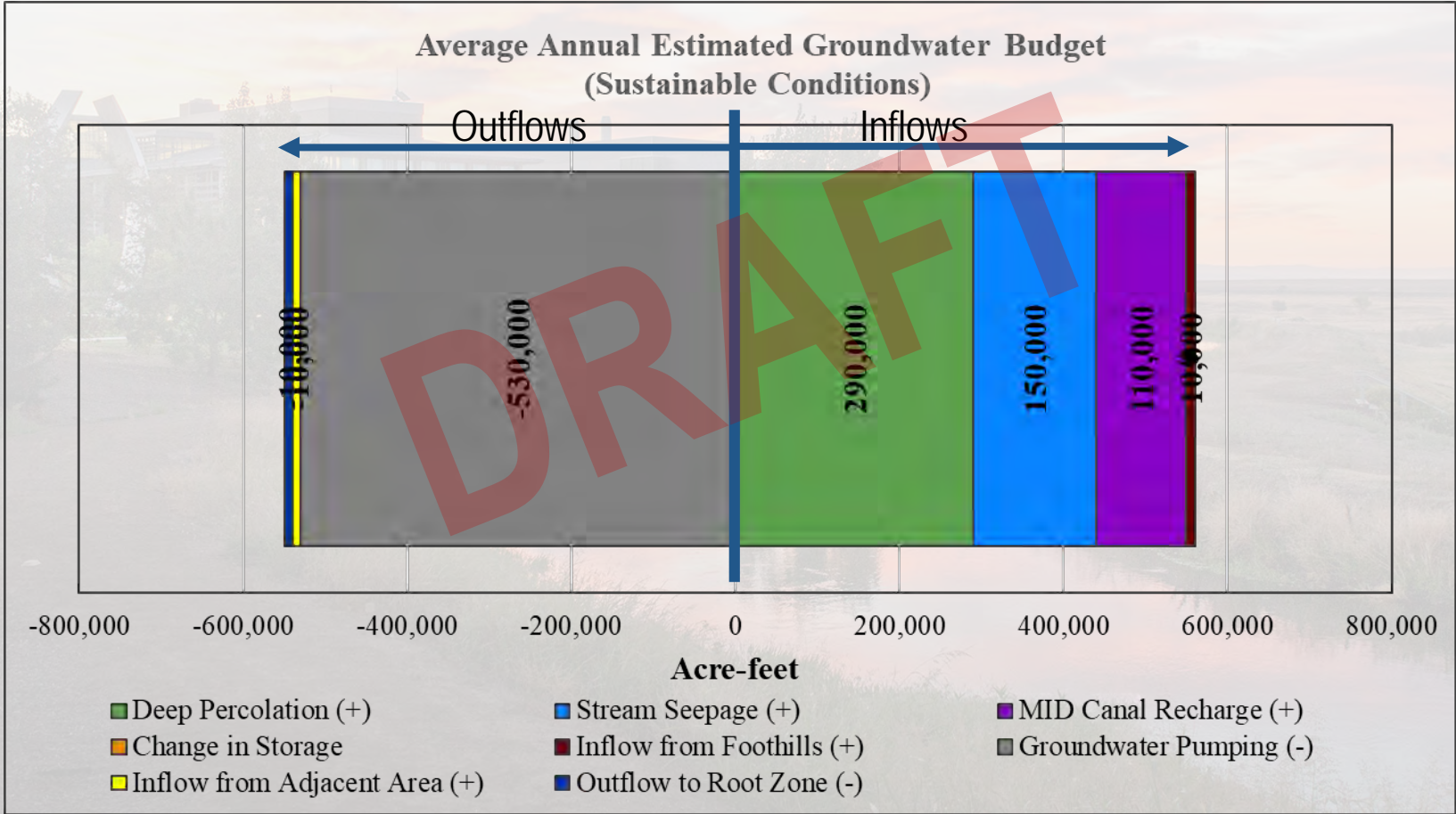


Image courtesy: Veronica Adrover/UC Merced

Approximate Split of Sustainable Yield if Based on Historical Use

MERCED SUBBASIN SUSTAINABLE YIELD

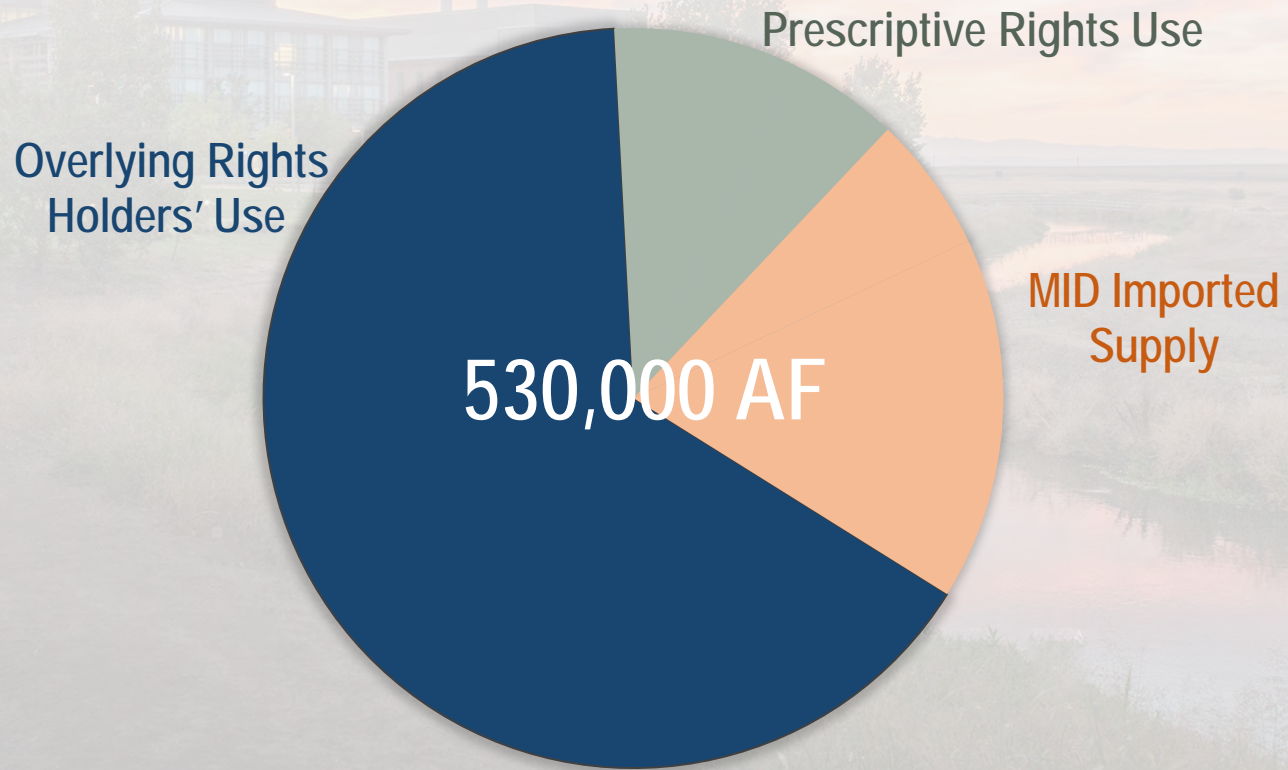


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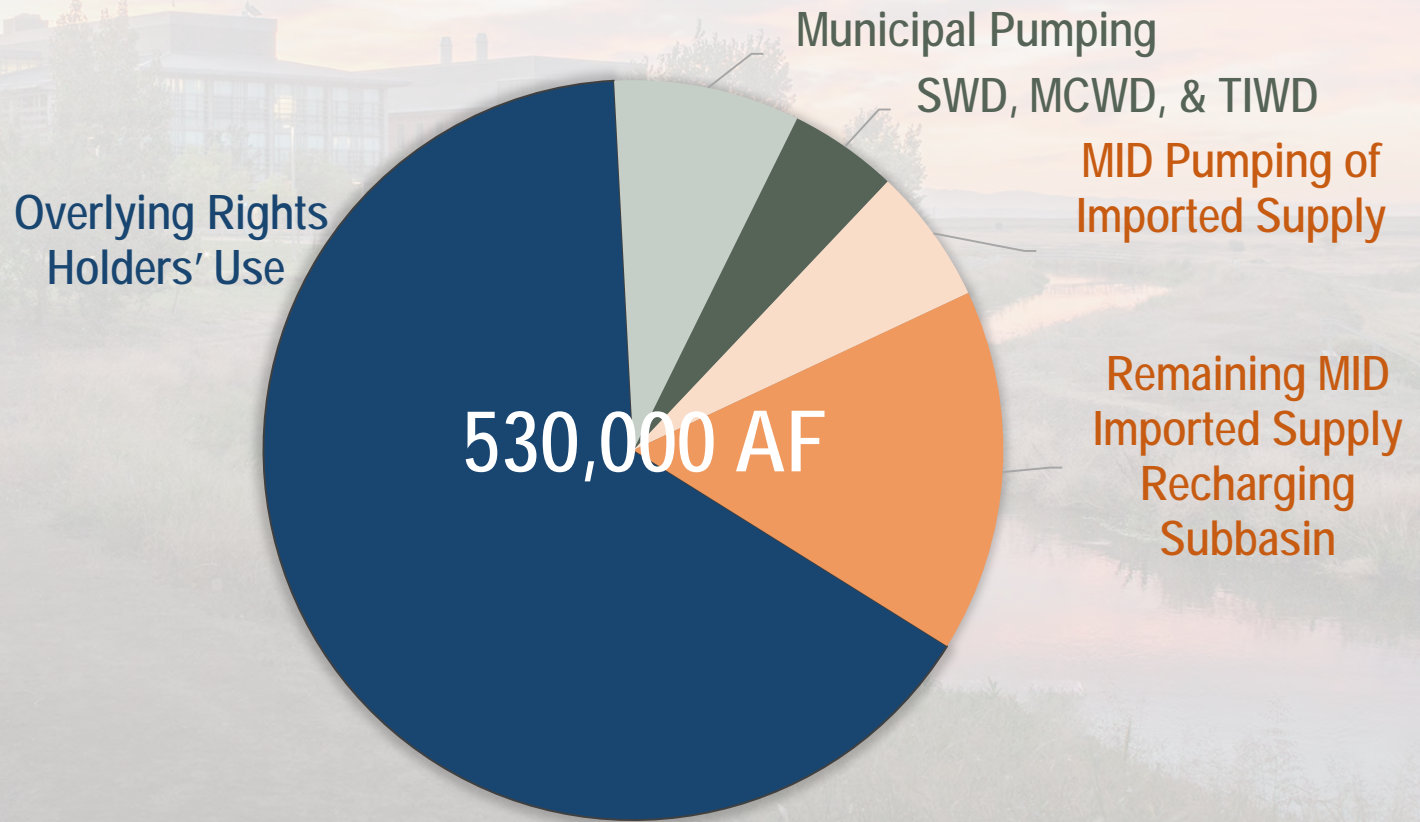


Image courtesy: Veronica Adrover/UC Merced

Prescriptive Use

For prescriptive use allocation, need to select time period for basis. Table below shows two 10-year historical periods and the projected demand in 2040.

	1996-2005 (acre-feet)	2006-2015 (acre-feet)	Projected (acre-feet)
Prescriptive Use Allocation (Muni., SWD, TIWD, Others*)	55,000	65,000	89,000

*Does not include smaller CSDs, mutual water companies. Additional information and analysis is needed to determine historical prescriptive water use.

Image courtesy: Veronica Adrover/UC Merced

Prescriptive Use

For prescriptive use allocation, need to select time period for basis. Table below shows two 10-year historical periods and the projected demand in 2040.

	1996-2005 (acre-feet)	2006-2015 (acre-feet)	Projected (acre-feet)
Agricultural Water Purveyors	16,000	24,000	21,000
Municipal Water Purveyors	39,000	41,000	68,000
Prescriptive Use Allocation	55,000	65,000	89,000

*Does not include smaller CSDs, mutual water companies. Additional information and analysis is needed to determine historical prescriptive water use.

Image courtesy: Veronica Adrover/UC Merced

Historical Conditions Urban Water Use in Merced Subbasin

Historical Conditions Water Use (1996-2015)	Merced	Atwater	Livingston	Total
Population*	72,000	26,000	12,000	110,000
% of Population	65%	24%	11%	100%
Domestic (and Industrial) Water Use (af)	23,000	9,000	7,000	39,000
GPCD*	291	308	518	315

- Population is an average of the 1996-2015 historical simulation period.
- Based on water pumped, not water delivered, includes conveyance losses and includes industrial use

Image courtesy: Veronica Adrover/UC Merced

Projected Conditions Urban Water Use in Merced Subbasin

Projected Conditions Water Use (2040)	Merced	Atwater	Livingston	Total
Population*	134,000	40,000	26,000	200,000
% of Population	67%	20%	13%	100%
Domestic (and Industrial) Water Use (af)	41,000	13,000	14,000	68,000
GPCD*	276	300	467	302

- Population is based off the 2040 projected conditions available in their Urban Water Management Plans

Image courtesy: Veronica Adrover/UC Merced

Modified Application of Comprehensive Allocation to Merced Subbasin

- Review historical and projected use for prescriptive users (cities, water purveyors). Gather additional info for smaller users or develop estimates on basin wide basis.
- MID credited for imported surface water that reaches basin
- Overlying users allocated remaining sustainable yield based on historical irrigated acres
- GSAs can modify implementation and allocation within GSA, but establishes basis for basin-wide management

Advantages	Disadvantages
<ul style="list-style-type: none">• Less likely to result in conflict among users• Explicitly accounts for appropriative use / prescriptive rights	<ul style="list-style-type: none">• Requires data that is not currently available• Does not account for unexercised GW rights• Significant outreach and engagement required

Draft Allocation Example – Prescriptive based on Historical Use

	Allocation (acre-feet)
MID Developed Supply Projected 2040	110,000
Prescriptive Use Allocation (Muni., SWD, TIWD, Others*) 2006-2015 use	65,000
Overlying User Allocation (Private Ag and Domestic Users)	355,000
Total Available Allocation (Sustainable Yield)	530,000

*Smaller CSDs, mutual water companies are currently accounted for as an overlying user. Additional analysis would be needed to determine historical prescriptive water use.

Image courtesy: Veronica Adrover/UC Merced

Draft Allocation Example – Prescriptive Based on Projected Use

	Allocation (acre-feet)
MID Developed Supply Projected 2040	110,000
Prescriptive Use Allocation (Muni., SWD, TIWD, Others*) Projected 2040	89,000
Overlying User Allocation (Private Ag and Domestic Users)	331,000
Total Available Allocation (Sustainable Yield)	530,000

*Smaller CSDs, mutual water companies are currently accounted for as an overlying user. Additional analysis would be needed to determine historical prescriptive water use.

Image courtesy: Veronica Adrover/UC Merced

Sustainable Yield Analysis Groundwater Budget

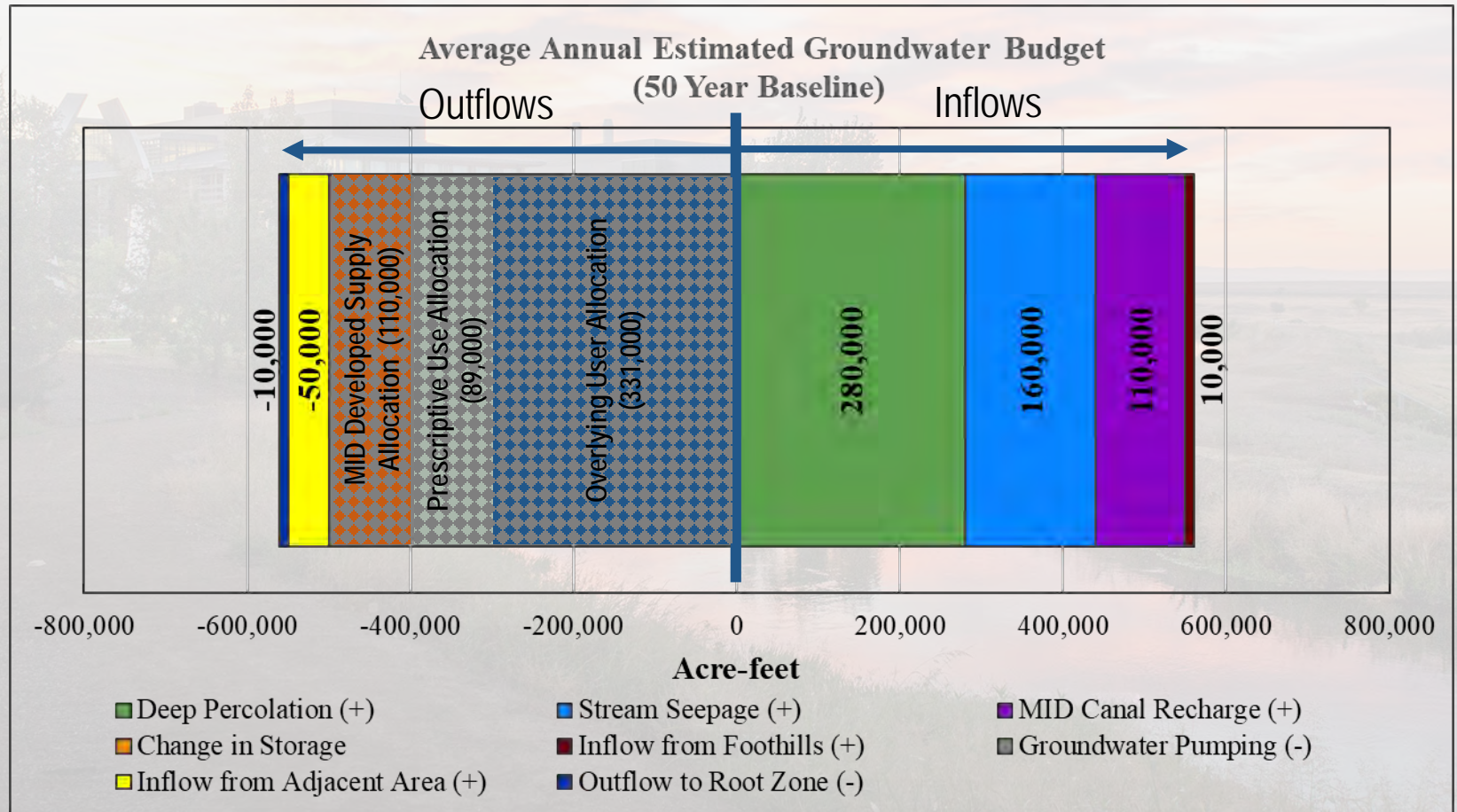


Image courtesy: Veronica Adrover/UC Merced

Other issues for discussion

- How to address unexercised overlying water rights
- How to address transferring allocations
 - Mojave adjudication example
- Implementation Timeframe

Image courtesy: Veronica Adrover/UC Merced

Mojave Adjudication

- Final judgement Jan 1996
- ~470 groundwater users included in judgement
- 1 basin; 5 distinct, but hydrologically interrelated “Subareas”
- Watermaster sets Subarea allocation based on safe yield annually on April 1 for next year
- Each producer required to measure and report annual production (meter or other Watermaster-approved method)



Quantified and Transferable Rights

Pumper Allocations Based on Historical Use

- Max annual production from 1986-1990
- Determines % share of subarea allocation (equal priority)
- Transfer water: payment to Watermaster **OR** transfer of unused allocation from another pumper (agreement of \$/af paid by violator)

Subarea Allocation

- Established by judgement for each Subarea
- Watermaster reviews and adjusts annually

Inter-Subarea Obligation

- Estimated average annual natural flow from upstream Subarea from 1931-90
- Makeup (unused) water provided to downstream Subarea if obligation not met

Image courtesy: Veronica Adrover/UC Merced

Groundwater Budget

[Sustainable Yield Analysis]

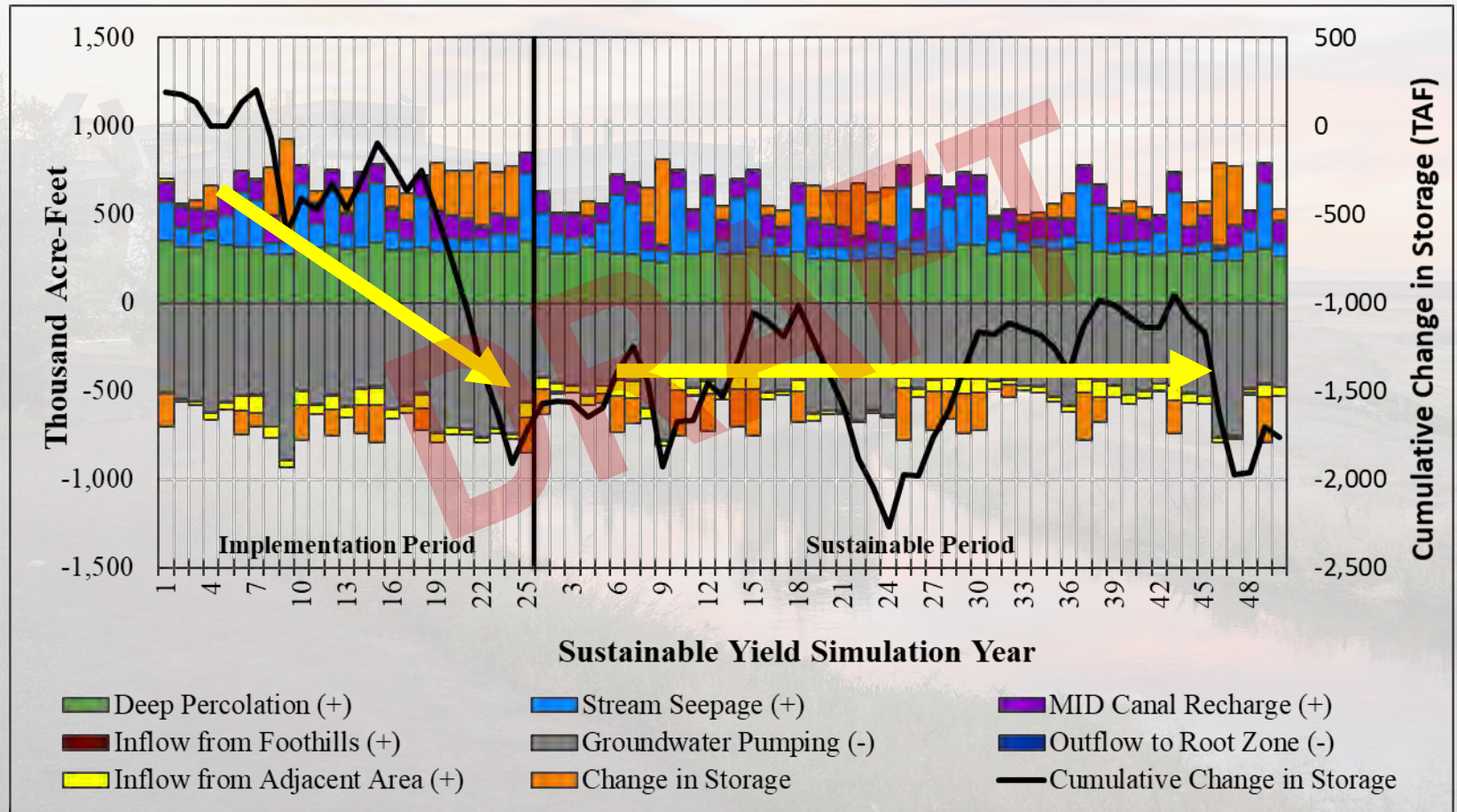


Image courtesy: Veronica Adrover/UC Merced

Conceptual GSP Implementation Timeline

Implementation will be phased over 20 years, with 5-yr updates.



Image courtesy: Veronica Adrover/UC Merced

Discussion

- General discussion on allocation approaches and consideration for approach selection

Image courtesy: Veronica Adrover/UC Merced



Other Updates

Image courtesy: Veronica Adrover/UC Merced

Other Updates

- Link for Merced Data Management System beta test version to be sent when ready

Image courtesy: Veronica Adrover/UC Merced



Public Outreach Update

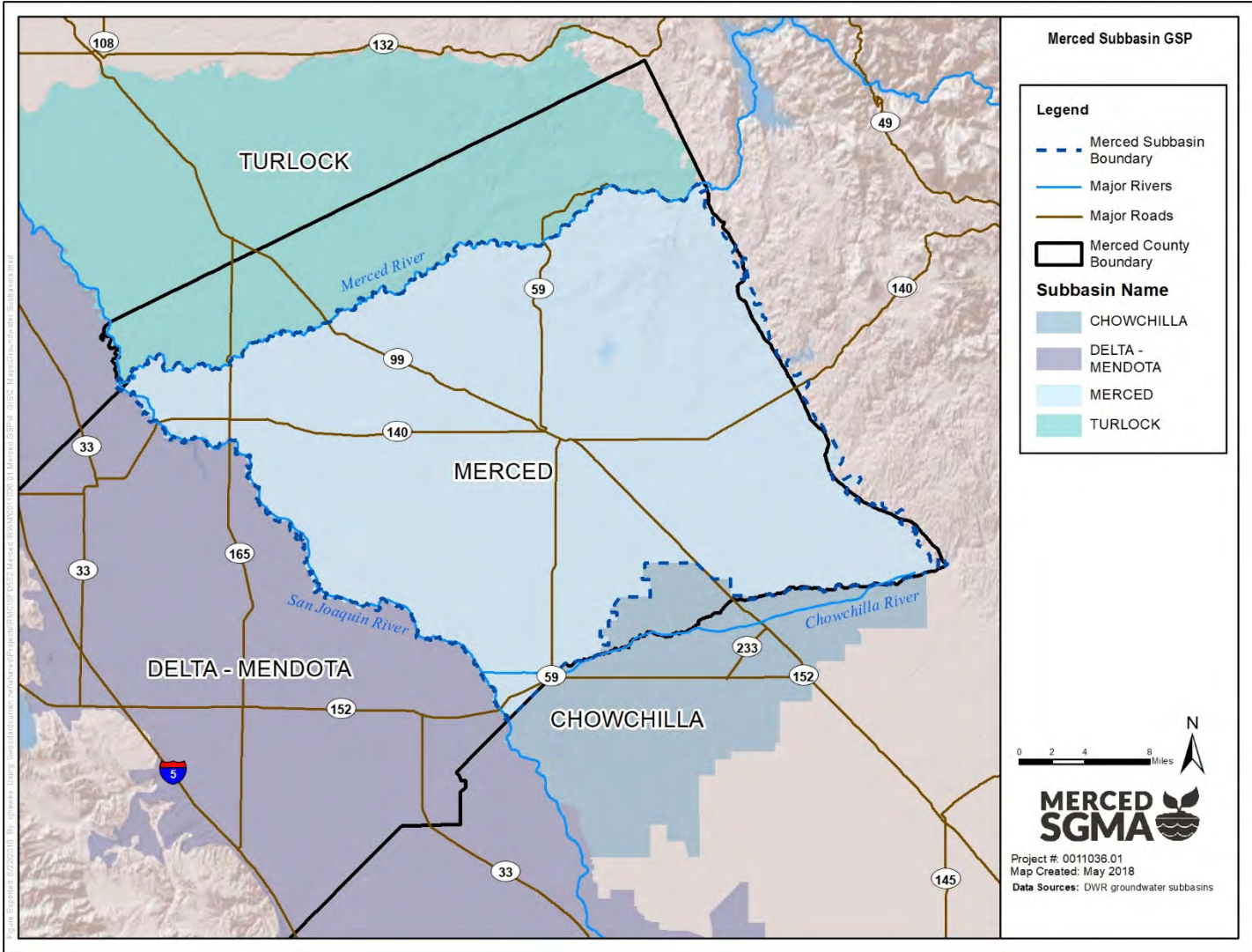
Image courtesy: Veronica Adrover/UC Merced



Coordination With Neighboring Basins Update

Image courtesy: Veronica Adrover/UC Merced

Coordination with Neighboring Basins





Next Steps

Image courtesy: Veronica Adrover/UC Merced

What's coming up next?

- GSP Development Items:
 - Water Budgets summary memo being provided for review and approval by GSAs
 - Complete allocation process updates
 - Assess projects and management actions
- Focus for January meeting
 - Allocation approaches (continued)
- Adjourn to next meeting (Adjourn to January 28th @ 9:30 AM, location Castle Airport)

Image courtesy: Veronica Adrover/UC Merced

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