Evaluation of Stormwater Management and Groundwater Recharge Projects in the Dry Creek Watershed of Stanislaus County

GSA GeoSystems Analysis, Inc. Innovations in Hydrology

PUR Safe Water for All

WOOD RODGERS BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

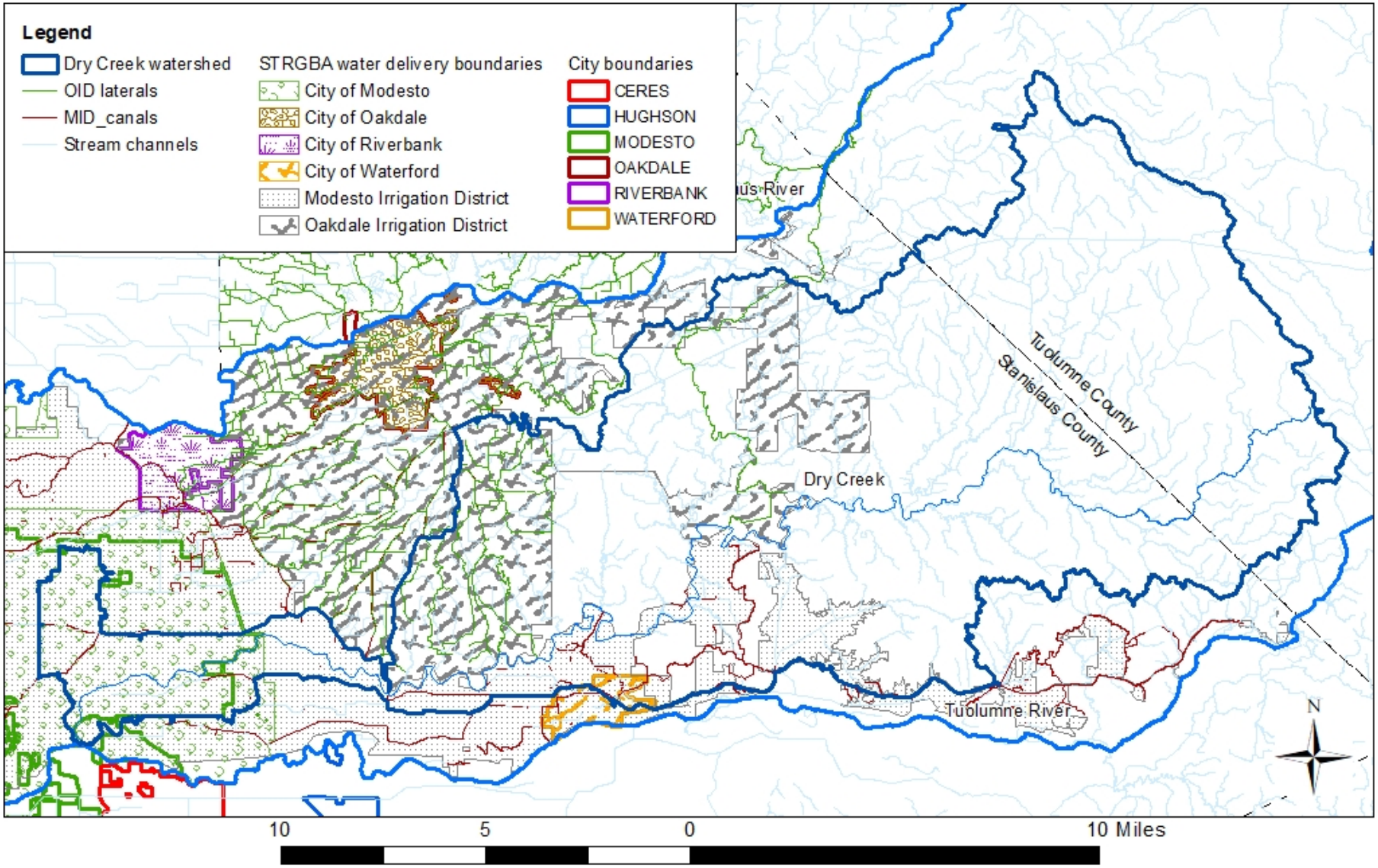
Project Objectives

1) Reduce flooding at confluence of Dry Creek and Tuolumne River
2) Provide stormwater capture that can be used for groundwater recharge or surface water augmentation
3) Phase I study to:
    1) Compile and review relevant data
    2) Develop Dry Creek surface water model
    3) Identify 10 potential sites for flood control/stormwater capture
    4) Develop project evaluation criteria
    5) Community outreach – downstream DACs

GSA GeoSystems Analysis, Inc. Innovations in Hydrology

PUR Safe Water for All

WOOD RODGERS BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

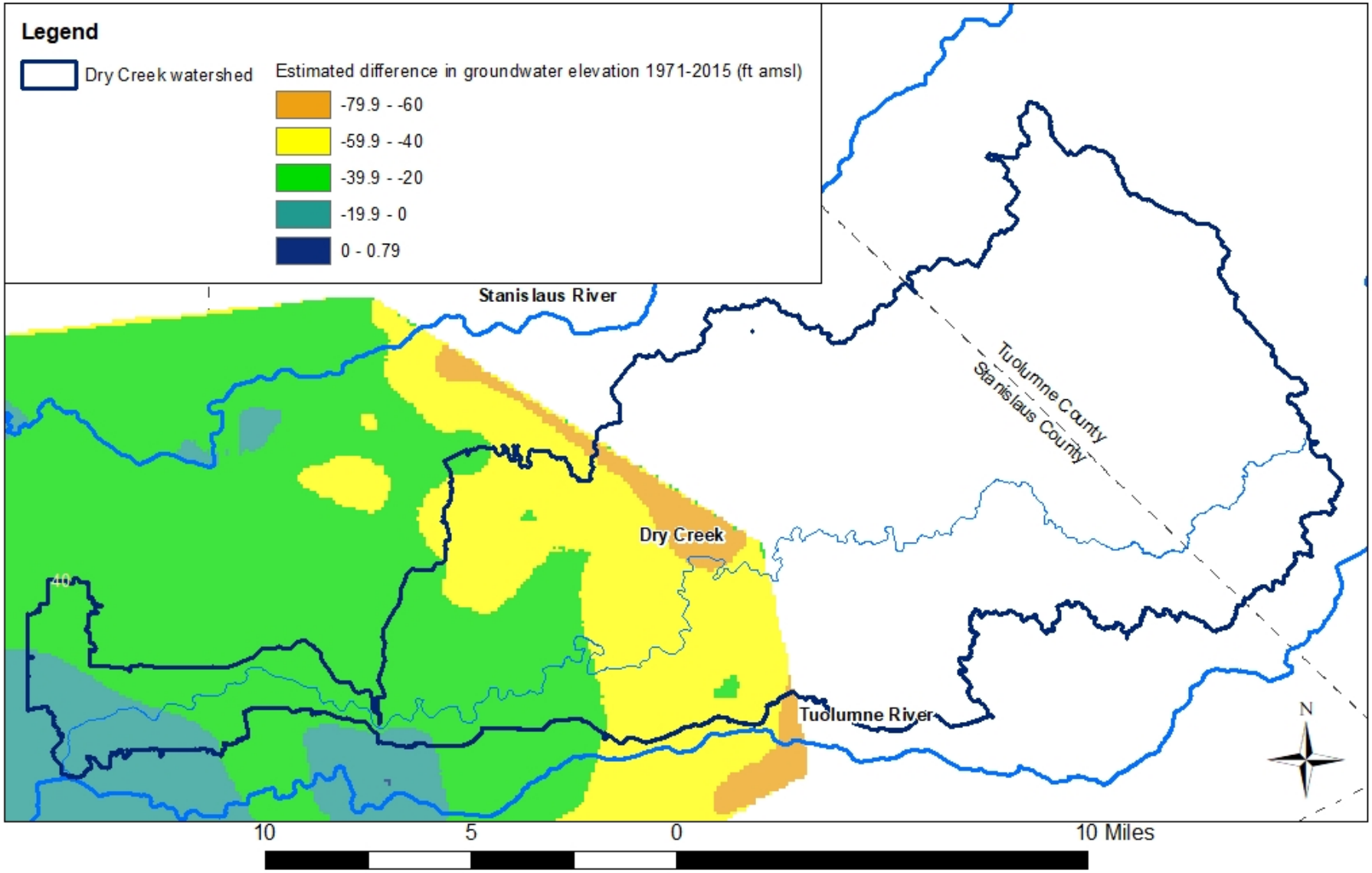


GeoSystems Analysis, Inc.

PUR Safe Water for All

WOOD RODGERS

Land use authority and city boundaries

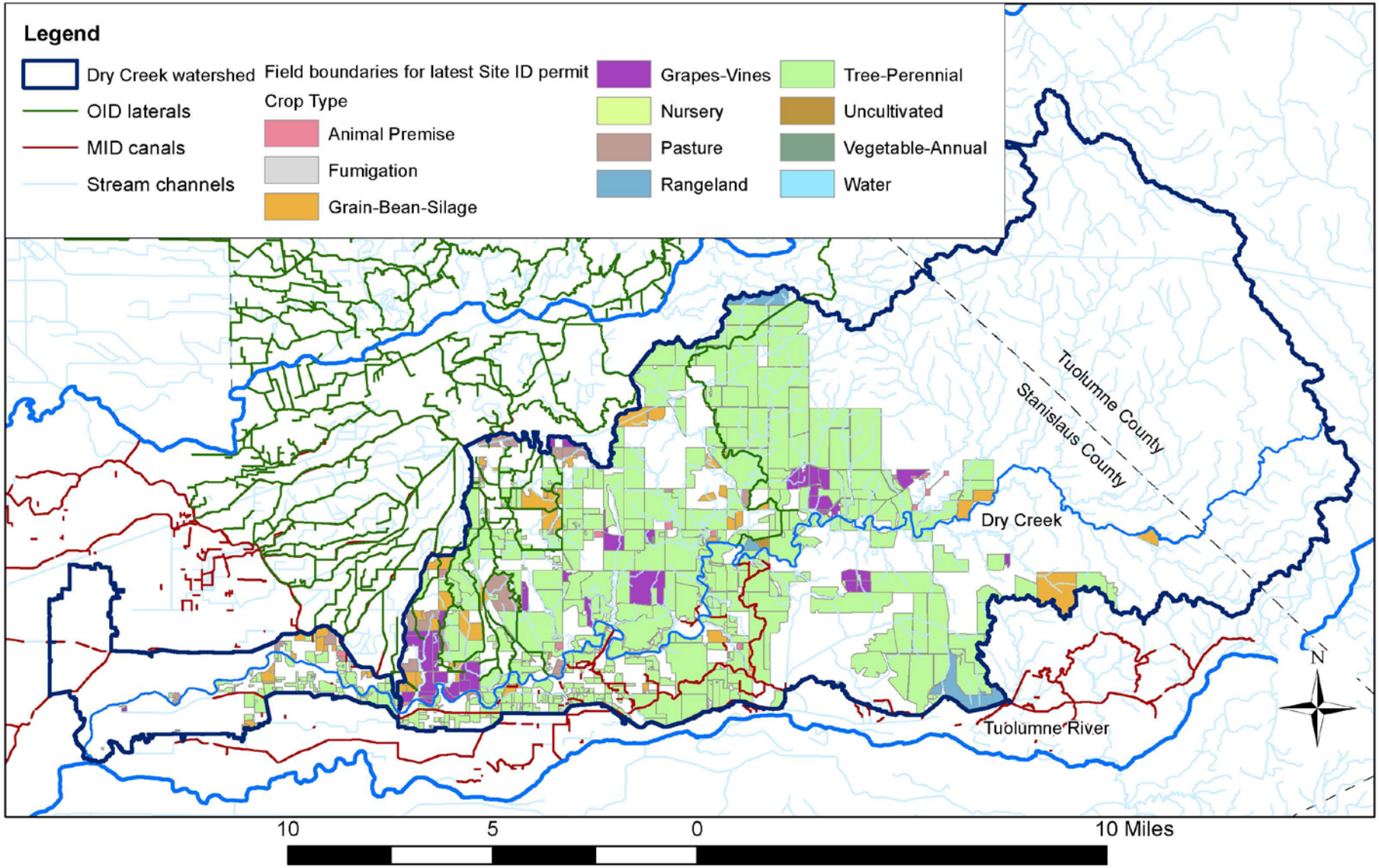


GSA GeoSystems Analysis, Inc.

PUR Safe Water for All

WOOD RODGERS

Estimated diference in groundwater elevation Spring 1971 to Spring 2015



Source data: Stanislaus County Department of Agriculture & Weights and Measures, 2019. Field Boundaries. N Leon, personal communication, 9/19/19.

GSA GeoSystems Analysis, Inc. Innovations and Solutions

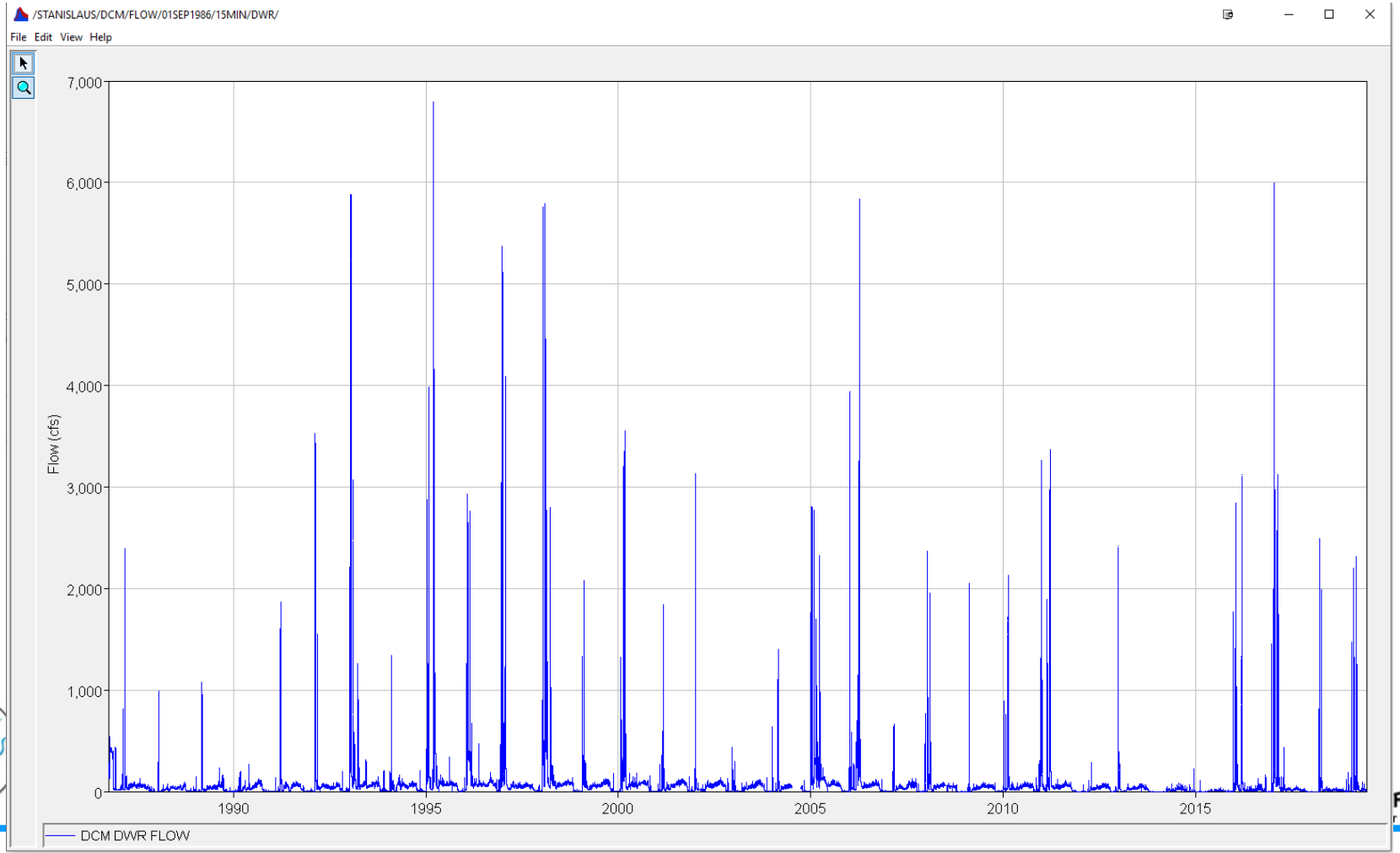
PUR Safe Water for All

WOOD RODGERS

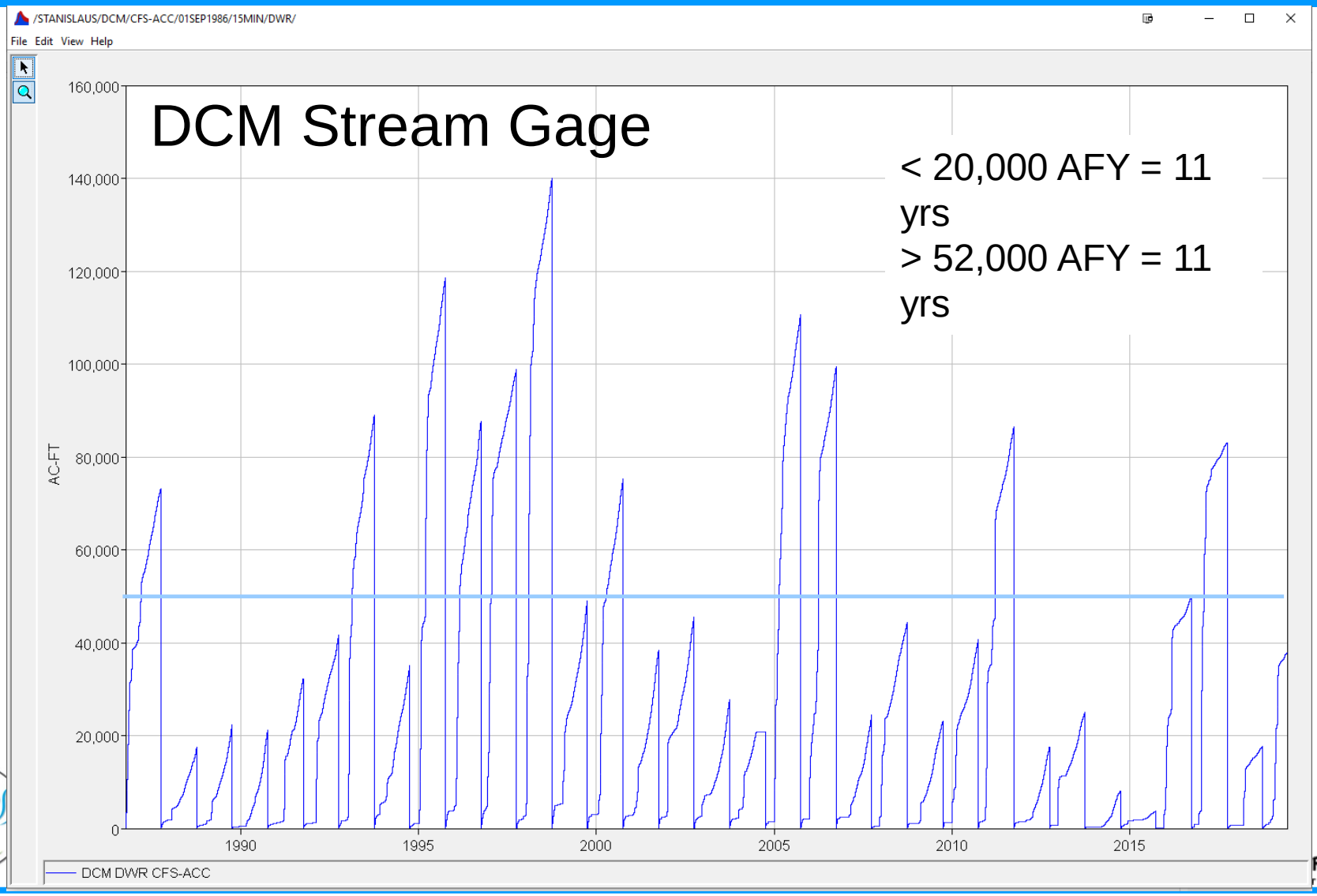
Stanislaus County field boundaries for latest Site ID permit

Historical Flow Rates (DCM Stream Gage)

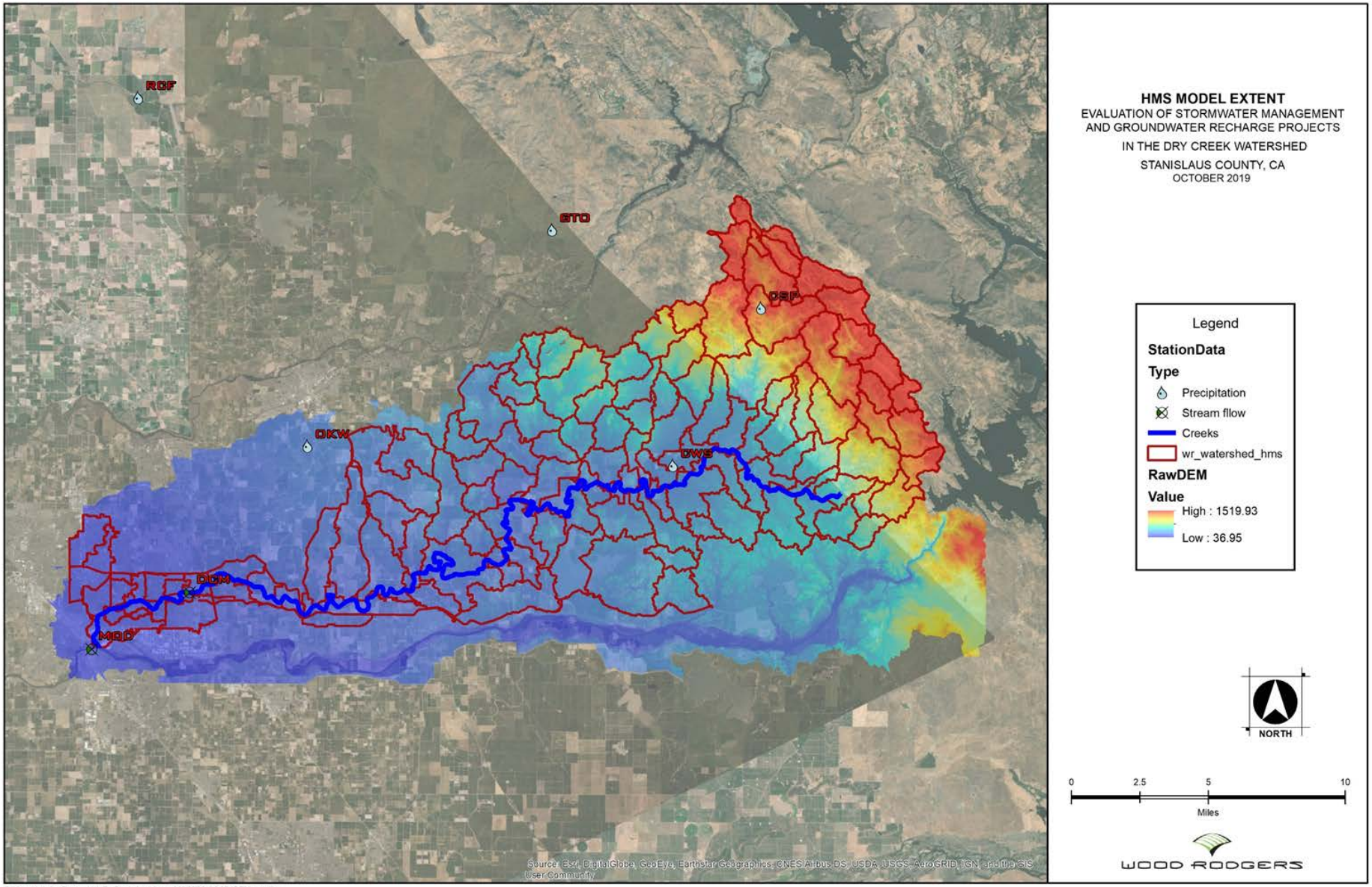
- Per data review, 5,000-6,000 cfs in Dry Creek causes flooding when in concurrence with 9,000 cfs in Tuolumne River



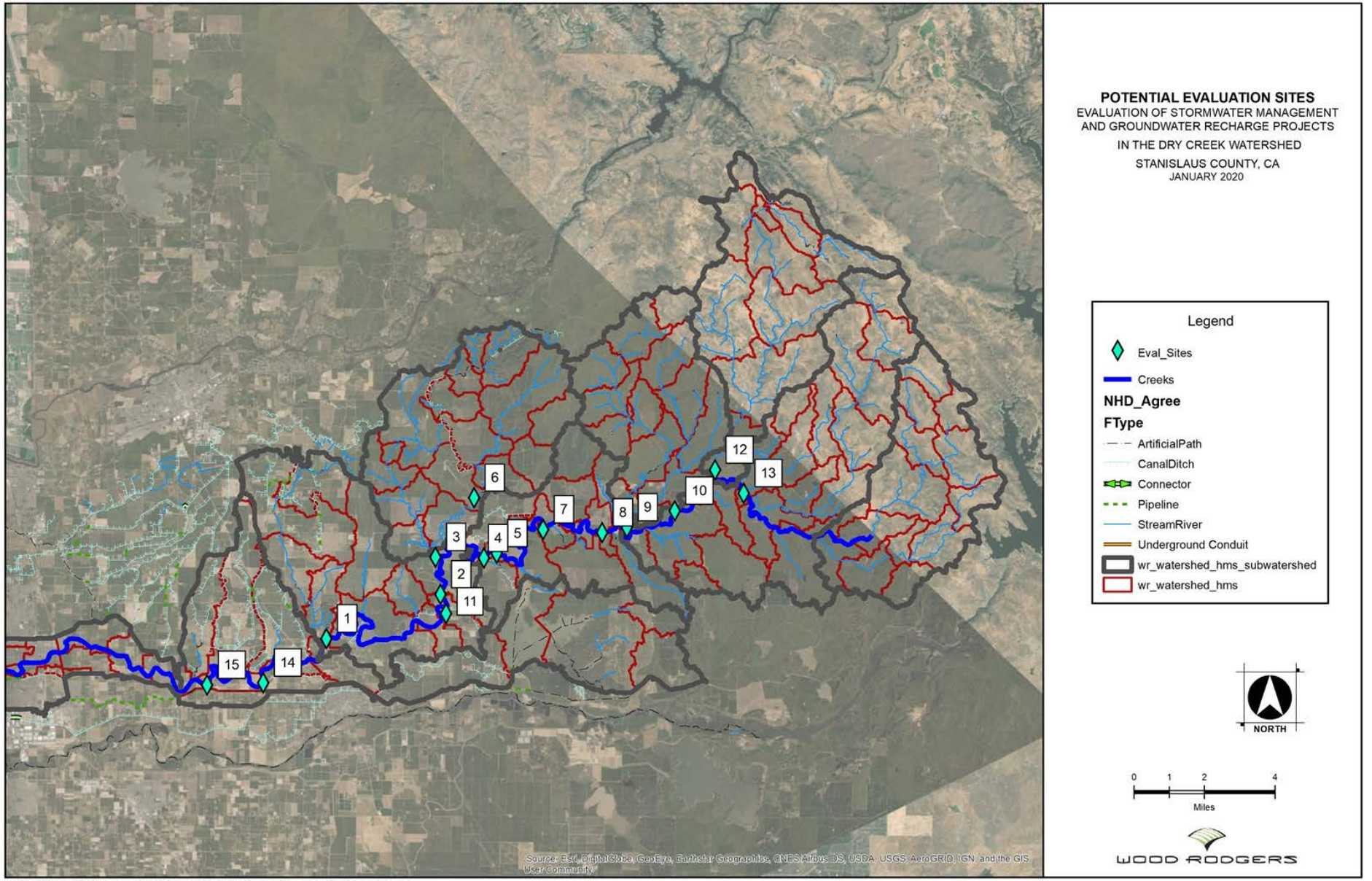
Historical Volumes by Water Year



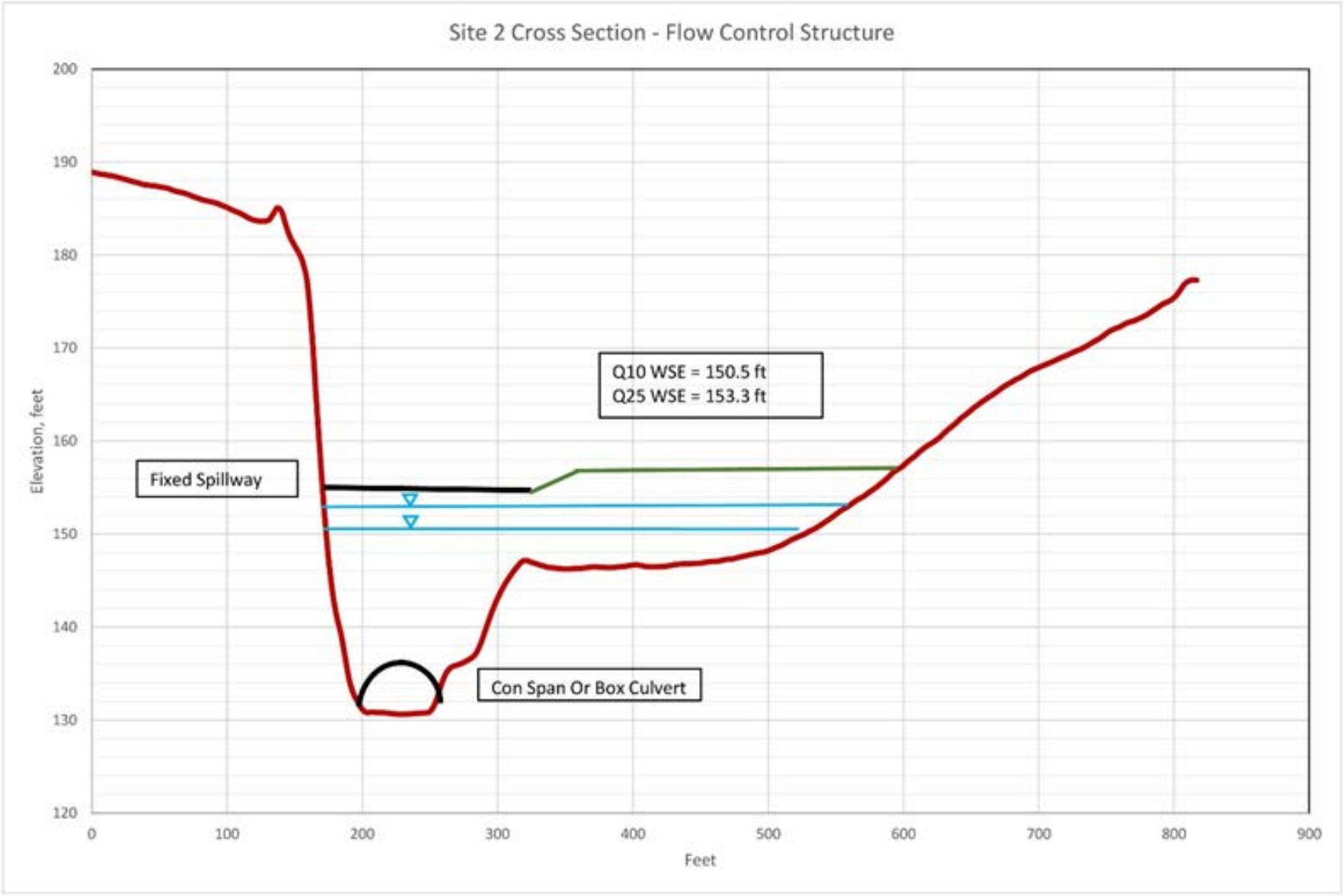
Surface Water Model



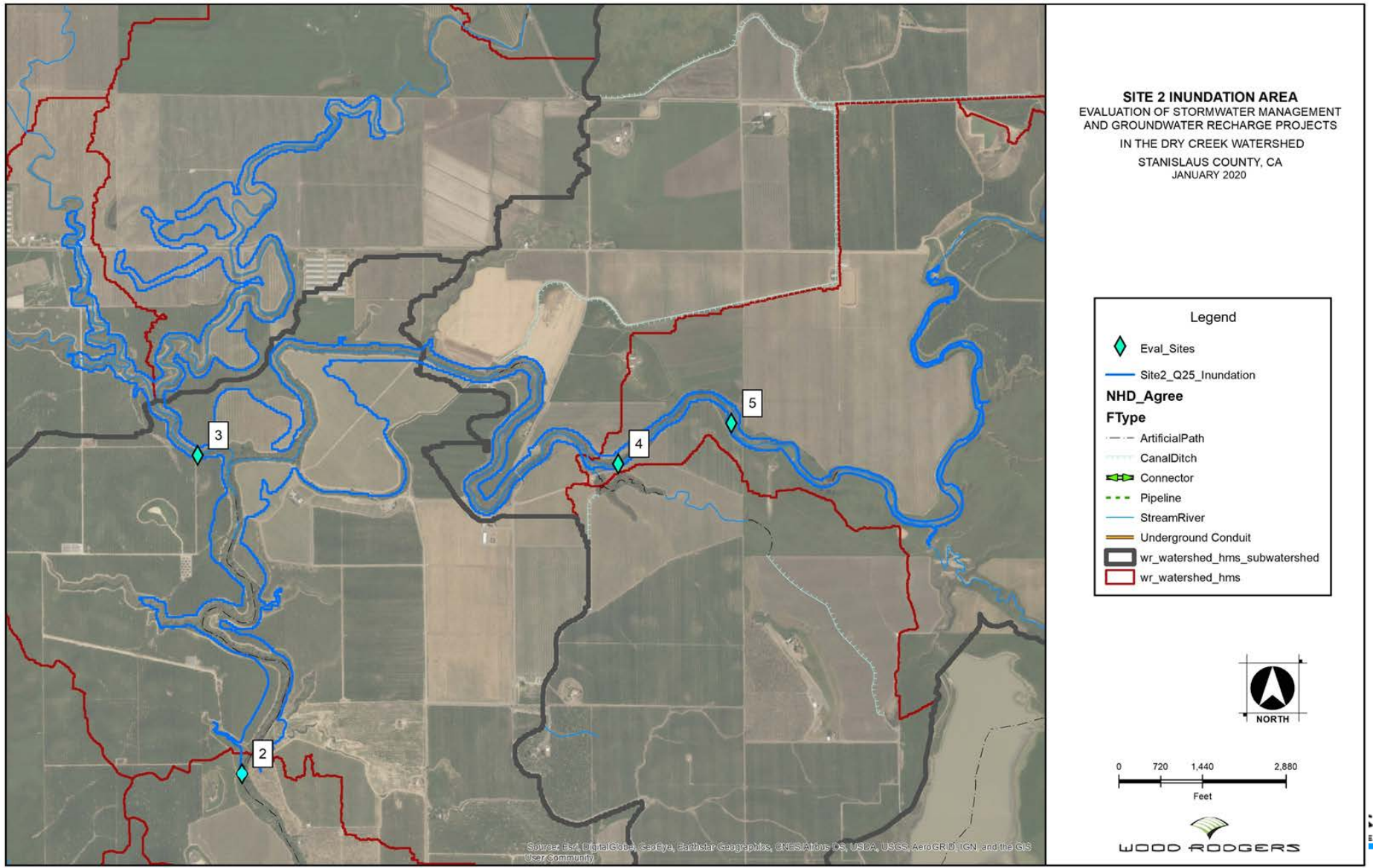
Initial Evaluation Sites



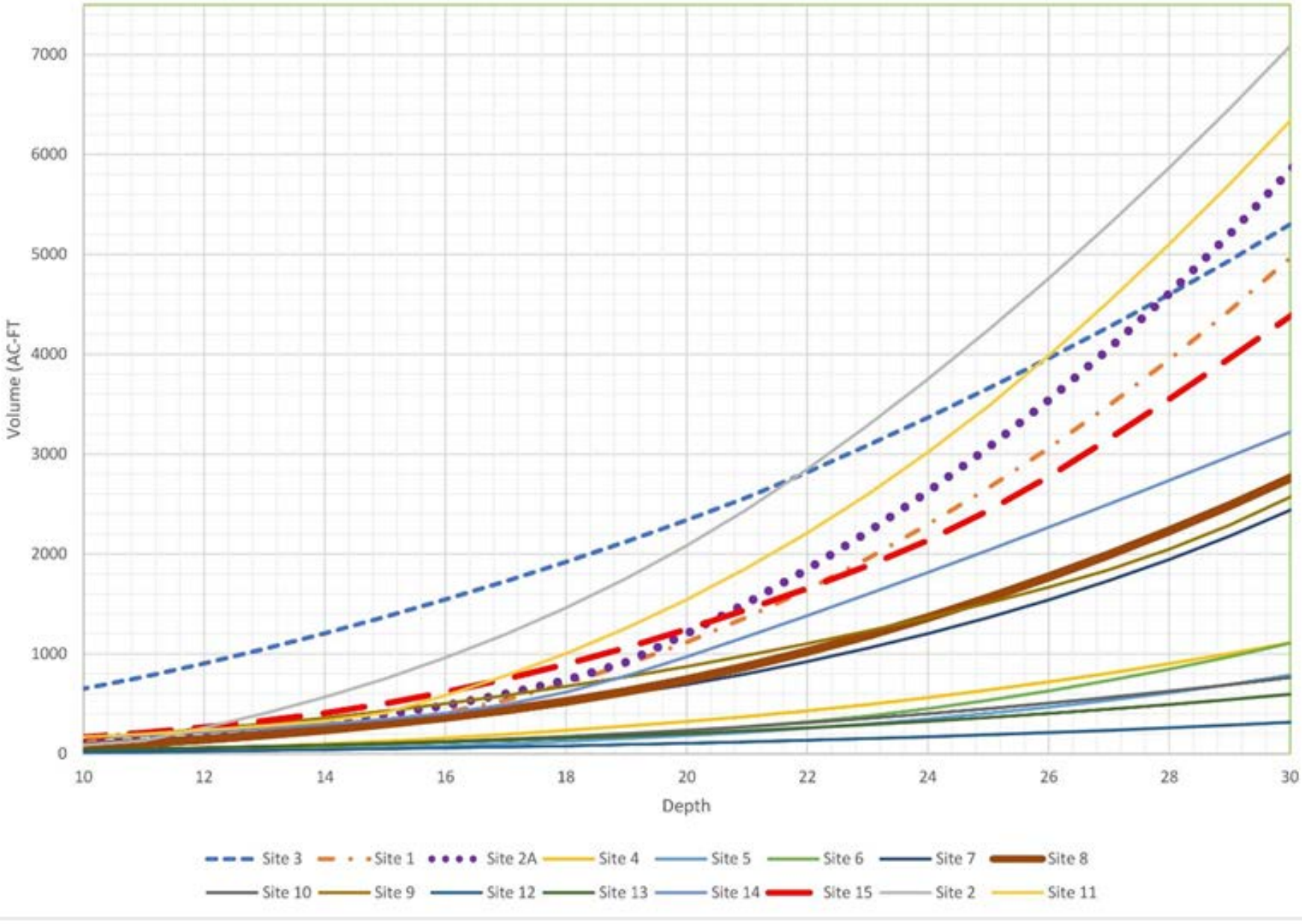
Hypothetical Flow Control Structure



Site 2 - Approximate Inundation Area, 10 year event



Height of Hypothetical Flow Control Structure vs. Storage



Current Schedule

- Identification of Potential Projects Report – January 31, 2020
- Develop Initial Project Screening Criteria and Methodology – February 21, 2020
- DAC Meeting – February 25, 2020

GSA GeoSystems Analysis, Inc. Innovations in Hydrology

EPUR Safe Water for All

WOOD RODGERS BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

Questions and Discussion

- Screening Criteria and Methodology will consider
  - Technical issues (examples)
    - Flood control effects
    - Potential for groundwater recharge (in-channel vs out of channel, recharge on agricultural land)
    - Land-use effects
    - DAC benefits
  - Economic
  - Environmental
  - Social, cultural and other (i.e. water rights)
- Need input from stakeholders

GSA GeoSystems Analysis, Inc. Innovations in Hydrology

EPUR Safe Water for All

WOOD RODGERS BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

Next Steps

- Apply for grant funding for Phase II
  - Conduct Community and Stakeholder Outreach
  - Select Three Highest Ranking Projects using Project Screening Criteria
  - Analysis of Three Selected Priority Projects
  - Phase II Draft Report
  - Conduct Additional Community and Stakeholder Outreach
- Phase III
  - Site investigations for groundwater recharge assessments
  - Detailed engineering