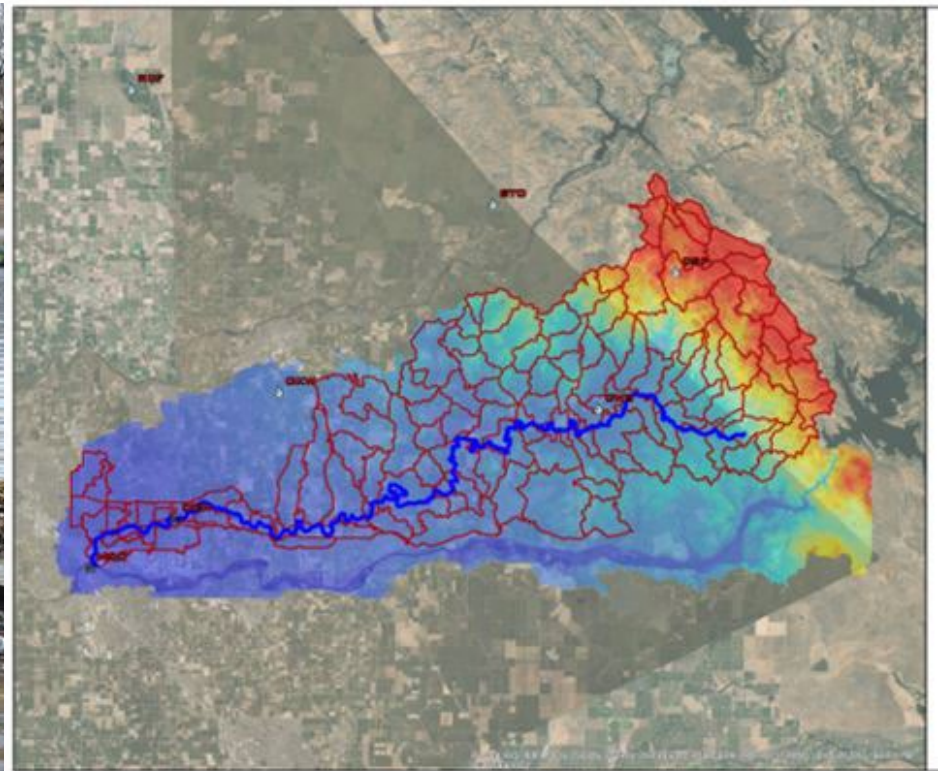


Evaluation of Stormwater Management with Groundwater Recharge in the Dry Creek Watershed above Modesto



Project Team

- Stanislaus County Public Works
 - Frederic Clark
 - Dhyan Gilton
 - Michael Brinton
 - Christopher Brady
 - Ramon Salinas
- City of Modesto
 - Miguel Alvarez
 - Jim Alves
- GeoSystems Analysis for Groundwater Recharge on Stormwater
- E-PUR LLC for Local Hydrogeologic and Stakeholder Needs
- Wood Rodgers for Hydraulic Modeling and Engineering

Dry Creek Project Objectives

- 1) Provide stormwater detention for flood risk reduction that can be useful for groundwater recharge – Direct recharge or *in-lieu* of groundwater pumping
- 2) Identify other water resource benefits from projects
- 3) Three Current Phases:
 - 1) Phase I - Identify possible project site locations – DWR DAC Grant Funding (COMPLETE)
 - 2) Phase II - Identify and evaluate up to three projects that rank well using objective method – DWR DAC Grant Funding (Completion April 2022)
 - 3) Phase III - Bring one or more of those projects to the implementation-grant-ready stage (DAC Funding for this phase should be available)

Phase I of Dry Creek Study

- 1) Compiled and reviewed available data
- 2) Developed Dry Creek surface water model
- 3) Identified 15 potential sites for flood control/stormwater capture
- 4) Inter-site competitive evaluation Multiple Accounts Analysis
 - Four accounts: Technical, Economic, Environmental, Social/Cultural
- 5) Community outreach – downstream DACs March 2020

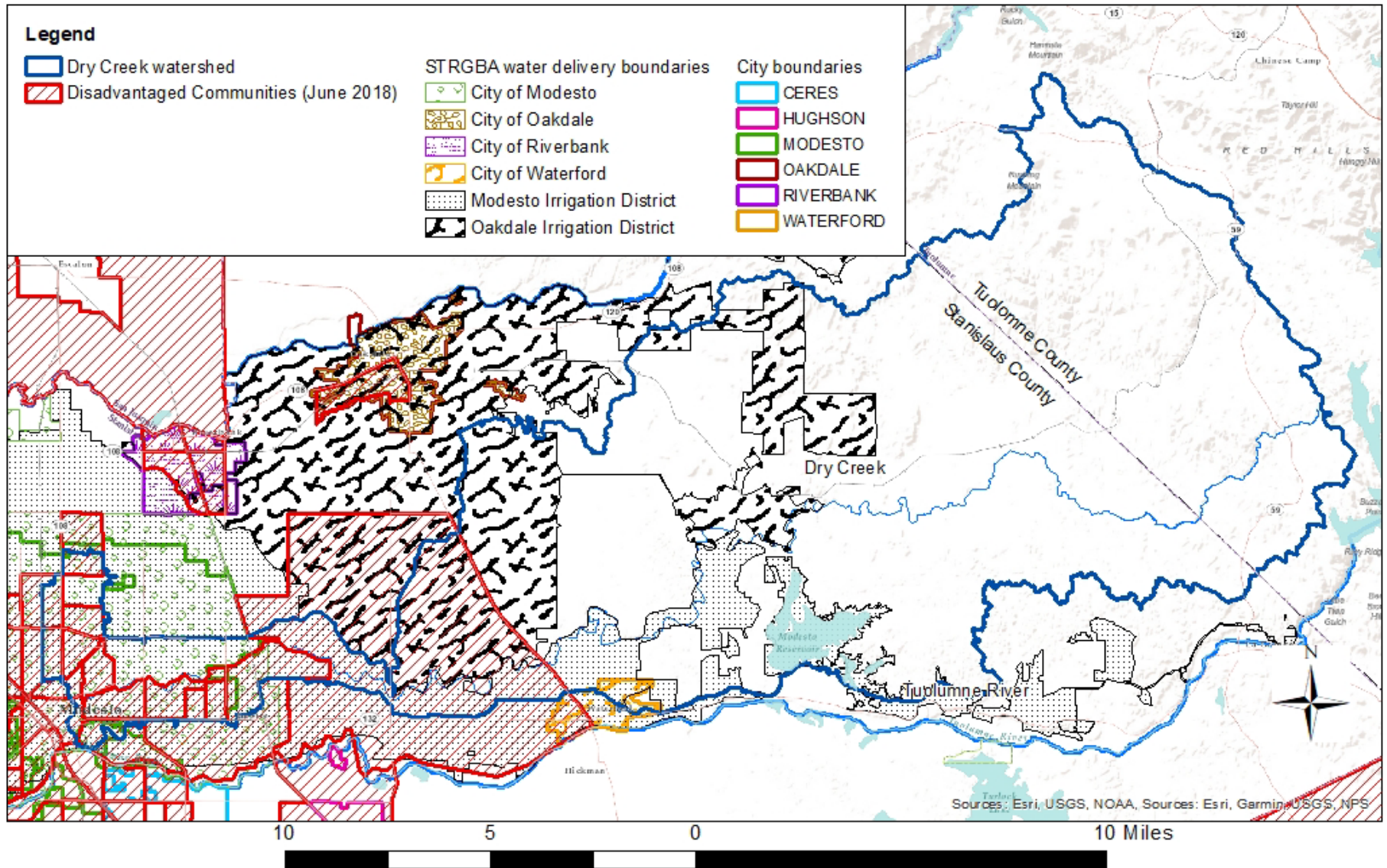
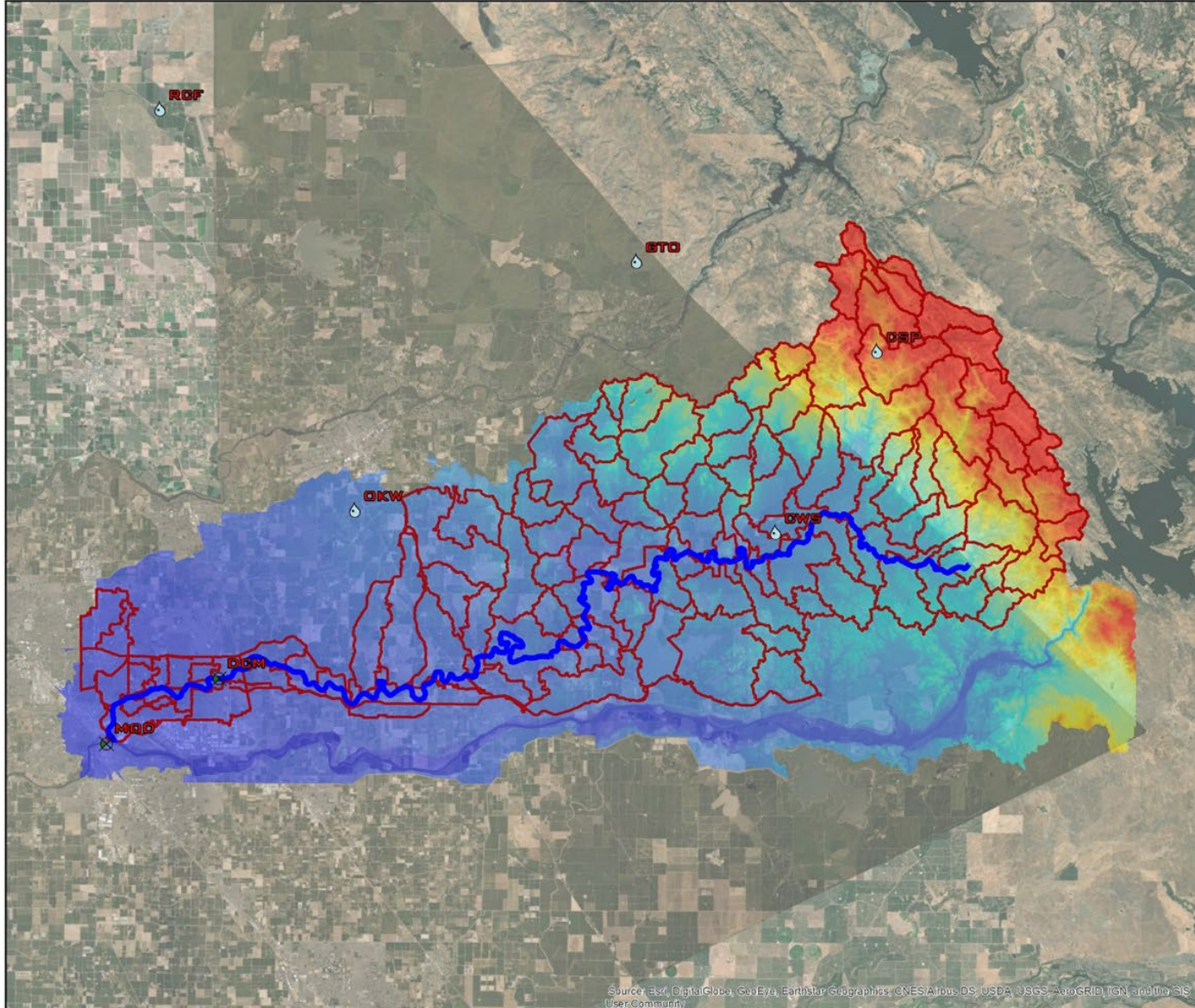


Figure 2. Dry Creek sub-watersheds and Stanislaus and Tuolumne Rivers Groundwater Basin Association water delivery boundaries

Surface Water Model







HMS MODEL EXTENT
EVALUATION OF STORMWATER MANAGEMENT
AND GROUNDWATER RECHARGE PROJECTS
IN THE DRY CREEK WATERSHED
STANISLAUS COUNTY, CA
OCTOBER 2019

Legend



StationData

Type

-  Precipitation
-  Stream flow
-  Creeks
-  wr_watershed_hms

RawDEM

Value

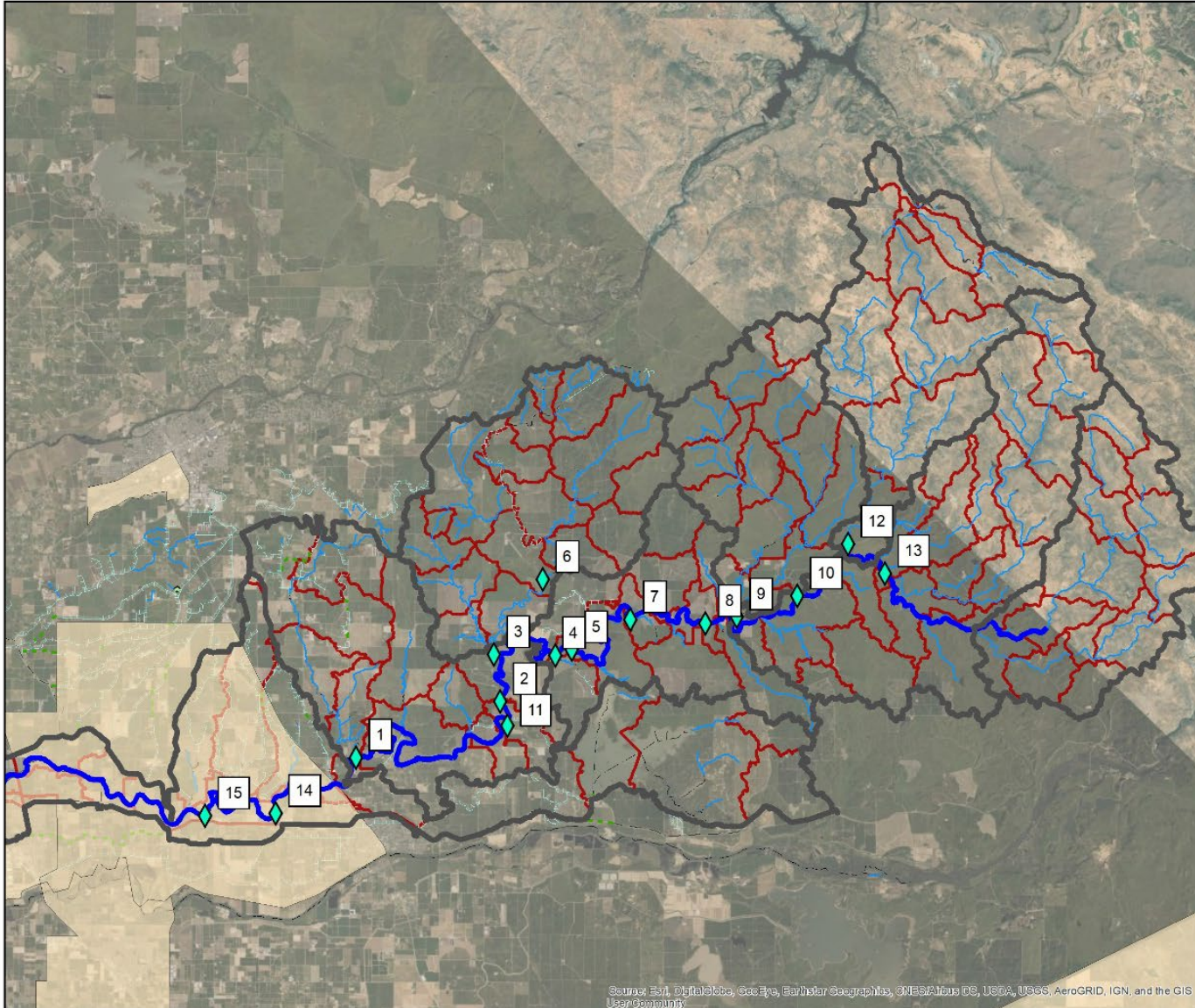
-  High : 1519.93
-  Low : 36.95



Initial Evaluation Sites



POTENTIAL EVALUATION SITES
 EVALUATION OF STORMWATER MANAGEMENT
 AND GROUNDWATER RECHARGE PROJECTS
 IN THE DRY CREEK WATERSHED
 STANISLAUS COUNTY, CA
 FEBRUARY 2020



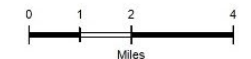
Legend

- Eval_Sites
- DACS_June_2018_NAD83
- Creeks

NHD_Agree

FType

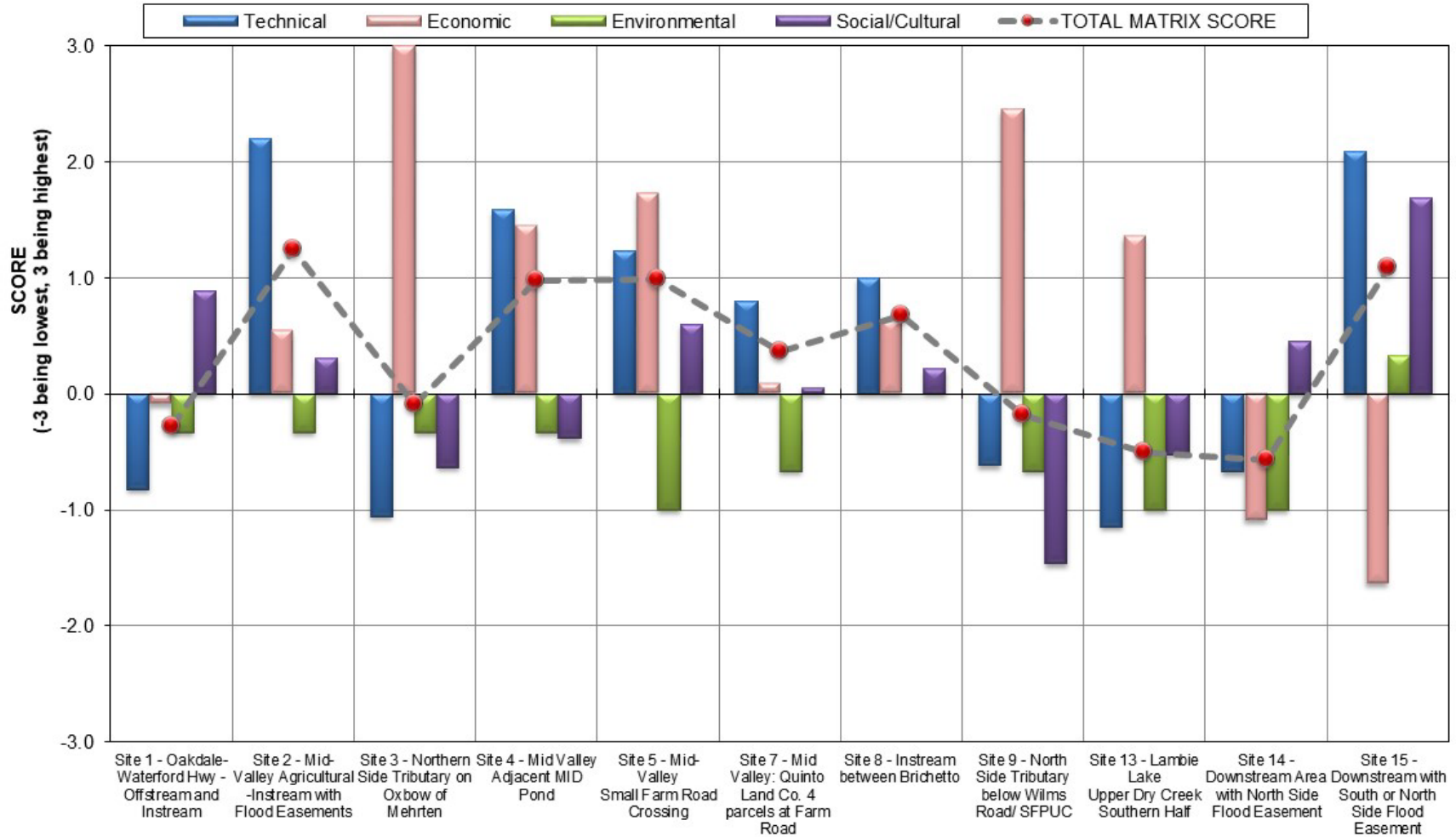
- ArtificialPath
- CanalDitch
- Connector
- Pipeline
- StreamRiver
- Underground Conduit
- wr_watershed_hms_subwatershed
- wr_watershed_hms



Phase II Steps

- Information developed for the Multiple Accounts on 11 of 15 sites
 - Site specific on technical, economic, environmental and social accounts and subaccounts (for example Capital vs O&M Costs)
- Published Multiple Accounts Analysis Memo December 18, 2021, <https://www.stancounty.com/publicworks/pdf/dry-creek.pdf>
- Community and stakeholder outreach event, January 18, 2022
 - Large turnout of ~100 people, highly engaged
 - Receiving public comments until February 18, 2022 to aid in developing 1 to 3 project alternatives

Multiple Accounts Analysis



Further on Phase II Steps

- Engage large Tuolumne River stakeholders in projects dialogue
 - Turlock Irrigation District
 - Modesto Irrigation District
 - San Francisco Public Utilities
- Produce Technical Report on Project Alternative Concepts by early March using community comments and stakeholder feedback
- Conduct second stakeholder meeting in late March 2022 and complete grant Scope of Work by April 2022
- Bring Phase II before the Board of Supervisors for support

Phase III Steps

- Characterize 1 to 3 project locations in the field
 - Develop landowner access agreements
 - Collect site data
- Assess stormwater resources in design such as detention of flood flow to retention of water for recharge
- Develop project designs to ~30% design level
- Identify environmental documents needed and initiate process
- Funding needed – looking specifically at grant sources

Questions?

