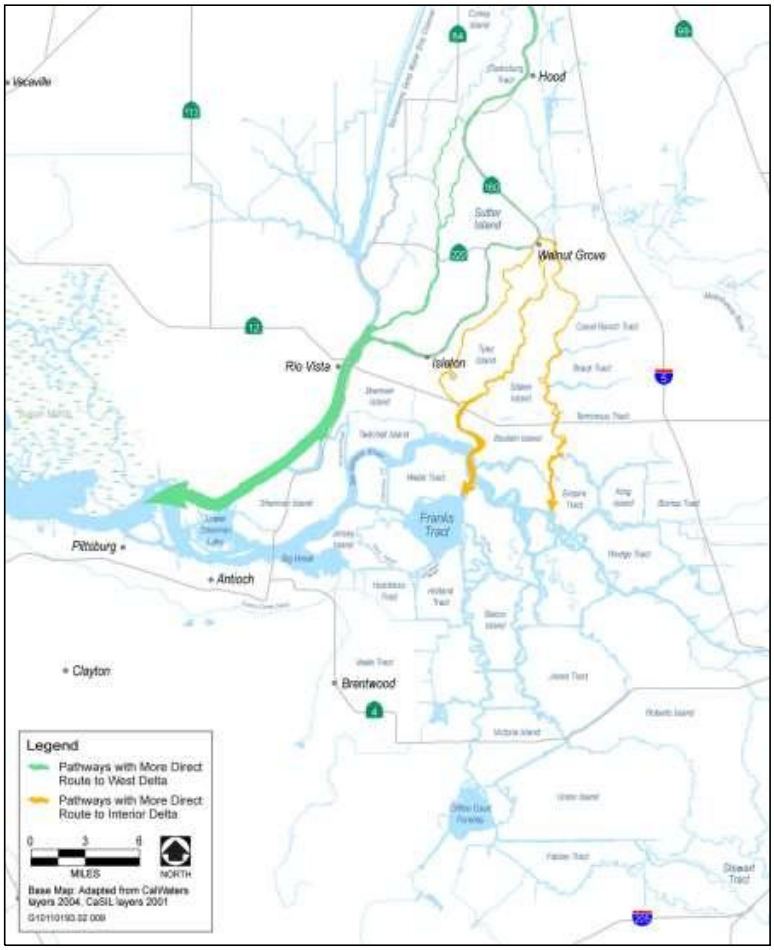
Salmon Protection Technology Study
PROJECT STATUS

DWR, Bay-Delta Office

March 2019

Background-Overview

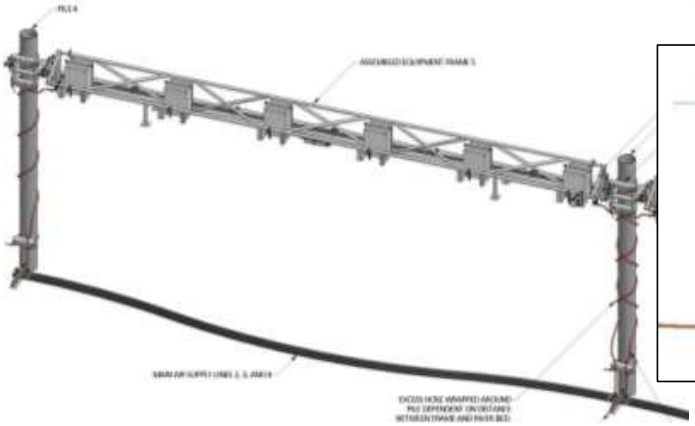


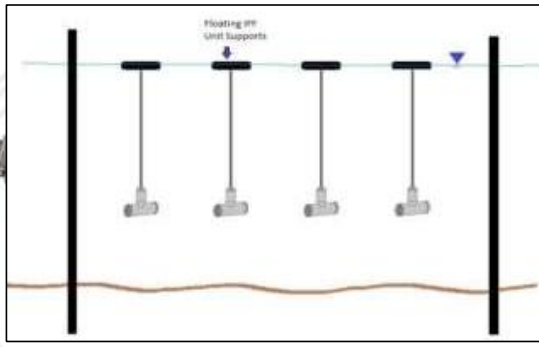
Background

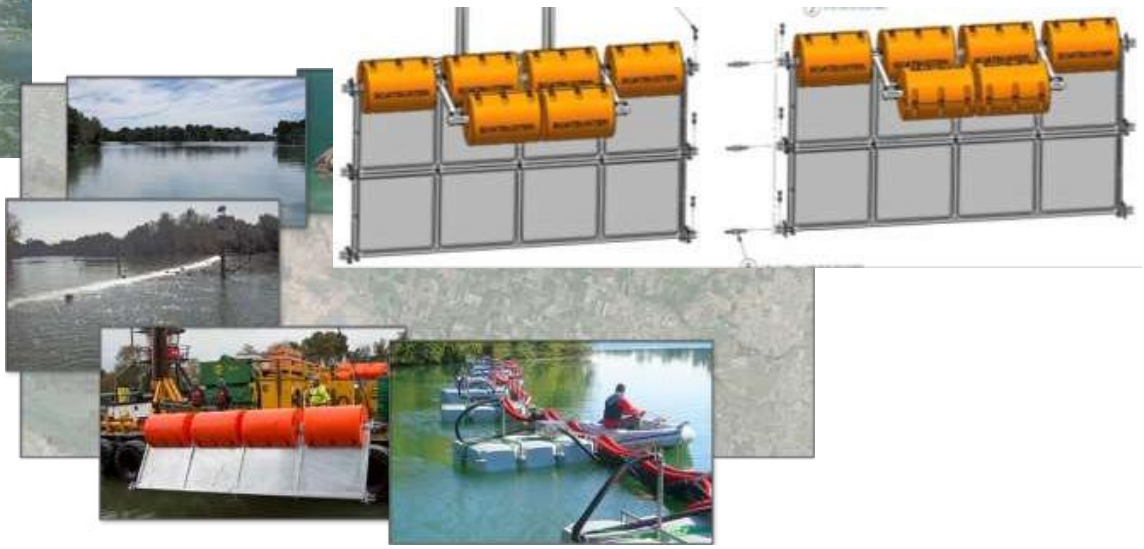
2009 NMFS BiOp RPA IV.1.3 “Engineering Solutions” Compliance Action Status

- Phase I
  - 2013 Initial Findings Report
- Phase II
  - 2011 and 2012 BAFF Study
  - 2014 FFGS Study
  - 2015 Recommended Solutions Report
- Phase III
  - Implement

Behavioral Barrier Technologies

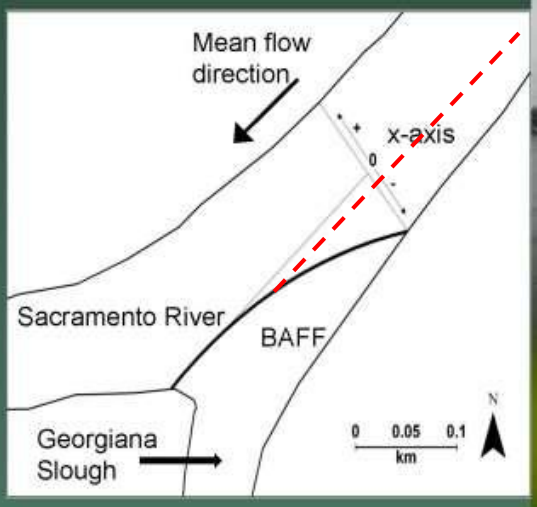






2011 and 2012 Study Results

Bioacoustic Fish Fence (BAFF)



Entraintment into Georgiana Slough:

2011: $\frac{2}{3}$ **Entrainment Reduction (22.3% Off→7.7% On)**

2012: $\frac{1}{2}$ **Entrainment Reduction (24.1% Off→11.4%On)**

USGS

2014 Results

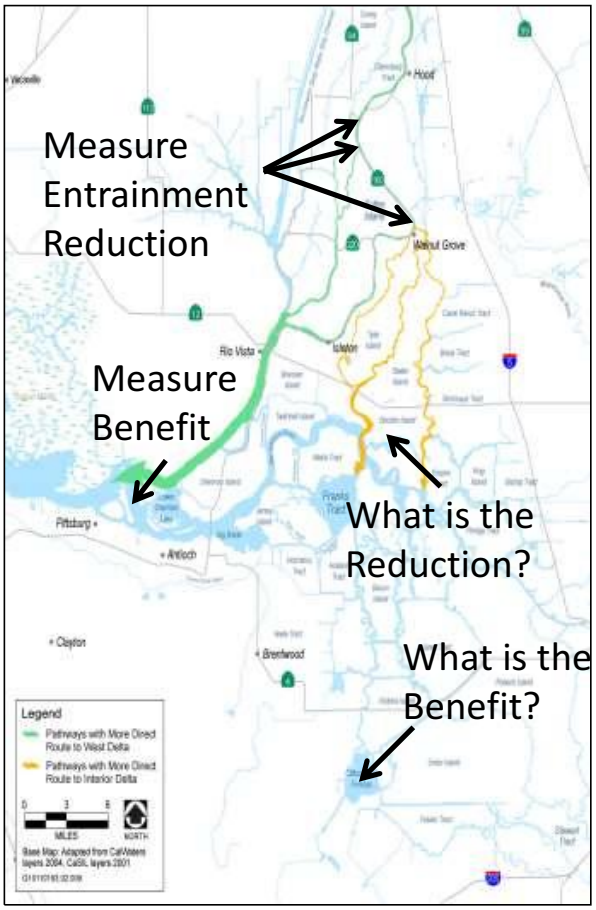
Floating Fish Guidance System (FFGS)

- 2014: 1/5 Entrainment Reduction
  - (23.9% off → 19.1% on)
  - At ~7,000-14,000 CFS
- 2014 Sacramento River was abnormally low -4,350 CFS to 21,090 CFS

2016 Project Concept Proposal

Salmon Protection Technology Study (SPTS)

- Operate behavioral barriers
  - 3 Sac River Junctions
    - Sutter Slough
    - Steamboat Slough
    - Georgiana Slough
- Minimize salmonid entrainment into the south Delta and:
  - Maximize salmonid survival to Chipps Island
  - Increase potential for SWP operational flexibility
- Project on hold 2016-2017



What has changed since 2017

- Significant improvements in salmonid behavior and survival modeling
  - Provides better:
    - Project design
    - Operation optimization
    - Benefit quantification
    - Cost justification
- USBR/NMFS began planning effort in response to Delta-WIIN
  - Only at Georgiana Slough and Delta Cross Channel (as specified by Delta-WIIN)

Status

- DWR BDO reinitiated planning activities
  - Regular team meetings with USBR staff, and updates provided to NMFS staff
  - Completed water quality modeling to assess benefit of DCC “reoperation”
    - Not feasible with current facility
    - Benefits and reoperation strategy’s should be reassessed if replacement/upgrade considered
  - Completed salmon survival modeling
    - Steamboat and Georgiana Slough salmon entrainment modification offer highest probability of increased overall survival
    - Sutter Slough-no longer considered for barrier operation without additional survival understanding/information
  - Draft Project Description
    - 5 year seasonal operation of non-physical barrier at Georgiana Slough
    - 2-4 seasonal testing periods of alternate non-physical barrier tests at Steamboat Slough (optional)

Status

- Project Cost
  - $4M Planning, Permitting, Design (Through 2019)
  - $13M Procurement, Construction (2020)
  - $8-15M/Year (installation, operation, and monitoring-range of cost depends on final/approved project design details and required adaptive management modification)

Next Steps

- Coordinate with NMFS staff to define RPA compliance activities: On-going
- Complete Draft-Final Project Description: May 2019
- Complete DWR Project Charter (Implementation): June 2019
- Initiate Project Permitting/Design Activities: June/July 2019
- Construct as early as Summer/Fall 2020
- Operate as early as January 2021

Implementation Challenges

- Permitting?
  - Pilot studies previously permitted
- Funding?
  - On-going parallel discussions between DWR/USBR on compliance cost share
- Scientific disagreements?
  - Carefully planning and analyzing implementation of non-physical barriers as long-term solution
  - Evaluating this project potential for success with overall goal for salmon survival improvement with water supply reliability benefits
  - Open to input
- Property Access Easement

Questions