Overview of the Nutrient Watershed Permit

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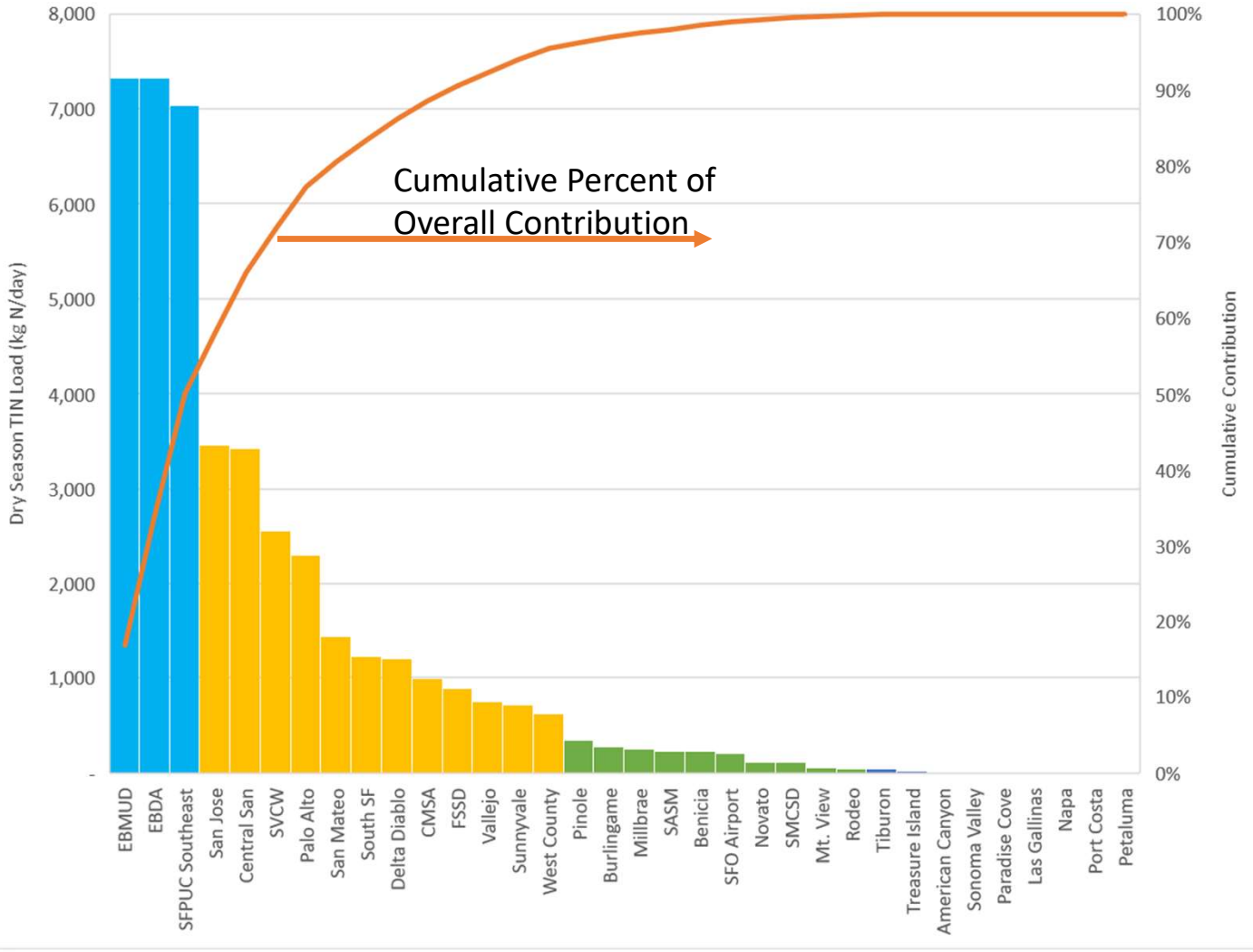
April 29, 2025

The Nexus Between Nutrient Removal Requirements and Water Recycling

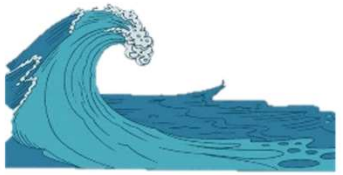
40 POTWs discharge **86% of dry season nitrogen to SF Bay**



The SF Bay has historically been resilient to nutrients

1. High turbidity blocks the light phytoplankton needs to grow

2. Strong tidal mixing reduces nutrient concentrations



3. Filter-feeding clams reduces phytoplankton concentrations

San Francisco Chronicle

Poop and pee cause algae blooms in S.F. Bay. Water agencies will spend $11 billion to fix the problem

History of the Nutrient Watershed Permit

#1: **2014**

- Monitoring and Reporting
- Support for Science
- **Nutrient Reduction via Optimization and Upgrade Study**

#2: **2019**

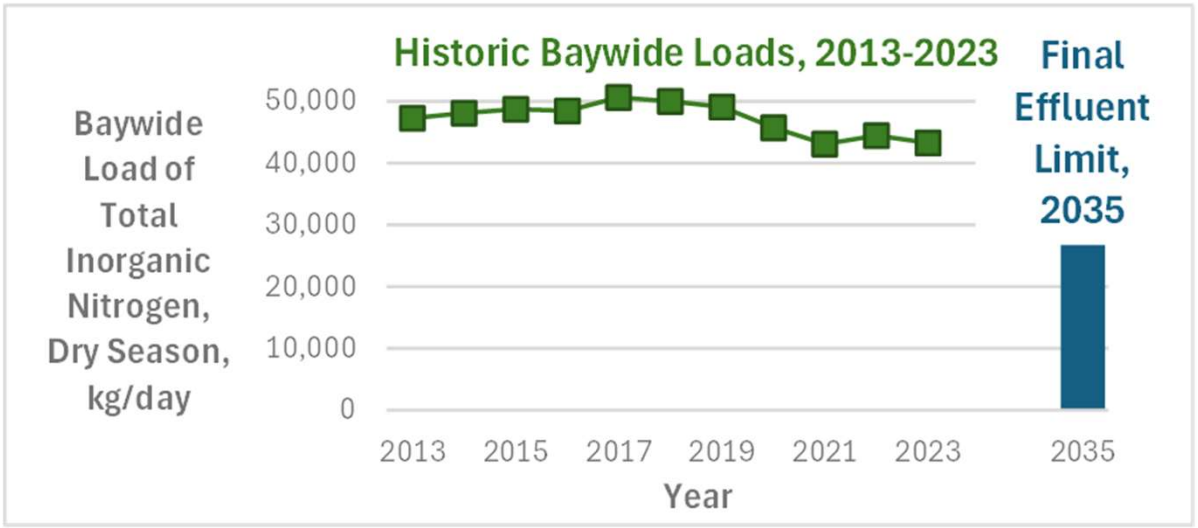
- Monitoring and Reporting
- Support for Science
- **Nutrient Reduction via Recycled Water and NBS Studies**

#3: **2024**

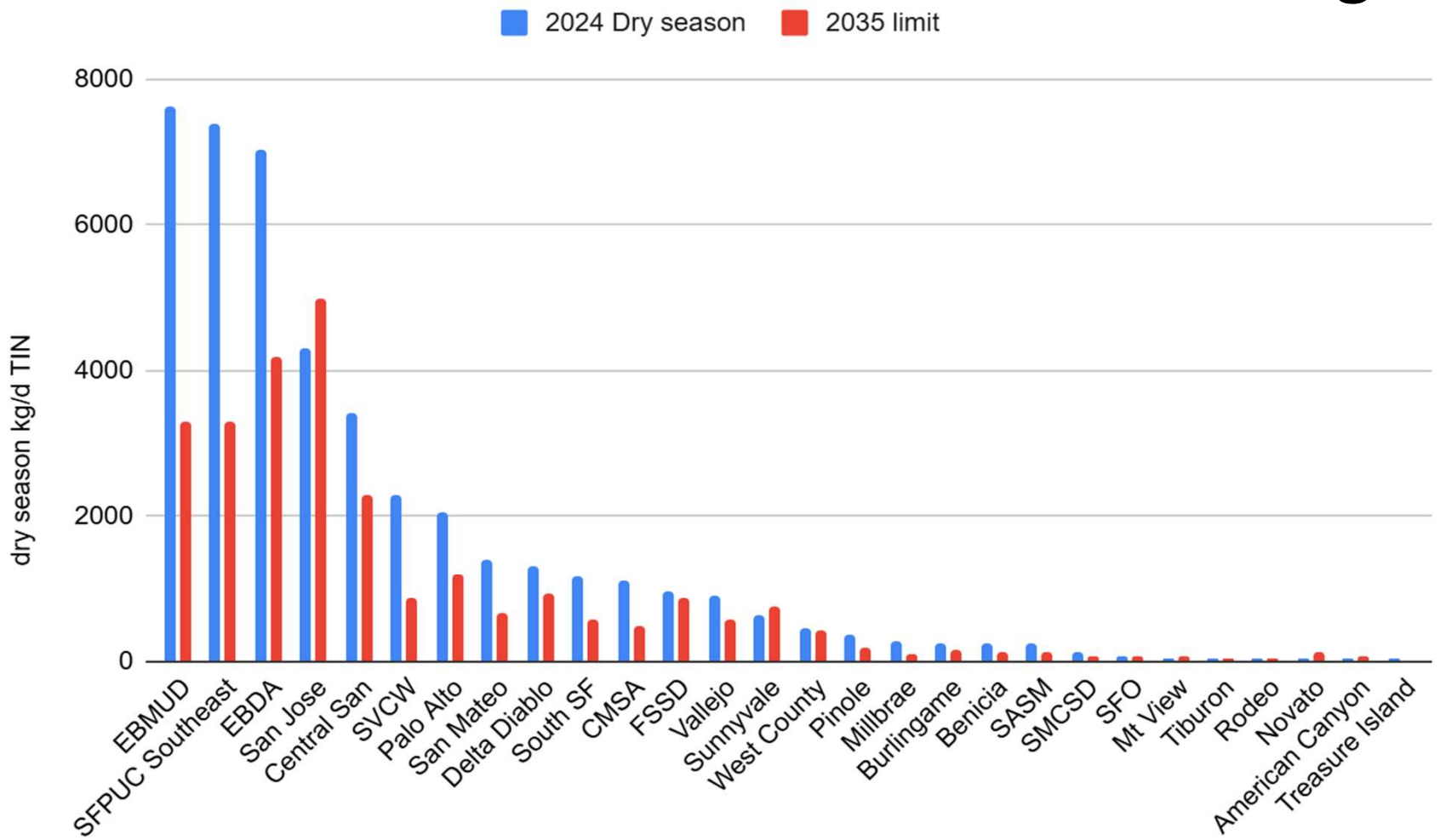
- Monitoring and Reporting
- Support for Science
- **Regional Planning**
- **Load Limitations**
- **Compliance Milestone Reporting**

Third Watershed Permit adopted July 10, 2024

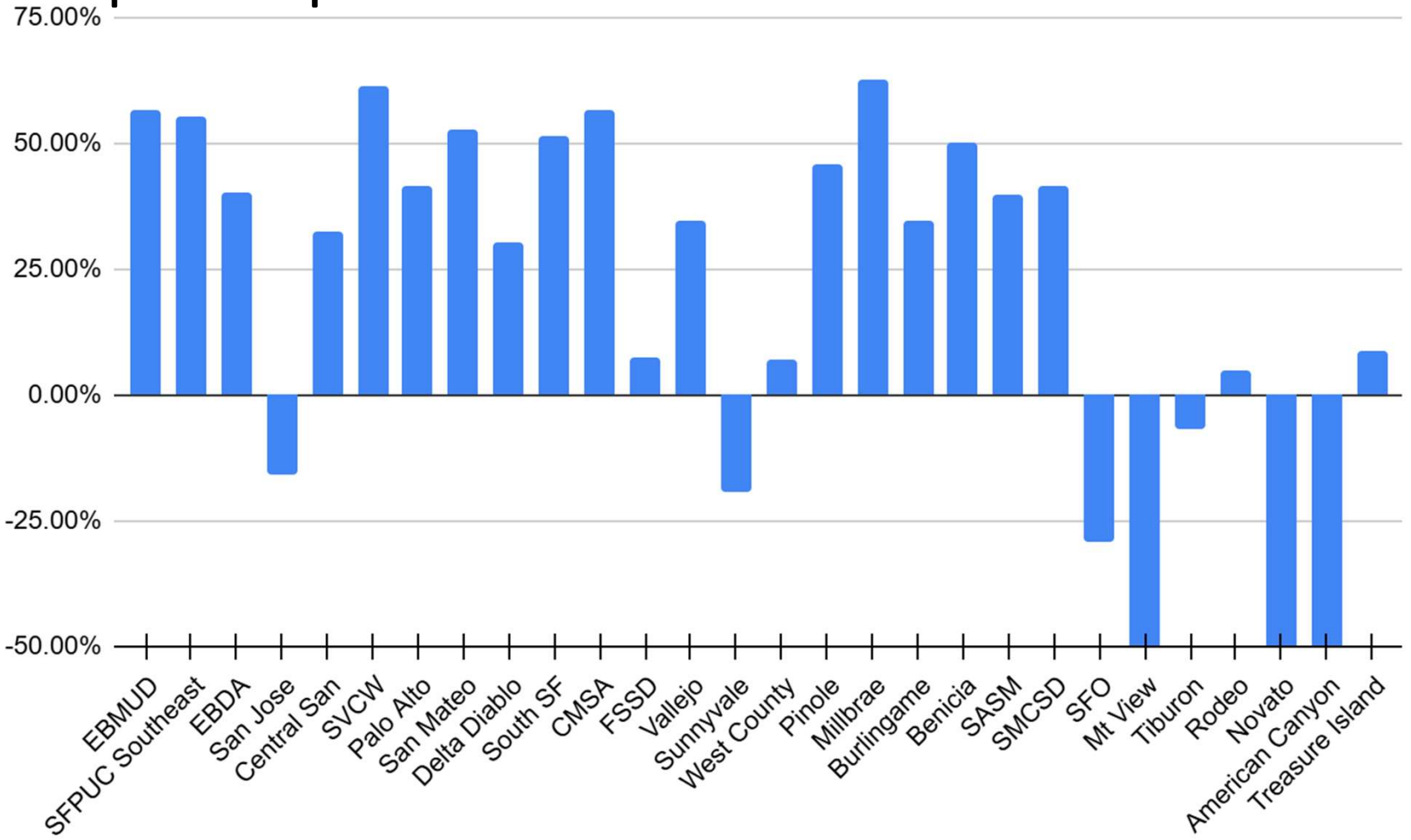
- Requires **40%** **aggregate dry season** load reduction
- Apportioned based on current performance – load limits calculated by multiplying effluent flow by **20.5 mg/L** TIN
- **10-year** compliance schedule
- Allows nitrogen trading
- Recognition that early actors, projects with multiple benefits and others will need more time – **Water Board working on a Basin Plan Amendment to provide extended compliance schedules for some projects**



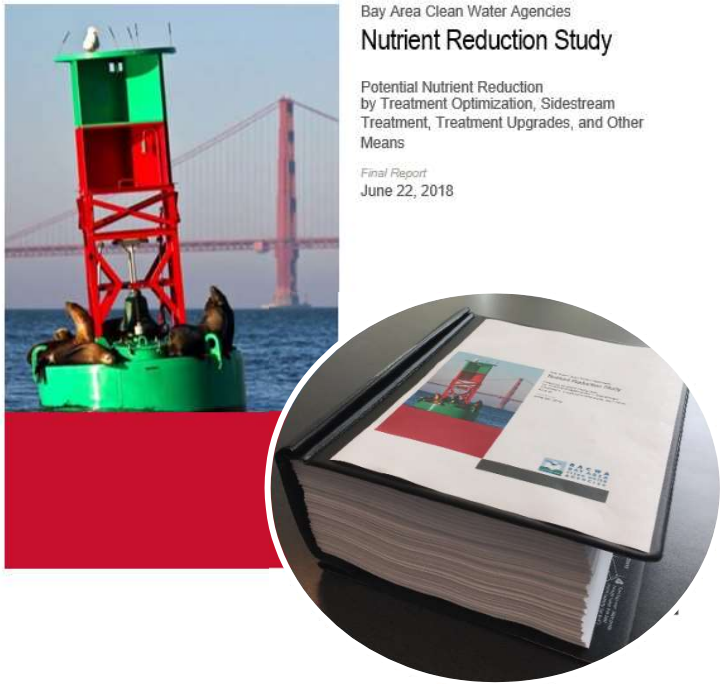
Permit load reduction allocation across agencies



Required percent reduction from 2024 loads

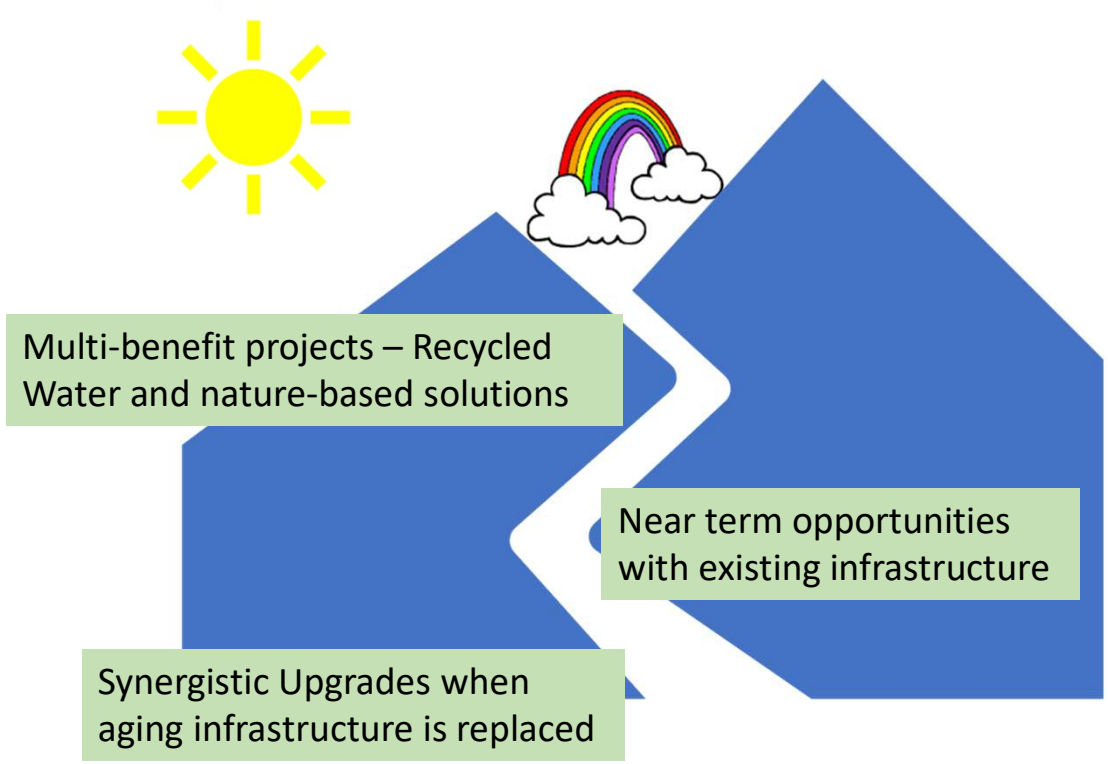


Cost estimates for regional nutrient reduction from 1st Watershed Permit



Strategy	Total N Load Reduction to the Bay	Total Present Value for Total N Load Reduction to the Bay ($ Mil in 2023)
Optimization	**7%**	**$200 M**
Sidestream Treatment	**19%**	**$870 M**
Upgrade Level 2 (15 mg N/L)	**57%**	**$10.8 B**
Upgrade Level 3 (6 mg N/L)	**82%**	**$13.0 B**

BACWA's members are planning a mixed approach to nutrient reduction



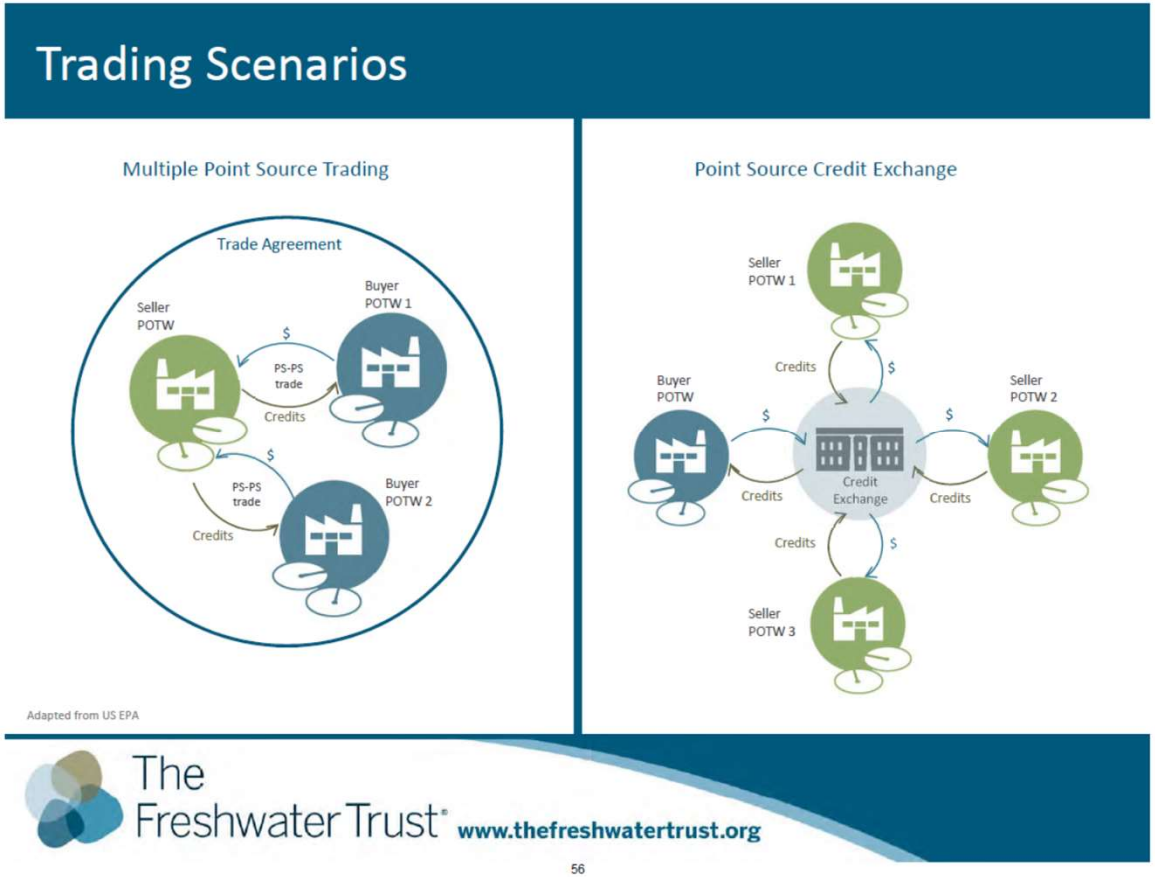
Identification of alternatives for each agency were submitted to the Water Board on April 1, 2025.

Benefits of regional planning

- Forecast regional projects to chart path to Baywide compliance and to identify opportunities to collaborate
- Lay out construction schedules to inform industry
- Communicate about costs and rate/affordability impacts
- Compile information to support Water Board's Basin Plan Amendment to provide extended compliance schedules
- Inform Bay Area Air District to allow them to allocate permitting resources
- Develop information to support trading framework

How can trading support recycled water?

- Allow agencies to fill in the gap between TIN reduction via RW demand and TIN limits
- Additional revenue stream for decreasing TIN below limits through RW
- Tool for providing a value for TIN removal to use in interagency recycled water agreements



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More info:

https://bacwa.org/nutrients-2/

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