

# WILD WINGS COUNTY SERVICE AREA WATER REGIONALIZATION FEASIBILITY STUDY



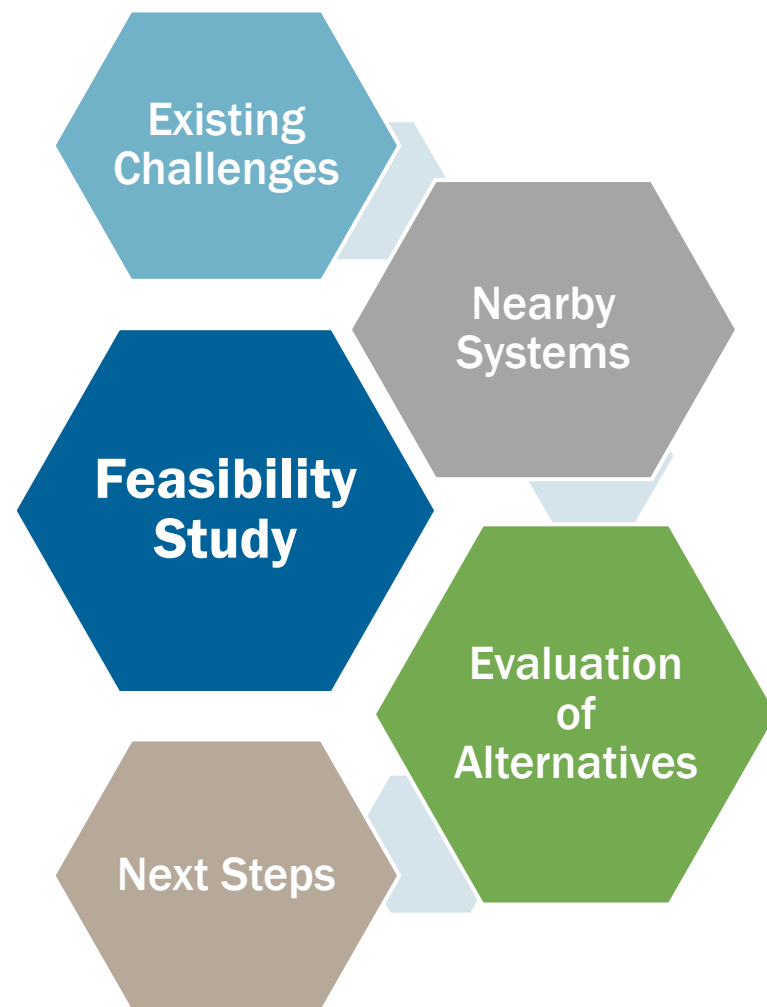
*August 9, 2023*

PRESENTATION FOR COUNTY OF YOLO  
AND WILD WINGS CSA

N|V|5

## KEY PRESENTATION POINTS

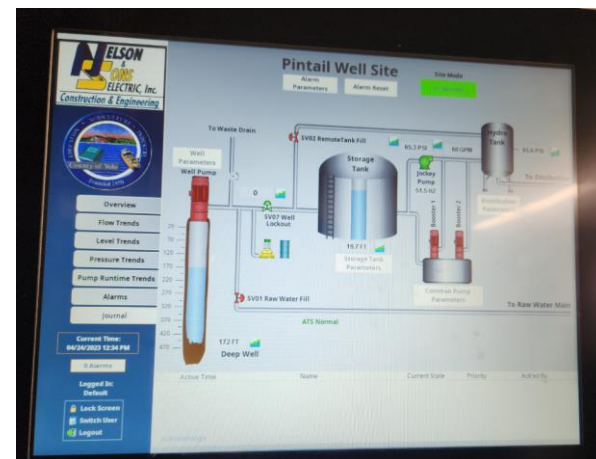
- ✓ Project Background
- ✓ Consolidation Overview
- ✓ Feasibility Study Approach
- ✓ Alternatives
- ✓ Evaluation & Recommendations
- ✓ Next Steps



## PROJECT BACKGROUND

### Existing Water System Facilities:

- Water Supply
  - Pintail Well
  - Canvas Back Well
  - Wood Duck Well (to be equipped)
- Storage Tanks (360,000 gal each)
  - Pintail Well Tank
  - Canvas Back Tank
- Pump Stations
  - Pintail Well Pumps (2 x 100 hp)
  - Canvas Back Pumps (2 x 100 hp)
- Distribution System
- 2 Monitoring Wells
- Future Arsenic Treatment Plant



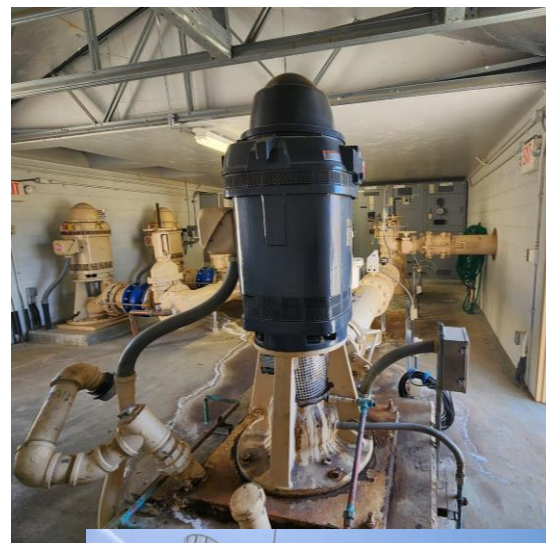
## PROJECT BACKGROUND (CONT'D)

### Challenges:

- Water Supply
  - Single active water source (Pintail Well)
  - Canvas Back Well for standby use only
  - Wood Duck Well drilled, to be equipped
- Water Quality
  - Pintail Well has high arsenic concentrations close to maximum contaminant level (MCL)
  - Canvas Back Well exceeds arsenic MCL (compliance order) and manganese MCL
- Drought Impacts
- High Priority Groundwater Basin
- Small Customer Base (353 connections)

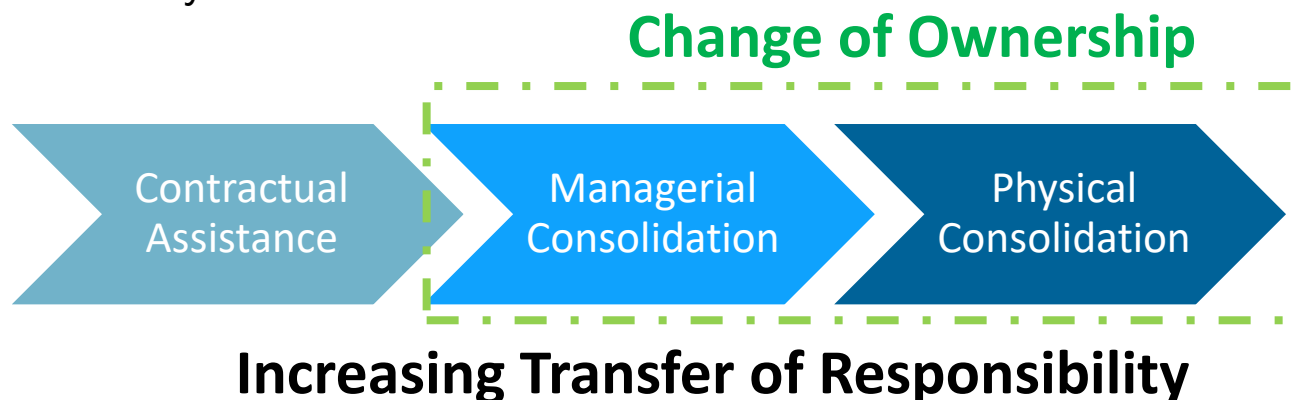
### Goals

- Prepare a feasibility study to evaluate consolidation options for a regionalized water supply that can withstand long periods of drought and be a reliable source of safe drinking water



## WHAT IS CONSOLIDATION?

- **Consolidation** is the joining of two or more water systems
  - Wild Wings CSA households would become customers of a different, larger water system
- **Physical Consolidation**
  - When one water system’s customers are provided water service by another existing water system
- **Managerial Consolidation**
  - When a small water system becomes part of a larger water system for managerial purposes but continues to use their original water supply and distribution system

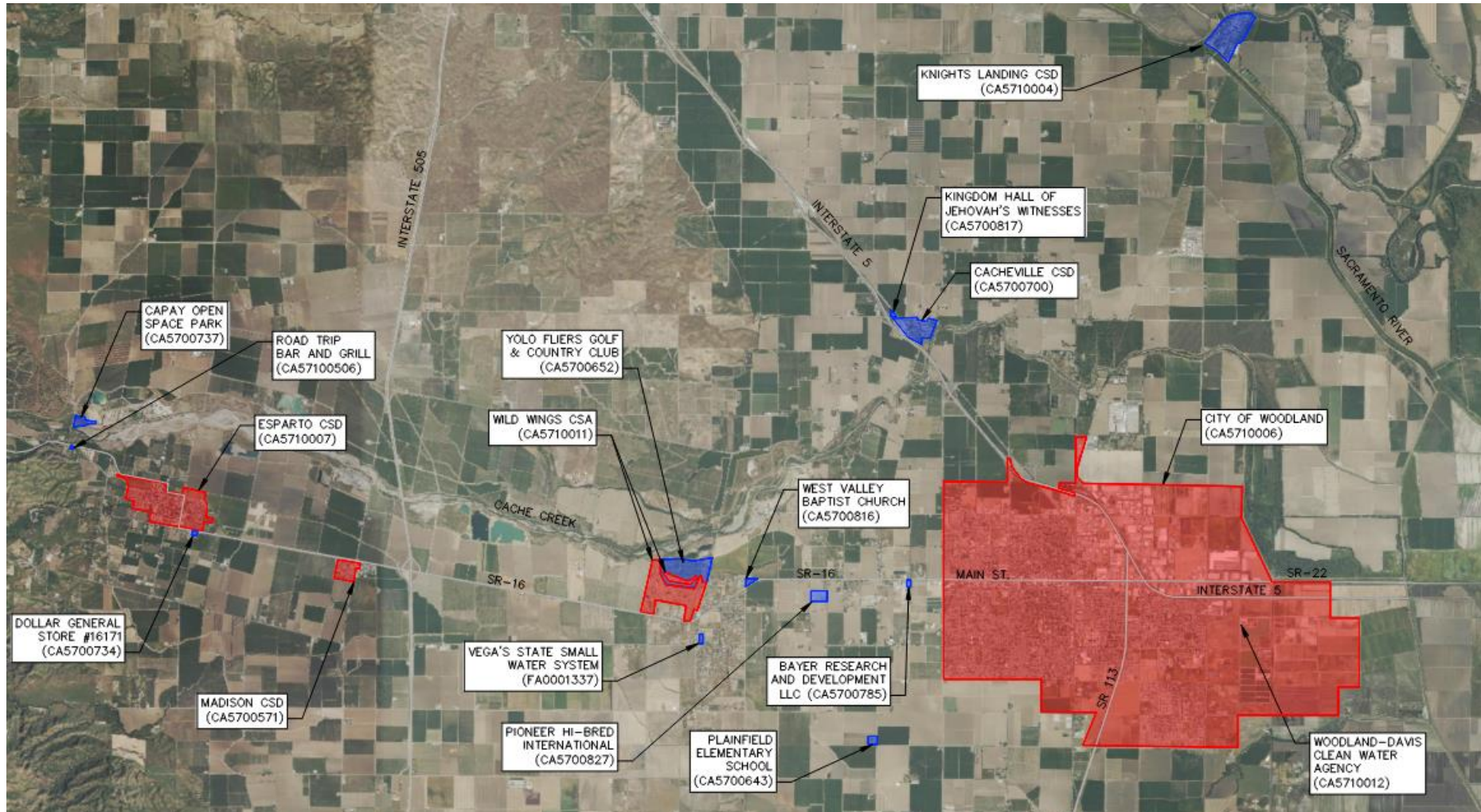


## APPROACH TO THE WORK

- **Initial Conceptualization**
  - Prepare Map of Nearby Systems
    - City of Woodland
    - Esparto CSD
    - Madison CSD
- **Meet With Each System & Review Information**
- **Develop Alternatives**
  - No Action
  - Consolidation (C1, C2, C3, C4)
- **Stakeholder Coordination**
  - County of Yolo, Wild Wings CSA, SWRCB-DDW, and nearby systems



## NEARBY WATER SYSTEMS



## APPROACH TO THE WORK (CONT'D)

- **Nearby Systems' Characteristics**
  - Better water quality
  - Similar elevations
  - City has diverse water supply portfolio (treated surface water with groundwater wells)
  - Limited supply sources (Esparto has 4 wells, Madison has 1 well)
  - Differing governing structures
  - Varying customer base
    - *City: ~16,977 service connections*
    - *Esparto: ~1,007 service connections*
    - *Madison ~149 service connections*
- **Identify Solutions Beneficial to All Systems**
  - Expanded customer base
  - Redundant water sources
  - Sufficient storage to meet maximum day demand and fire flow suppression requirements
  - Consolidation incentives funding

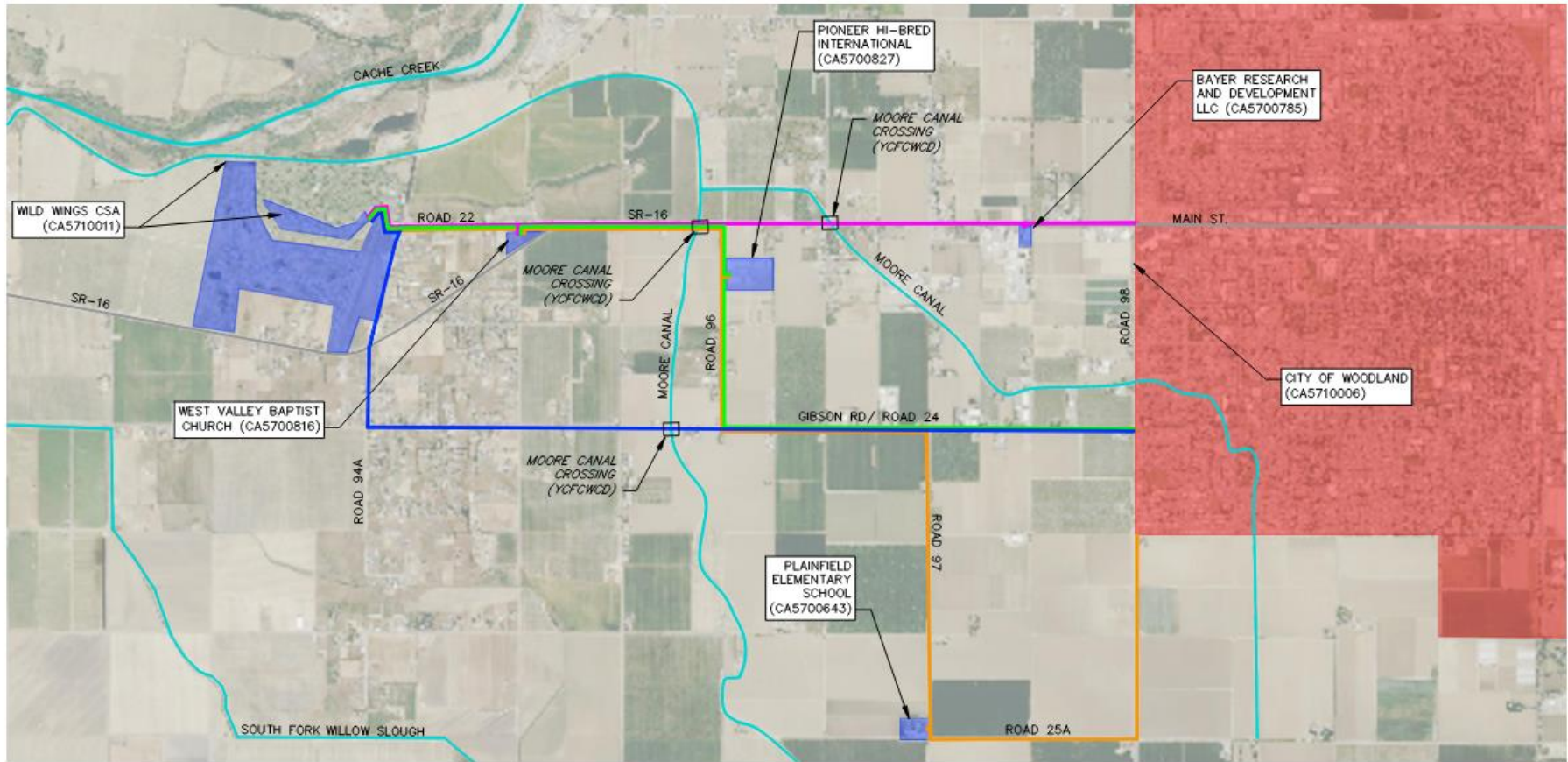


## ALTERNATIVES

Alternative	Anticipated Infrastructure Improvements	Preliminary Capital Cost
<b>Alternative NC</b> <i>No Action</i>	Wood Duck Well, pump station, arsenic treatment plant	\$7.9M
<b>Alternative C1</b> <i>Consolidate Wild Wings CSA into the City of Woodland</i>	~4 miles of transmission pipeline and pump station	\$17.0M
<b>Alternative C2</b> <i>Consolidate Wild Wings CSA into Esparto CSD</i>	~10 miles of transmission pipeline and pump station, 2 wells (900 gpm min)	\$28.7M
<b>Alternative C3</b> <i>Consolidate Wild Wings CSA and Madison CSD into Esparto CSD</i>	~11 miles of transmission pipeline and pump station, 2 wells (600 gpm min)*	\$30.8M
<b>Alternative C4</b> <i>Physical Consolidation of Wild Wings CSA and Madison CSD &amp; Managerial Consolidation of Cacheville CSD and Knights Landing CSD</i>	~11 miles of transmission pipeline and pump station, 2 wells (600 gpm min)*	\$32.2M

\*Madison CSD is replacing distribution system & seeking funding for a new storage tank

## ALTERNATIVE C1 – CONSOLIDATE WITH CITY



### LEGEND

<span style="color: red;">█</span>	RECEIVING WATER SYSTEM
<span style="color: blue;">█</span>	CONSOLIDATING WATER SYSTEM
<span style="color: pink;">█</span>	POTENTIAL ALIGNMENT NO. 1
<span style="color: orange;">█</span>	POTENTIAL ALIGNMENT NO. 2
<span style="color: green;">█</span>	POTENTIAL ALIGNMENT NO. 3
<span style="color: blue;">█</span>	POTENTIAL ALIGNMENT NO. 4

WATER SYSTEM	WATER SYSTEM COMPONENT	STATUS AFTER CONSOLIDATION
WILD WINGS CSA	PINTAIL WELL	STANDBY
	CANVAS BACK WELL	STANDBY
	(2) 360,000 GAL. STORAGE TANKS	ACTIVE
	(2) BOOSTER PUMP STATIONS AND HYDROPNEUMATIC TANKS	ACTIVE

### NOTES:

1. PROPOSED BOOSTER PUMP STATION LOCATION YET TO BE DETERMINED.

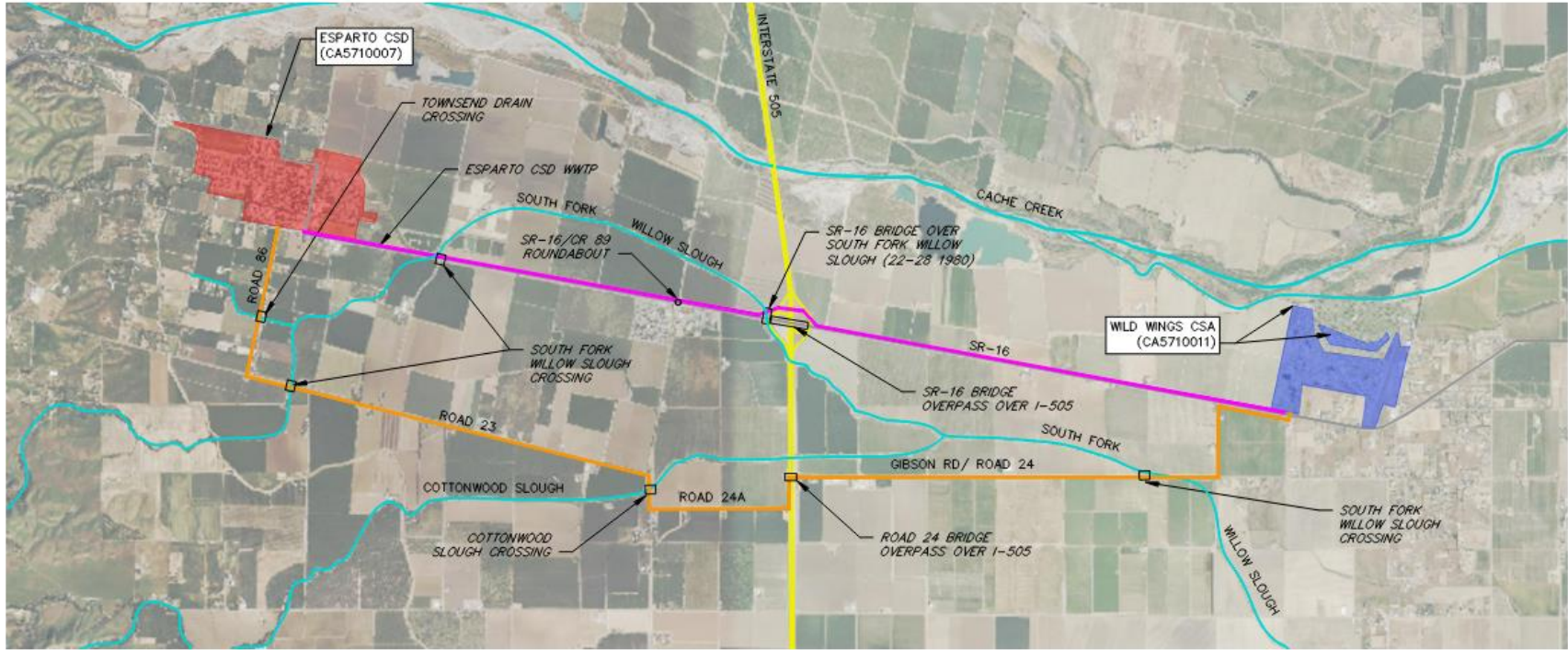
**PRELIMINARY**  
**NOT FOR CONSTRUCTION**



0 1/2 MILE 1 MILES

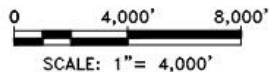
SCALE: 1"= 1/2 MILE

## ALTERNATIVE C2 – CONSOLIDATE WITH ESPARTO CSD



**LEGEND**

<span style="color: red;">█</span>	GOVERNING WATER SYSTEM
<span style="color: blue;">█</span>	CONSOLIDATING WATER SYSTEM
<span style="color: purple;">█</span>	POTENTIAL ALIGNMENT NO. 1
<span style="color: orange;">█</span>	POTENTIAL ALIGNMENT NO. 2



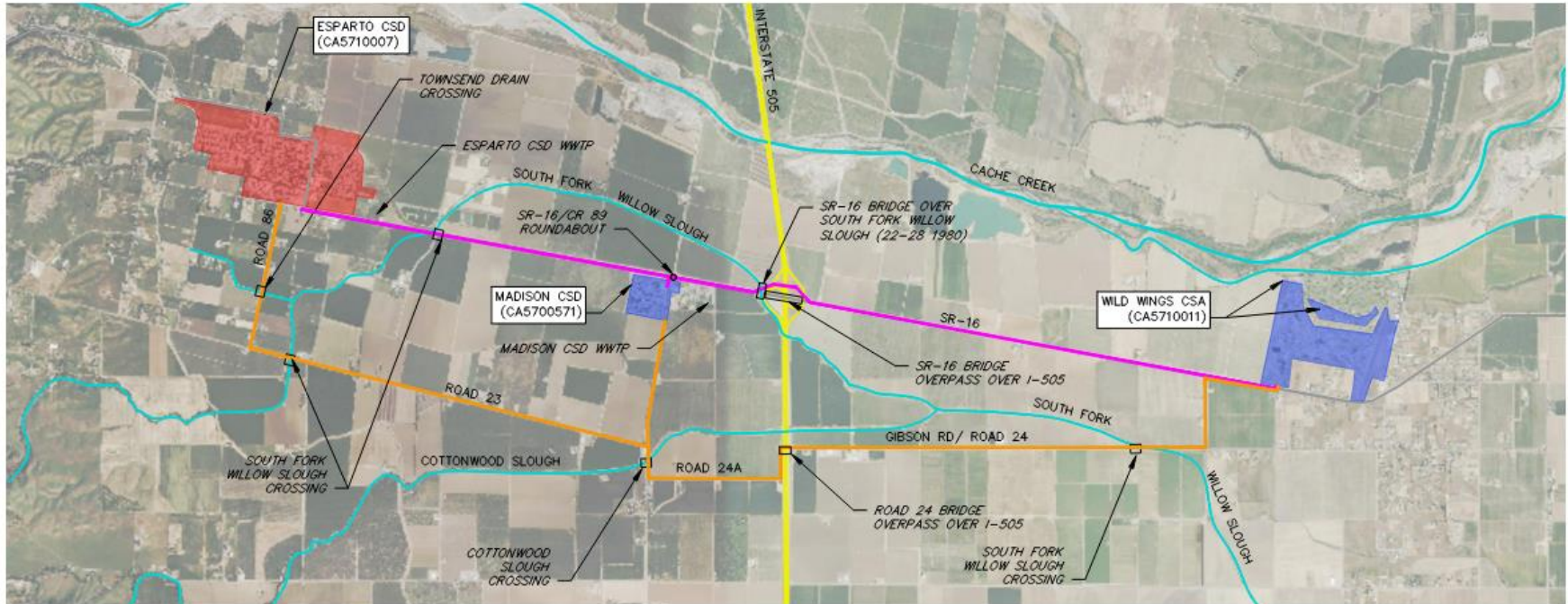
WATER SYSTEM	SYSTEM COMPONENT	STATUS AFTER CONSOLIDATION
ESPARTO CSD	WELL 1A	ACTIVE
	WELL 5B	ACTIVE
	WELL 6	ACTIVE
	WELL 7	ACTIVE
	500,000 GAL. STORAGE TANK	ACTIVE
	BOOSTER PUMP STATION AND HYDROPNEUMATIC TANKS	ACTIVE
WILD WINGS CSA	PINTAIL WELL	STANDBY
	CANVAS BACK WELL	STANDBY
	(2) 360,000 GAL. STORAGE TANKS	ACTIVE
	(2) BOOSTER PUMP STATIONS AND HYDROPNEUMATIC TANKS	ACTIVE

**NOTES:**

1. PROPOSED WELL NO. 8, WELL NO. 9, AND BOOSTER PUMP STATION LOCATION YET TO BE DETERMINED.

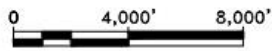
**PRELIMINARY**  
NOT FOR CONSTRUCTION

# ALTERNATIVES C3 & C4 – REGIONAL CONSOLIDATION WITH ESPARTO CSD



### LEGEND

- █ RECEIVING WATER SYSTEM
- █ CONSOLIDATING WATER SYSTEM
- █ POTENTIAL ALIGNMENT NO. 1
- █ POTENTIAL ALIGNMENT NO. 2



SCALE: 1" = 4,000'

WATER SYSTEM	SYSTEM COMPONENT	STATUS AFTER CONSOLIDATION
ESPARTO CSD	WELL 1A	ACTIVE
	WELL 5B	ACTIVE
	WELL 6	ACTIVE
	WELL 7	ACTIVE
	500,000 GAL. STORAGE TANK BOOSTER PUMP STATION AND HYDROPNEUMATIC TANKS	ACTIVE
WILD WINGS CSA	PINTAIL WELL	STANDBY
	CANVAS BACK WELL	STANDBY
	(2) 360,000 GAL. STORAGE TANKS (2) BOOSTER PUMP STATIONS AND HYDROPNEUMATIC TANKS	ACTIVE
MADISON CSD	WELL 1	STANDBY
	WELL 2	STANDBY
	WELL 3	ACTIVE
	HYDROPNEUMATIC TANK	ACTIVE

### NOTES:

1. PROPOSED WELL NO. 8, WELL NO. 9, AND BOOSTER PUMP STATION LOCATION YET TO BE DETERMINED.

**PRELIMINARY**  
**NOT FOR CONSTRUCTION**

# EVALUATION & RECOMMENDATIONS

- **No Action Alternative (Alternative NC)**
  - Yolo County to continue owning and maintaining the water system.
  - Additional regulatory requirements and costs such as regular sampling, reporting, and operations and maintenance will be needed for the treatment plant.
  - The anticipated water supply portfolio will include three wells. Long-term longevity of groundwater supply remains a concern during longer periods of drought conditions.
- **Consolidation with City of Woodland (Alternative C1)**
  - Lowest capital cost out of all consolidation alternatives
  - The City has sufficient existing water capacity to serve Wild Wings CSA, as well as administrative/operational capacity.
  - Currently cannot extend service outside of City's service area until moratorium is repealed.
- **Consolidation with Esparto CSD (Alternatives C2, C3, C4)**
  - Esparto CSD currently does not have sufficient source capacity to serve an expanded consolidation system. Consolidation would require 2 new wells.
  - Esparto CSD currently has limited administrative and operational capacity to serve additional customers. Esparto CSD is already providing some contract administrative and operating services to nearby systems.
  - Inclusion of Madison CSD (disadvantaged community) in the consolidation would likely provide additional grant funding resources to the project.
- **Potential Financing Programs**

## NEXT STEPS

- Public Comment: Email questions or comments to Shen Huang at [shen.huang@nv5.com](mailto:shen.huang@nv5.com)
- Finalize Feasibility Study
- Track City of Woodland's proposed ballot measure to repeal moratorium not allowing extension of service outside of City service area