Salinas River Stream Maintenance Program Design and Implementation

Salinas River Long-term Management Plan

Planning Group Meeting #2

September 14, 2018

New Approach to Stream Maintenance

Stream maintenance activities have occurred for nearly a century

- **1995-2008** – Management for flood risk reduction in response to 1995 flood. Administered by MCWRA which held the 404 and 401 permits. Landowners obtained their own 1600 permits for maintenance activities.

- **2008-2014** – A time for change. Stakeholders at odds over management approaches. Developed a new approach to how and where maintenance activities occur.

New Approach to Stream Maintenance

- Holistic and system-wide approach
- A multi-benefit approach:
  - flood risk reduction activities such as vegetation and sediment management
  - non-native invasive vegetation removal (*Arundo* and *tamarisk*)
  - avoidance of or minimizing impacts to sensitive habitats
  - broader mitigation approaches
  - focused native species plantings in areas of need for levee or bank rehabilitation/stabilization.
- Flexibility to address the dynamic system

Organizational Structure

- Developed discrete units of the river to better understand each area and aid in permitting decisions
- Resulted in 7 River Management Units aka RMUs, based on:
  - Vegetation
  - Hydrology
  - Biological species/habitats
  - Land ownership


RMU 7 - Salinas 2
RMU 6 - Salinas 1
RMU 5 - Chualar
RMU 4 - Gonzales
RMU 3 - Soledad
RMU 2 - Greenfield
RMU 1 King City / San Ardo

Collaborative Process

- **Technical & Design Committee for each RMU**
  - Expertise in a multi-benefit approach to watershed and stream maintenance
  - Developed objectives
  - Gathered historical information
  - Ground-truthed the existing conditions flood model
  - Discussed potential management options
  - Used the flood model to determine benefits of management options
  - Made recommendations for the permitting committee to vet
- **Permitting Committee**
  - Representatives from each RMU and each regulatory agency
  - Finalize the design of the management options
  - Developed more detailed information regarding implementation/BMPs

Development

- Stakeholder Interests
  - Reduce flood risk
  - Improve quality and diversity of the ecological system
  - Prevent erosion
  - Facilitate steelhead trout migration to and from Arroyo Seco River
  - Improve water quality

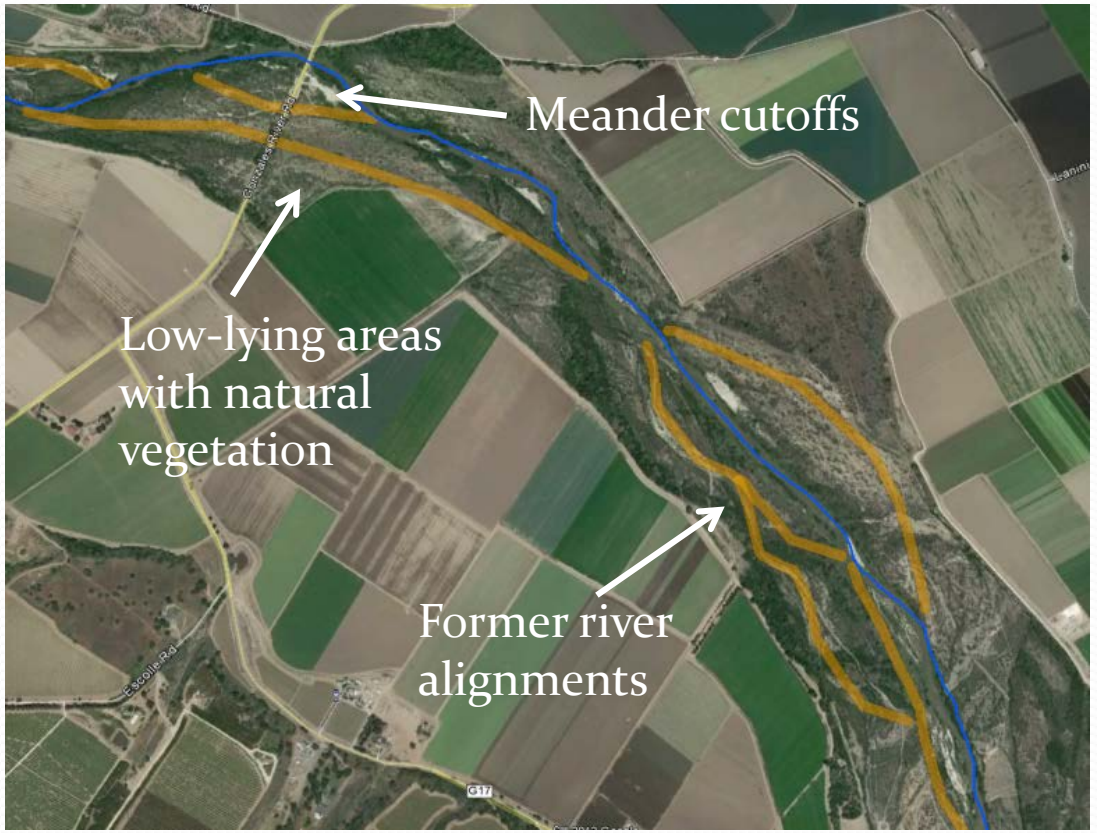
The starting point: Use science to show where these goals align or overlap

The 2D Hydraulic Model

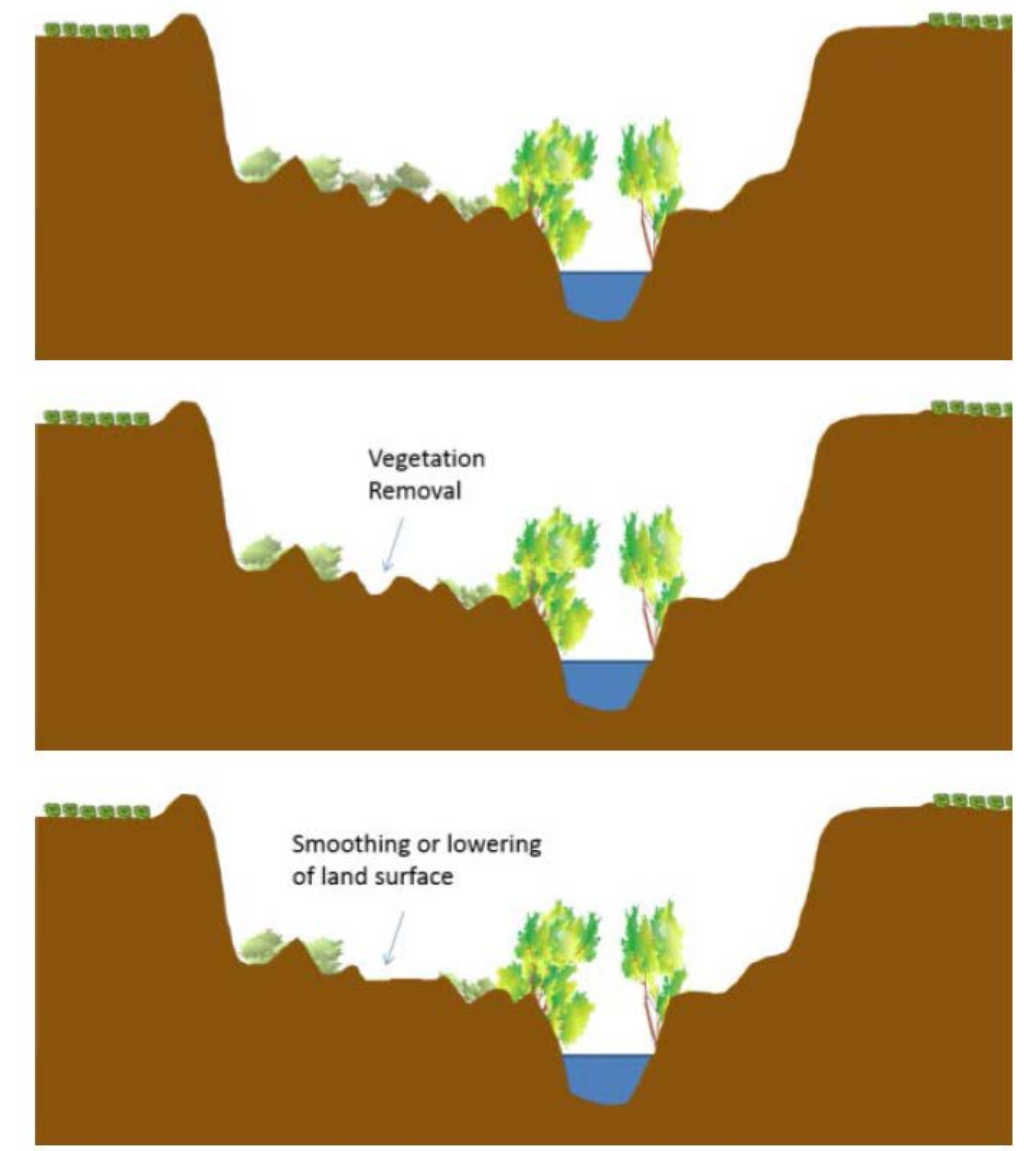
- Modeled frequent flow scenarios
  - 2, 5, and 10-year return flow events
- Modeled "bookend" management scenarios to understand range of possible benefits and impacts
  - Bookend 1 – Total clearing of vegetation in the river channel
  - Bookend 2 – No clearing, current river conditions
- Modeled proposed scenarios based on stakeholder goals and multi-benefit approach

Design Maintenance Activities

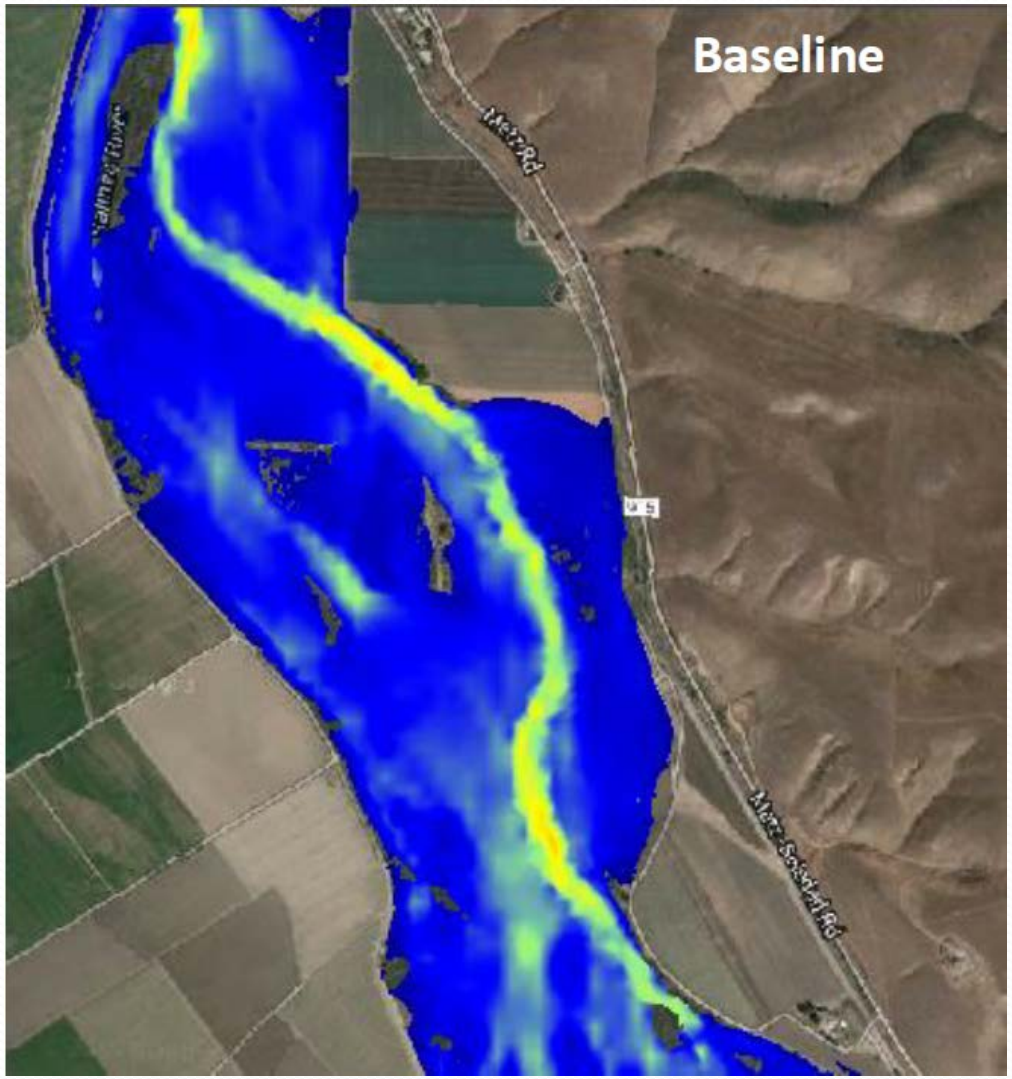
- Mimic the natural braiding of a sand-based system
- Rebuild some of the historical structure and function of the river

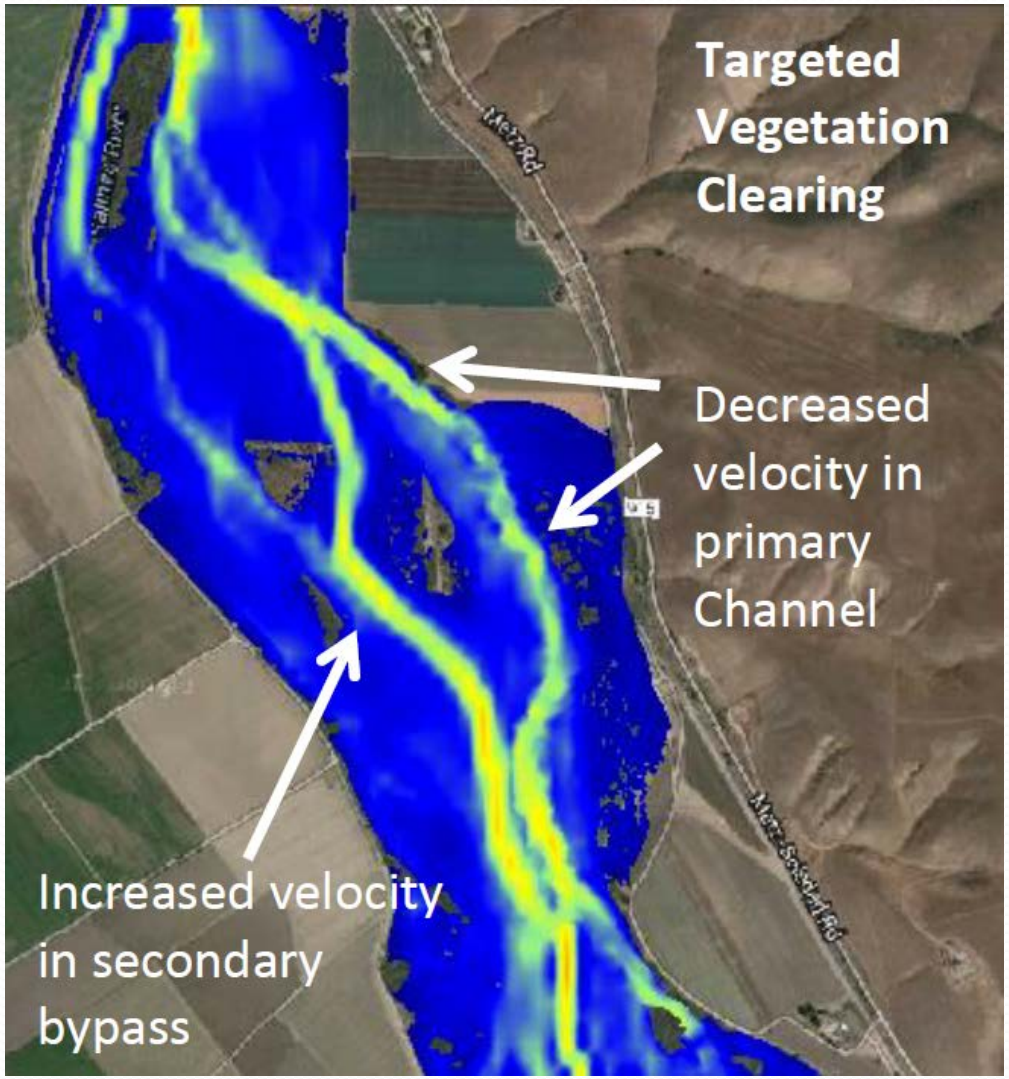


Design Maintenance Areas



Model Results



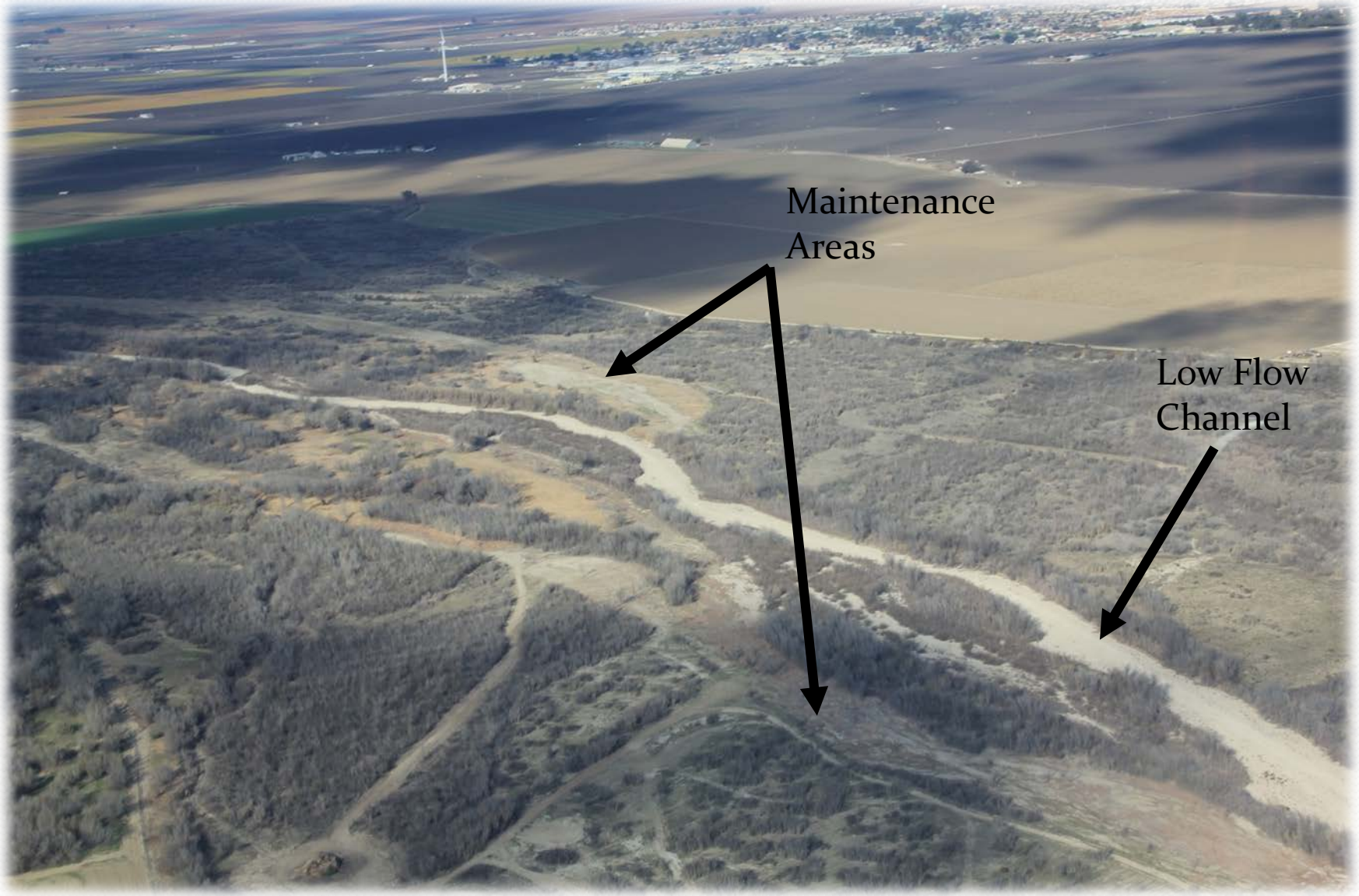


Final Maintenance Areas

- Pre-defined Maintenance Areas (129 total) in each RMU: all of the native vegetation removal and sediment management work occurs here
  - Most follow the secondary channel approach
  - Two Selective Treatment Areas
- Avoidance and minimization measures guided the locations

Maintenance Areas

Maintenance Area


Maintenance
Areas
Low Flow
Channel

Selective Treatment Areas

- Tree removal
  - Limited for willows 6 inches dbh and greater
  - Limited in the thalweg or within the 10-foot buffer around the thalweg
- Limbing of trees
  - up to 10 feet from the base of the trunk, up to 25% of canopy
  - using hand tools
- Mowing or Disking:
  - Up to 50 percent in areas of sparse herbaceous (with and without arundo) and early successional willow

Selective Treatment Area

Protected Areas

- Flag areas to avoid
  - Wetlands
  - Habitat features
  - High value, under-represented trees

Avoidance

Avoidance

Data Collection/Mapping

Lessons Learned, Challenges, Future Vision

- Long-Term Effectiveness Assessment Reporting – 2021
  - Does the SMP meet the objectives?
  - How could things be done differently to accomplish those goals?
  - What is happening in the watershed and how does the SMP fit within it?
  - Data has been collected and will be analyzed for the report.

Lessons Learned, Challenges, Future Vision

- Challenges with current program
  - How can we increase participation?
  - Should a maintenance entity perform the work?
  - How to overcome access issues – river flows, landownership, etc.
  - How can we allow for adaptive management as conditions change?
  - Some river reaches do not have maintenance areas identified.
  - RMU 7 has unique challenges.