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Sweetwater Reservoir Floating Photovoltaic Project Next Steps

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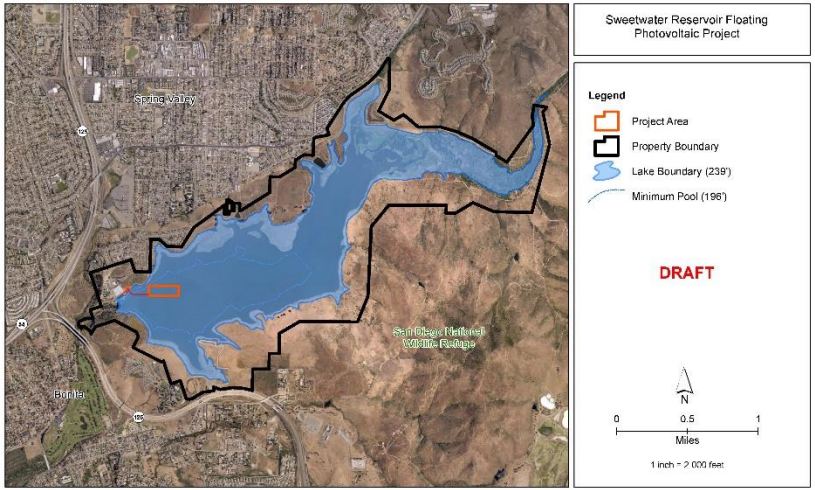
Introduction

- SWA is studying the feasibility of a floating photovoltaic (FPV) system at Sweetwater Reservoir
- The Proposed FPV system would reduce approximately 66% of SWA's carbon footprint, and result in approximately $500,000 of savings to SWA, annually
- In collaboration with Noria Energy, two potential Design Alternatives and a Pilot Project were analyzed by WSP USA Environment and Infrastructure
- SWA staff is recommending the preparation of a CEQA-compliant Environmental Impact Report for the Proposed Project



Background

Benefits of Renewable Energy

- SWA and State of California sustainability goals
- Reducing carbon emissions from SWA's Operations
- Lowering energy costs
- Energy independence
- Clean energy job creation
- Environmental justice
- Cleaner air and water
- Climate change mitigation and adaptation
- Reduce resilience on fossil fuels
- Good for the planet and future generations!

Background (cont.)

Why Floating Solar at Sweetwater Reservoir?

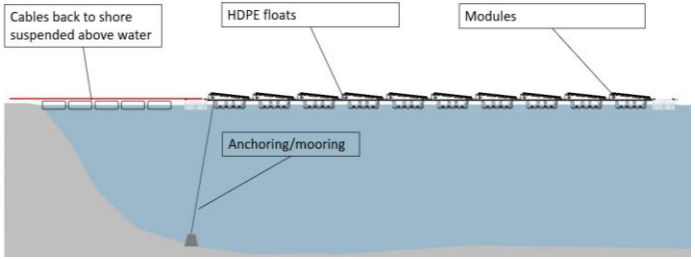
- FPV systems don't require the conversion of sensitive habitats or other undeveloped real estate into solar farms
- Depending on water levels, only **1.3% to 3.6%** of the surface area of the reservoir would be dedicated to the FPV system
- FPVs benefit from the water below as it provides a cooling effect, increasing efficiency of panels by approximately 15%
- May assist reducing evaporation ("water losses") within the covered area

Design Alternative 1 from the Sweetwater Summit Regional Park Community Room. Due to the elevation of the community room, the proposed FPV system is visible in the background. However, sweeping views of the lake and the hilly topography in the background remain.

Project Components

Design Alternative 1 – Rectangular FPV system

- Approximately 9.4 acres of FPVs
- FPVs to be attached to a buoyant HDPE racking system
- Multiple concrete-block anchors, to secure FPV system
- Cables back to shore, as needed, to secure FPV system
- Electrical conduits would be on floats, then buried (once above 239’ elevation)
- No digging, drilling, or other disturbance of the reservoir floor would be required



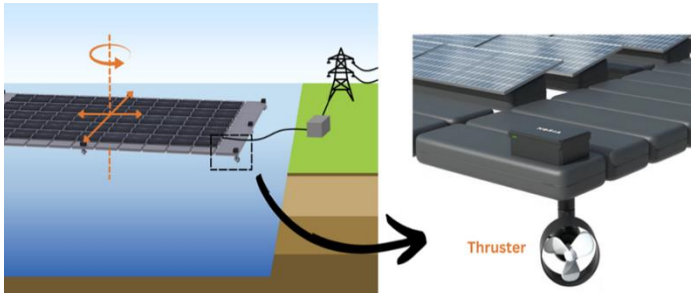
Project Components (cont.)

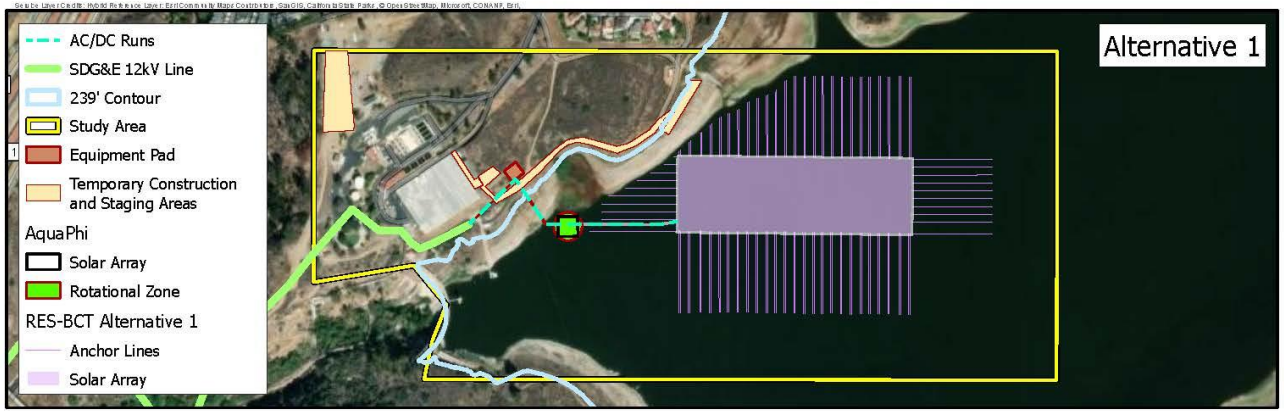
Design Alternative 2 - AquaPhi™ or Similar Rotating Technology

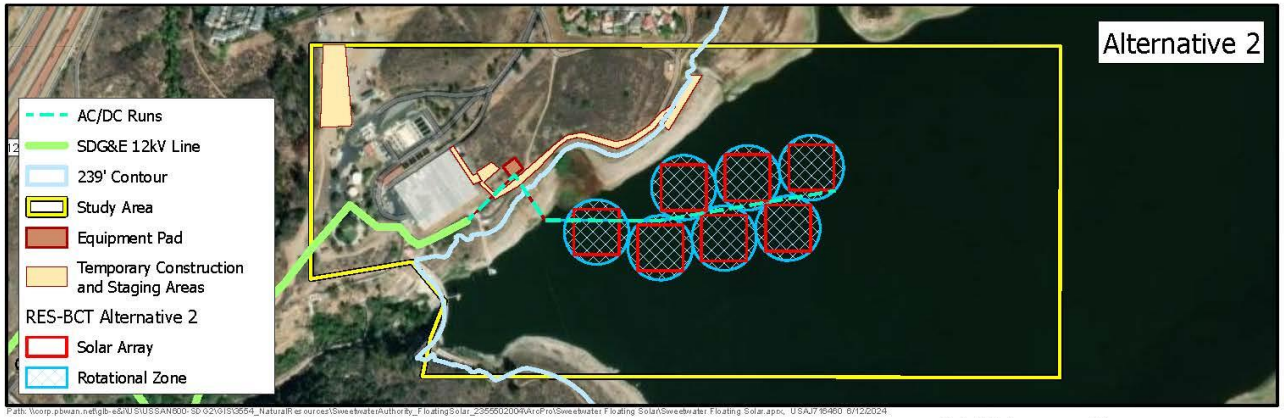
- Seven islands of rotating FPV systems, approximately 7.4 acres of FPVs
- Rotate to track the sun, producing approximately 17% more energy
- Utilizes autonomous thruster, replacing the need of traditional anchoring and mooring
- Two anchors holding each island to the reservoir ground

AquaPhi™ or Similar Technology Pilot

- A pilot 0.2-acre rotating FPV system







1 inch =600 feet
0 300 600 Feet

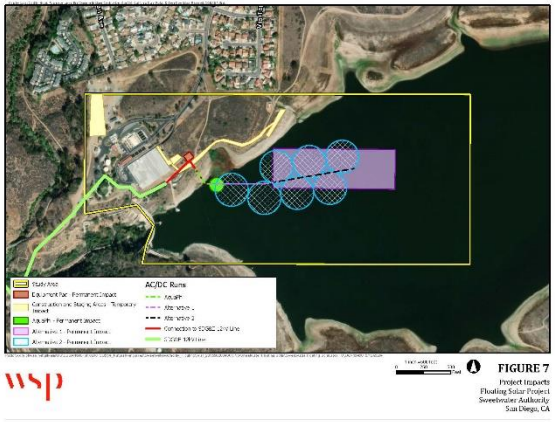
FIGURE 2

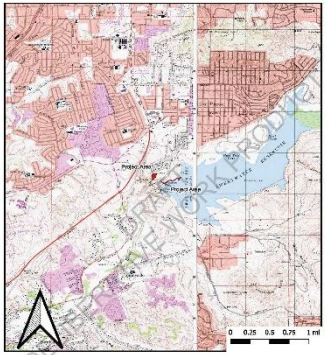
Project Overview
Floating Solar Project
Sweetwater Authority
San Diego, CA

Environmental Assessment

- Draft Initial Study
- Draft Aesthetics and Visual Resources Study
- Draft Biological Resources Technical Report
- Draft Cultural Resources Assessment
- Draft Water Quality Memorandum

Existing paved surfaces or previously disturbed areas would be used for construction staging and material storage during construction. A paved surface lot outside of the Perdue WTP would be used for material storage as well as dirt and paved roadways running along the shoreline. A temporary launch ramp would also be placed along the shoreline of the reservoir.





Environmental Assessment (cont.)

WSP identified environmental effects:

Biological Resources

Potential impacts to birds (avian collisions, electrocution, and entrapment), vegetation communities, and waters

- Mitigation measures identified, including avoiding using guy wires to the extent practicable, bird mortality surveys, spacing panels to prevent entrapment, installation of bird deterrents
- Mitigate aquatic resource loss at a 1:1 ratio through restoration or enhancement
- Mitigate vegetation losses at a ratio agreed with wildlife agencies

Cultural Resources / Tribal Resources

Potential impacts to archaeological and tribal resources

- Mitigation measures identified, including coordination and monitoring during construction activities

Aesthetics

Based on WSP assessment, the Draft Initial Study identified “less than significant impacts” to Aesthetics

Environmental Assessment (cont.)

Water Quality / Hydrology

Take a conservative approach and apply the following mitigation measures to ensure there are no impacts to water quality:

- Comply with NSF-61 Requirements when applicable
- Use PFAS-free solar panels
- Develop a Water Quality Monitoring Plan
- Conduct Bio-foul and Quagga Mussel inspections
- Bird dropping mitigation (deterrent/exclusion devices, regular cleaning, etc.)
- Implement a Maintenance and Monitoring Program
- Prepare and implement a Water Pollution Control Plan during construction
- Ensure proper engineering of anchoring devices and other facilities

Fiscal Impact

During FY 2023-24, WSP billed a total of $48,721.69 to Budget Expense Line 10-100-5650.

This FY 2024-25 Budget Expense Line 10-40-400-5650 includes a total of $125,000 for environmental tasks related to the Sweetwater Reservoir Floating Photovoltaic Project, and WSP is expected to bill to that expense account approximately $25,000 for services provided between July 2024 and December 2024.

Approximately an additional $100,000 would be necessary for the completion of the CEQA process. The available budget in expense line 10-40-400-5650 may be sufficient to complete an EIR; however, additional budget may be requested for the next Fiscal Year if necessary.

Options

1. Authorize the General Manager to request proposals from the Authority's on-call environmental consulting firms to assist with the preparation of an Environmental Impact Report for the Sweetwater Reservoir Floating Photovoltaic Project.

2. Authorize WSP USA Environment and Infrastructure to continue with the completion of the Initial Study and, assuming that nothing changes in terms of impact level on any of the environmental topics that would trigger the need for an Environmental Impact Report, circulate a Notice of Intent to Adopt a Mitigated Negative Declaration.

3. Other direction, as provided by the Governing Board.

Staff Recommendation

Option 1 - Authorize the General Manager to request proposals from the Authority's on-call environmental consulting firms to assist with the preparation of an Environmental Impact Report for the Sweetwater Reservoir Floating Photovoltaic Project.

Questions?