

San Francisco Bay Water Quality Trading Feasibility Assessment

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Limitations & Acknowledgments

Limitations

This initial assessment evaluated the viability of a WQT program and is intended to inform permit compliance strategies. A trading framework will be developed in subsequent work.

Acknowledgment

We are grateful to **SFEI** and **HDR** for collaborating and providing critical information. However, interpretation of information was done by TFT and any resulting errors, if present, are TFT's alone.

Topline for San Francisco Bay WQT

- WQT is viable in SF Bay
- Trading is:
 - Consistent with permit
 - Provides flexible compliance pathways
 - POTWs need
 - Enables investment where it has the most impact
- Need to move fast

Steps to Deployment

Key Dates & Framework Development Milestones

POTW Engagement	January – March 2026
Permit: Alternatives Analysis Due	April 1, 2026
Technical Analysis and Vetting	January – June 2026
WQT Framework to Water Board	July 2026
Finalize WQT Framework	September 2026
Enable Management Systems	January 2027
Launch WQT Program	February 2027
Permit: Compliance Plan Due	April 1, 2027
IMPLEMENT PROGRAM (2027-2030), Consider NPS Credits	
REFINE PROGRAM (2031-2034)	

Components of a WQT Framework

WQT is customizable. Many options for program design.

- Participation Eligibility
- Credit Characteristics
- Credit Quantification & Baseline
- Trading Area
- Transactional Mechanics
- Trading Ratios & Reserve Pool
- Tracking & Reporting
- Incentives for Early Participants
- Adaptive Management



Bottomline Requirements

Economically Viable, Legally Permissible, Scientifically Defensible

Initial Feasibility Analysis

What we considered:

- Is there a need for WQT?
- Viable credit supply and demand?
- Is there science to support analysis?
- Trading area sufficient to support market?
- Credit Price?

Checking for Dealbreakers

Economically Viable, Legally Permissible, Scientifically Defensible

BACWA Member Perspectives

15 meetings with 25 utilities between August and December

- 100% Attendance Rate from Large POTWs (12 of 12)
- 76% Attendance Rate from Medium/Small POTWs (13 of 17)

“We are making decisions now . . . when will WQT be available?”

“I’m holding my excess reductions as an insurance buffer.”

“What if I only need credits for a short period of time?”

“What if I buy credits and the seller doesn’t deliver?”

“How much do credits cost?”

We Heard: *“We are interested, but we need details fast to include WQT as part of a compliance strategy.”*

WQT is a desired alternative. Move Now.

Is there a Need? POTW Compliance Pathways

**TFT Interpretation from Compliance Plans, Courtesy of HDR*

~35% of needed reductions are "Unknown" or "Uncertain".*

Likelihood of Meeting Final Effluent Limit	Sum Final Effluent Limit Total Inorganic Nitrogen (kg/day) [2]
Certain	7006.20
Mostly Certain	3048.00
Somewhat Certain	6500.00
Uncertain	4649.00
Unknown	5480.00
Grand Total	26683.20

POTW April 1, 2026
Deadline for
Alternatives Analysis.

*6,600 kg/day of 17,850
kg/day = ~35%

There is a Need – Keep WQT on the Table

Next: Support POTWs to include WQT in April 2026 alternatives.

SFEI Research – Usable Now For WQT

*As Interpreted by TFT

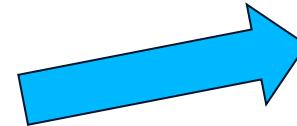
Nitrogen loading and the relation to HABs is difficult to predict.

SFEI Biogeochemical Model:

- Simulates nutrients (loads, transport, cycling); phytoplankton production; oxygen cycling.
- HAB model development underway.
- Water quality results predicted at 100-200m resolution.

TIN Source Apportionment Model:

- Allows for estimating zones of influence (ZOI) and relative contributions to TIN
- Scenarios for ZOI, subembayments, and relative contributions useful for WQT scenarios.
- V1 (Dec 2025). Development in CY2026 Q1-Q2



Source: SFEI

SFEI has Tools to Consider WQT

Next: Collaborate with SFEI to consider trading scenarios.

Trading Areas & Ratios

Trading throughout the Bay with minimal or no trade ratio consistent with Permit's Aggregate Mass Load Limit approach.

- The permit considers Aggregate Mass, not subembayment reductions.
- If WQT follows the current permit approach, trading could occur across the full Bay with no trading ratios for attenuation.
- Full Bay trading maximizes buyer/seller options and facilitates robust WQT.

Full Bay Trading Appears Reasonable

Next: Confirm that full bay trading without attenuation ratios is appropriate legally and ecologically.

Cost of Credits

Information for a final cost analysis is currently incomplete

Factors Influencing Credit Price

- Cost of Treatment (\$/kg TIN)
- Market Structure and program management cost
- Attenuation factors
- Retirement pool and uncertainty buffer
- Tracking and reporting obligations
- Seller risk variables



Determined by WQT
Program Structure

Require More Information to Know Credit Price

Next: Collect cost information and define WQT program structure.

Next Steps in Trading Framework

- **POTW Support:** Provide information for compliance alternative analysis.
- **Credit Supply/Demand:** Refine analysis and create a responsive WQT Framework.
- **Science & Modeling:** Coordinate with SFEI on trading scenarios.
- **Trading Areas:** Confirm full bay trading without attenuation ratios is appropriate legally and ecologically.
- **Credit Price:** Collect treatment costs and define WQT Program.

No Dealbreakers Identified

Economically Viable, Legally Permissible, Scientifically Defensible, but WQT program development must proceed quickly to be feasible

Bottomline

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Steps to Deployment

Build, Implement, Refine

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Contact

If you have questions or would like to discuss WQT as it could relate to your specific circumstances, please contact:

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