



Applying Sacramento River Conservation
Area Principles and Our Understanding of
Natural River Process
in the
Feasibility Study for the Kopta Slough
Project





**Kopta Slough Flood Damage Reduction
and Habitat Restoration Project**

“Kopta Slough Project”

Conservation Area Principles

Science



Opportunity





Conservation Area Principles



Physical Environment

Biological Environment

Human Environment





CVFPP Conservation Strategy and Framework Prop 1E Funding



Promote natural processes



Minimize Operations & Maintenance



Benefit Species & Biological Communities



Provide Advance Mitigation

Gerber-Los Flores

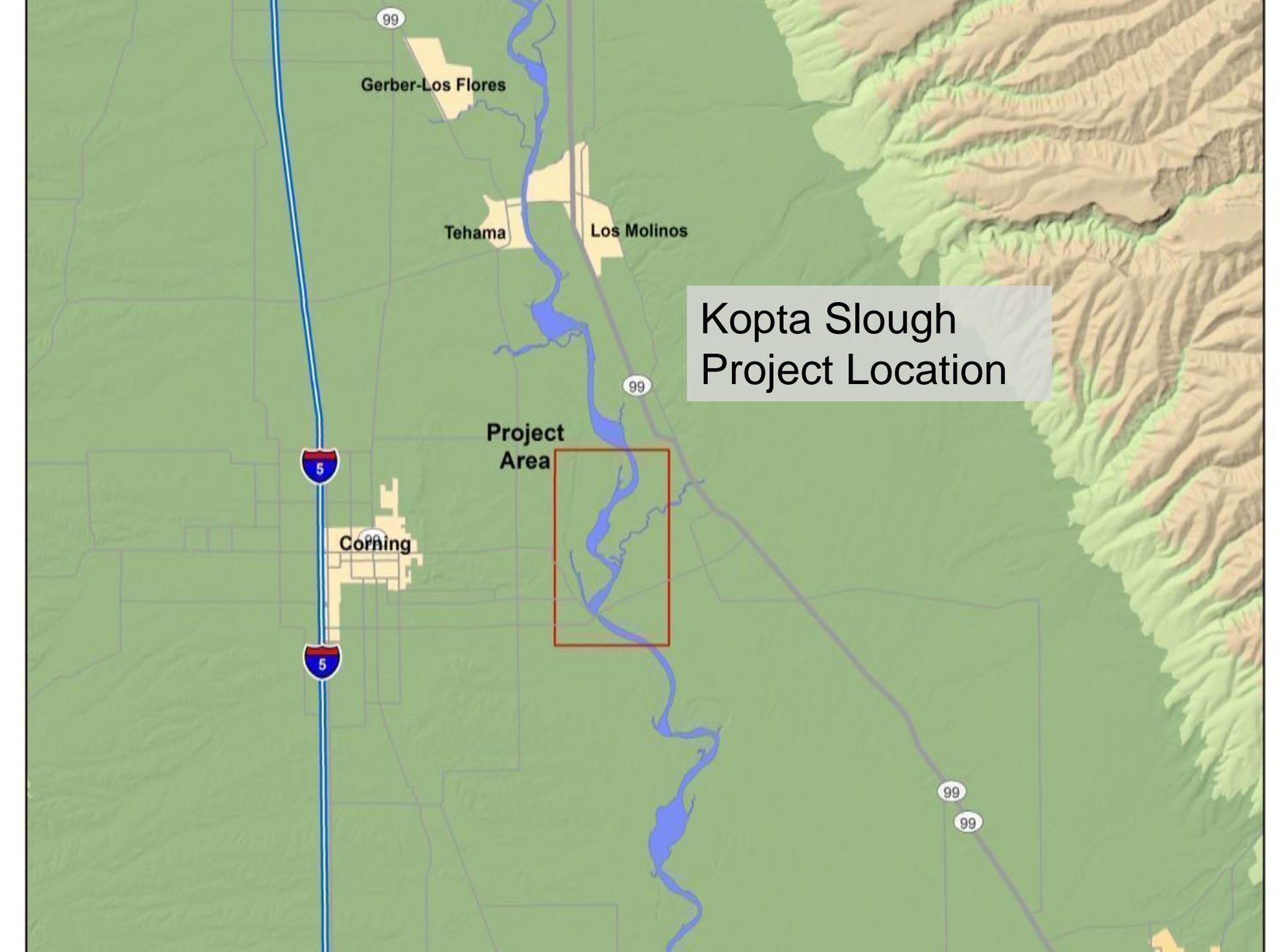
Tehama

Los Molinos

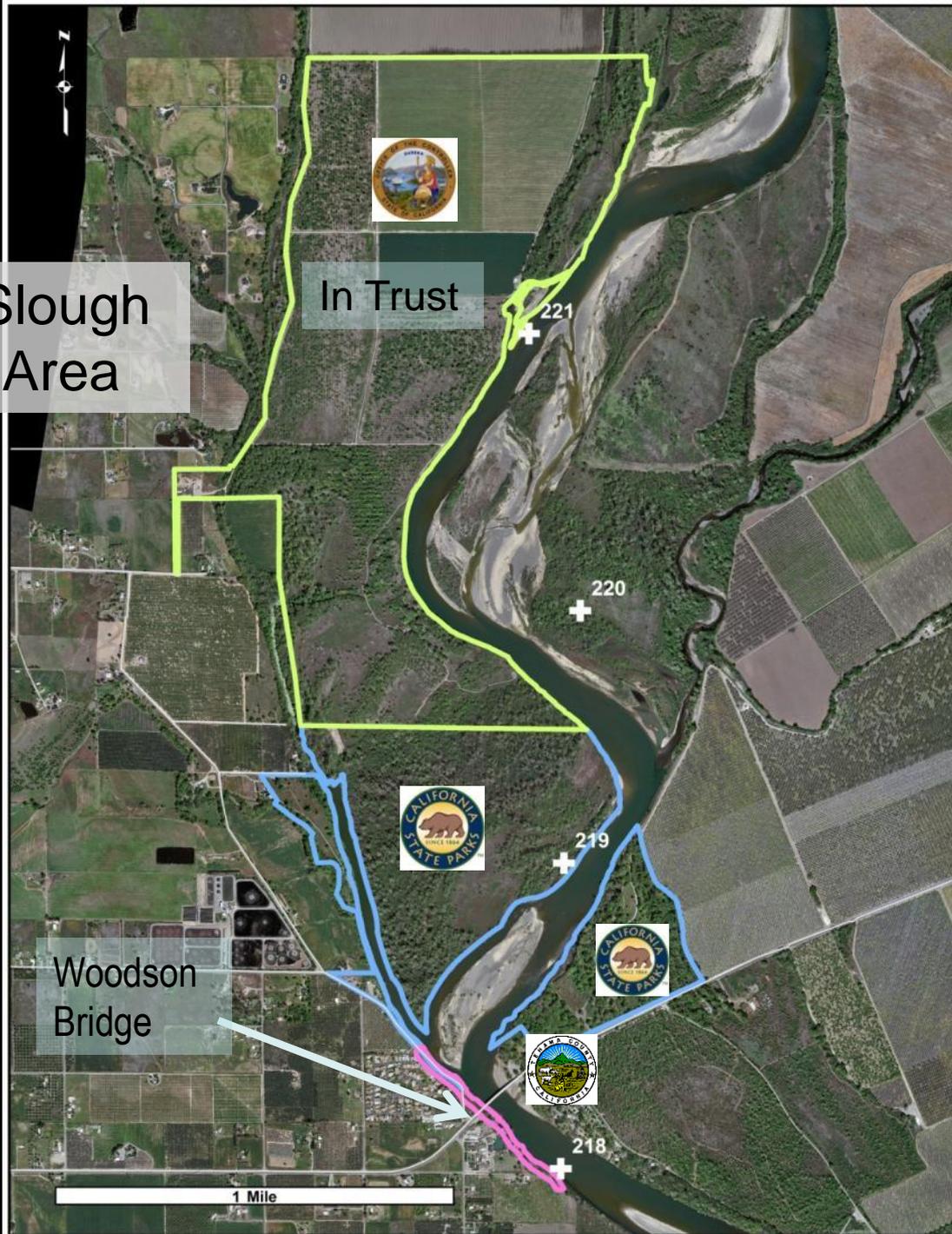
Kopta Slough
Project Location

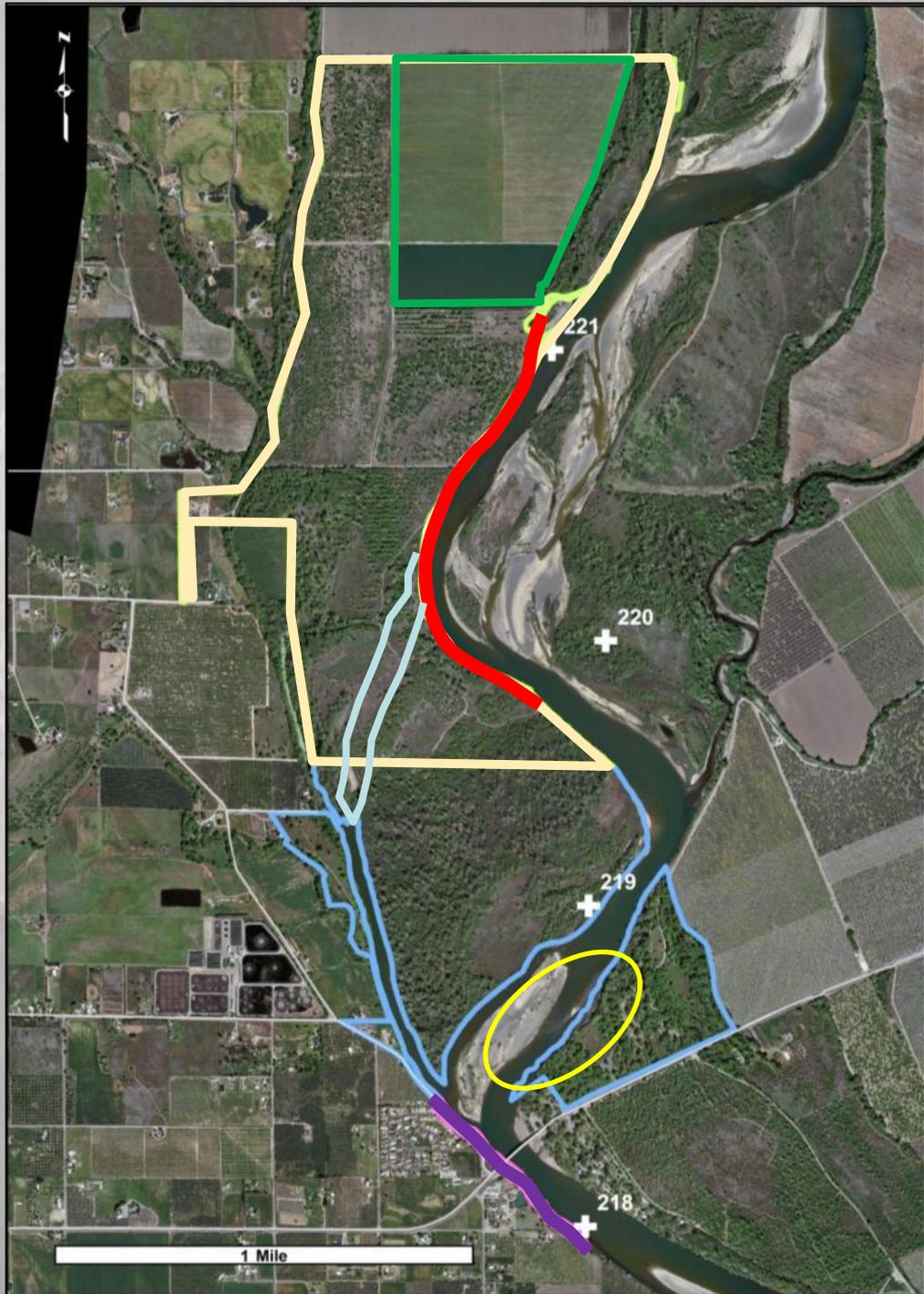
Project
Area

Corning



Kopta Slough Project Area





Project Elements



Transfer 648-acre Kopta Slough Property to the State



Restore 176 acres of riparian habitat



Remove 5,600 lft of rock revetment



Reduce unwanted erosion on Woodson Bridge State Recreation Area Property and protect Woodson Bridge and the City of Corning Sewer Outfall



Reconnect Kopta Slough to the main channel of the Sacramento River

Hydrology



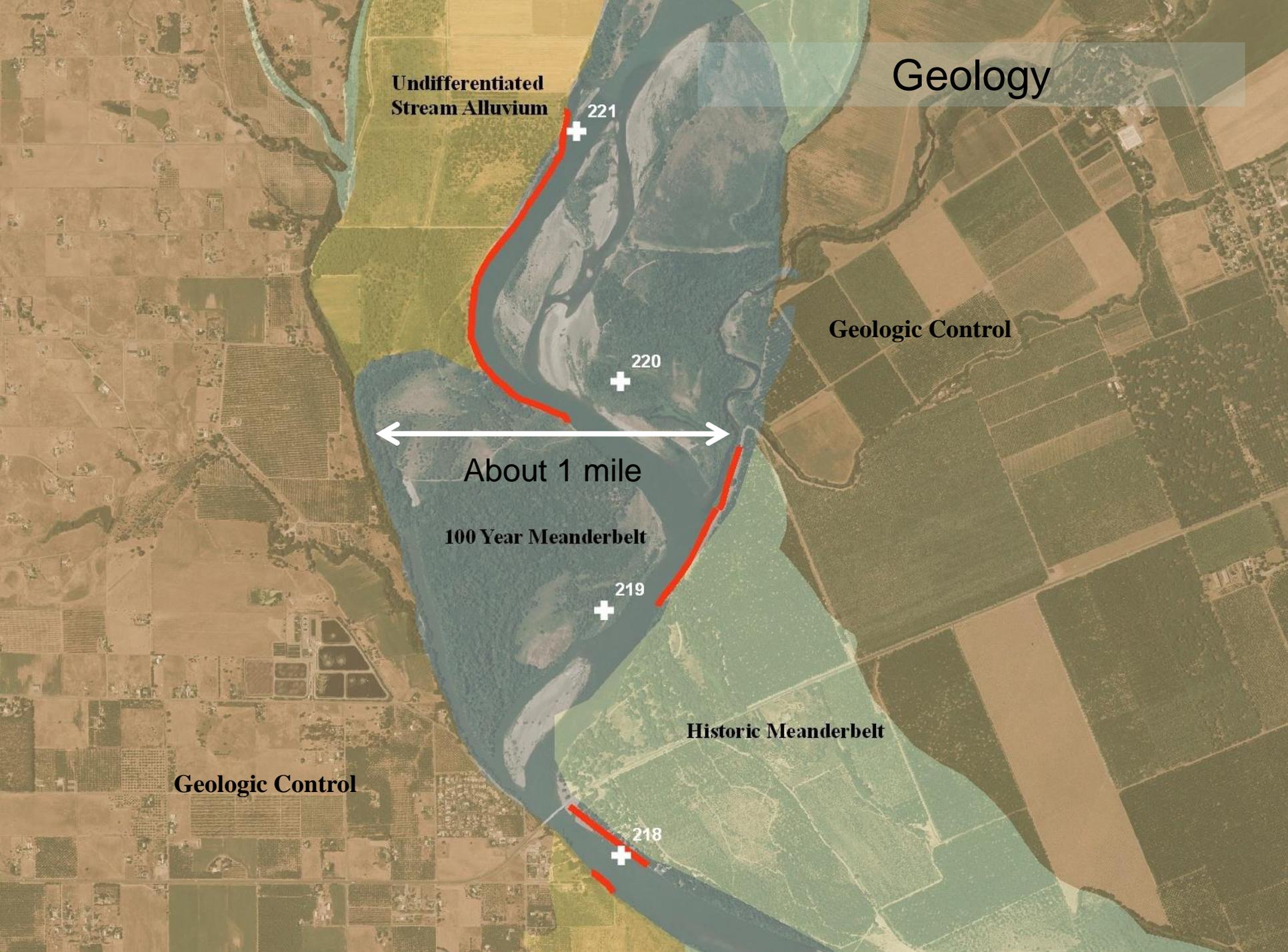
2-Year Flood – 100,270 cfs

10-Year Flood – 168,548 cfs

1997 Flood – 199,700 cfs

100-Year Flood – 293,700 cfs





Geology

**Undifferentiated
Stream Alluvium**

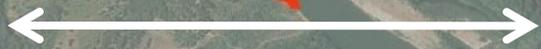
221



220



Geologic Control



About 1 mile

100 Year Meanderbelt

219



Historic Meanderbelt

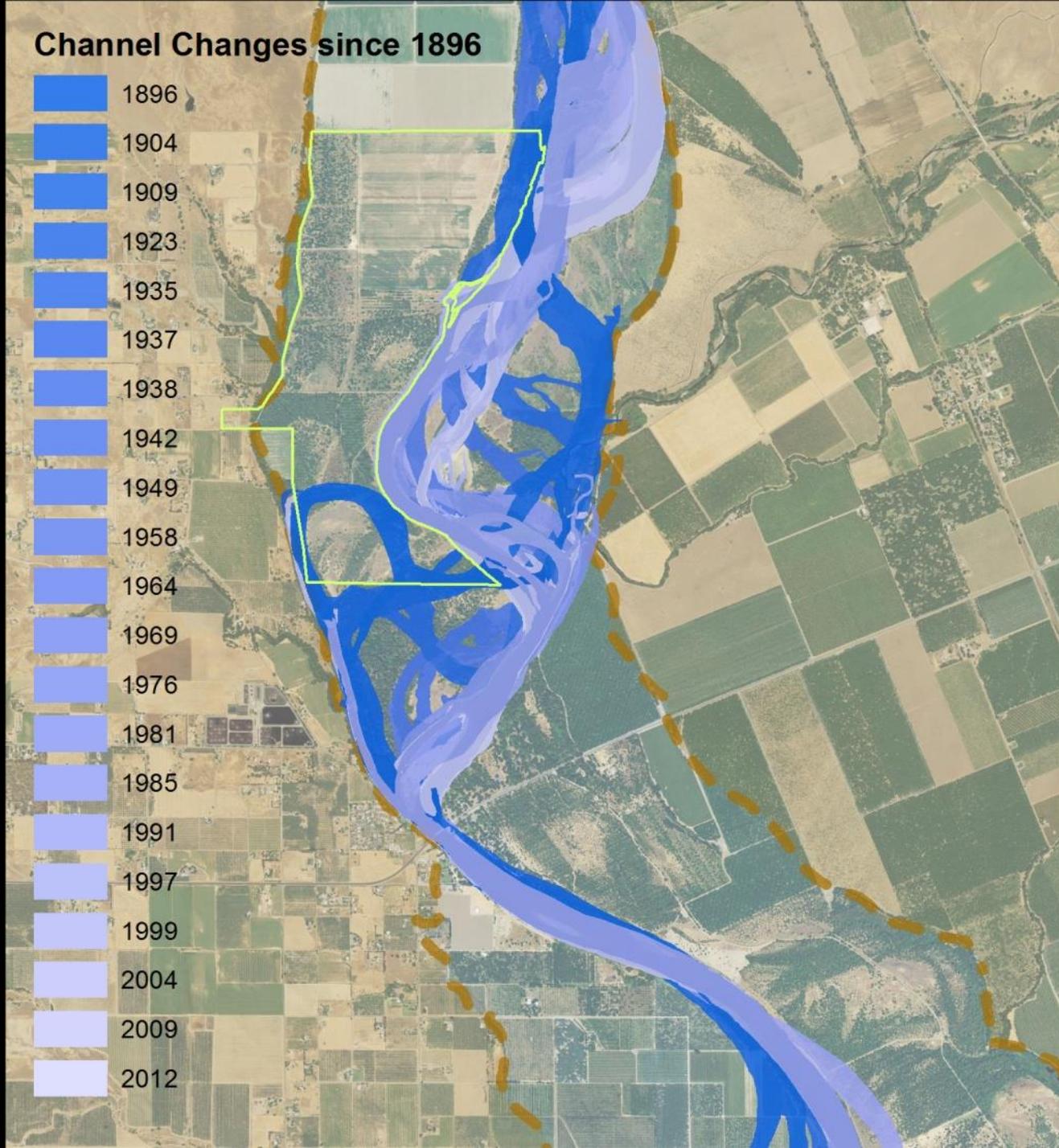
Geologic Control

218

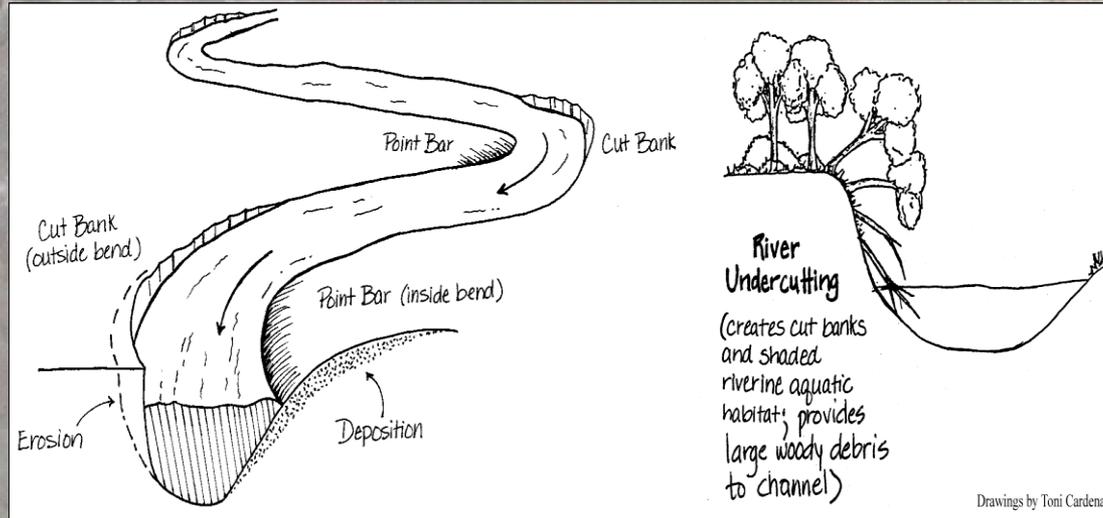


Channel Changes since 1896

- 1896
- 1904
- 1909
- 1923
- 1935
- 1937
- 1938
- 1942
- 1949
- 1958
- 1964
- 1969
- 1976
- 1981
- 1985
- 1991
- 1997
- 1999
- 2004
- 2009
- 2012



Restore natural fluvial and floodplain processes





Project Goals

Restore natural fluvial and floodplain processes

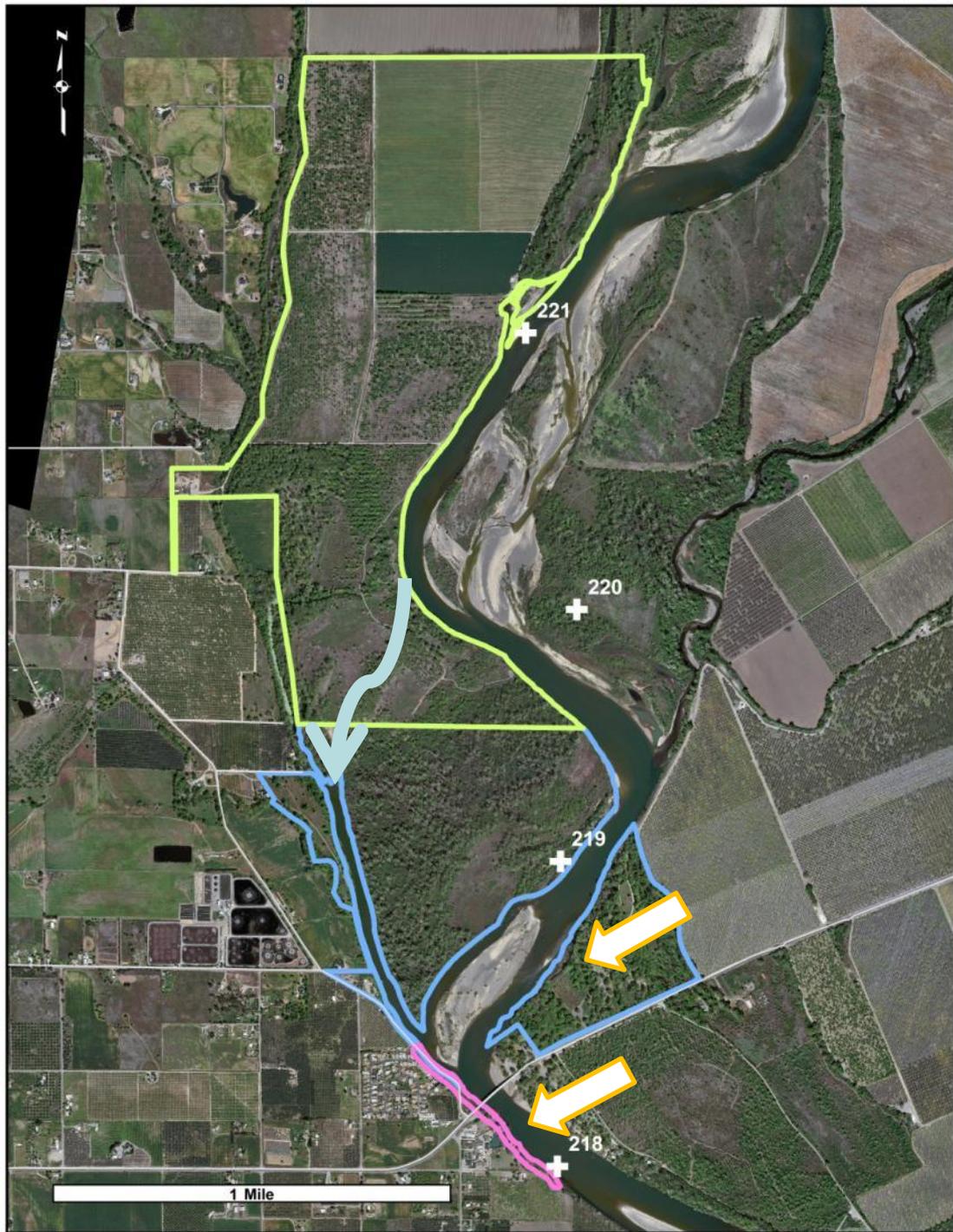
Provide advance mitigation for flood projects

Reduce flood management operation and maintenance

Reduce unwanted bank erosion to protect public resources

Expand recreational opportunities





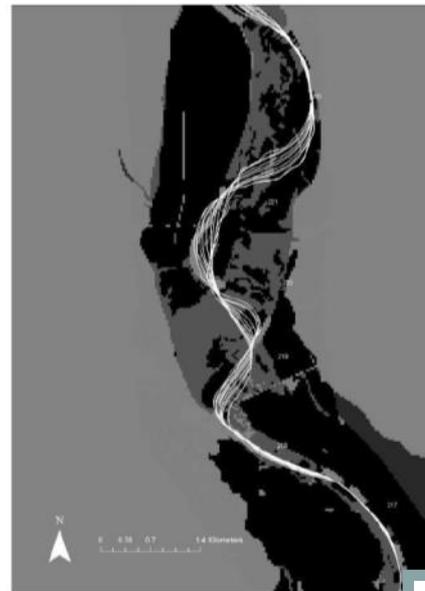
Quantitative

Area Re-worked

Erosion/Migration Rate

Stream Power

Erodability Index



(a) (b)
Figure 15 Woodson Bridge base flow with existing and altered revetment 2005-2059

Greco and Larsen, 2007



Dynamic/Non-linear

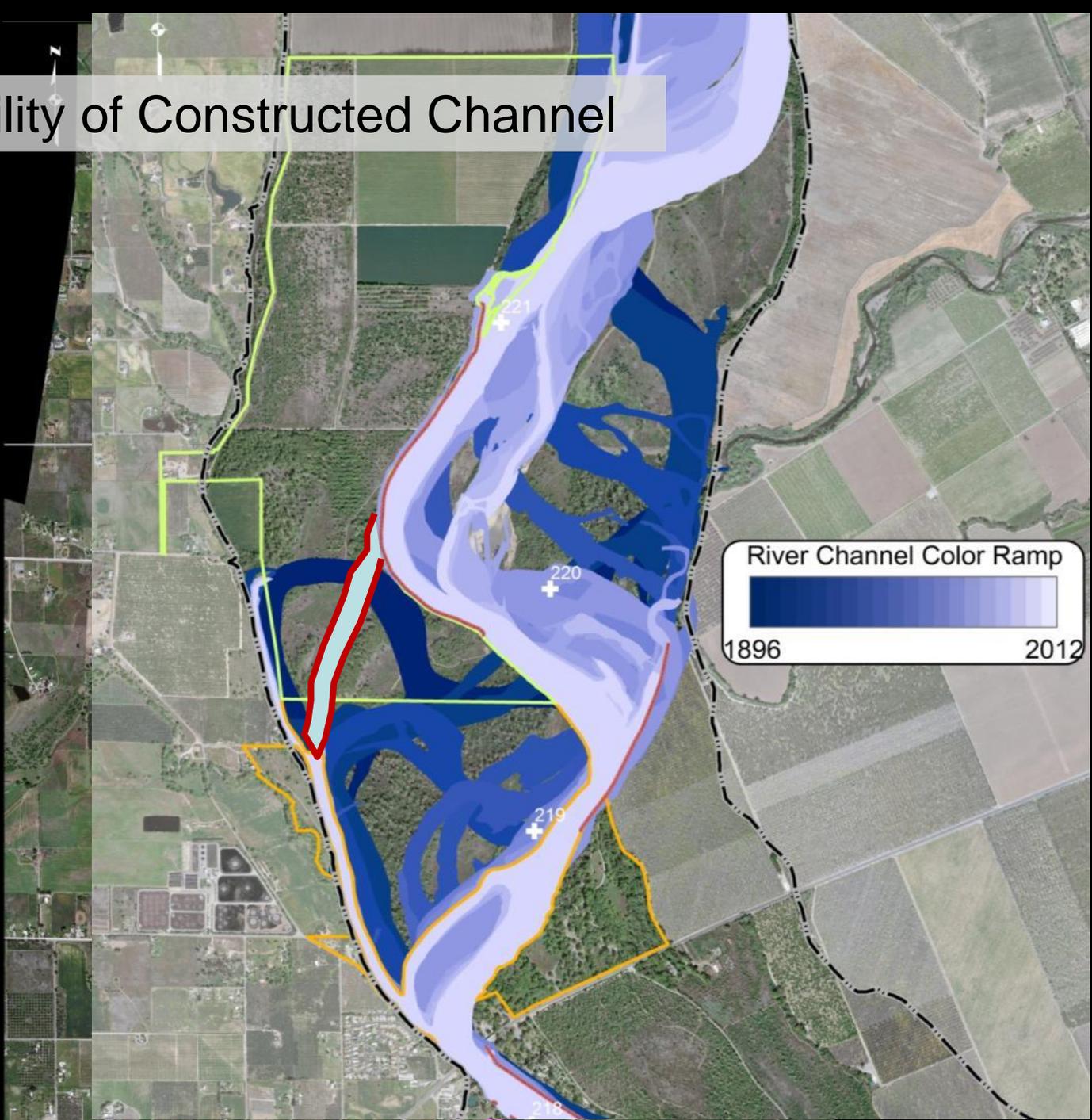
Range of Possibilities

Quickly Assess Scenarios

Qualitative



Feasibility of Constructed Channel



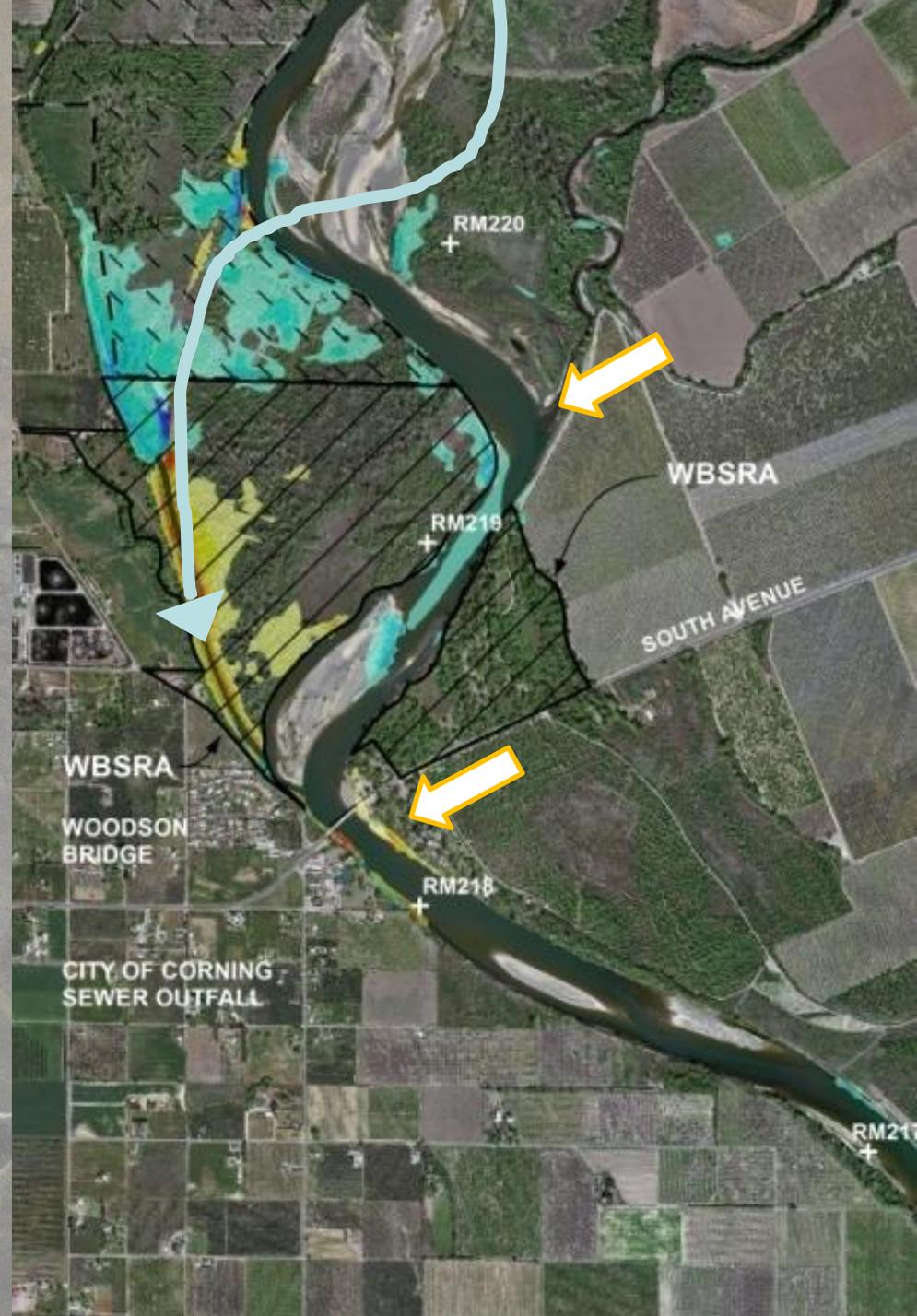




There are some potential negative impacts that we will have to address

Potential for increased erosion downstream of Woodson Bridge

Potential to transition the confluence of Deer Creek downstream





Opportunity



Science

 Thank You 

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Meander Video: Rob Irwin, SRCAF

