2 - PROJECT SUMMARY

Clear Lake is a vital cultural, ecological, and economic resource for Lake County and Tribal communities. Despite decades of watershed management and a nutrient TMDL to reduce external loading, persistent harmful algal blooms continue to degrade water quality, ecosystem function, and regional economic opportunities. Research has shown that internal phosphorus (P) loading from lake sediments is a key driver promoting and sustaining these blooms.

To address this, the Clear Lake Blue Ribbon Committee approved an in-lake phosphorus management approach utilizing EutroSORB® G, a 10% lanthanum-modified bentonite proven to permanently bind P in sediments. This project represents the first step toward large-scale restoration by combining scientific assessment, community engagement, and a field-scale demonstration.

Project Objectives and Deliverables

Task 1. Lake-Wide Sediment Assessment: Quantify sediment P fractions and characteristics to determine the magnitude and distribution of releasable sediment P to inform dosing and long-term lake management planning.

1. Sampling: Collect and analyze water profiles at 18 locations for total P and free-reactive P. Collect sediment samples and cores at 66 locations across Clear Lake. Conduct laboratory P fractionation and analyze sediment characteristics.
2. Community Outreach & Media: Host a public meeting and produce an informational video to communicate purpose, methods, and benefits to the community.
3. Data Analysis & Reporting: Analyze data to quantify releasable sediment P across Clear Lake. Share quarterly progress updates.
4. Deliverables: Public sediment dataset; quarterly updates.

Task 2. Field Demonstration of EutroSORB G: Demonstrate P binding effectiveness in Clear Lake sediments and provide data to refine full-lake implementation planning.

1. Application: Apply ~725,000 lbs. of EutroSORB G over 400-600 acres in the Upper Arm of Clear Lake to permanently bind up to 14,500 lbs. of releasable sediment P.
2. Sampling: Collect and analyze water samples for dissolved lanthanum for 4 events (pre, during, 1 week post-treatment, 3 months post treatment). Collect surficial sediments and cores at 12 sites for 3 events (pre, 3 months post-treatment, and 1 year post-treatment). Conduct laboratory P fractionation and analyze sediment characteristics.
3. Community Outreach & Media: Host a public meeting and produce an informational video to communicate implementation and results to the community.
4. Data Analysis & Reporting: Analyze project data to evaluate treatment effectiveness and site-specific recommendations for full scale implementation. Share quarterly progress updates and a final report summarizing results.
5. Deliverables: Monitoring dataset; quarterly updates; final technical report.

Task 3. Community Outreach & Media: Meetings and digital content to engage local stakeholders of the project and outcomes.

1. Community Outreach: Host public meetings to engage stakeholders, communicate project implementation plans and results with the community.
2. Media: Creation of print materials and project videos to visually communicate science-based information from the project for general audience and tribal community members.
3. Deliverables: public meetings, print materials, project videos.

Expected Outcomes

- Quantification of releasable sediment P and management needs for Clear Lake.
- Demonstration of a scalable, environmentally safe method to permanently bind P which reduces internal P loading.
- Baseline data and monitoring framework to inform future lake management, modeling, and restoration.
- Enhanced community engagement in science-based stewardship of Clear Lake.

Long-Term Vision

This project establishes the scientific and community foundation for a multi-year internal P reduction program that, alongside continued watershed work, will restore ecological function, cultural uses, and economic value to Clear Lake.