M&T/Llano Seco Fish Screen Short-term/Long-term Project Post-Workshop 5 Update

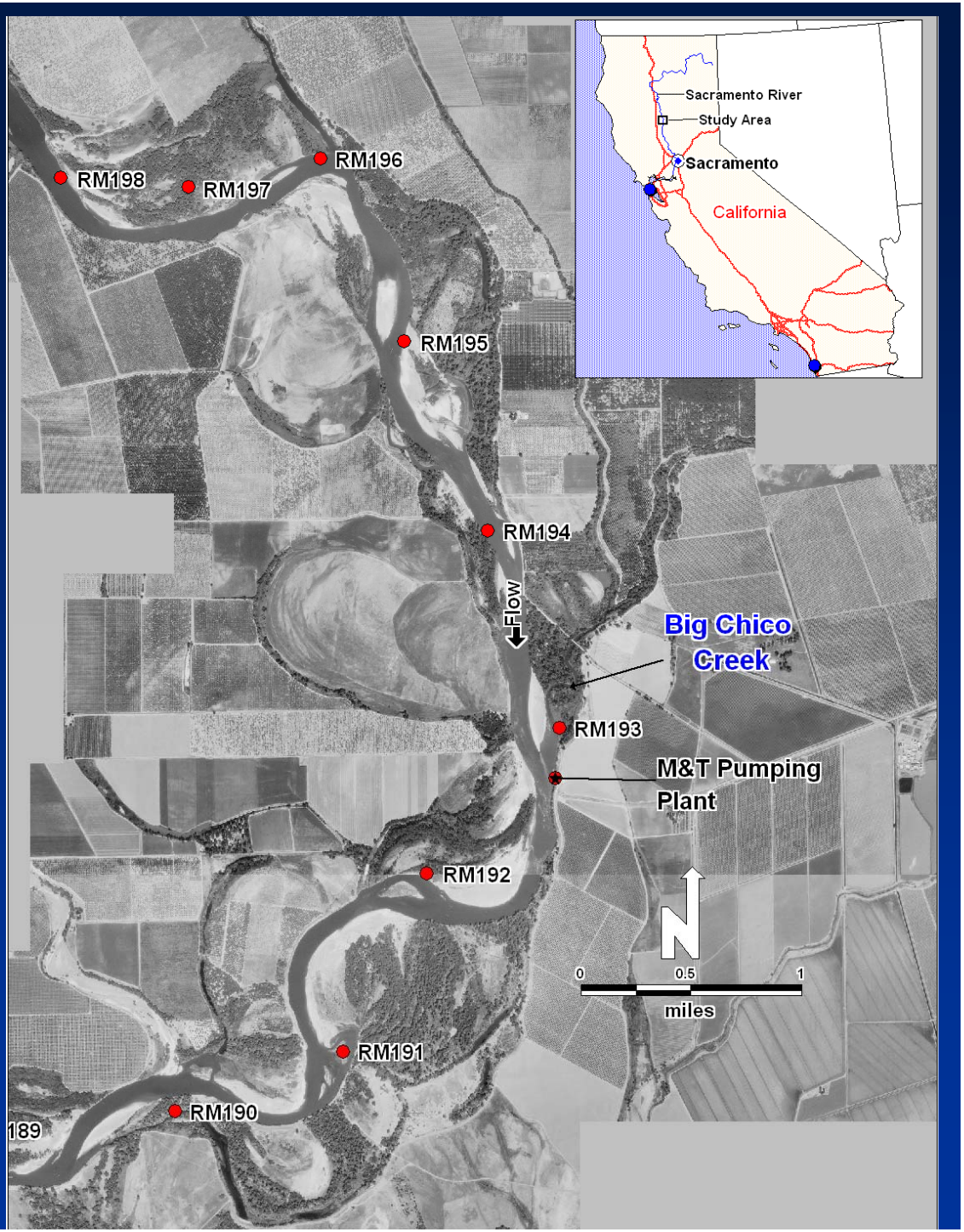
A CALFED BAY-DELTA AUTHORITY
Funded project,
Managed by
Ducks Unlimited

Mike Harvey

TETRA TECH

M&T/Llano Seco Fish Screens Project

PUMPING PLANT LOCATION RM 192.8



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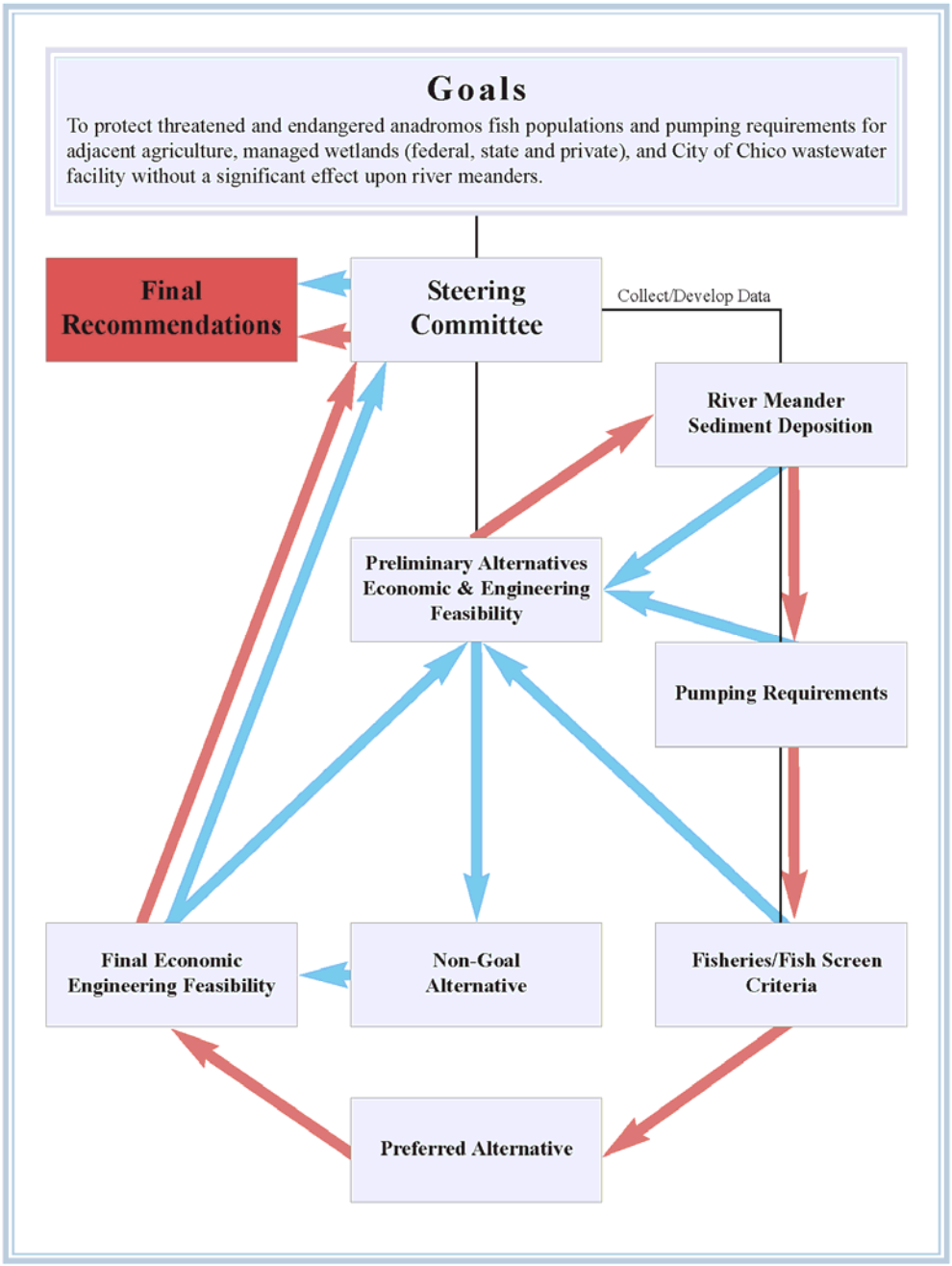
Project Conceptual Model



M&T PROBLEM

- Primarily a Fish Screen Problem
- Solutions

  1. Relax the NOAA and DFG fish screening criteria

  2. Evaluate a range of solutions that meet fish screen (in-channel) criteria or eliminate the need (out-of-channel)

CAUSES OF THE PROBLEM

- **Downstream bar migration**

  850 ft in 6 yrs (1995-2001): Rate = 140'/yr (Stillwater Sciences, 2001)

  Recent rates reduced by dredging of gravel bar (2001, 2007): 300,000 t.
- **Bank erosion and river migration**

  ~ 400 ft in 10 yrs (1996-2006)

M&T/Llano Seco Fish Screens Project

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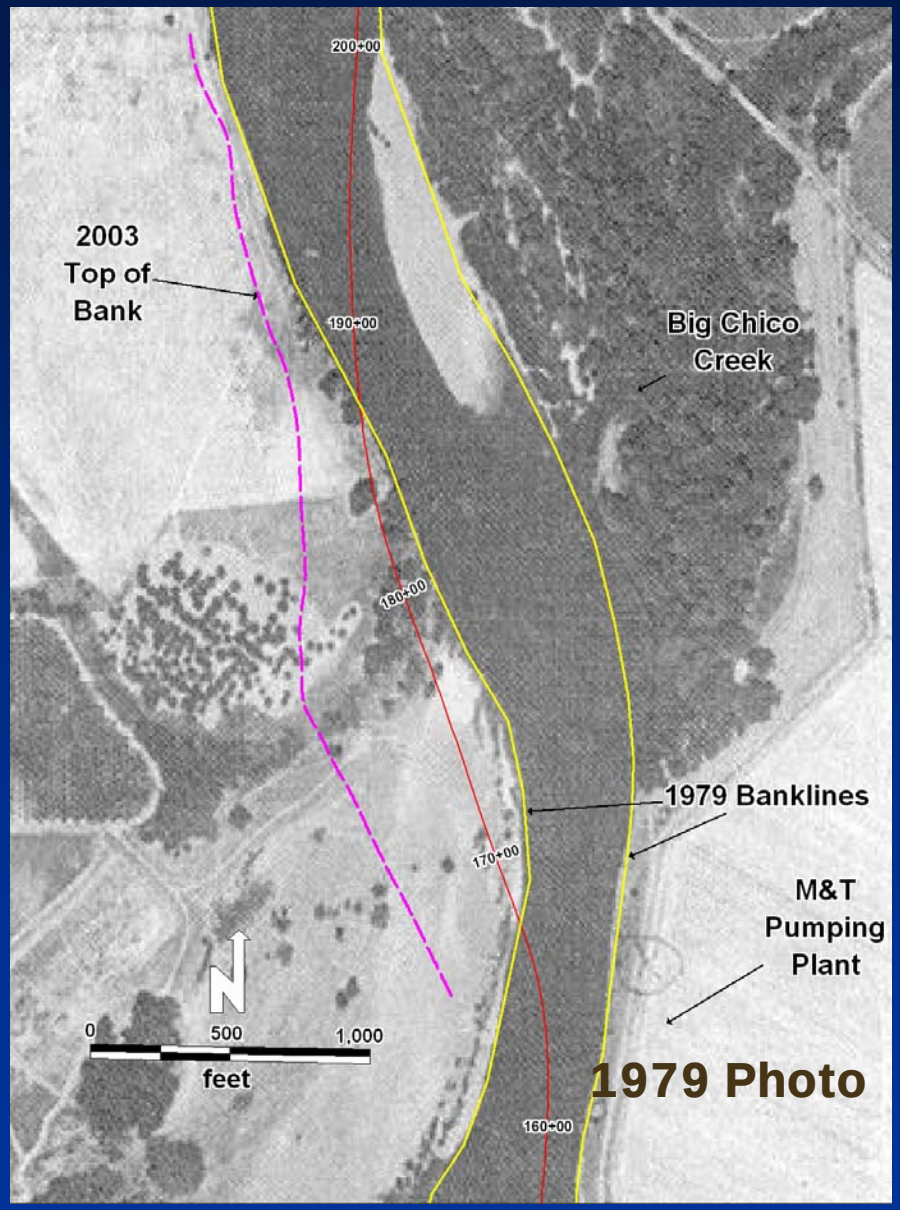
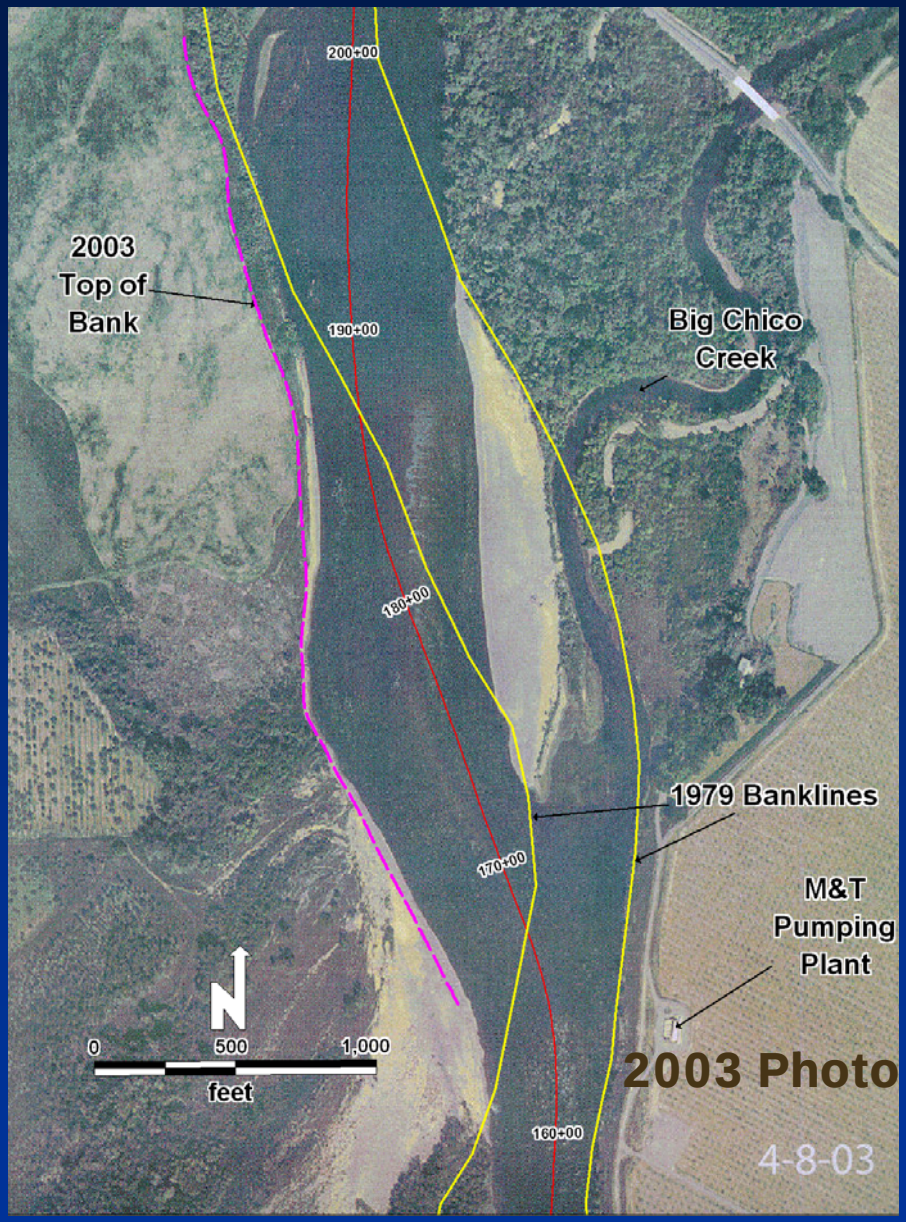
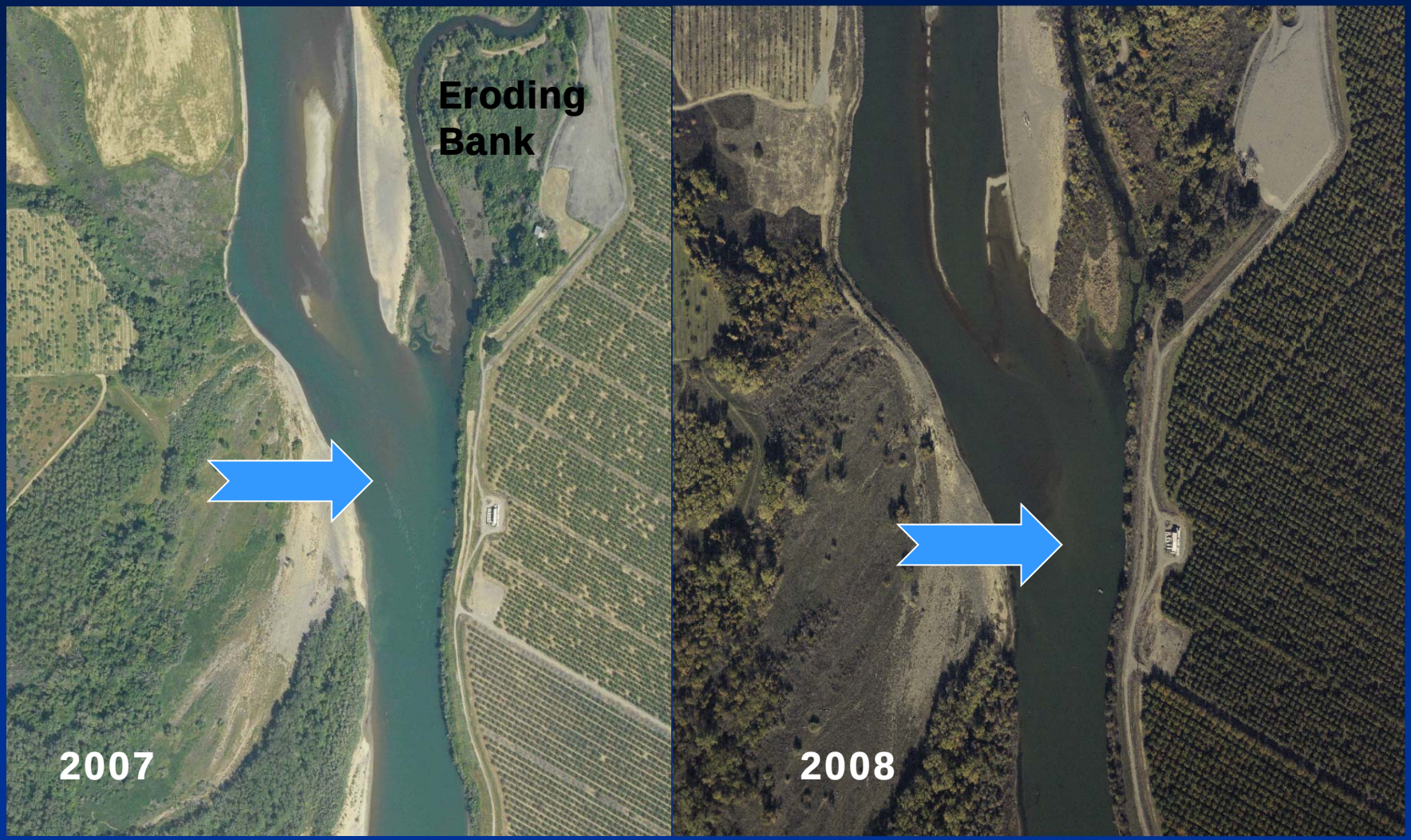
Channel Migration



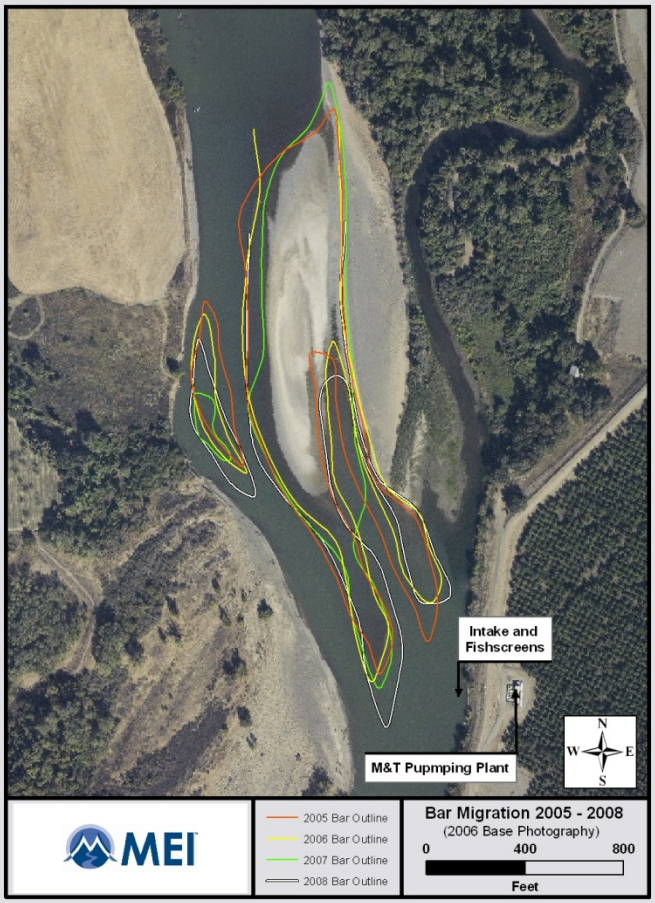


Gravel Bar 2007 and 2008 Conditions

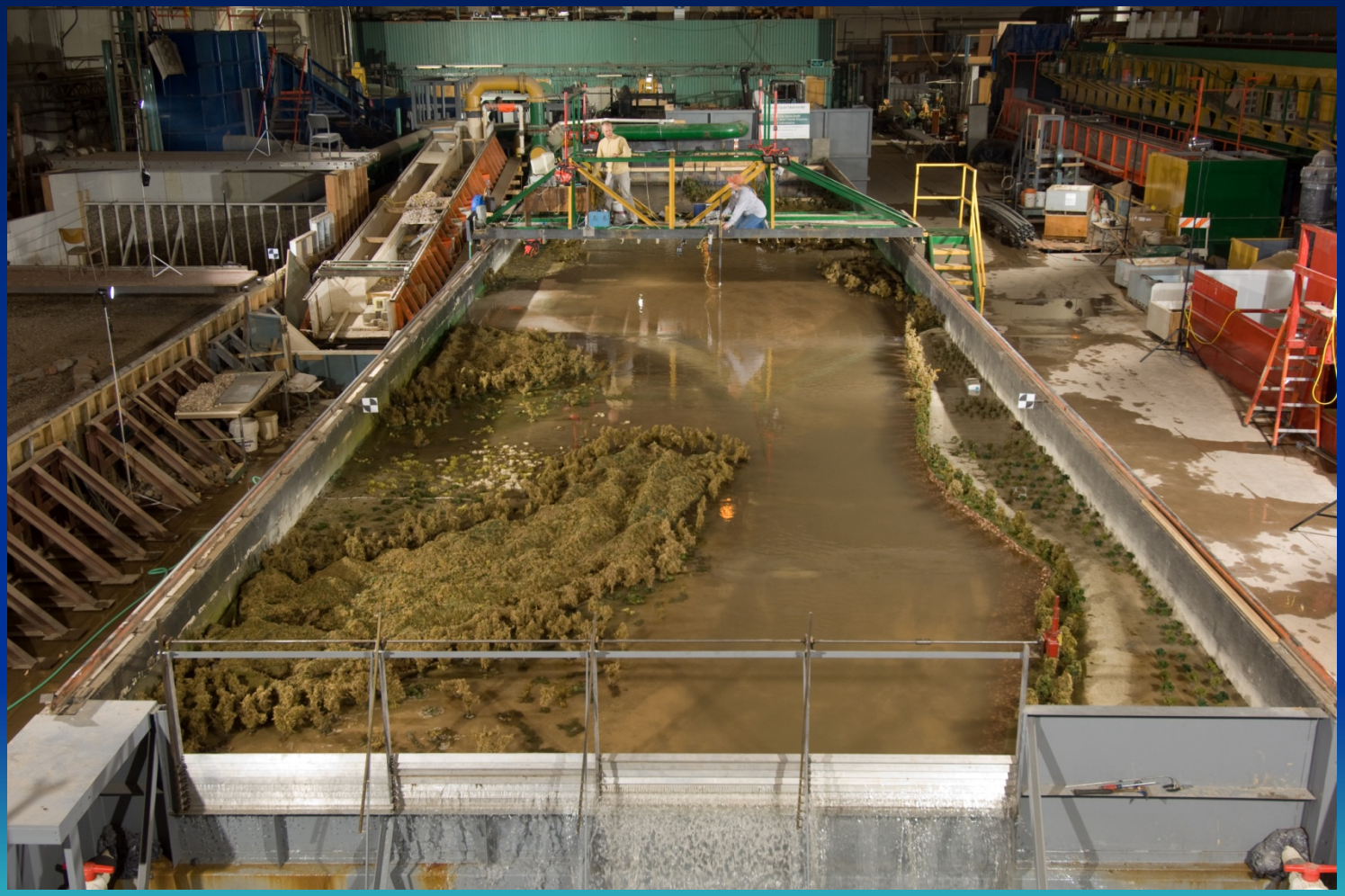


NOVEMBER 2008 GRAVEL BAR

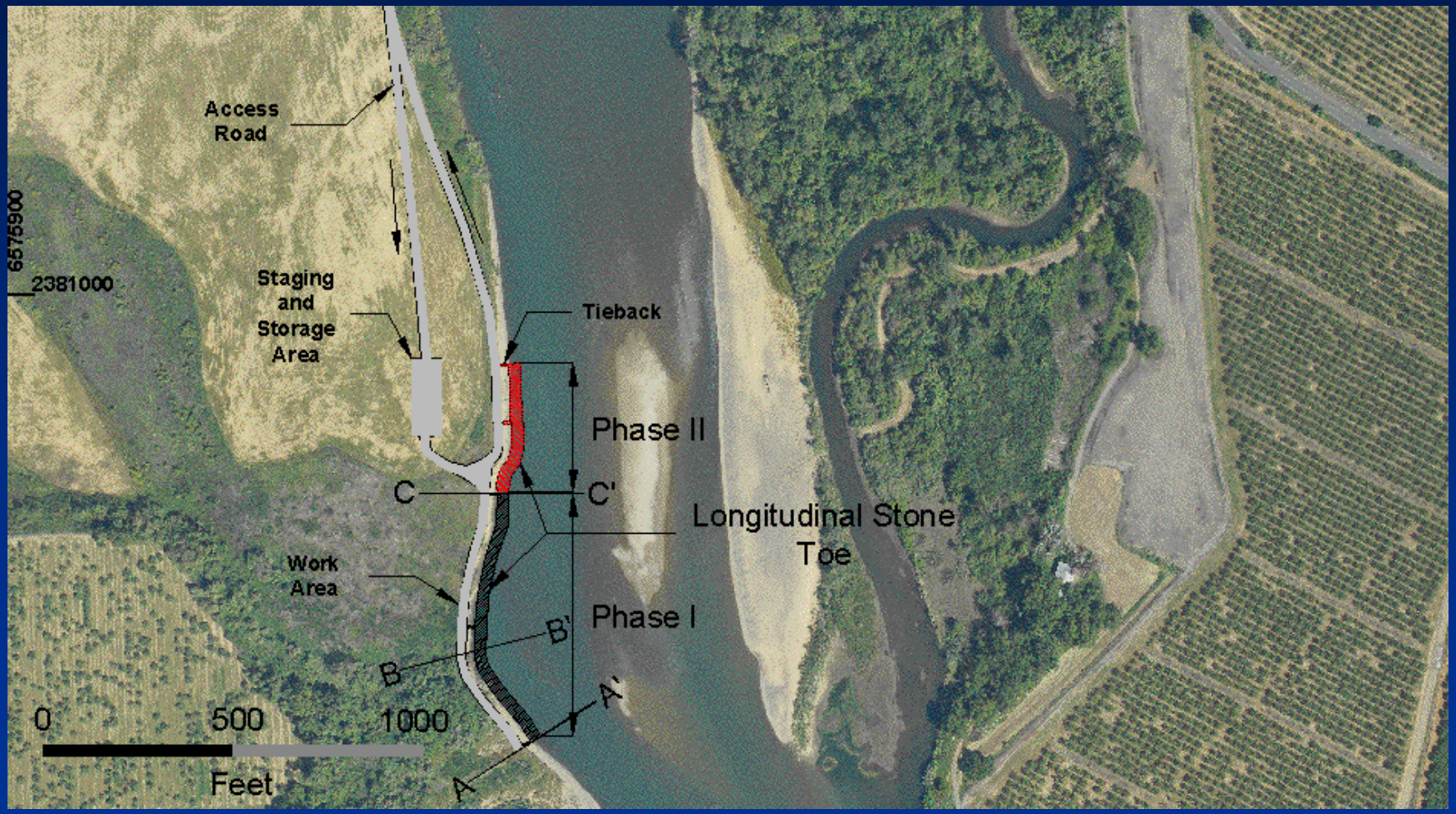
BAR MIGRATION 2005-2008



CSU PHYSICAL MODEL



Interim Stabilization



INTERIM STABILIZATION
2007
1,500 LF Rock Toe & Brush Revetment

2007 “DRY” DREDGING
100,000 tons

CURRENT ALTERNATIVES

- 9 Dike alternative
- Move pumping plant
  - ~ 2,200 ft
  - ~ 3,500 ft

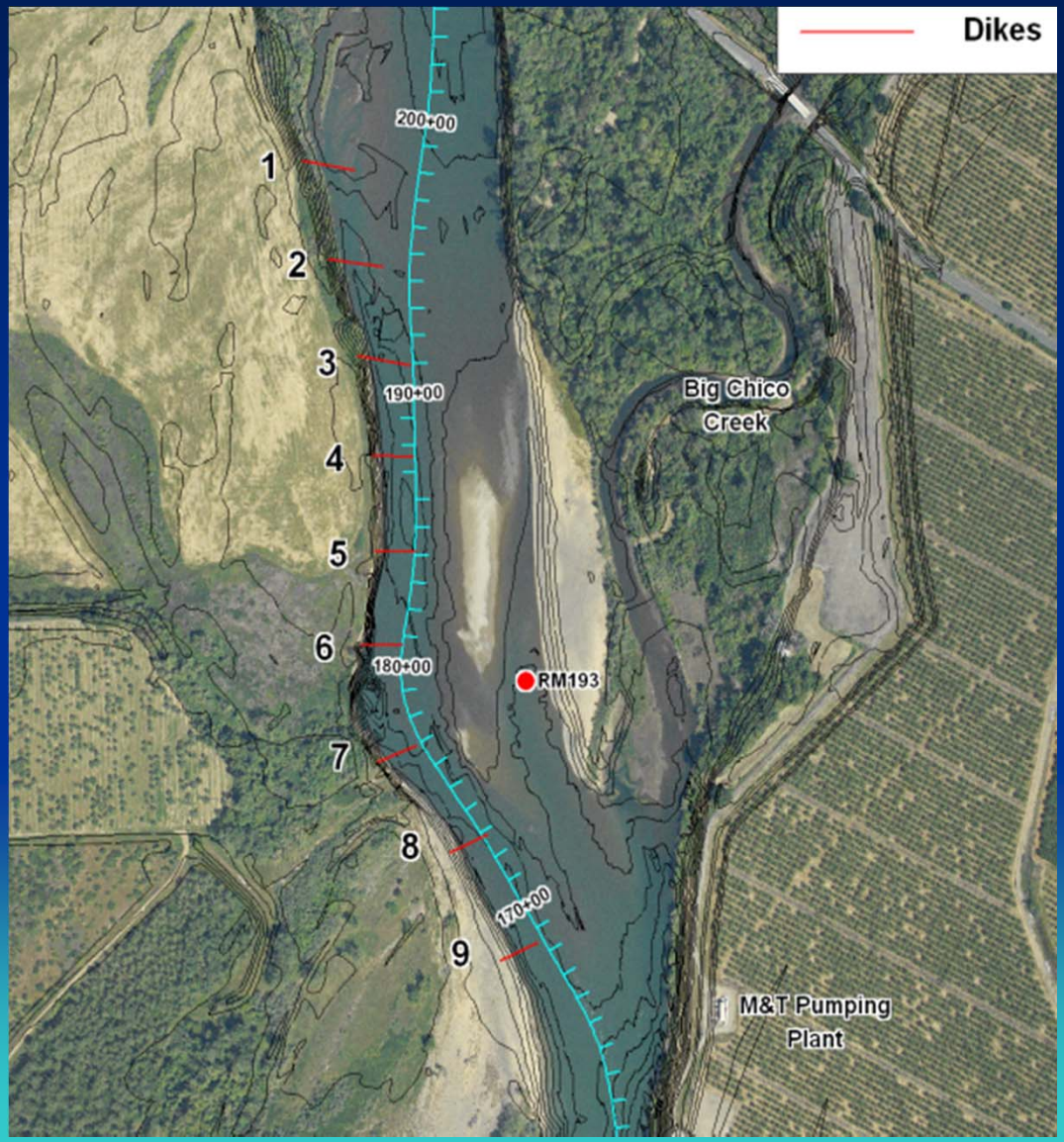
Range of Bar Migration Estimates:

Corrollo Engineering: 60-80 ft/yr

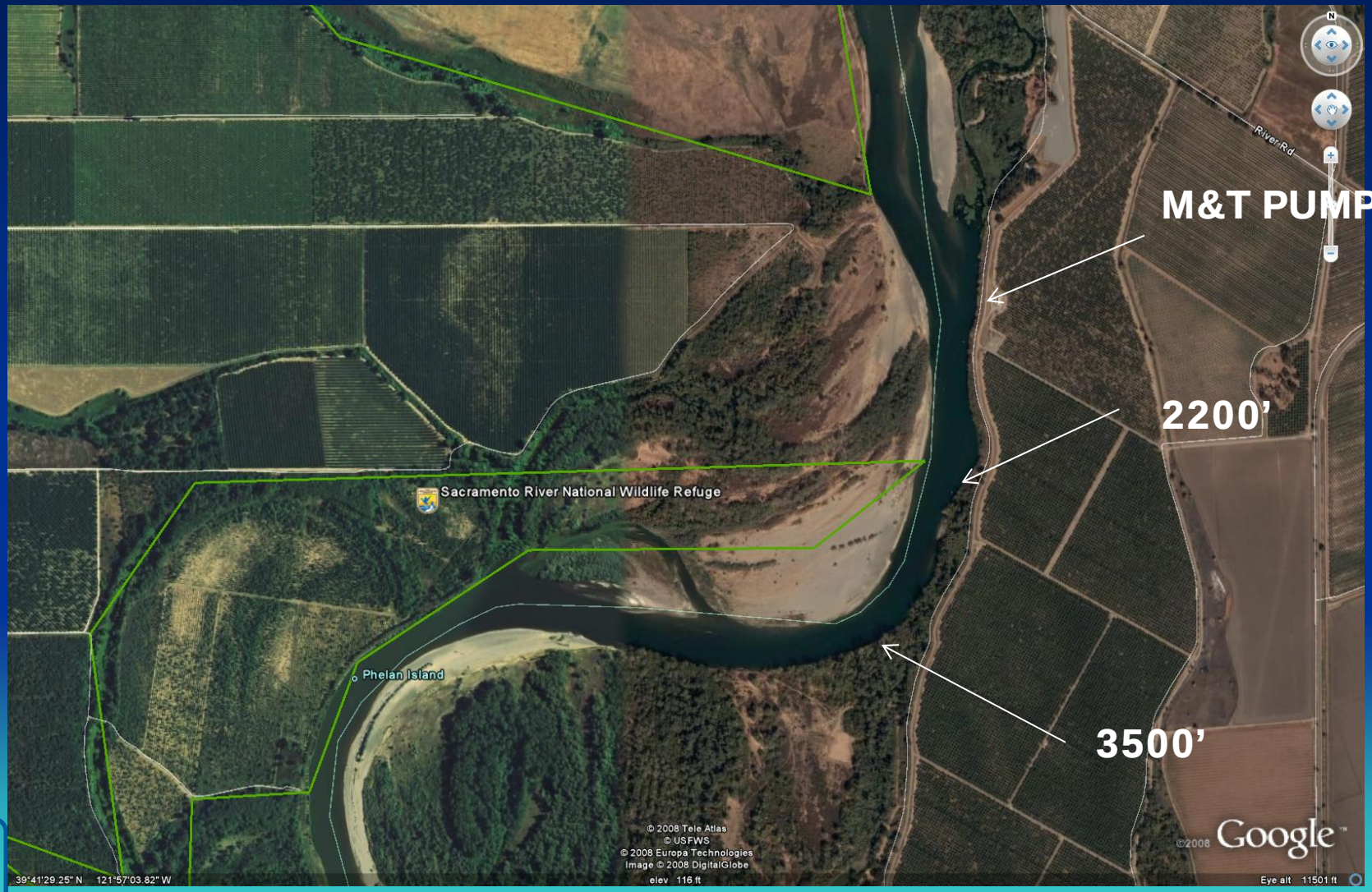
Stillwater Sciences: 140 ft/yr

- 2,200 ft d/s: 16 – 36 yrs
- 3,500 ft d/s: 25 – 58 yrs

9 DIKE ALTERNATIVE



PUMP RELOCATIONS



POST-WORKSHOP 5 TASKS

- Numerical Modeling of Pump Relocation Alternatives with 2010 Bathymetry
- Evaluate Interactions, if any, of the Hamilton City J Levee Project
- Physical Modeling of Pump Relocation Alternatives with 2010 Bathymetry
- January 2010 Bathymetric Survey

POST-WORKSHOP 5 TASKS

- Rock Toe & Brush Revetment Inspections, April, 2010, June, 2011, November, 2011
- June 2011 Bathymetric Survey to Establish Dredge Volumes
- Numerical Modeling to Evaluate Rock Toe Extension Potential