PURIFIED AND RECYCLED WATER

NOVEMBER 17, 2023

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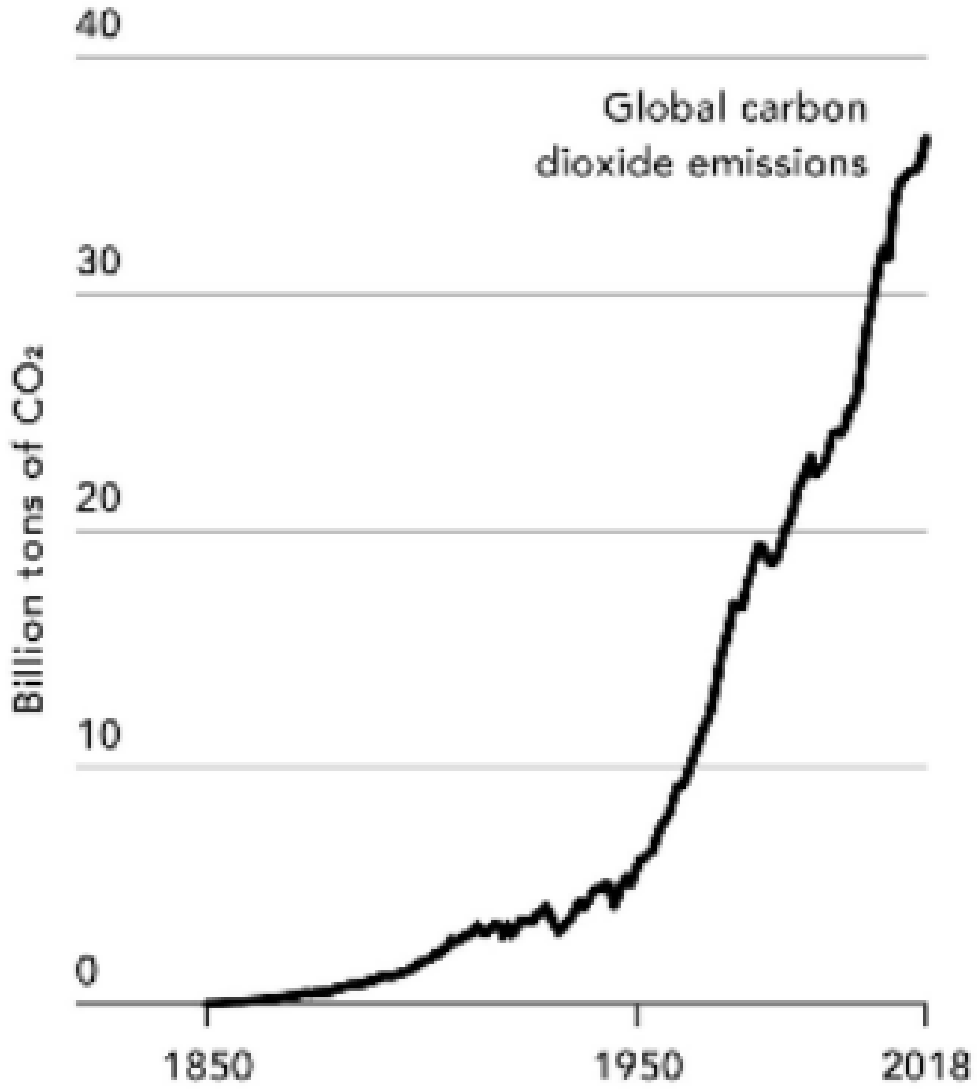
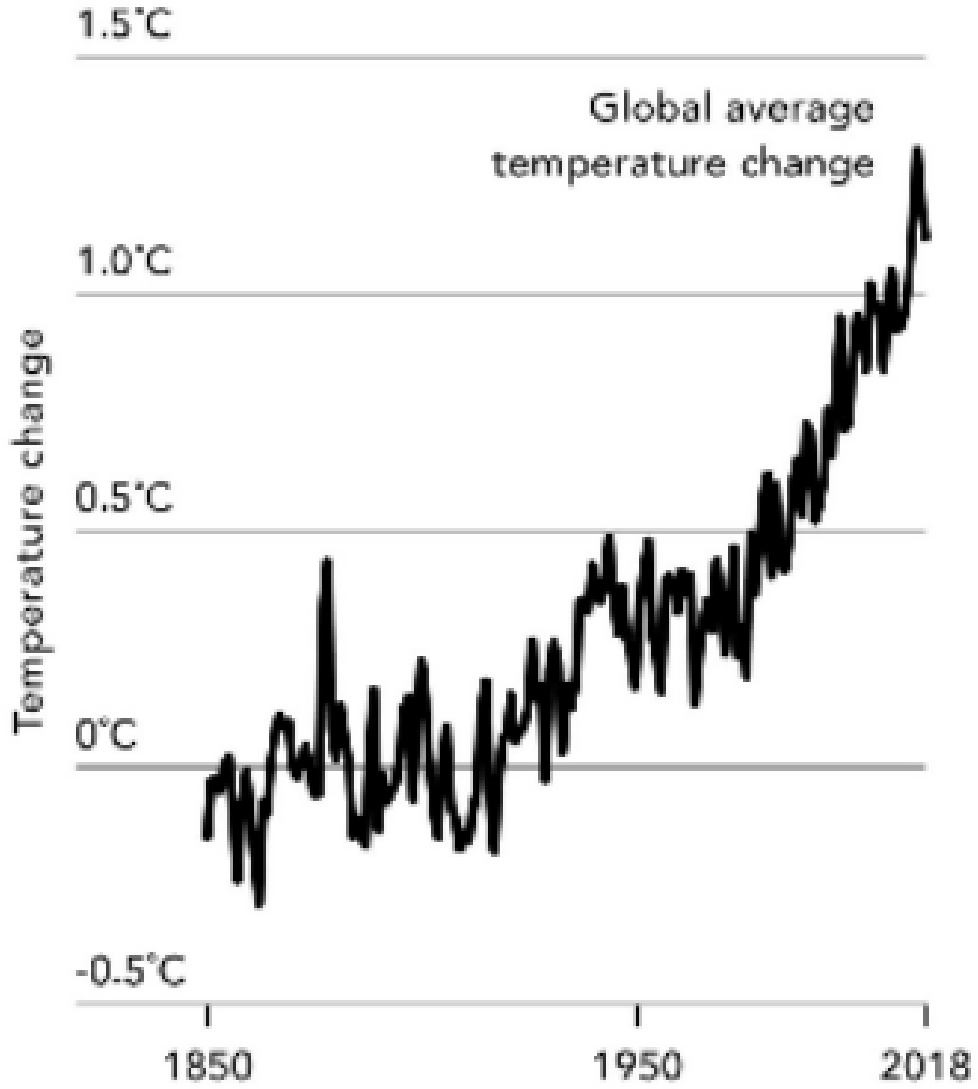
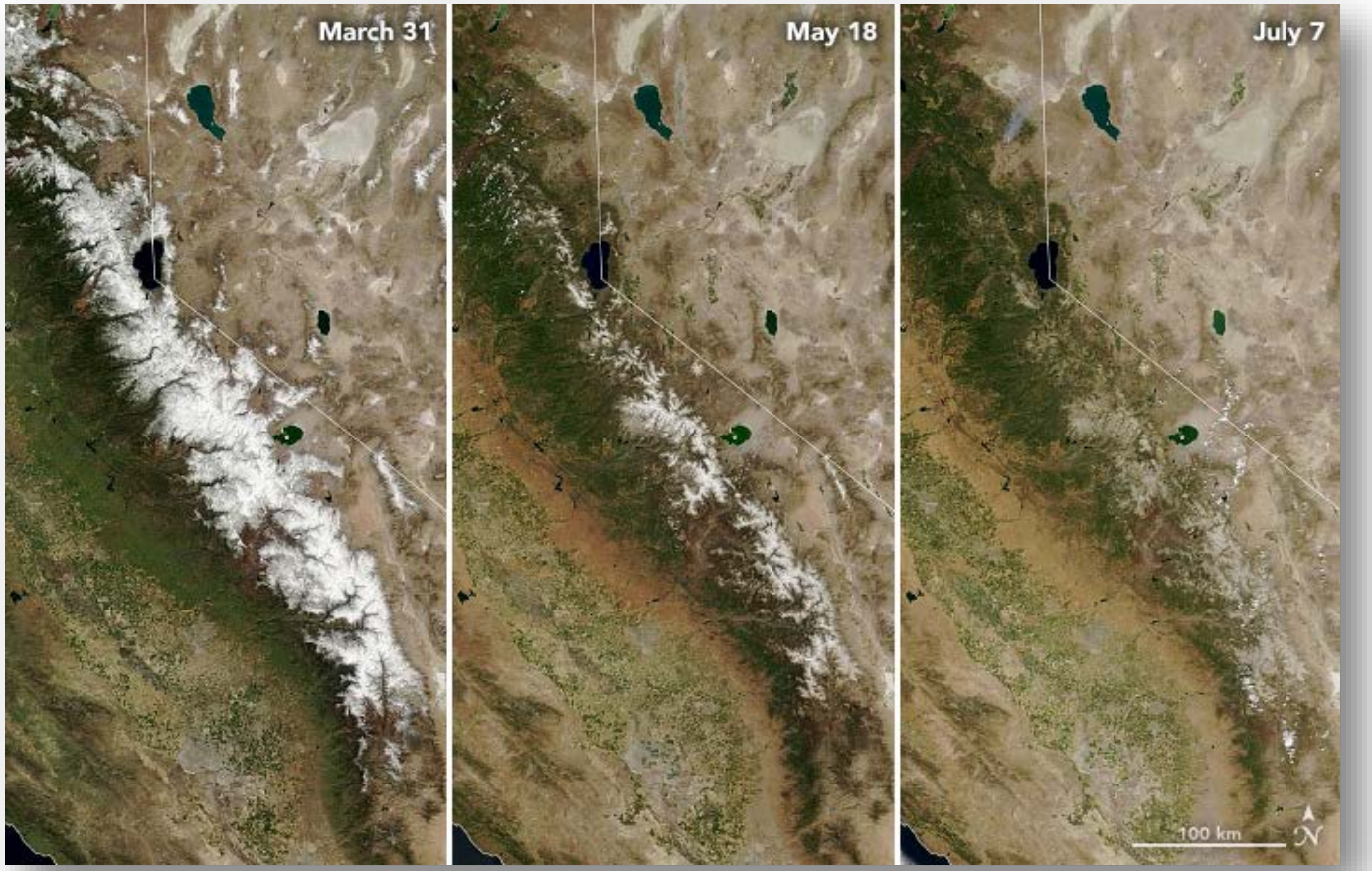




Gates, Bill. (2021). How to Avoid a Climate Disaster: The Solutions We Have and the Breakthroughs We Need.

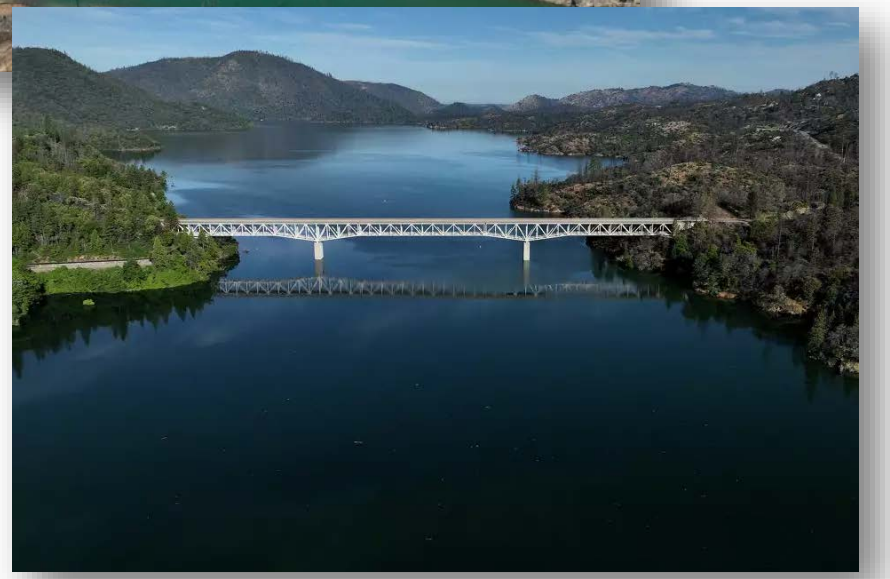
Climate Change

Impacts to Imported Water – 50% of county's water supply



2021

2021



2023

Collaborating on Solutions

Mutual Goals for Improved Water Supply Reliability

2023 Letter of Intent

- Meeting each Party's respective water supply needs
- Maximize the use of treated wastewater to best serve the water supply needs of the community
- Develop a more sustainable, water-resilient future

The Solution – Water Reuse

Ensuring Water Reliability

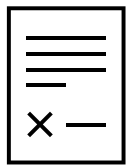
- Protects us from impacts of climate change
- Creates a new drought-resilient and locally controlled water supply
- Reduces dependency on imported water

Pathway to Potable Reuse

- Silicon Valley Advanced Water Purification Center enhances non-potable system
- Direct Potable Reuse allows greatest flexibility for water supply
- New regulations will require additional treatment processes and new institutional arrangements
- Demonstration facility is necessary first step to a full-scale project

Benefits:

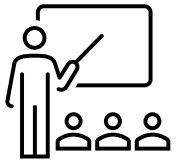
Regulatory Permitting



Interagency Agreements

Train Operators

Operational and Technical Studies



Outreach and Public Perception

Example Demonstration Facilities

City of San Diego Pure Water Program

Metropolitan Water District of Southern California

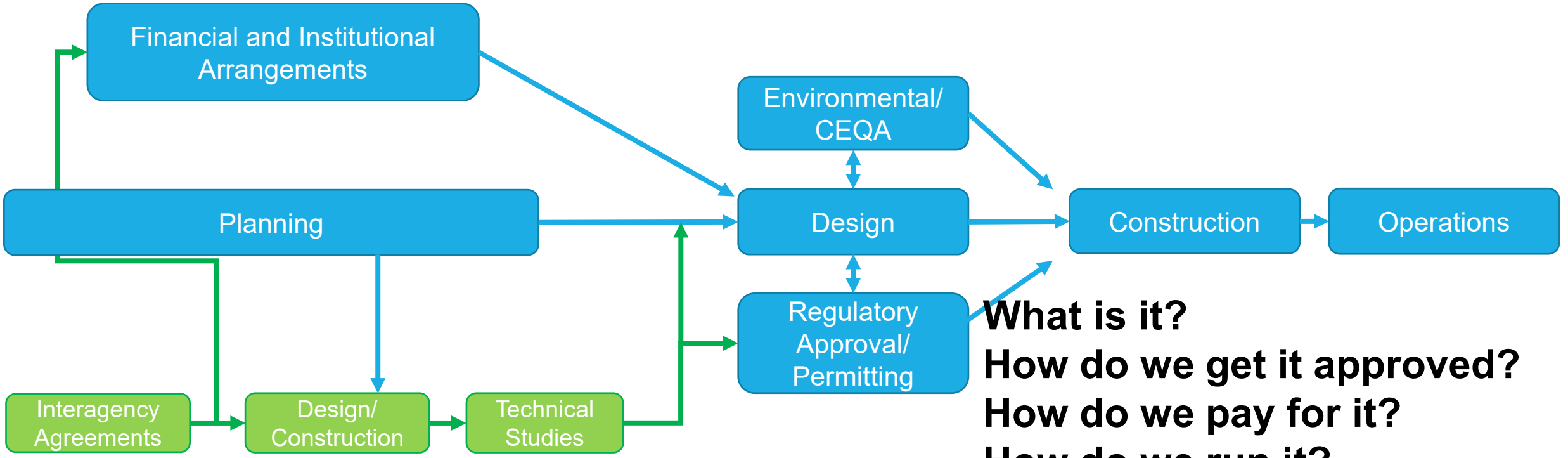
Valley Water

Direct Potable Reuse Regulations

A **validation study** report documenting the validation study methodology and **results** shall be submitted to the State Board as part of the submittal of the engineering report prepared pursuant to section 64669.75… The validation study report shall identify the LRV (log removal value) demonstrated by each treatment process for each pathogen pursuant to subsection (a)(5)(C)(9.), the operating envelope, and the critical limit(s) for each validated treatment process… § 64669.45. – Pathogen Control

A Direct Potable Reuse Responsible Agency shall submit a **validation study** protocol for the ozone/BAC process that complies with this subsection to the State Board for review and written approval prior to conducting the validation study. …The validation study protocol shall include proposed surrogate and/or operational parameters to be used in the validation study. The ozone/BAC process shall be **re-validated when the full-scale operating conditions** or control strategy are inconsistent with the previous validation study conditions. § 64669.50. Chemical Control

Full-Scale DPR Project Implementation is Complex



What is it?
How do we get it approved?
How do we pay for it?
How do we run it?
How do we get public support?

Outreach/ Public Acceptance

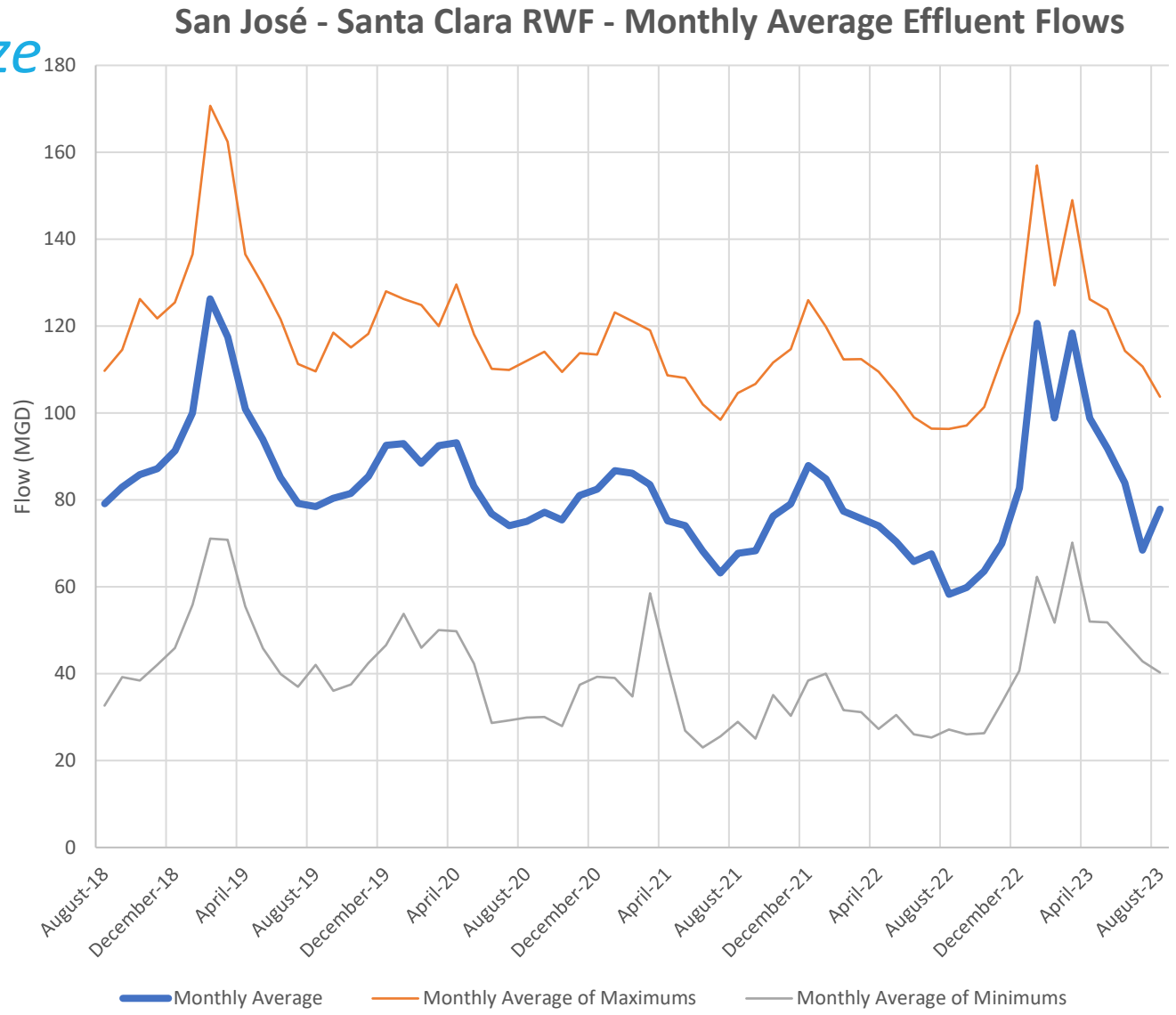
2024 2025 2026 2027 2028 2029 2034

Valley Water

Project Considerations

Wastewater Availability and Facility Size

- Understand wastewater availability given increased water conservation and significant variation (seasonal/annual)
- Drought = less wastewater available
- Expansion of the non-potable system (SBWR) will impact wastewater availability for potable reuse



Project Considerations

Water Utilization

- Understand where and how potable reuse facility will be connected to the water supply system and infrastructure needs
- Understand water supply needs (dry year vs. wet year)
- Meet blending requirements

Project Considerations

Reverse Osmosis Concentrate Management

Ensure Reverse Osmosis Concentrate management in an environmentally responsible manner

Exploring Nature Based Solutions: Horizontal Levee, Floating Wetlands and engineering options

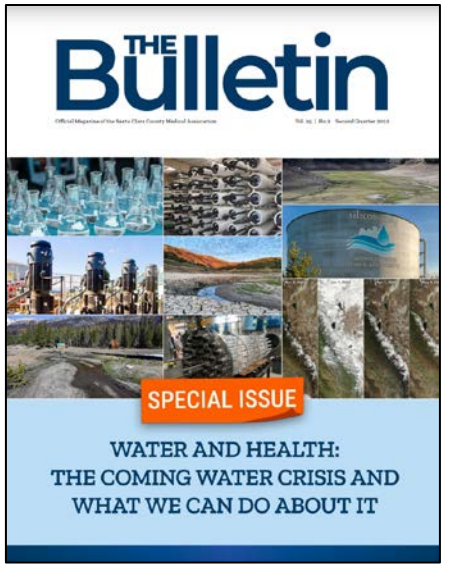
Project Considerations

Potable Reuse Outreach – public support

Community Events & Presentations

Public tours and private tours

Stakeholder Endorsements



Inclusive & Equitable Outreach

Project Considerations

Institutional Arrangements

- Land Lease
- Wastewater Delivery Agreement
- Direct Potable Reuse Responsible Agency
- Private Activity Analysis
- Operations and Maintenance
- San Francisco Public Utilities Commission Collaboration

Next Steps and Discussion Points

- **Confirm support for pursuing a joint project to meet local water supply needs, including a demonstration and full-scale project that is the largest size practicable**
- **Confirm support for the development of a feasibility study for the full-scale project**
  - Valley Water awarded a USBR WaterSMART grant for more than $380,000 for a collaborative study with the cities
  - Feasibility study and agreements required for future construction grant funding
  - Valley Water funding agreement for City staff support ($100K)
- **Confirm support for the development of land lease and minimum wastewater delivery within two years**
- **Confirm support for a coordinated public outreach program**
- **Twice a year or as needed updates to JRWPAC**