

Salinas Valley Basin GSA

Discussion on Projects & Management Actions

Presented to Upper Valley
Subbasin Committee
December 7, 2020

Prepared by






Purpose


- Introduce stakeholders to the role of projects and management actions, and review types of projects
- Provide an overview of already-identified potential projects
- Receive stakeholder ideas on projects and management actions
- Receive direction on where to spend effort analyzing project benefits

Part 2 of our Two-Meeting Process



Overview & Purpose of Projects and Management Actions

- ▶ Projects and management actions are a critical ***component of GSPs***
- ▶ Meant to implement the GSP and enable the basin to ***reach sustainability by 2042*** and then maintain sustainability for 30 years
- ▶ Within GSP, they show that reaching sustainability is ***feasible***; however, further work is required to determine which projects to implement and project design
- ▶ Must address ***all the SMCs*** relevant to the basin ***and SGMA requirements***, which includes bringing pumping to within the sustainable yield



All Projects and Actions are Part of One Integrated Program within the Salinas Valley

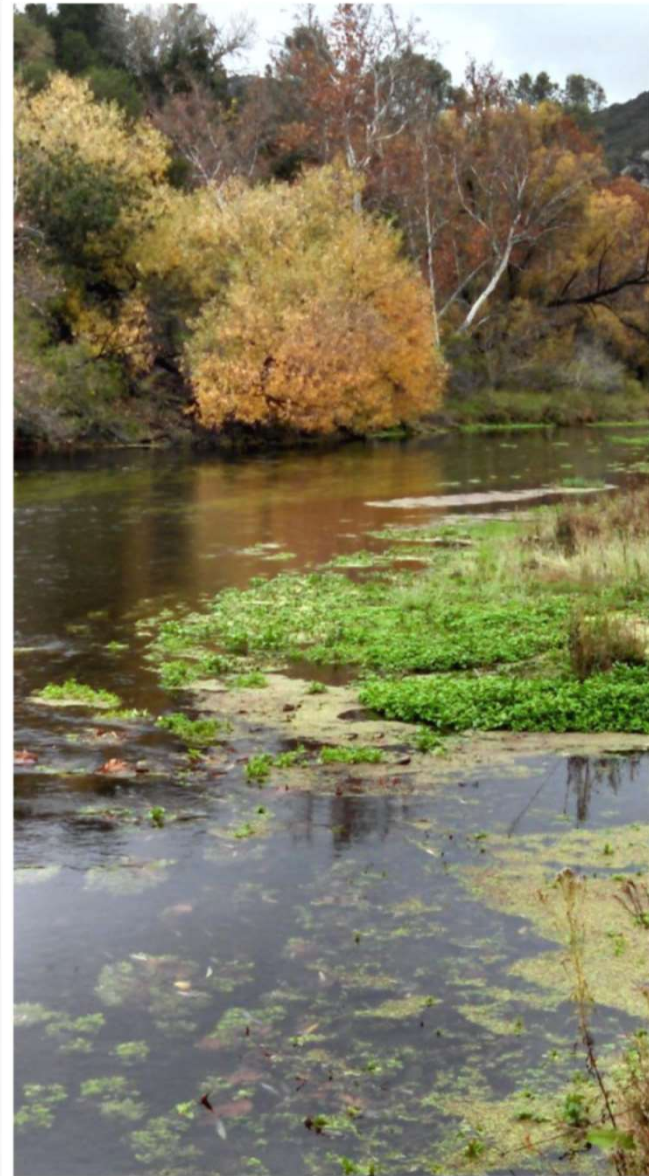
Provide
adequate
water for
economic
vitality

Avoid
degradation
to, or
enhance,
ecological
benefit

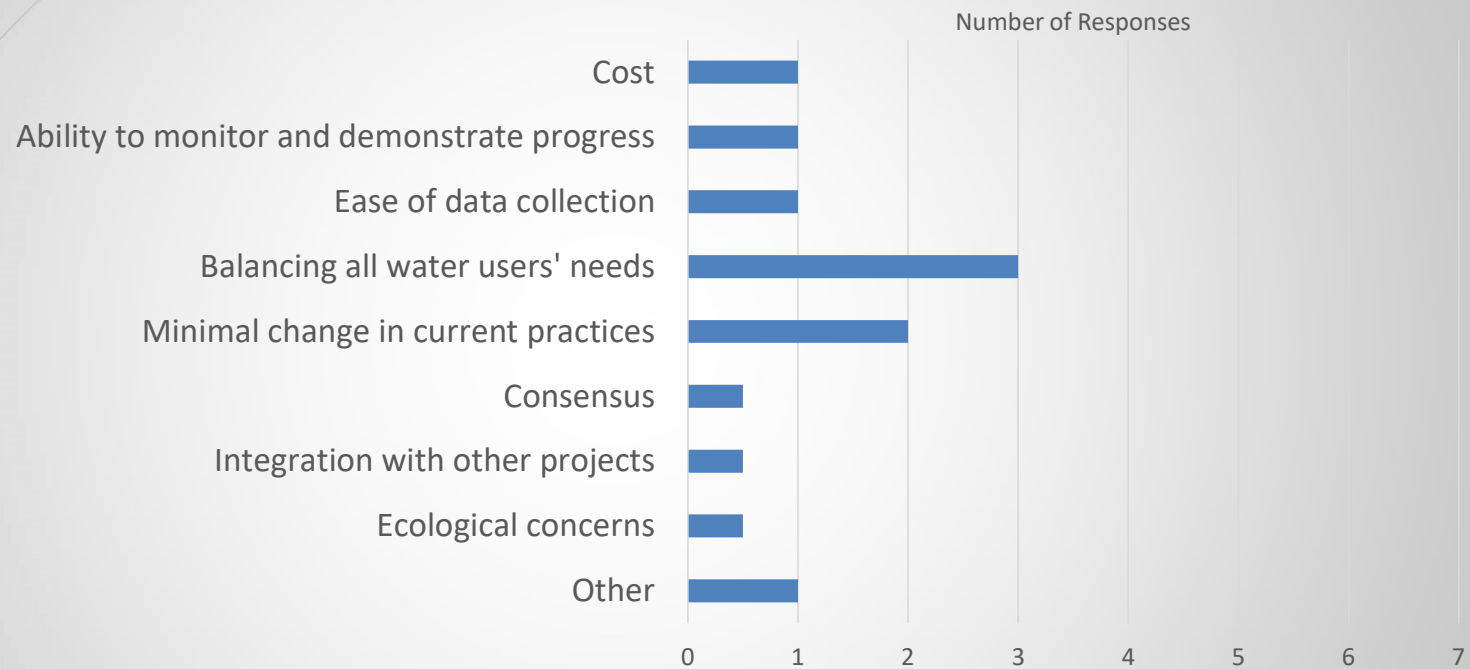
Combat
seawater
intrusion

Plan for
droughts

Survey Results

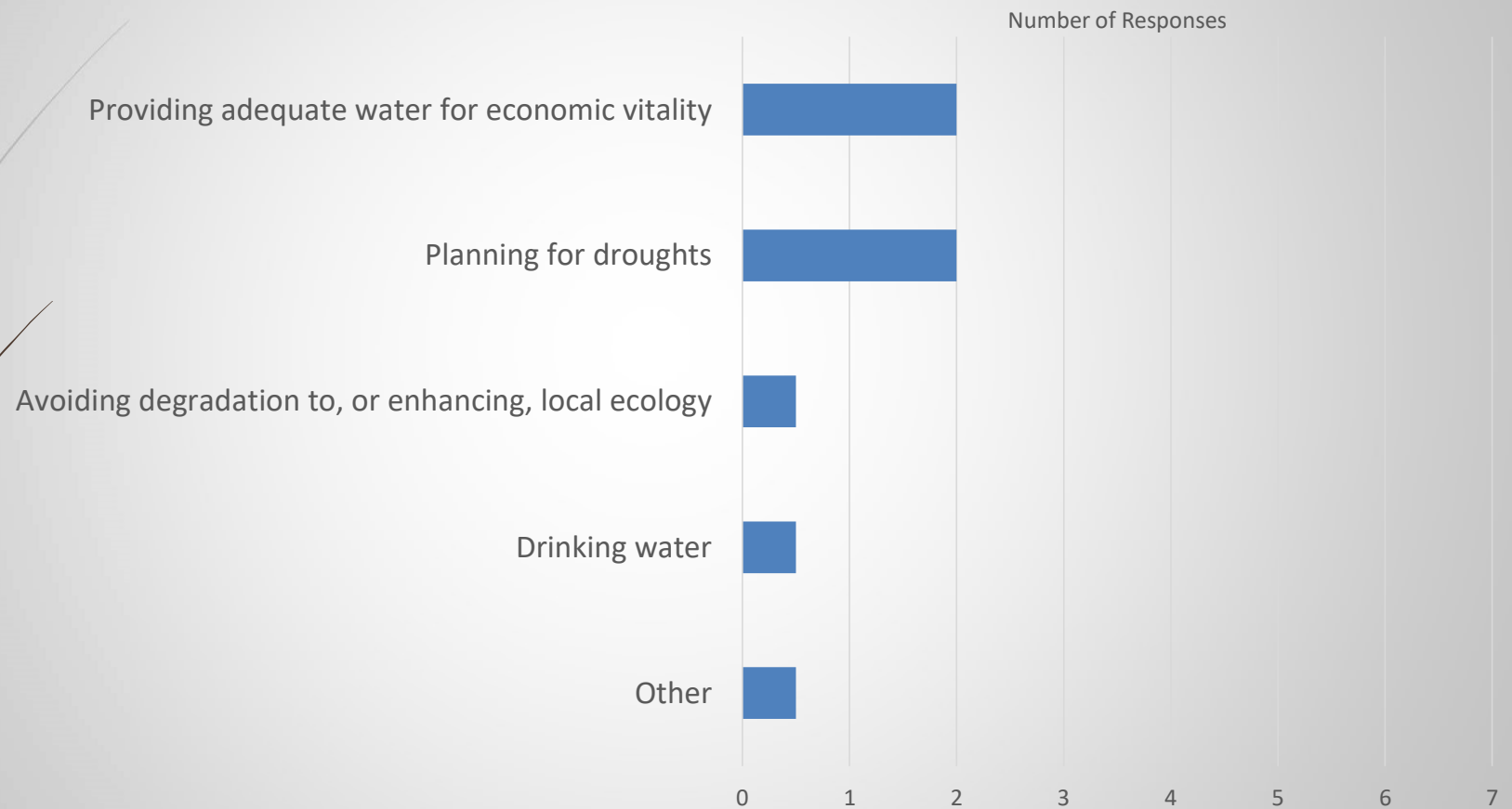


Most important factors in prioritizing projects:

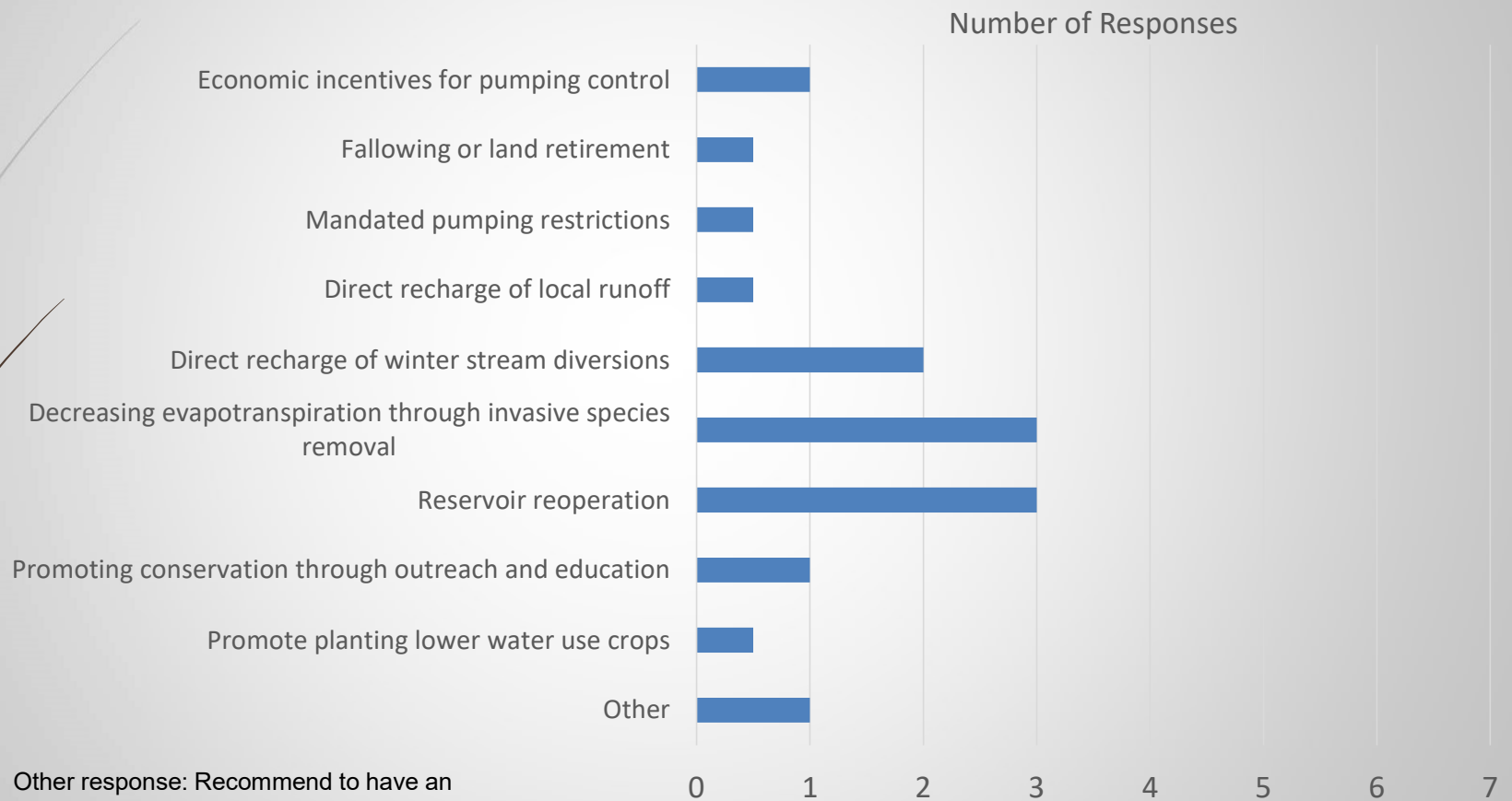


- Other Response: cost, benefit to relevant SMCs for UV, and risks/uncertain of each project


Project benefits that concern me the most:



Actions that have the greatest impact on groundwater:



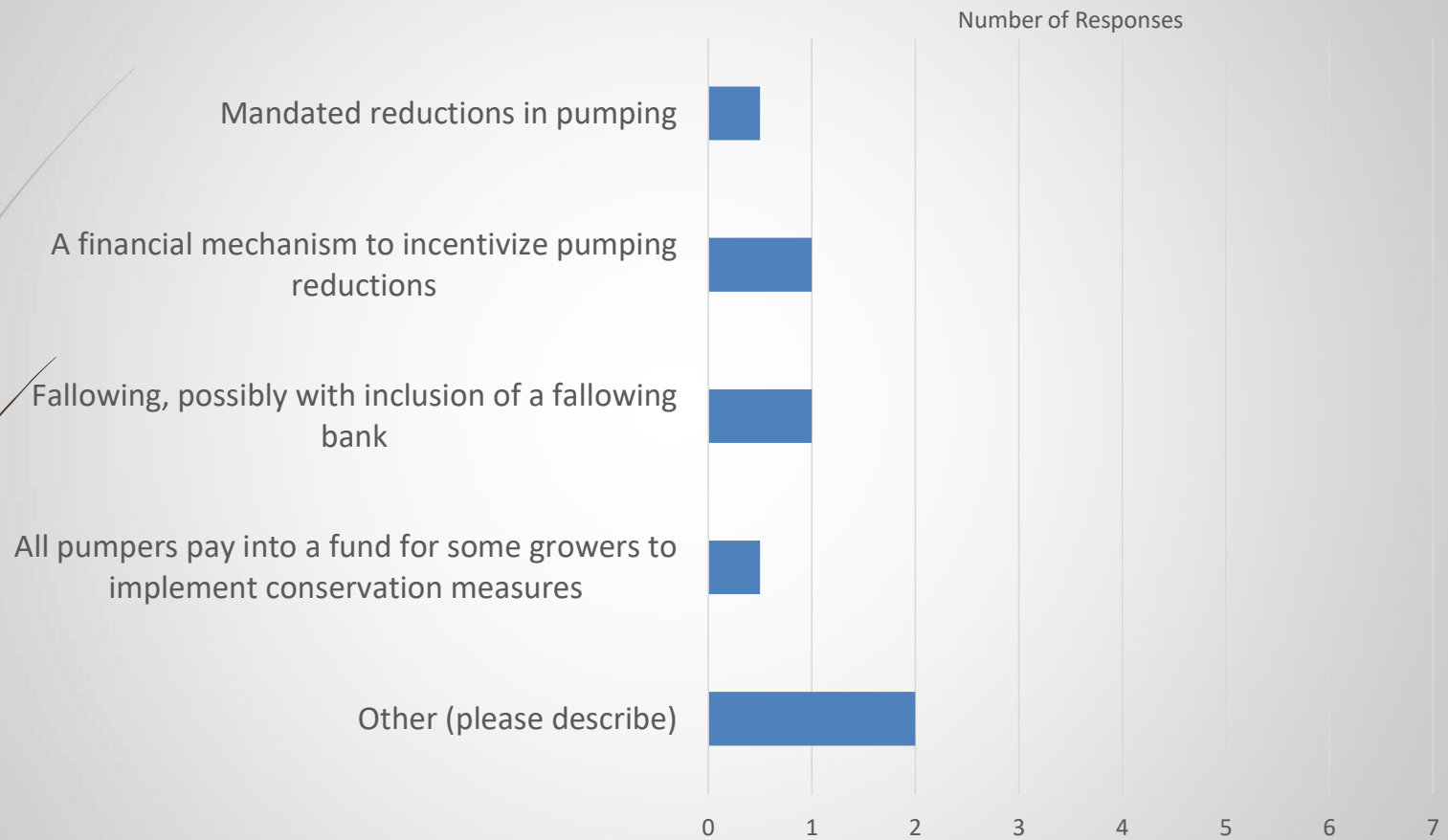
Other response: Recommend to have an auxiliary plan for the worst case scenario of lengthy drought




Do you have any comments on the above list of projects?

- ▶ ET efficiencies through invasive species removal is low hanging fruit; winter releases are logical and likely scientifically provable to benefit the four primary sub-basins of the Salinas Valley; and very importantly operating the reservoir systems at Nacimiento and San Antonio to provide maximum benefit to all stakeholders, safely and transparently. Reservoir Operations are forever linked with the sustainability of all sub-basins in the Salinas Valley
- ▶ Our effort may benefit from a detailed assessment of cost, benefit, and risk/uncertainty assessments. If we choose to pursue this option, we can discuss alternative approaches

Preferred approach to potential pumping limitations:






Preferred approach to potential pumping limitations:


▶ Other responses:

- ▶ Scientific study/validation that reduction in pumping is necessary; in the Upper Valley specifically due to its nearly wholly sustainable status (i.e. nearly a low-priority basin, which is wholly sustainable).
- ▶ I feel having a financial mechanism in place to incentivize pumping reductions is a starting point, but to utilize this approach, it is important to have annual accounting and allocations established, banking for annual unused allocations due to BMPs, etc, and offset allocations for any direct and indirect recharge.




If conservation or agricultural BMPs are selected as a management action, what suggestions do you have for specific BMPs that could be considered?

- ▶ Sub-terrain applications, Micro emitters in place of overhead sprinklers, financial aid for water moisture technologies.
- ▶ I would consult with the large growers in the four primary sub-basins; many/all of them have existing BMP's, are ultra-innovative in regards to irrigation techniques and have a regulatory regime that requires adherence in order to comply (i.e. Region 3 - CCRWQCB). In other words, don't reinvent the wheel; you'll find the big growers comprise 60-80% of the irrigated acres (maybe more). Get their input before you put any draft out; you might save a lot of time if you can build a template from what stakeholders have already developed. Norm Groot is a good contact/resource; Emily Gardener can also likely get input from the big/key operators.
- ▶ I am not a farmer, but something to consider is crop rotation with various water usage requirements integrated with annual temperature variations, and guidelines on allowed maximum % for over-irrigation to prevent salt build up in the near surface soils.



Do you have project ideas for your subbasin that you would like to share?

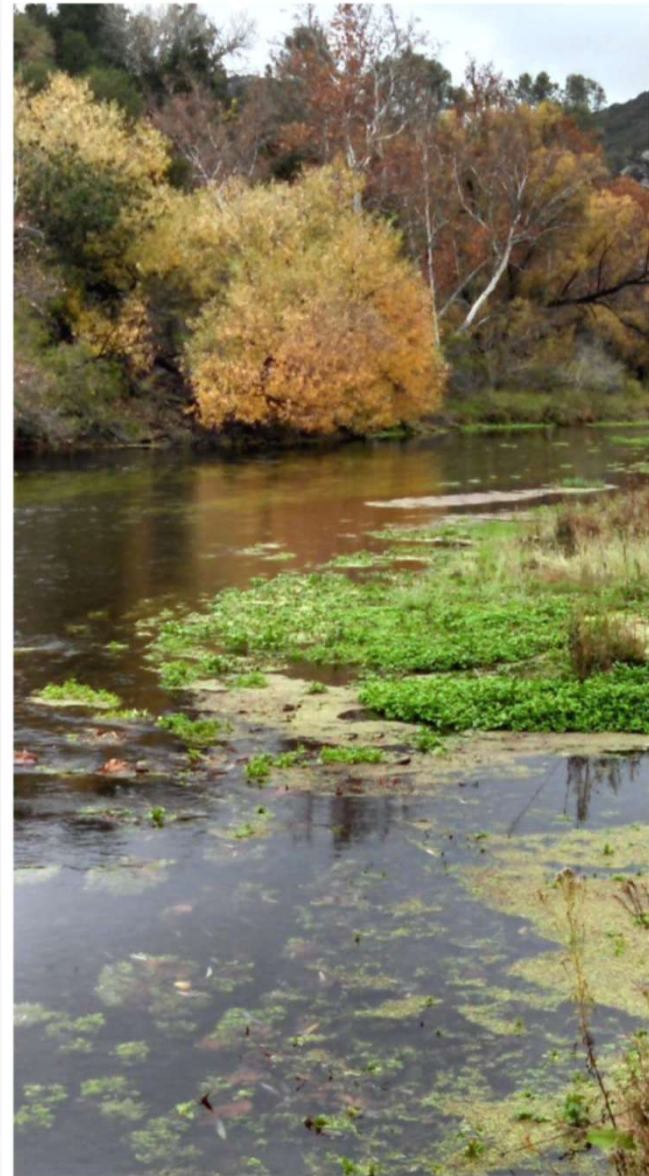
- ▶ As a new committee member, I am trying to listen to the current data and historical perspectives of committee members so that I can be of greater value in the future. If there is a financially feasible way to increase water storage in Monterey County I would recommend that. I.e.. Naci or San Antonio or additional storage of some kind. (Arroyo Seco Canyon)
- ▶ 1.) Winter releases (i.e. Reservoir Re-operations), to the extent possible, are safe, backed by science/metrics, provide fish passage days and maintain obligations for diversion at SRDF. 2.) Siphon/Pump system at Nacimiento reservoir that allows for release of water at any elevation down to minimum pool at a capacity of 1200-2000 cfs. This would enhance Nacimiento's outlet of water for safety (flood control), winter releases, fish passage days and SRDF operations when the elevation level at Nacimiento is below 755 feet. 3.) SVBGSA developing it's own model, that the agency maintains and makes available to the public in a transparent manner; one that provides a wider spectrum for validation with other modeling.
- ▶ This may not apply to the UV subbasin, but for the winter release and ASR storage project, it may be worth compare the cost benefit and risk of using ASR wells vs. recharge basins and extraction wells. It is much easier to address biofouling maintenance at the surface in a recharge basin than underground in a well. Any cost benefit analysis needs to address the risk of each option as well.



What is the most crucial data to guide projects in your subbasin?

- ▶ 1. Naci reservoir releases, 2. local well performance, 3. What is of critical nature in the sub-basins above the Upper Valley. Our position will affect all stakeholders north of us, therefore we need to continue to operate in a more than sustainable capacity.
- ▶ The most crucial data for the Upper Valley, in my opinion, are stream flow data and reservoir release data. The Upper Valley groundwater sustainability is 80%+ reliant on upstream flows, with the most predominant stream the Nacimiento (hence the emphasis with question 9 about reservoir re-operations and improvements to the outlet at Nacimiento).
- ▶ Accurate measurements of water volumes and usage rates.

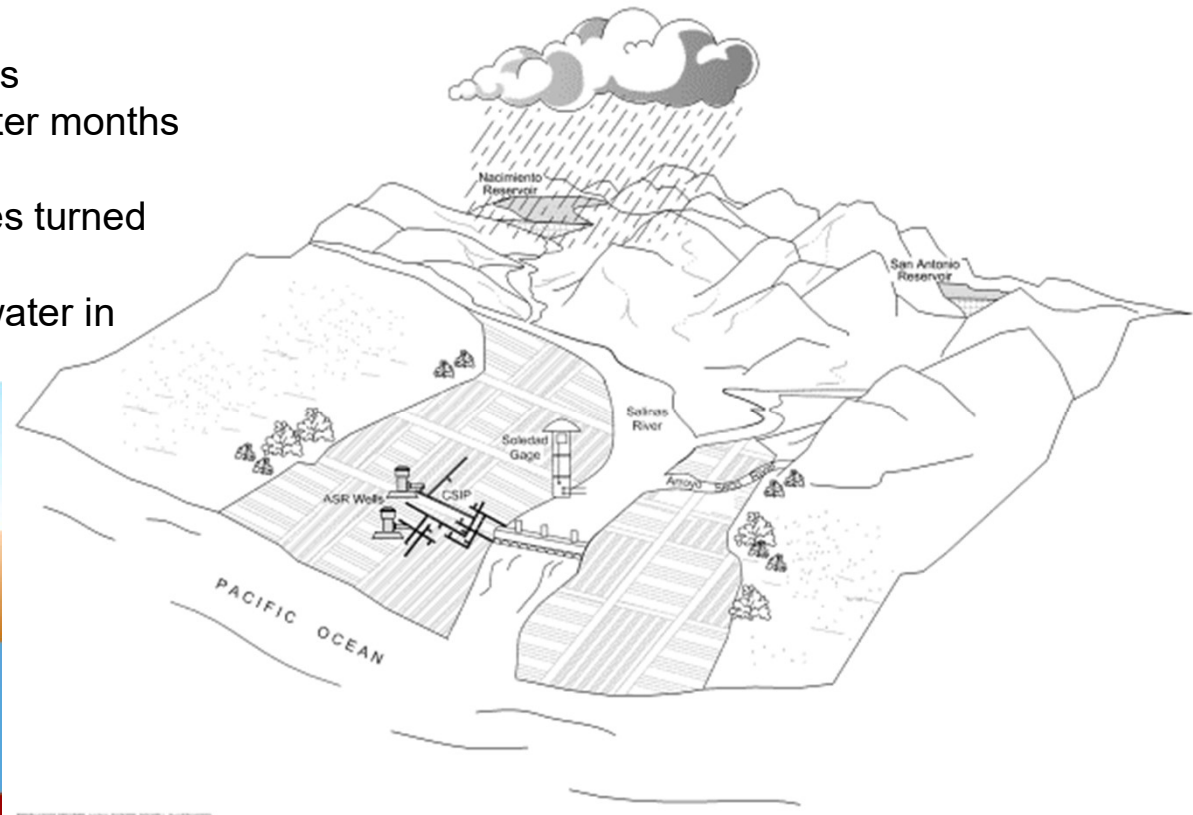
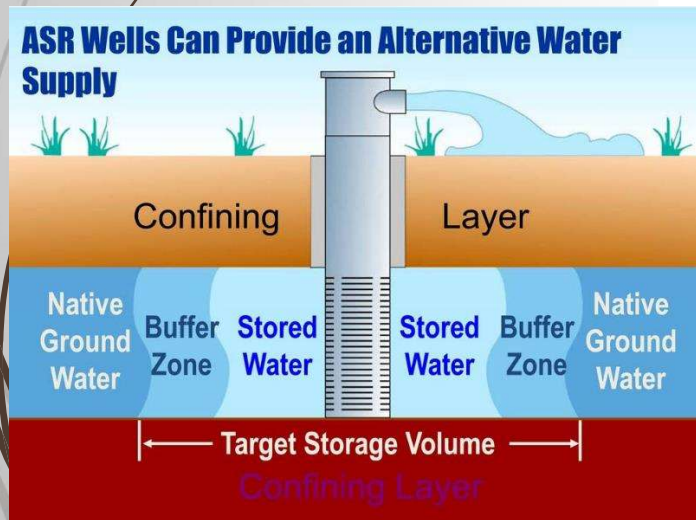
Additional Data on Potential Projects & Management Actions



Winter Releases from Reservoirs, with ASR in the 180/400-Foot Aquifer Subbasin

Model Simulation:

- Increased winter reservoir releases
- Diverts 13,000 AF at SRDF in winter months
- 16 ASR injection wells
- Summertime conservation releases turned off for simulation
- CSIP customers extract injected water in summertime



Invasive Species Eradication (*Arundo donax*)

- ▶ Capital cost: \$35,230,000, with \$325,000 annual O&M
- ▶ Indirect project yield originally estimated at 20,000 AF/yr., but recent estimates indicate could be substantially less
- ▶ Amortized cost of water: \$160/AF/yr.
- ▶ *Will be updated when updated yield estimates are available*



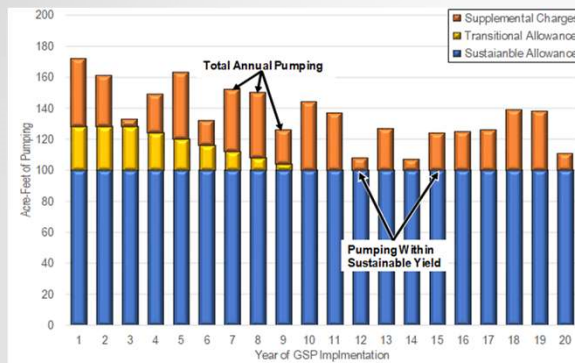


Conservation and Agricultural BMPs

- Leveraging evapotranspiration (ET) data
 - Incorporate ET data with soil moisture sensors, soil nutrient data, and flow meter data to help inform more efficient irrigation practices
 - Secure funding and/or coordinate with existing local agricultural extension specialists who conduct research and provide technical assistance to growers
- Education and outreach
 - Support existing local agricultural extension specialists with their education and outreach on BMPs to increase water conservation and decrease pumping
 - Use technical workshops and partnerships to accomplish outreach effectively and efficiently with growers
- Any others?

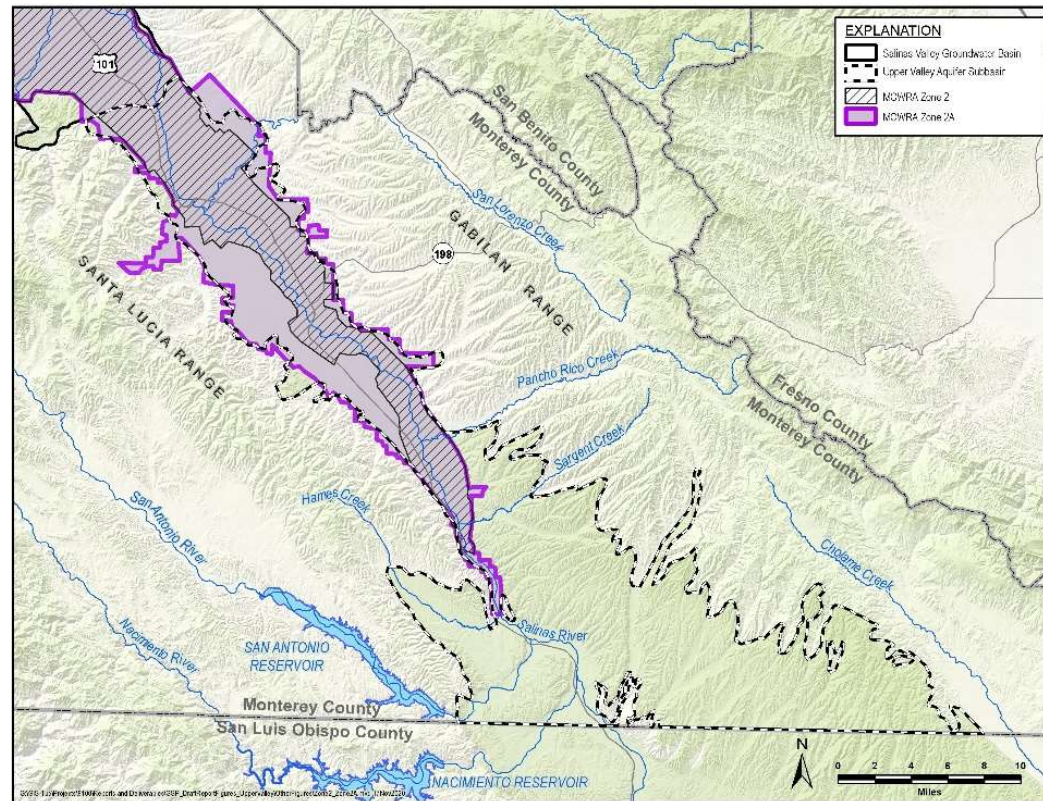
Pumping Controls/Allocations


To be discussed at next Subbasin Committee Meeting



- Rotational fallowing**
- Fallow bank**
- Agricultural land retirement
- Financial mechanism**
- Water markets
- Mandated reductions
- Other options yet to be defined

Implementation action:
Expand MCWRA's Groundwater Extraction (GEMS) Program





Next steps

- Develop water budget, sustainable yield, and overdraft
- Projects & Management Actions Chapter
 - Will discuss pumping allocation and financing in upcoming meetings
 - For selected projects
 - Further develop project concepts and descriptions,
 - Develop expected benefits and evaluation of benefits,
 - Draft circumstances for implementation, public noticing, permitting and regulatory process, implementation schedule, and legal authority sections
 - Estimate project cost and amortized cost of water
 - Assess mitigation of overdraft (once have sustainable yield estimate from model)



Next Steps - Further investigate and assess:

- ▶ Winter Releases from Reservoirs (potentially with ASR in the 180/400-Foot Aquifer Subbasin)
- ▶ Invasive species removal
- ▶ Pumping allocation/control
- ▶ Conservation and Agricultural BMPs
 - ▶ Leveraging evapotranspiration (ET) data
 - ▶ Education and outreach
- ▶ Any other projects or management actions identified during the meeting

Questions

