

# WYANDOTTE CREEK SUBBASIN

## SGM Grant Program: Submitted Application Package

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For information on the grant program, visit:

<https://water.ca.gov/work-with-us/grants-and-loans/sustainable-groundwater>



**Resolution No. 2022-01**

**RESOLUTION BY THE WYANDOTTE CREEK GROUNDWATER SUSTAINABILITY AGENCY THAT AN APPLICATION BE MADE TO THE DEPARTMENT OF WATER RESOURCES TO OBTAIN A GRANT UNDER THE 2021 SUSTAINABLE GROUNDWATER MANAGEMENT GRANT PROGRAM SGMA IMPLEMENTATION GRANT.**

**WHEREAS**, the Wyandotte Creek is the Groundwater Sustainability Agency (“Wyandotte Creek GSA”) in the Wyandotte Creek Subbasin; and

**WHEREAS**, the Wyandotte Creek Subbasin has adopted one Groundwater Sustainability Plan for the subbasin pursuant to the Sustainable Groundwater Management Act (“SGMA”) and pursuant to a Joint Powers Agreement agreed to and executed by the Wyandotte Creek GSA Member Agencies; and

**WHEREAS**, the Wyandotte Creek GSA is preparing an application to the California Department of Water Resources (“DWR”) to obtain a grant under the Sustainable Groundwater Management (SGM) Grant Program SGMA Implementation Grant pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018 (Pub. Resources Code, § 80000, et seq.) and the Budget Acts of 2021 and 2022; and

**WHEREAS**, DWR will accept one application per subbasin during the SGM Grant Program’s SGMA Implementation Round 2; and

**WHEREAS**, the Wyandotte Creek GSA desires to work cooperatively with the Wyandotte Creek GSA Member Agencies in the submission of one application to DWR and in developing and undertaking projects and other activities pursuant to the Wyandotte Creek Subbasin’s application to DWR; and

**WHEREAS**, it is the intention of the Wyandotte Creek GSA to submit one grant application on behalf of the entire Wyandotte Creek Subbasin for the SGM Grant Program SGMA Implementation Grant Round 2 solicitation; and

**WHEREAS**, the Wyandotte Creek GSA is preparing an application that includes proposed projects submitted by the GSA’s Member Agencies and eligible entities consistent with the Wyandotte Creek Subbasin Groundwater Sustainability Plan for the SGM Grant Program’s SGMA Implementation Grant Round 2; and

**WHEREAS**, the Wyandotte Creek GSA’s application includes projects that are of interest and of benefit to the Wyandotte Creek Subbasin; and

**WHEREAS**, the SGM Grant Program SGMA Implementation Grant Proposal Solicitation Package requires that the Wyandotte Creek GSA, as the entity acting as the applicant, must adopt a resolution that designates an authorized representative to submit the application and execute an agreement with the State of California for the SGMA Implementation Grant application.

**NOW, THEREFORE BE IT RESOLVED**, by the Wyandotte Creek GSA, that an application be made to the Department of Water Resources to obtain a grant under the 2021 Sustainable Groundwater Management (SGM) Grant Program SGMA Implementation Grant pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018 (Pub. Resources Code, § 80000, et seq.) and the Budget Acts of 2021 and 2022.

**BE IT FURTHER RESOLVED** that the Wyandotte Creek GSA has the authority and shall enter into a funding agreement with the Department of Water Resources to receive a grant for the: Wyandotte Creek Subbasin GSP Projects and Management Actions Implementation – Round 2 Grant Application.

**BE IT FURTHER RESOLVED** that the Butte County Director of Water and Resource Conservation, administrator of the Wyandotte Creek GSA, or designee, is hereby authorized and directed to prepare the necessary data, conduct investigations, file such application, execute a funding agreement and any future amendments thereto, submit invoices, and submit any reporting requirements with the Department of Water Resources.

**PASSED AND ADOPTED** by the Wyandotte Creek Board of Directors, the governing body for the Wyandotte Creek GSA this 10<sup>th</sup> day of November 2022, by the following vote:

**AYES:** Bynum, Wristen, Smith, Connelly

**NOES:**

**ABSENT:** Daley

**ABSTAIN:**

  
\_\_\_\_\_  
**Bill Connelly, Chair**  
Wyandotte Creek Board of Directors

**CERTIFICATION**

I do hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the Wyandotte Creek GSA held on the 10<sup>th</sup> day of November, 2022.

**ATTEST:**

By:   
\_\_\_\_\_  
Kamie Loeser, Administrator, Wyandotte Creek GSA

Resolution 07-22  
THERMALITO WATER AND SEWER DISTRICT  
410 Grand Avenue, Oroville CA 95965

**“A RESOLUTION IN SUPPORT OF THE WYANDOTTE CREEK GROUNDWATER  
SUSTAINABILITY AGENCY’S APPLICATION FOR A SUSTAINABLE  
GROUNDWATER MANAGEMENT GRANT”**

WHEREAS, Thermalito Water & Sewer District (District) is a Member Agency of the Wyandotte Creek Groundwater Sustainability Agency (“Wyandotte Creek GSA”); and

WHEREAS, the Wyandotte Creek Groundwater Sustainability Agency (“Wyandotte Creek GSA”) is the GSA in the Wyandotte Creek Subbasin; and

WHEREAS, the Wyandotte Creek Subbasin has adopted one Groundwater Sustainability Plan for the subbasin pursuant to the Sustainable Groundwater Management Act (“SGMA”) and pursuant to a Joint Powers Agreement agreed to and executed by the Wyandotte Creek GSA Member Agencies; and

WHEREAS, the Wyandotte Creek GSA is preparing an application to the California Department of Water Resources (“DWR”) to obtain a grant under the Sustainable Groundwater Management (SGM) Grant Program SGMA Implementation Grant pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018 (Pub. Resources Code, § 80000, et seq.) and the Budget Acts of 2021 and 2022; and

WHEREAS, DWR will accept one application per subbasin during the SGM Grant Program’s SGMA Implementation Round 2; and

WHEREAS, it is the intention of the District that one grant application be submitted on behalf of the entire Wyandotte Creek Subbasin for the Round 2 Solicitation; and

WHEREAS, the District desires to work cooperatively with the Wyandotte Creek GSA Member Agencies and other project proponents in the submission of an application to DWR and in developing and undertaking projects and other activities pursuant to the Wyandotte Creek GSA’s application to DWR; and

WHEREAS, the Wyandotte Creek GSA’s application includes consideration of the Thermalito Water Treatment Plant Capacity Upgrade, a potential project of interest and of benefit to the District.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors for Thermalito Water & Sewer District that the District supports the Wyandotte Creek GSA’s application to DWR to obtain a grant under the SGM Grant Program SGMA Implementation Grant pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018 (Pub. Resources Code, § 80000, et seq.) and the Budget Acts of 2021 and 2022.

BE IT FURTHER RESOLVED that the District acknowledges that the Wyandotte Creek GSA has the authority and shall enter into a funding agreement with DWR to receive a grant benefitting one or more SGMA projects in the Wyandotte Creek Subbasin, including the District's potential project(s).

BE IT FURTHER RESOLVED that the Butte County Director of Water and Resource Conservation, or designee, is authorized to administer the SGM Grant Project on County's behalf and for its benefit, including preparing the necessary data, conducting investigations, filing such application, executing a funding agreement and any future amendments thereto, submitting invoices, and any reporting requirements with DWR.

PASSED AND ADOPTED, by the Board of Thermalito Water and Sewer District, Butte County, at its regular meeting on December 13, 2022.

AYES: Director's Hatley, Taggart, Wristen, Koch and Clark

NAYS:

ABSTAIN:

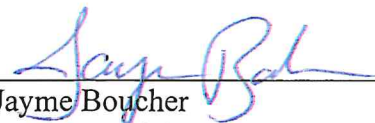
ABSENT:



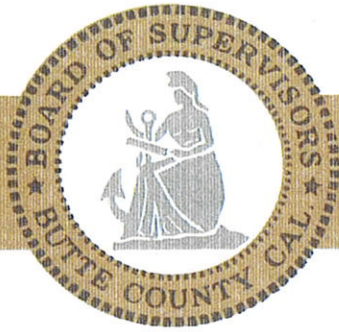
Bruce Wristen

President of the Board of Directors  
Thermalito Water and Sewer District

ATTEST:



Jayne Boucher  
Secretary of the Board of Directors  
Thermalito Water and Sewer District



**BOARD OF SUPERVISORS**  
COUNTY OF BUTTE, STATE OF CALIFORNIA

**Resolution No. 22-167**

**A RESOLUTION IN SUPPORT OF THE WYANDOTTE CREEK GROUNDWATER SUSTAINABILITY AGENCY'S APPLICATION FOR A SUSTAINABLE GROUNDWATER MANAGEMENT GRANT ROUND 2 APPLICATION**

**WHEREAS**, Butte County is a Member Agency of the Wyandotte Creek Groundwater Sustainability Agency ("Wyandotte Creek GSA"); and

**WHEREAS**, the Wyandotte Creek Groundwater Sustainability Agency ("Wyandotte Creek GSA") is the GSA in the Wyandotte Creek Subbasin; and

**WHEREAS**, the Wyandotte Creek Subbasin has adopted one Groundwater Sustainability Plan for the subbasin pursuant to the Sustainable Groundwater Management Act ("SGMA") and pursuant to a Joint Powers Agreement agreed to and executed by the Wyandotte Creek GSA Member Agencies; and

**WHEREAS**, the Wyandotte Creek GSA is preparing an application to the California Department of Water Resources ("DWR") to obtain a grant under the Sustainable Groundwater Management (SGM) Grant Program SGMA Implementation Grant pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018 (Pub. Resources Code, § 80000, et seq.) and the Budget Acts of 2021 and 2022; and

**WHEREAS**, DWR will accept one application per subbasin during the SGM Grant Program's SGMA Implementation Round 2; and

**WHEREAS**, it is the intention of Butte County that one grant application be submitted on behalf of the entire Wyandotte Creek Subbasin for the Round 2 Solicitation; and

**WHEREAS**, Butte County desires to work cooperatively with the Wyandotte Creek GSA Member Agencies and other project proponents in the submission of an application to DWR and in developing and undertaking projects and other activities pursuant to the Wyandotte Creek GSA's application to DWR; and

**WHEREAS**, the Wyandotte Creek GSA's application includes projects and management actions that are consistent with the Wyandotte Creek Subbasin Groundwater Sustainability Plan; these projects are of interest and of benefit to Butte County.

**NOW, THEREFORE, BE IT RESOLVED** by the Board of Supervisors of the County of Butte that the County supports the Wyandotte Creek GSA's application to DWR to obtain a grant under the SGM Grant Program SGMA Implementation Grant pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018 (Pub. Resources Code, § 80000, et seq.) and the Budget Acts of 2021 and 2022.

**BE IT FURTHER RESOLVED** that Butte County, a Member Agency of the Wyandotte Creek GSA, acknowledges that the Wyandotte Creek GSA has the authority and shall enter into a funding agreement with DWR to receive a grant benefitting one or more SGMA projects in the Wyandotte Creek Subbasin.

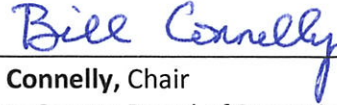
**PASSED AND ADOPTED** by the Butte County Board of Supervisors this 8<sup>th</sup> day of November, 2022 by the following vote:

**AYES:** Supervisors Ritter, Kimmelshue, Teeter and Chair Connelly

**NOES:** None

**ABSENT:** None

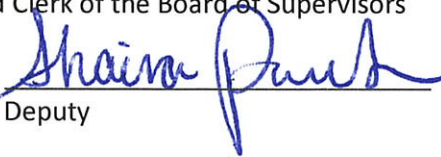
**ABSTAIN:** None



**Bill Connelly**, Chair  
Butte County Board of Supervisors

**ATTEST:**

**Andy Pickett**, Chief Administrative Officer  
and Clerk of the Board of Supervisors

By:   
Deputy

# Eligibility Criteria Self-Certification

## Attachment 2: Eligibility Criteria Self-Certification Form

As a Grantee of General Funds and/or Proposition 68 grant funds with the Department of Water Resources' (DWRs) Financial Assistance Branch, you must complete this self-certification form to enter into a Grant Agreement with DWR to receive grant funds. Failure to meet and maintain these conditions and requirements may result in DWR revoking the grant award, withholding grant funding, stopping invoice payment, and/or terminating the Grant Agreement. Answers must be provided for the primary Awardee and all member agencies within the Groundwater Sustainability Agency (GSA) or adjudicated basin. An answer of No to some questions below may make you ineligible to enter a contract with DWR.

A. Grantee Name: Wyandotte Creek Groundwater Sustainability Agency

**Member Agencies**

County of Butte
Thermalito Water and Sewer District
City of Oroville

The Grantee, Wyandotte Creek GSA, is a GSA, a member agency of a GSA, an agency with an Alternative to a Groundwater Sustainability Plan (GSP), or located within an adjudicated basin.

Yes    No If no, DWR cannot enter into a Grant Agreement.

2. **Agricultural Water Management Compliance:** Is the Grantee or any member agency required to submit an Agricultural Water Management Plan (AWMP) to DWR?    Yes    No

If yes, list all member agencies required to submit the most recent AWMP (2015, 2020) and the date the AWMP was submitted to DWR. If yes and not submitted, DWR cannot enter into a Grant Agreement.

A.

Member Agency	Date AWMP Submitted to DWR
	enter date
	enter date
	enter date
	enter date
	enter date
	enter date
	enter date
	enter date
	enter date
	enter date



## Eligibility Criteria Self-Certification

3. **CASGEM / SGMA Portal:** Has the Grantee and all member agencies met the requirements of DWR’s CASGEM Program and is current with all data reporting requirements for CASGEM and the SGMA Portal?

Yes    No    N/A

A. List all member agencies required to meet CASGEM requirements. If not current, DWR cannot enter into an agreement.

Member Agency	Date
County of Butte (monitoring current as of 11/1/22)	11/1/2022
	enter date
	enter date
	enter date
	enter date
	enter date
	enter date
	enter date
	enter date
	enter date

4. **Consistency with the Delta Plan:** Is the Project, in whole or in part, within the Sacramento-San Joaquin Delta (Delta) or Suisun Marsh (Marsh)?

Yes, the Grantee and member agencies have engaged with the Delta Stewardship Council (Council) regarding the Council’s regulatory policies that may be potentially applicable to the project and the consistency of the Project with the Delta Plan. (If yes and inconsistent, DWR cannot enter into an agreement.

No, the Project is within the Delta or Marsh, but the Awardee and member agencies have not engaged with the Council.

N/A

5. **Open and Transparent Water Data:** The Grantee and member agencies will adhere to the protocols developed pursuant to subdivision (a) for data sharing, transparency, documentation, and quality control (Water Code §12406(b)).

Yes, the Grantee and member agencies have systems in place that will adhere to the required protocols.

No, the Grantee and member agencies do not have systems in place to adhere to the required protocols; however, those systems will be in-place within 90-days of an executed Grant Agreement.

No, the Grantee and member agencies do not have systems in place to adhere to the required protocols and do not intend to have them in place. If so, DWR cannot enter into an agreement.

6. **Public Utilities and Mutual Water Companies:** A Project(s) proposed by a public utility regulated by the Public Utilities Commission or a mutual water company shall have a clear and definite public purpose and shall benefit the customers of the water system and not the investors (Water Code §79712(b)(1)).

Yes, the Grantee and/or member agencies are a public utility regulated by the Public Utilities Commission or a mutual water company and the proposed Project will solely benefit the customers.

# Eligibility Criteria Self-Certification

No, the Grantee and/or member agencies are a public utility, but the investors will benefit from the proposed Project. If so, DWR cannot enter into an agreement.

N/A

7. **Stormwater Resource Plan (SWRP) Compliance:** Is the proposed Project a stormwater, surface water, or dry weather capture project as defined by the State Water Resources Control Board (capture for reuse, treatment, and/or infiltration) and is required to be listed within a SWRP or functionally equivalent SWRP (FE-SWRP)?

Yes  No  N/A

If yes, is the Project listed within a SWRP or FE-SWRP?  Yes  No  
If no, DWR cannot enter into a Grant Agreement.

If yes, provide the name of the SWRP or FE-SWRP, a copy of the SWRP/FE-SWRP Self-Certification form, and proof that the SWRP or FE-SWRP is included in the local Integrated Regional Water Management Plan (IRWMP) as an attachment to this form.

Name of SWRP or FE-SWRP:

Page number(s) where Project(s) is listed:

Contact person and contact information for SWRP or FE-SWRP:

8. **Surface Water Diverter Compliance:** Is the Grantee or member agency a surface water diverter?

Yes  No

A. If yes, please list the name of the agency(-ies) that are surface water diverters.

**Agency Name**

Thermalito Water and Sewer District

B. Has the agency(-ies) submitted the surface water diversion reports to the State Water Resources Control Board in compliance with the requirements outlined in Part 5.1 (commencing with § 5100)?

Yes  No

# Eligibility Criteria Self-Certification

C. If not, please explain and provide the anticipated date for meeting the requirements. DWR may not be able to enter into an agreement.

9. **Sustainable Water Use and Demand Reduction:** SBx7-7 (Water Code §10608 et seq.) conditions the receipt of a water management grant or load for urban water suppliers on gallons per capita per day reduction targets with the end goal of a 20% reduction by 2020. Is the Grantee and/or member agency an urban water supplier?

Yes    No    N/A

A. If yes, list the member agency(-ies) that are urban water suppliers.

Thermalito Water and Sewer District

B. Is the agency(-ies) on track for meeting the SBx7-7 per capita water use targets? If not, DWR cannot enter into an agreement.

Yes    No    N/A

10. **Urban Water Management Plan (UWMP):** An urban water supplier shall adopt and submit to DWR an UWMP in accordance with Water Code § 10610 et seq. to be eligible to receive SGM Grant Program funding. Eligible Urban Water Suppliers must have the most recent UWMP (2015, 2020) that has been verified as complete by DWR before a grant agreement will be executed. Per Executive Order B29-15, Urban Water Suppliers must provide the State Water Resources Control Board with monthly information on water usage, conservation, and enforcement on a permanent basis.

Does the Grantee and/or member agency that are Urban Water Suppliers submit an UWMP to DWR?

Yes    No    N/A

Does the Grantee and/or member agency that are Urban Water Suppliers been submitting monthly information on water usage, conservation, and enforcement to the State Water Resources Control Board?

Yes    No    N/A

If no to either question, DWR cannot sign an agreement with the Grantee.

# Eligibility Criteria Self-Certification

11. **Water Metering Compliance:** Any Urban Water Supplier applying for State grant funds for wastewater treatment projects, water use efficiency projects, drinking water treatment projects, or for a permit for a new or expanded water supply, shall demonstrate that they meet the water meter requirements in Water Code § 525 et seq.

Is the Project a wastewater treatment projects, water use efficiency projects, drinking water treatment projects, or for a permit for a new or expanded water supply?

Yes    No

If so, does the Grantee and/or member agency that are Urban Water Suppliers meet the water meter requirements in Water Code § 525 et seq.?

Yes    No    N/A

12. **Groundwater Sustainability Plan (GSP):** Does the Project(s) or Component(s) include activities associated with the implementation of an adopted GSP or approved Alternative and listed within an adopted GSP or approved Alternative?

Yes    No    N/A (Only for adjudicated basin)

If no, DWR cannot enter into an agreement.

I, Kamela Loeser, understand that the Department of Water Resources will rely on this signed certification in order to approve funding and that false and/or inaccurate representations in this Self-Certification may result in loss of all funds awarded to the Grantee and that reimbursement of any grant funds is reliant upon the Grantee and all member agencies within the Groundwater Sustainability Agency (-ies) continuing to meet all eligibility requirements outlined within this Self-Certification form, the 2021 Sustainable Groundwater Management Grant Program Guidelines, and the Grant Agreement terms and conditions. Additionally, for the aforementioned reasons, the Department of Water Resources may withhold disbursement of project funds and/or pursue any other applicable legal remedy.

Kamela Loeser  
Name of Authorized Representative  
(Please print)



\_\_\_\_\_  
Signature

Director, Water and Resource Conservation  
Title

12/12/2022  
Date

## ATTACHMENT 3

### APPLICATION WORK PLAN, BUDGET, AND SCHEDULE

**Grant Proposal Title:** Wyandotte Creek Subbasin GSP Projects and Management Actions Implementation

**Applicant:** Wyandotte Creek Groundwater Sustainability Agency

#### A. General

##### COMPONENT 1: Grant Administration

This component consists of overall grant administration, including contract management, communications with DWR, invoicing, development of quarterly status reports and final project completion report to DWR. This component will also take care of overall subcontractor management. This component is necessary to allow the GSA to adequately manage the overall implementation of the different components under this grant. For this grant application, the Wyandotte Creek GSA would serve as the Grantee and administer funds received through the SGM Grant Program.

The Work Plan includes activities associated with implementation and continued planning, development, and preparation of a Groundwater Sustainability Plan (GSP) for the Wyandotte Creek Groundwater Subbasin (Subbasin) (**Figure 1**; Attachment 4, page 1). The resulting GSP and implementation projects will incorporate appropriate Best Management Practices (BMPs) as developed by DWR, and will result in a more complete understanding of the Subbasin to support long-term sustainable groundwater management. The Wyandotte Creek Subbasin uses both groundwater and surface water supplies for irrigation and municipal/household water demands and groundwater conditions are generally stable. Implementing the GSP in this subbasin largely focuses on increasing monitoring to improve our understanding of the groundwater system, conducting the required reporting and monitoring to meet the requirements of SGMA, and pursuing opportunities to reduce reliance on groundwater (i.e. Regional Conjunctive Use Project, Thermalito Water Treatment Plant Capacity Upgrade). The proposed Project also consists of the installation of monitoring wells for identifying and filling data gaps related to shallow groundwater level monitoring, interconnected streams monitoring, and community monitoring of domestic wells. The Project in this application includes 6 components:

- Component 1: Grant Administration
- Component 2: GSP Implementation, Outreach, and Inter-basin Coordination Activities
- Component 3: Regional Conjunctive Use Project
- Component 4: Monitoring Network Enhancements
- Component 5: Thermalito Water Treatment Plant Capacity Upgrade
- Component 6: Groundwater Recharge Feasibility Analysis, Design, and Construction

The GSA, shown in **Figure 1** (Attachment 4, page 1), has taken a “portfolio-based” approach by diversifying the components for the grant application and implementing the GSP. The Subbasin’s current conditions show about 25% agricultural lands, about 20% developed lands with the City of Oroville and rural residential areas primarily in the northern part of the subbasin, and over half of the subbasin as native vegetation throughout the area (**Figure 2**; Attachment 4, page 2). Agricultural lands are dominated by orchards, with some rice and a variety of other crops also grown in the Subbasin. The agricultural land use in the Subbasin has prompted the development of components that favor best practices in irrigation efficiency and agricultural water use for groundwater sustainability. Underrepresented communities are located throughout the Subbasin as shown in **Figure 3** (Attachment 4, page 3). Disadvantaged Communities (DAC) and Severely Disadvantaged Communities (SDAC) areas are mapped consistent with the layers for Census tracts, places and block groups for 2016-2020 shown on the DWR DAC Mapping Tool. Groundwater use for domestic purposes and small water systems are shown in **Figure 4** (Attachment 4, page 4). Data sources used for map figures included in Attachment 4 are shown in the table on page 20 of Attachment 4.

The components are a combination of activities and projects that would work toward maintaining sustainability and meeting the interim milestones (IMs), Measurable Objectives (MOs) and Minimum Thresholds (MTs) identified in the GSP. In addition, these components seek to increase the available data needed to further characterize and successfully manage the subbasin. These components are also consistent with member agency, Butte County’s General Plan Water

Element in that they work to: ensure an abundant and sustainable water supply for all uses (Goal W-2); plan and manage water resources that uses science, data and public participation (Policy W-P2.3); promotes partnerships in water resource planning (Policy W-P2.7) and coordination between GSAs (Goal W-4); works to protect and manage groundwater resources (Goal W-3); and promotes water conservation and sustainable water supplies (Goal W-5). These projects are also consistent with the member agency, City of Oroville's General Plan and specifically address improving water infrastructure (Policy P1.4) and enhancing the monitoring network that would protect creeks, drainages and groundwater basins (Goal OPS-11). Stakeholder support for the Project is included in Attachment 4. This includes a letter of support from the Northern California Water Association and Butte Environmental Council.

## COMPONENT 2: GSP Implementation, Outreach, and Inter-basin Coordination Activities

### Component Description

Implementation of the following ten tasks will help the GSA fulfill the goals and objectives of the GSP and continue to comply with the requirements of SGMA.

Task 1. Long-term Financing. The first task consists of conducting a fee study for long-term financing of the Wyandotte Creek GSA. The scope of this task is to build on previous efforts and conduct all work necessary to evaluate, develop options, select, and implement a new funding mechanism to support the operations of the GSA and to implement the Wyandotte Creek Subbasin GSP. Activities under this task would include:

- Reviewing the GSP and initial budget and implementation plan; Reviewing meeting presentations related to discussions on proposed fee mechanisms; Evaluating potential fee alternatives; Recommending selection of an appropriate mechanism and process to implement a fee;
- Developing a fee study or Engineers Report as appropriate; Updating parcel information, as applicable; and
- Developing outreach materials; Presenting to the GSA Board, advisory committee, and public

Task 2. Annual Reporting. The second task consists of developing the Annual Report, due each year to DWR on April 1. Key subtasks for developing these reports include collecting and analyzing data for the previous water year, developing maps to illustrate basin conditions, calculating water use and change in storage, reviewing the collected data with respect to the sustainable management criteria outlined in the GSP, summarizing project and management actions implementation progress, writing the full report, presenting the outcome of the analysis at GSA public meetings, and uploading the data and report to the SGMA portal. During the grant administration timeframe, four (4) annual reports can be developed and submitted, for water years 2022, 2023, 2024, and 2025.

Task 3. Respond to DWR GSP Determination. The third task is to review, understand, and act upon the DWR GSP evaluation letter in order to fully address DWR's comments. The DWR evaluation letter will be reviewed to identify areas in the GSP that need to be revised. The GSA will review and discuss DWR comments and identify revisions to be incorporated into the 5-year evaluation report or to be addressed more immediately. Public meetings will be conducted as needed, to address and explain DWR comments to the Subbasin stakeholders. DWR-recommended corrective actions will be implemented. Based on other GSP reviews, the GSA anticipates DWR comments may be related to developing a robust plan to fill data gaps, refining the interconnected surface water (ISW) SMC, refining how the GSP addresses water quality, strengthening justifications for established SMC, strengthening the domestic well analysis, and better defining Groundwater Dependent Ecosystems (GDEs) and potential impacts to them from the SMC. A number of related comments were received during the public comment period before adoption of the GSP in December 2021. If the GSP is deemed incomplete by DWR, this task will include DWR consultations, GSP revisions and modifications during the 180-day resubmittal period, and GSA Board adoption of the revised GSP.

Task 4. Interconnected Surface Water Sustainability Management Criteria. The fourth task is to gather and evaluate data, and develop a refined approach for the ISW SMC. Given the identified data gaps associated with this sustainability indicator, this is anticipated to be a significant effort, but will be important for sustainably managing groundwater in the subbasin and avoiding undesirable results associated with depletion of interconnected surface water (also known in the Sacramento Valley as Undesirable Result #6 or UR 6). This task involves regional coordination and technical work toward further refining the SMC for UR 6. These efforts will address expected DWR comments on Sacramento Valley GSPs related to the technical approach for the use of groundwater levels as proxies for MOs and MTs in GSPs, specifically this task will support the development of revised MO's and MTs for UR 6. This regional coordination is critical for UR 6 because the effects on interconnected surface water do not stop at groundwater subbasin boundaries, major surface water features are often also subbasin boundary lines, and because of the unique technical challenges associated with stream-aquifer interaction. Coordination and information sharing with GSAs in the Sacramento Valley and DWR will be conducted to define a recommended technical approach and methodology for establishing SMC for interconnected surface water. To meet GSP regulations and as stated by DWR: "By 2025, provide the specific methodology to quantify stream depletion, including the location, quantity, and timing of depletion of interconnected surface water".

A detailed plan to fill data gaps will be developed, that identifies the number of stream gages and shallow monitoring wells required to assess stream interconnectivity and monitor interconnected surface water at key locations. Enhancements to the monitoring network to fill data gaps will be conducted through Component 4 - Monitoring Network Enhancements. Data collected from the enhanced monitoring network will be assessed, as available, to identify where streams are interconnected and identify seasonality of ephemeral streams. This will help to refine the understanding of interconnected surface water initially developed in the GSP. The Butte Basin Groundwater Model (BBGM) or other appropriate modeling tools will be revised and additional simulations could be run to show an updated map of interconnected streams and

improve our understanding of where these streams are gaining and losing during different times of the year. An assessment of the effects of pumping near interconnected streams will be undertaken, by updating and reviewing maps and data of pumping wells near interconnected streams to evaluate potential effects of groundwater pumping on stream depletion. The BBGM can be used to develop scenarios with and without pumping to identify how pumping is currently affecting stream depletion. Updates to the BBGM conducted under Task 6 (described below) of this component will support this effort. Potentially affected GDEs will be identified as well. This effort will be coordinated with other Sacramento Valley subbasins to ensure a consistent approach throughout the Sacramento Valley. This effort started during the GSP development, with the Northern California Water Association coordinating and facilitating technical team discussions and inviting Environmental Defense Fund and The Nature Conservancy to provide input on general assumptions and approach. This effort will include stakeholder outreach and GSA meetings of the advisory committee and GSA Board. It would also include separate working group meetings with key stakeholders and meetings with DWR to vet the approach. Once the approach is developed, a similar process as during GSP development will be undertaken, to refine the interconnected surface water SMC, with input from the advisory committee and vetting by the GSA Board.

Task 5. Periodic Evaluation of the GSP (5-year update). The fifth task is to initiate the preparation of the five-year GSP Update report. The GSP Regulations call out a periodic evaluation of their GSP implementation by the respective GSAs. The assessment will describe whether GSP implementation, including implementation of projects and management actions, is meeting the sustainability goal in the basin. Given the timing of the available grant funds, development of the Draft five-year GSP Update report (Draft Report) will be feasible. The Draft Report will be considered by the GSA Boards and available for public comment. This can be accomplished by the April 30, 2026 project completion date established by the grant, leaving the finalization and submission of the report to occur after close out of the grant which can be accomplished by the GSA. In light of DWR evaluations of the 2020 submitted GSPs and the significant data gaps identified in this Subbasin, this GSP evaluation and update will be a substantial effort to complete. The GSP update will also be used to evaluate and update SMC, as needed.

Task 6. Update Local Groundwater Model. The sixth task is to update the Butte Basin Groundwater Model (BBGM), as described in the GSP Section 5.4.2. The BBGM is built on DWR's Integrated Water Flow Model (IWFM) platform and has been used in the GSP development phase to compute the water budgets, including the projected future water budget with estimated climate change effects from DWR-provided datasets. This model will be used in the future to assess project feasibility and quantify project benefits, as well as update water budgets for the five-year GSP update. The existing BBGM covers the Vina, Butte, and Wyandotte Creek subbasins. This task will help fill identified data gaps by 1) updating the BBGM with newly acquired data; and 2) using the updated model to run simulations to support evaluation of projects or GSP updates as appropriate and warranted. Some of the new data to be incorporated is the Airborne Electromagnetic Method (AEM) data and data on the different hydraulic conductivities of each layer of the aquifer. Once the model has been updated with the new data, it will be better suited for running simulations of different water or land use management scenarios as well as predictions for climate and precipitation fluctuations. Lateral and vertical connectivity between aquifer layers and connections to surface water features will be more accurate and help identify areas of the basin where groundwater recharge may be needed. Overall, this will help shape management actions by focusing efforts on those particular areas. As part of the overall inter-basin coordination and GSP evaluation task (described below), the model will also be reviewed in tandem with neighboring subbasin models to assess similarities and discrepancies.

Task 7. Data Management System Enhancements. The seventh task will update and enhance the subbasin's Data Management System (DMS) to support the GSA as it monitors, analyzes, and reports on conditions and activities in the subbasin. A well designed and accessible DMS is essential to understanding potential impacts to small water systems, domestic well users, Under Represented Communities (URCs), Tribal lands, and SDACs from different GSP implementation interventions. Specific attention will be given to outreach and education for these communities. This task will involve conducting a data inventory and developing DMS functions and procedures, quality control functions, methods for data submissions, and development of visualizations and reporting functions. Outcomes will include an enhanced DMS with a user guide and training materials as well as a functioning web-based DMS accessible by subbasin stakeholders.

Task 8. Technical Inter-basin Coordination. The eighth task is to conduct a joint analysis and evaluation of GSPs with neighboring subbasins within the Feather River Corridor area. This includes the Butte, Sutter, North Yuba and Wyandotte Creek Subbasins as described in the *Northern Sacramento Valley Inter-basin Coordination Report* (**Figure 5**; Attachment 4, page 5). Conducting a joint analysis and evaluation of the GSPs is a necessary step in ensuring successful GSP implementation and developing a path for regional groundwater sustainability. GSAs in these subbasins would like to proactively do this to support GSP implementation within and beyond individual subbasins and to help avoid conflicts. Subtasks to conduct the evaluation of the GSPs include:



- Evaluation and comparison of contents of GSPs with a focus on establishing a common understanding of basin conditions at boundaries
- Identification of significant differences, uncertainties, and potential issues of concern related to groundwater interaction at the boundaries; primarily using modeling tools
- Engaging in analysis and evaluation of SMCs between GSPs to assess impacts and identify significant differences and possible impacts between subbasins that could potentially lead to undesirable results
- 

The Feather River Corridor is the appropriate scale of coordination for these activities due to the shared boundary of the River, shared data gaps, and the interconnectedness of the subbasins.

Task 9. Stakeholder / Community Outreach and Engagement. This task will support activities, such as public workshops, and development of materials to increase outreach to subbasin stakeholders and communities regarding the GSA and GSP implementation.

Task 10. Inter-basin Coordination Outreach and Engagement. This task will support inter-basin coordination activities between GSA managers and Boards in the Feather River Corridor and throughout the Northern Sacramento Valley. This task will include information sharing amongst subbasins that will continue throughout GSP implementation to ensure water managers and GSAs have a venue to provide important updates on water management activities and data collection that may be of interest to others, and how to access the data and information. This will become ever more important with drought and climate change challenges. Coordinated communication and outreach will also be part of this task, such as participating in regular regional collaboration meetings with other Feather River Corridor GSAs.

The **goal** of this component is to complete all required elements to comply with SGMA. The **objective** of this component is to implement activities described in the implementation section of the Wyandotte Creek GSP including tasks required by DWR to maintain compliance with the GSP regulations. These activities will help fulfill the sustainability goals of the subbasin while maintaining SGMA compliance, enhancing the objective of subbasin-wide agreement to sustainability, and fulfilling immediate funding needs for longer-term strategic and technical support. The **needs** for this component, consist of funding, and implementation by GSA staff with participation by the Wyandotte Creek Subbasin communities and stakeholders. The GSA currently has very limited staff and financial capacity to carry out the requirements of SGMA. This component will be crucial for supporting the GSA's efforts in implementing the GSP while it builds longer-term capacity. This component's **timeline** includes completion by April 30, 2026 and is **feasible** as conducting projects of these types typically take less than 40 months based on professional experience with similar projects.

### **Benefits and Location**

This planning component allows the GSA to maintain compliance with the GSP regulations, and benefits all communities, stakeholders and groundwater users in the Wyandotte Creek Subbasin and all tasks consist of subbasin-wide activities. These activities are important for supporting the agricultural and drinking water needs throughout the subbasin. These tasks increase the feasibility of implementing the GSP and are crucial for the continued success of GSP implementation to maintain sustainability in the subbasin, by 1) establishing a funding mechanism to allow for independent financing of GSP implementation activities, as needed, 2) developing annual reports and important updates to the GSP to address data gaps and improve subbasin characterization for the 5 year update, 3) improving modeling tools and the data management system, 4) developing a technical understanding of surrounding GSPs to support coordination, and 5) effectively engaging stakeholders and decision makers within the subbasin and in neighboring subbasins.

The following SIs, data gaps or other areas known to need refining in the GSP are addressed through one or more of these tasks:

- Refining the understanding of impacts of the established MOs, MTs to beneficial users of groundwater
- Refining analysis of GDEs and their relation to established SMC
- Refining the SMC for Interconnected Surface Water
- Addressing data gaps related to domestic wells, groundwater quality, vertical connection between shallow and deeper portions of the aquifer system, and inter-basin groundwater flows.

The project area of this component spans the entire subbasin, shown in **Figure 1** (Attachment 4, page 1) with current conditions of land use and infrastructure for domestic water use shown in **Figures 2 and 4**, respectively (Attachment 4, pages 2 and 4).

## **Communities and Human Right to Water**

The GSA is committed to addressing the needs, risks, and vulnerabilities of URCs with the implementation of SGMA and subsequently the GSP. The Wyandotte Creek Subbasin includes DACs, SDACs, the Berry Creek Rancheria of Maidu Indians and Mooretown Rancheria of Maidu Indians of California. The Berry Creek Rancheria and Mooretown Rancheria are federally recognized Tribes in the Subbasin. Portions of the Berry Creek Off-Reservation Trust Land and Mooretown Off-Reservation Trust Land are located along the northeastern boundary of the Subbasin. SDAC communities cover roughly half of the subbasin primarily in the City of Oroville area and including the Thermalito and Palermo communities. The entire subbasin is covered by DAC or SDAC areas according to layers for census tracts, places, and block groups for 2016-2020 from the DWR DAC Mapping Tool (**Figure 3**; Attachment 4, page 3). Using the DWR Mapping Tools ACS 2016-2020 datasets, the Median Household Income for the Wyandotte Creek Subbasin's DAC and SDAC communities ranges from as low as \$34,371 to \$52,234. Based on the ACS data in 2016-2020, 80% of the California Statewide MHI is \$62,938.

By filling data gaps, refining methods and modeling tools for setting SMC (MTs, MOs), engaging communities through outreach, and inter-basin coordination, this component will further DWRs' goals for addressing the needs, risks, and vulnerabilities for URCs in medium and high priority basins. Similar to other efforts led by DWR to minimize impacts to URCs, i.e., URC Technical Assistance Program, this component would minimize risks and improve groundwater resources for URCs and other beneficial uses and users by supporting the GSA in conducting more robust analysis to support planning activities that will lead to more effective management of groundwater resources in the subbasin. This will benefit private domestic well owners that are most vulnerable to changes in groundwater conditions as well as small water systems that often have little capacity to address impacts to their infrastructure. Private domestic well owners in the subbasin are located within SDAC or DAC areas (**Figure 6**; Attachment 4, page 6).

The State Water Resources Control Board's (SWRCB) SAFER program is responsible for identifying at-risk public water systems, domestic wells, and state small water systems. This component will aid in this effort by supporting data, analysis and tools to better understand how management of the subbasin will impact or protect these systems, shown in **Figure 4** (Attachment 4, page 4).

The entire Wyandotte Creek Subbasin would benefit from this component and, thus incremental benefits would occur within the DACs, SDACs and Berry Creek Rancheria and Mooretown Rancheria tribal lands. It is estimated that 100% of the total cost of this component equaling \$1,175,000 will benefit DACs, SDACs and tribal lands.

The **Human Right to Water** was addressed in the Wyandotte Creek Subbasin GSP (Section 1.9) and will continue to be an important part of the GSP implementation through this component. Human Right to Water, states that "every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes." Input from the advisory committee and community engagement via public workshops and outreach are venues through which those potentially most vulnerable to loss of clean drinking water, private domestic well owners, are able to share information and concerns throughout the GSP implementation so the GSA can address issues as they arise. The GSA will continue to work collaboratively with Butte County Department of Water and Resources Conservation and Division of Environmental Health to obtain grants and assess and monitor potentially failing water systems, including domestic well users, small community water systems, and non-community water systems to ensure that these systems meet clean water criteria. By expanding the capacity of the GSA to enhance the GSP, data and modeling tools, and outreach through this component, this coordination and information sharing between agencies can continue to help assess and monitor the water supply available to these users and address barriers to access.

## COMPONENT 3: Regional Conjunctive Use Project

### Component Description

This component consists of three phases: (1) Intra-Basin Water Exchange Feasibility Study (GSP Section 5.2.5.1), (2) Agricultural Surface Water Supplies Feasibility Study (GSP Section 5.2.5.2), and (3) Agricultural Irrigation Efficiency (GSP Section 5.2.4.2).

**Phase 1, Intra-Basin Water Exchange Feasibility Study**, will focus on working with water purveyors with service areas within and outside the Subbasin to enhance their ability to divert supply and make it available to agricultural users within the subbasin. Within the Wyandotte Creek Subbasin, surface water entities that would be part of this phase include South Feather Water and Power Agency (SFWPA) and Thermalito Water and Sewer District (TWSD).

Thermalito Water and Sewer District's water supply is primarily surface water rights from the Concow Reservoir. The TWSD conveys the water under agreements with DWR. The water flows from Concow Reservoir to Lake Oroville where it is conveyed through State Water Project facilities including Lake Oroville, Oroville Dam, and the Thermalito Complex. TWSD service area boundaries are included on **Figure 8** (Attachment 4, page 8) and relevant surface water features in the area are included on **Figure 9** (Attachment 4, page 9).

South Feather Water and Power Agency owns and operates the South Feather Power Project, a water supply/hydropower project located within Plumas, Yuba, and Butte counties. Project facilities are located on the South Fork Feather River, Lost Creek, and Slate Creek. SFWPA service area boundaries within the Subbasin are included on **Figure 8** (Attachment 4, page 8) and relevant surface water features in the area are included on **Figure 9** (Attachment 4, page 9).

There are multiple factors that will influence the ability of these agencies in the Wyandotte Creek Subbasin to divert excess supply. Although allocations are determined on an annual time period, there are also limitations based on the time of diversion, the flow rate diverted, and the bypass flow requirements. In-lieu recharge projects should be designed to be as flexible as possible in order to divert water based on supply conditions. The feasibility study will evaluate the water available for exchange and create 100% design plans for any necessary infrastructure updates needed for implementation.

**Phase 2, Agricultural Surface Water Supplies Feasibility Study**, is intended to utilize existing surface water available in the region for agricultural users in the Wyandotte Creek subbasin. Intra-basin exchanges of surface water available outside of the Subbasin would improve conjunctive use of water resources, improve overall stability of water levels, and access to groundwater in times of drought. In the 2018 "*Evaluation of Restoration and Recharge within Butte County Basins*" report, Butte County identified surface water sources that could be diverted to fields, recharge basins, and/or recharge ponds in the Subbasin. The main source of surface water would come from Lake Oroville, while other sources are owned by water right holders in the Wyandotte Creek Subbasin and upper watershed. Surface water under this project would be used in place of groundwater in agricultural settings for in-lieu recharge. The feasibility study would identify potential agricultural users who could use surface water supply in-lieu of groundwater supply. **Figure 10** (Attachment 4, page 10) includes agricultural land within the subbasin. Agricultural users may need dual irrigation systems that allow them to use surface water and switch to groundwater when surface water is not available. The study would also investigate the feasibility of these dual source irrigation systems and create 100% design plans for any infrastructure updates needed for implementation.

**Phase 3, Agricultural Irrigation Efficiency** will improve subbasin sustainability related to groundwater levels and groundwater storage by decreasing consumptive use (*i.e.*, evaporation and transpiration or ET) by applying ET-based water management principles of precision irrigation and ET monitoring. This phase will leverage education and outreach, a feasibility study involving piloting of innovative technologies, and development of a precision irrigation implementation plan to improve ET-based water management at a broader scale in the Wyandotte Creek Subbasin. Agricultural land for investigation is included on **Figure 10** (Attachment 4, page 10).

The concept and interpretation of irrigation efficiency depends on the spatial scale and view of what constitutes beneficial use. In common use, irrigation efficiency generally focuses on field-scale water use, relating the amount of water that is consumptively used plus salinity leaching requirements to the amount of water that is applied through irrigation. This localized, field-scale viewpoint does not adequately account for the many other beneficial uses of water within the larger hydrologic system, or the important role of non-consumptive use at the subbasin scale. Although crops do not consume all of the water that is applied through irrigation, much of the remaining balance of water is still beneficially used in the larger, subbasin-scale system, as it is recycled back to the groundwater system and/or downstream waterways.

Non-consumptive surface water uses, especially for groundwater recharge, are important components of sustainable groundwater management. Unexpected problems and drawbacks can arise when seeking higher irrigation efficiency as a means to support groundwater sustainability. This is especially the case if groundwater sustainability requires a decrease in consumptively used water, which is often more strongly correlated with the area of land being irrigated, and not the irrigation efficiency at the field scale. “Jevons’ Paradox” describes a technology or policy that (1) enhances the efficiency of using a natural resource but (2) does not necessarily lead to less consumption of that resource.

Technologies and policies that support adoption of higher-efficiency irrigation systems are well-intentioned, but there may be unintended consequences that impede water conservation and sustainable groundwater management. This is highlighted by the following:

- Applying less surface water to an area as a result of improvements to irrigation efficiency can also reduce deep percolation and seepage to the groundwater system and surface outflows to surface water features.
- Increased irrigation efficiency often leads to an increase consumptive use of water (i.e., evaporation and transpiration), so while gross volumes of groundwater extraction may be less, net volumes of consumptive groundwater use may increase (**Figure 11**; Attachment 4, page 11).
- Behavioral responses and changes in irrigation resulting from improvement to irrigation efficiency can lead to increased consumptive use. If less water can be used to produce the same amount of a crop product, growers may be inclined to use the same amount of water and produce more or use the “conserved” water to irrigate additional land. This highlights the importance of properly coupling land use management together with sustainable water management.

In some parts of the world, water management that targets reductions in these flow paths is referred to as ET-based water management. The United Nations Food and Agriculture Organization (UN-FAO) is actively promoting ET-based water management in a number of different water scarce regions.

Reducing non-beneficial evaporation (E) and transpiration (T) within the Wyandotte Creek subbasin will have a direct benefit to assist with feasibility of the GSP implementation. Every acre-foot (AF) of reduced non-beneficial E and T will help to offset groundwater extraction. Reducing agricultural water requirements will reduce demand on the groundwater system, thereby reducing the likelihood of negative impacts to small groundwater dependent water systems, URCs, DACs, SDACs, and Tribes. Specific attention will be given towards education, outreach, and the piloting of precision irrigation technologies nearby small groundwater dependent water systems, URCs, DACs, SDACs, and Tribes.

The **goals** of component 3 are to minimize groundwater pumping throughout the Subbasin by: 1. maximizing the use of surface water when available instead of groundwater; 2. improving the regional water exchange systems for ease of distribution, and 3. facilitating the adoption of more efficient and precise irrigation practices. The main **objective** is to facilitate inter- and intra-basin exchanges of surface water with conveyance system upgrades and improved coordination with water rights holders and surface water entities. It also seeks to aid the agricultural community in implementing irrigation practices that will reduce groundwater pumping. The **needs** for this component, consist of funding, and implementation by GSA staff with participation by the Wyandotte Creek Subbasin agricultural community. The component’s needs will be met through grant money and the efforts of the GSA working with an engaged community. The objectives will be accomplished by implementation of the scope of work in this application.

This component’s **timeline** includes completion by April 30, 2026 and is **feasible** since conducting feasibility studies, creating design plans, and conducting pilot projects of these type typically take less than 40 months based on professional experience with similar projects.

### **Benefits and Location**

Regional water transfers for in-lieu recharge will create opportunities for the growers to be involved with GSP implementation through conjunctive use efforts. Efforts to use full surface water allocations within the subbasin will require outreach to the agricultural community, will generate information about water use and enhance understanding of the Subbasin conditions. Agricultural irrigation efficiency will help facilitate more sustainable irrigation practices, reducing groundwater extraction within the Subbasin. This component will affect conditions relevant to the groundwater levels, groundwater storage, and land subsidence MOs, and MTs. Maximizing water exchanges with the intent of facilitating in-lieu groundwater recharge has the benefit of increasing groundwater levels and groundwater storage. This stored groundwater can be extracted in years when no exchange water is available, or if delivery systems are capacity constrained (i.e., Conjunctive Use). Surface water use in-lieu of groundwater will result in less groundwater pumping and higher groundwater levels, which will in turn, increase groundwater storage and help achieve long-term sustainable yield. Additionally, surface water use in-lieu of groundwater reduces the potential for subsidence caused by groundwater

pumping. Finally, surface water use in-lieu of groundwater reduces the pumping stress on the local aquifer(s) and thereby reduces the depletion of interconnected surface waters.

Expected **benefits** from project implementation were estimated in GSP Sections 5.2.5.1 and 5.2.5.2 and range from 3,000 acre-feet per year (AFY) to 5,000 AFY of groundwater offset and/or recharge each from phase 1 and an additional 2,000 AFY to 3,000 AFY from phase 2. Improving irrigation efficiency through Phase 3 will have the benefit of reducing groundwater pumping in agricultural settings providing in-lieu recharge.

As a planning phase of implementation projects, the project area of this component spans the entire subbasin (**Figure 1**; Attachment 4, page 1) with current conditions of land use and district service areas shown in **Figures 2 and 8**, respectively (Attachment 4, pages 2 and 8).

### **Communities and Human Right to Water**

The GSA is committed to addressing the needs, risks, and vulnerabilities of Underrepresented Communities (URCs) with the implementation of SGMA and subsequently the GSP.

The Wyandotte Creek Subbasin includes DACs, SDACs, the Berry Creek Rancheria of Maidu Indians and Mooretown Rancheria of Maidu Indians of California. The Berry Creek Rancheria and Mooretown Rancheria are federally recognized Tribes in the Subbasin. Portions of the Berry Creek Off-Reservation Trust Land and Mooretown Off-Reservation Trust Land are located along the northeastern boundary of the Subbasin. SDAC communities cover roughly half of the subbasin primarily in the City of Oroville area and including the Thermalito and Palermo communities (**Figure 3**; Attachment 4, page 3). Using the DWR Mapping Tools ACS 2016-2020 datasets, the Median Household Income for the Wyandotte Creek Subbasin's DAC and SDAC communities ranges from as low as \$34,371 to \$52,234. Based on the ACS data in 2016-2020, 80% of the California Statewide MHI is \$62,938.

All 3 phases of this component further DWRs' goals for addressing the needs, risks, and vulnerabilities for URCs in medium and high priority basins. Similar to other efforts led by DWR to minimize impacts to URCs, i.e., URC Technical Assistance Program, this component (Regional Conjunctive Use Project) would minimize risks and improve groundwater resources for URCs and other beneficial uses and users by:

- Reducing reliance on groundwater supply to increase in-lieu recharge through all three phases which when implemented has the effect of increasing groundwater levels. By implementing these projects near underrepresented communities, these communities will likely **benefit** from increased groundwater levels. A review of surface water suppliers and agricultural lands in relation to SDAC, DAC, and the Berry Creek Rancheria and Mooretown Rancheria will ensure that in-lieu recharge applications will benefit those communities (**Figures 8 and 10**; Attachment 4, pages 8 and 10). Areas closest to these communities will be given priority for implementation pending the results of feasibility studies.
- GSP implementation will serve to minimize risks to **shallow wells** and will protect the human right to water as considered in the GSP (Section 1.9). The majority of domestic wells in the Subbasin are less than 200 ft bgs (**Figure 12**; Attachment 4, page 12). **Private shallow domestic wells** are susceptible to dewatering from depressed water levels, which could create a barrier to the human right to water. Domestic well users, particularly those who are economically disadvantaged (SDAC and DAC), are more vulnerable as the cost for well deepening/replacement and alternative supplies may be prohibitive. The potential for dry wells directly relates to sustainability indicators (MOs and MTs) since the well owners are the beneficial users of groundwater and MOs and MTs were established after considering domestic well depths. Conjunctive use efforts leading to in-lieu recharge can increase the groundwater supply available to these domestic wells.
- The State Water Resources Control Board's (SWRCB) SAFER program is responsible for identifying at-risk public water systems, domestic wells, and state small water systems. This objective is met for shallow domestic wells and small water systems by focusing on increasing the groundwater supply that is used as a source of drinking water. This component will aid in this effort as decreased reliance on groundwater (through conjunctive use efforts and increased agricultural irrigation efficiency) can increase groundwater levels and groundwater storage. Agricultural land and surface water entities service areas in relation to **at-risk water systems** are shown on **Figure 7** (Attachment 4, page 7).

The entire Wyandotte Creek Subbasin would benefit from the component and, thus incremental benefits would occur within the DACs, SDACs and Berry Creek Rancheria and Mooretown Rancheria tribal lands. It is estimated that 100% of the total cost of this component equaling \$400,000 will benefit DACs, SDACs and tribal lands. Coordination with surface water rights holders and existing active surface water entities, namely SFWPA and TWSD, will be crucial to the success

of this project. Grower education will be needed for successful implementation of conjunctive use of surface water and groundwater and agricultural irrigation efficiency. This component aims to identify and plan installation of upgrades needed to irrigation systems and conveyance systems. **Figure 8** (Attachment 4, page 8) shows water district service areas in relation to SDAC, DAC, and Tribal Land areas and **Figure 10** (Attachment 4, page 10) shows agricultural land in relation to SDAC, DAC, and Tribal Land areas. These areas will be preferentially selected and given priority to receive upgrades and education.

## COMPONENT 4: Monitoring Network Enhancements

### *Component Description*

This component will enhance the monitoring network to help fill data gaps identified in the Wyandotte Creek Subbasin GSP. This component consists of three phases: (1) installation of monitoring wells, (2) interconnected surface water monitoring expansion and GDE investigation, and (3) community monitoring program development.

Phase 1. Installation of monitoring wells. To further characterize the hydrogeology and expand the groundwater monitoring network, this phase includes the installation of monitoring wells (both multi-completion and single completion). There will be up to five (5) multi-completion monitoring wells, and thirty (30) shallow monitoring wells/piezometers installed in total. A pumping test will be performed in these deeper multi-completion wells while monitoring of groundwater levels in the shallow wells/piezometers is conducted to establish degree of hydraulic connectivity between shallow and deeper aquifer zones.

The shallow single completion monitoring wells will be installed adjacent to and in conjunction with new stream gages described in Phase 2, and equipped with dataloggers in order to improve the understanding of the connection and flow between the surface water and groundwater systems. For planning purposes, the wells or piezometers are expected to be approximately 15 ft bgs, 20-100 ft bgs, and 100-150 ft bgs as outlined in Section 3.8 of the GSP. Groundwater levels in the shallow wells will be compared to stream stage at comparable times. The multi-completion monitoring wells will be installed at locations that lack deeper monitoring sites in the Subbasin. Preliminary locations where deeper wells are needed are shown on **Figure 13**. (Attachment 4, page 13), but the final location of these monitoring wells will be based on further evaluation of the existing network during a planning phase and adjusted based on secured access agreements. The final construction and screened intervals of these monitoring wells will be based on the known geology, groundwater conditions, the HCM, and field conditions encountered during drilling.

The budget and schedule contained herein is based on the preliminary design that each multi-completion well will consist of up to four discrete wells at varying depths with the deepest being completed to approximately 1,000 ft bgs. Each monitoring well will have pressure transducers, data loggers, and telemetry equipment installed as applicable and set to record groundwater levels at least hourly. This will result in a potential 250% increase in groundwater level monitoring wells. The monitoring wells will be incorporated into the GSP monitoring network and monitored by the GSA on a regular basis following the same protocols for monitoring the current network.

Phase 2. Interconnected Surface Water Monitoring Expansion. This phase includes installation of surface water stream gages to create an integrated assessment of surface water and groundwater. There will be ten stream gages installed in total. The stream gages will be equipped with dataloggers to compare the stream stage with shallow groundwater levels at comparable times. Each stream gage will have three proximal shallow monitoring wells associated with them from those installed in Phase 1, following the framework discussed in Section 3.8 of the GSP. New stream gages will record data hourly and the proximal wells and piezometers will be equipped with pressure transducers and data loggers so that measurements are synchronized. The proposed stream gages will be installed in new locations based on information gathered as part of the planning phase. Preliminary locations where new surface water/groundwater monitoring sites are needed are shown on **Figure 14** (Attachment 4, page 14) however, the final location of these monitoring sites will be based on a review of groundwater dependent ecosystems, available hydrogeologic and hydraulic information, and adjusted based on secured access agreements.

This phase also consists of activities to further refine where GDEs exist in the Subbasin. Potential GDEs in the GSP were mapped by refining the available data from the Natural Communities Associated with Groundwater (NCCAG) database. The potential GDE dataset was refined primarily using analysis of aerial photography, available land use designations, and GIS analysis tools as discussed in the GSP (Section 2.2.7). To further expand and refine the understanding of GDEs, a field biological study will be conducted to define and map the GDEs in the area. The GSA will partner with qualified CSU, Chico staff with experience and expertise in ecological mapping. Standard ecological mapping techniques will be utilized to define the boundaries where GDEs exist in the Subbasin. Initial studies will be conducted in areas identified as potential GDEs in the GSP and expanded based on information collected during planning and from field conditions. Biological studies will take place multiple times over a period of three years in order to observe how GDEs change over time in response to groundwater levels. Initial locations where mapping will take place are shown on **Figure 15** (Attachment 4, page 15). GDE investigations in this phase include cooperation with the local university to conduct a biological study and will also require coordination with landowners. Approximately three years of GDE field investigations will be conducted to track the fluctuations in conditions over time in these ecosystems.

Phase 3 Community Domestic Well Monitoring Program. This phase includes a community domestic well monitoring program effort, requiring outreach to the community of domestic well owners within the subbasin.

This program will build on the ongoing GSP related monitoring program, expand the network of wells and add volunteer monitoring. The program will start with a small study to identify potential wells and volunteers to be incorporated into the program. Potential community monitoring volunteers will be contacted via registration forms that are mailed to landowners for applicable APNs and information on accessing online registration will be distributed through outreach efforts. Well registration should include information, such as, well construction, date of construction, well and landowner contact information, well completion report, uses and status. These data will be non-public information, to be used at the discretion of the GSA, including for reports, maps, and other analyses. The GSA will equip 25 initial volunteer wells with monitoring equipment that will be provided to the volunteers at no cost. Monitoring equipment will include pressure transducers and dataloggers with potential for telemetry systems pending final design. The volunteers will also receive education on how to collect data and upload water levels to the GSA's existing DMS. Front-end visualization software that interfaces with the DMS will be created or modified for communication and ease of use for community members. The public will have the ability to track water levels. **Figure 6** (Attachment 4 pg. 6) shows domestic well density and SDAC and DAC areas within the Subbasin. Domestic wells within SDAC and DAC areas and representative of wells nearby will be preferentially selected and given priority to participate in the monitoring program.

This component is needed to help fill data gaps related to the limited number of existing monitoring wells/stream gages in the subbasin and difficulty in characterizing interconnected surface water, as described in Section 4.10 of the GSP. The **goals** of this component are to fill data gaps and improve the understanding of the hydrogeology and hydrology of the subbasin. The **objectives** are to 1. Install new wells and stream gages which will supplement the existing monitoring for both groundwater and surface water conditions 2. Expand the understanding of GDE by performing a biological study, and 3. Expand the monitoring network to voluntary participants by developing a community monitoring program of domestic well users. The **needs** for this component, in addition to funding, are dedicated GSA staff time and participation by the Wyandotte Creek Subbasin community. Importantly, the planning and identification of new monitoring well and stream gaging sites will also be coordinated with neighboring subbasins/GSAs. The goals, objectives and needs of the component will be met by implementing the scope of work, providing there is sufficient funding based on the budget request, herein.

This component's implementation **timeline** is to be completed before April 2026 and is **feasible** since the typical timeframe for installation of monitoring wells and stream gages (based on professional experience with similar projects) from planning to completion is within three years. Lastly, the component will assist in the **feasibility of GSP implementation**, as it will improve characterization of water bearing zones and groundwater/surface water interactions, supplement the existing groundwater level and quality monitoring network, have a strong focus on stakeholder engagement, and potentially support future recharge projects.

### **Benefits and Location**

This component does not directly affect conditions impacting MOs, and MTs. However, a more representative and robust monitoring network will help track related sustainability indicators at the basin scale, beyond representative monitoring sites (RMS). The component benefits will include enhanced well, groundwater, and surface water information so the GSA can better manage the subbasin by providing data to support future development and refinement of the SMC for groundwater levels, groundwater storage, and interconnected surface water, as appropriate. These new monitoring sites may be added to the RMS network, as needed, to enhance MO and MT analysis at 5-year updates. The water quantity and water quality information gathered from new wells can be used to track and manage the groundwater level, groundwater storage, and groundwater quality sustainability indicators.

The existing groundwater monitoring network is limited in its distribution and representativeness of subbasin conditions. Section 4.2 of the GSP identifies 13 monitoring wells dedicated to the groundwater levels sustainability indicator. Of these 13 wells, only four are deeper than 200 ft bgs. The bottom of the Wyandotte Creek Subbasin (base of fresh water) ranges from 200 ft bgs to over 1,000 ft bgs and is identified as a data gap in the GSP Section 2.1.1.2. If the conservative 200 ft bgs is accurate, it means only 30% of the wells in the Wyandotte Creek monitoring network are within the lower half of the Subbasin. Additionally, none of the monitoring sites consist of multi-completion monitoring wells. Multi-completion wells are valuable for characterizing groundwater conditions in the subbasin as they provide information about groundwater levels from different hydrogeologic zones at different depths at a single point in the subbasin. They are also valuable to help define vertical flow of groundwater. Drilling multiple deep wells throughout the Subbasin will also help to clarify the geology and refine the bottom of the Subbasin.

The interconnected surface water (ISW) monitoring network is limited in its distribution and significant data gaps exist as described in the Wyandotte Creek Subbasin GSP. Requirements outlined in Section 3.8 include measurement of groundwater levels directly adjacent to the stream channel in the adjacent riparian zone or floodplain, wells, or piezometers at three different depths across the water table, and simultaneous measurements of groundwater levels and stream stage. Section 4.10 of the GSP acknowledges there is a lack of sufficient data to analyze interaction of surface



water and groundwater and the impact to GDEs. Updates to the monitoring network to fill this data gap are proposed in the GSP by installing additional wells and other monitoring networks, as appropriate.

The current ISW monitoring network consists of the entire groundwater level monitoring network and uses groundwater level measurements as a proxy until data gaps are filled. At least three wells or piezometers at varying depths (ranging from 10 to 150 feet bgs) are needed directly adjacent to stream gages in order to fully characterize the surface water/groundwater interaction. A critical reason for expanding the interconnected surface water monitoring network is to avoid undesirable results to GDEs. GDEs in the Subbasin exist where vegetation depends on access to shallow groundwater and in areas where streams and creeks are connected to groundwater as described in Section 2.2.7 of the GSP. Expanding the monitoring will help the GSA understand the magnitude of where and when groundwater is connected to surface water and how GDEs may be impacted.

The project area of this component spans the entire subbasin with possible locations for additional monitoring sites shown in **Figures 13 and 14** (Attachment 4, pages 13 and 14).

### **Communities and Human Right to Water**

The GSA is committed to addressing the needs, risks, and vulnerabilities of Underrepresented Communities (URCs) with the implementation of SGMA and subsequently the GSP.

The Wyandotte Creek Subbasin includes DACs, SDACs, the Berry Creek Rancheria of Maidu Indians and Mooretown Rancheria of Maidu Indians of California. The Berry Creek Rancheria and Mooretown Rancheria are federally recognized Tribes in the Subbasin. Portions of the Berry Creek Off-Reservation Trust Land and Mooretown Off-Reservation Trust Land are located along the northeastern boundary of the Subbasin. SDAC communities cover roughly half of the subbasin primarily in the City of Oroville area and including the Thermalito and Palermo communities (**Figure 3**; Attachment 4, page 3). Using the DWR Mapping Tools ACS 2016-2020 datasets, the Median Household Income for the Wyandotte Creek Subbasin's DAC and SDAC communities ranges from as low as \$34,371 to \$52,234. Based on the ACS data in 2016-2020, 80% of the California Statewide MHI is \$62,938.

The installation of multi-completion monitoring wells, expansion of ISW monitoring, and the community domestic monitoring program phases of this component furthers DWRs' goals for addressing the needs, risks, and vulnerabilities for URCs in medium and high priority basins. Similar to other efforts led by DWR to minimize impacts to URCs, i.e., URC Technical Assistance Program, this component (Monitoring Network Enhancements) would minimize risks and improve groundwater resources for URCs and other beneficial uses and users by:

- Enhancing monitoring efforts and filling data gaps to give the GSA a more complete understanding of subbasin conditions. Having a more complete understanding of subbasin conditions will help by informing the GSA when mitigation strategies may be needed. Higher resolution data can lead to faster and more targeted mitigation strategies. By increasing monitoring efforts (i.e., nested monitoring wells and stream gages) near underrepresented communities, these communities will **benefit** from a more complete picture of current groundwater conditions and faster mitigation if their supply of clean water is compromised. More data collection points near the underrepresented communities will result in a more accurate assessment of the groundwater and surface water supplies available to them. A review of monitoring network enhancement locations in relation to SDAC, DAC, and the Tribes will ensure that new monitoring will be representative of conditions relevant to those communities. Potential monitoring locations in relation to SDAC and DAC are visible on **Figure 13** (Attachment 4, page 13).
- Enhanced monitoring and the Community Monitoring Program will serve to minimize risks to **shallow wells** and will protect the human right to water as considered in the GSP. The majority of domestic wells in the Subbasin are less than 200 ft bgs (**Figure 16**; Attachment 4, pg. 16). **Private shallow domestic wells** are susceptible to dewatering from depressed water levels, which could create a barrier to the human right to water. Domestic well users, particularly those who are economically disadvantaged (SDAC and DAC), are more vulnerable as the cost for well deepening/replacement and alternative supplies may be prohibitive. The potential for dry wells directly relates to sustainability indicators (MOs and MTs) since the well owners are the beneficial users of groundwater and MOs and MTs were established after considering domestic well depths. Enhanced monitoring efforts will give the GSA more data points that will help track when these domestic wells could be at-risk for adverse effects of lowering groundwater levels. If more data is known, faster and more targeted mitigation strategies can be employed by the GSA.
- The State Water Resources Control Board's (SWRCB) SAFER program is responsible for identifying at-risk public water systems, domestic wells, and state small water systems. This objective is met for shallow domestic wells and small water systems by focusing on mapping of aquifers that are used as a source of drinking water. This

component will aid in this effort as increased data will help map the Subbasin's aquifer through ongoing monitoring of water levels, water quality, and ISW as well as with lithology information gained from drilling new monitoring wells. Proposed monitoring enhancement locations in relation to at-risk water systems are shown on **Figure 17** (Attachment 4, page 17). In addition, Domestic wells within these URCs and at-risk water systems will be given priority for inclusion in the Community Monitoring Program.

The entire Wyandotte Creek Subbasin would benefit from the component and, thus incremental benefits would occur within the DACs, SDACs and Tribe areas. It is estimated that 100% of the total cost of this component equaling \$1,433,750 will benefit DACs, SDACs and tribal lands.

The Human Right to Water was addressed in the Wyandotte Creek Subbasin GSP (Section 1.9) and will continue to be an important part of the GSP implementation through this component. Human Right to Water, states that "every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes." Community engagement via public workshops and outreach are venues through which those potentially most vulnerable to loss of clean drinking water are able to share information and concerns throughout the GSP implementation so that the GSA can address issues as they arise. The GSA will continue to work collaboratively with Butte County Department of Water and Resources Conservation and Division of Environmental Health to obtain grants and assess and monitor potentially failing water systems, including domestic well users, small community water systems, and non-community water systems to ensure that these systems meet clean water criteria. By expanding and enhancing the monitoring network through this component, the GSA will be able to provide additional data to the County to help assess and monitor the water supply available to these users.

## COMPONENT 5: Thermalito Water Treatment Plant Capacity Upgrade

### **Component Description**

This component implements the project described in section 5.2.4.6 of the Wyandotte Creek GSP: *Thermalito Water and Sewer District Water Treatment Plant Capacity Upgrade*. Thermalito Water and Sewer District (TWSD) is the implementing agency of this component. This agency currently services 3,136 connections or roughly 11,000 people in the City of Oroville. The current maximum capacity of the treatment plant is 4 MGD. When demand exceeds the plant capacity, the remaining demand is provided using groundwater via district wells throughout the area. The proposed component will install additional membrane filter racks at the existing TWSD treatment plant, located at 535 Table Mountain Boulevard, Oroville, CA 95965, increasing TWSD's ability to treat additional surface water to offset district groundwater pumping.

The plumbing to the building as well as all ancillary equipment is already in place. The work will involve removing sections of the building floor to accommodate the two additional racks as well as compressors and blowers for operation. The proposed project would double the treatment plant capacity to 8 MGD with the installation of two filter racks and associated equipment.

The City of Oroville is located within the Wyandotte Creek Subbasin and is served by three local domestic water providers: Cal Water, South Feather Water and Power, and the TWSD. TWSD is a member agency of the Wyandotte Creek GSA and serves areas of the City of Oroville to the north and west of the Feather River as well as adjacent unincorporated areas of Butte County (**Figure 8**; Attachment 4, page 8). Utility services provided by the water supplier include domestic and irrigation water service, and sewer collection. TWSD has rights to approximately 8,200-acre feet of surface water from Concow Lake/Wilnore Reservoir with a 3.0 Million Gallons per Day (MGD) backup supply coming from four wells, as needed. Total water consumption is currently 2.5 MGD annually for the TWSD and is expected to grow to just over 5.0 MGD by 2025. The District's water supply is sufficient to meet this future demand as it has secured water rights to 7.3 MGD annually.

The **goal** of the proposed component is to reduce the District's use of groundwater by expanding its capacity to treat and use available surface water to meet water demands within the district. In order to accomplish this, the **objective** of this project is to upgrade the treatment plant to expand its capacity to treat a greater volume of surface water. The **needs** of this implementation project consist of funding and completion of the construction phase of the overall project by implementation of the scope of work in this application.

The project **timeline** is expected to take approximately 13.5 months to complete. No environmental documentation or permitting is necessary. The project began May 3, 2022 and is approximately 25% complete. Project design and fabrication of equipment is underway. The construction contractor is under contract and was sole sourced since the project design includes a proprietary membrane filter, i.e., and there is no other place to source it. Construction is expected to begin in February 2023. This project is **feasible** as conducting projects of these type typically take less than 40 months based on professional experience with similar projects.

### **Benefits and Location**

When demand exceeds the plant capacity, the remaining demand that cannot be provided with surface water, due to the limitations of treatment capacity, is provided through groundwater using District wells. The groundwater demand is currently approximately 600 acre-feet per year. Therefore, the quantifiable benefit of the project is a reduction in groundwater pumping in the subbasin of about 600 acre-feet per year. The impact will be directly measurable by the reduced groundwater pumping from the District's wells.

This component will affect the groundwater levels, groundwater storage, and land subsidence MOs, and MTs. Maximizing surface water use will result in in-lieu groundwater recharge which has the benefit of increasing groundwater levels and groundwater storage. Surface water use in-lieu of groundwater will result in less groundwater pumping and higher groundwater levels, which will in turn, increase groundwater storage and help maintain groundwater use within the long-term sustainable yield. Additionally, surface water use in-lieu of groundwater reduces the potential for subsidence caused by groundwater pumping. Finally, surface water use in-lieu of groundwater reduces the pumping stress on the local aquifer(s) and thereby reduces depletion of interconnected surface waters.

This component's project area is shown by the green outline of the TWSD service area in **Figure 8** (Attachment 4, page 8) in relation to the Wyandotte Creek Subbasin and Underrepresented Communities. Approximately one-third of the District's customers are within the City of Oroville city limits, with the remainder in the unincorporated areas of Butte County. Land use in the subbasin is shown in **Figure 2** (Attachment 4, page 2) with most of the residential areas located in the northern portion of the subbasin and agricultural land use dominating the southern half. The subbasin has significant portions of native vegetation as well. Groundwater conditions in the Oroville Management Area of the subbasin

based on monitoring wells indicate stable conditions or a decline of about 20 feet over the past 20 years, depending on the well. Reduction of groundwater demand in this management area as accomplished by this proposed component will benefit groundwater levels and storage and help to maintain sustainable groundwater conditions in the subbasin.

### ***Communities and Human Right to Water***

The GSA is committed to addressing the needs, risks, and vulnerabilities of Underrepresented Communities (URCs) with the implementation of SGMA and subsequently the GSP. The Wyandotte Creek Subbasin includes DACs, SDACs, the Berry Creek Rancheria of Maidu Indians and Mooretown Rancheria of Maidu Indians of California. The Berry Creek Rancheria and Mooretown Rancheria are federally recognized Tribes in the Subbasin. Portions of the Berry Creek Off-Reservation Trust Land and Mooretown Off-Reservation Trust Land are located along the northeastern boundary of the Subbasin (**Figure 3**; Attachment 4, page 3). SDAC communities cover roughly half of the subbasin primarily in the City of Oroville area and including the Thermalito and Palermo communities. Using the DWR Mapping Tools ACS 2016-2020 datasets, the Median Household Income for the Wyandotte Creek Subbasin's DAC and SDAC communities ranges from as low as \$34,371 to \$52,234. Based on the ACS data in 2016-2020, 80% of the California Statewide MHI is \$62,938 (**Figure 3**; Attachment 4, page 3). The project area of this component almost entirely covers an SDAC, with the remainder being a DAC area, and thus 100% of the project benefits and the total cost of this component equaling \$2,318,534 will benefit DACs, SDACs and tribal lands, as shown within the TWSD service area on **Figure 8** (Attachment 4, page 8).

The construction of this component furthers DWRs' goals for addressing the needs, risks, and vulnerabilities for SDACs and other URCs in medium and high priority basins. Similar to other efforts led by DWR to minimize impacts to URCs, i.e., URC Technical Assistance Program, this component would minimize risks and improve water resources for the SDACs including Oroville and Thermalito since TWSD serves these communities and a handful of domestic well users are also present in the northern portion of the subbasin (**Figure 4**; Attachment 4, page 4). As discussed previously, reducing groundwater demand and expanding the use of treated surface water to serve households in this SDAC area will help to maintain sustainable groundwater conditions and therefore benefit private domestic wells. No at-risk small water systems are located in the project area and thus this component is not expected to help the needs of the State Water Board's SAFER Program.

## COMPONENT 6: Groundwater Recharge Feasibility Analysis, Design, and Construction

### *Component Description*

This component is an implementation project that includes planning through construction phases consistent with section 5.2.4.3 of the Wyandotte Creek GSP. This component consists of a feasibility analysis to identify potential locations for enhancing recharge and construction of a groundwater recharge project within the Wyandotte Creek Subbasin. The intent would be to create a recharge project that captures or slows storm water to enhance groundwater recharge and reduce flooding. The type of recharge project would be determined as part of the feasibility study, such as detention basins, dry wells, etc. The potential recharge areas are located throughout the Subbasin. However, among the areas for special consideration is in the vicinity of the unincorporated Palermo community located on the eastern side of the subbasin, shown on Figure 1. (Attachment 4, page 1). This area is subject to localized flooding resulting from inadequate drainage facilities.

This project builds upon previous studies for groundwater recharge in the County including the 2018 *Evaluation of Restoration and Recharge within Butte County* Report (ERR Project). The ERR project provided a preliminary assessment of groundwater recharge projects throughout Butte County including areas within the Wyandotte Creek Subbasin. The feasibility study will also consider data, surveys, and project plans compiled for other projects, i.e., Palermo Clean Drinking Water Consolidation Project and the Palermo Drainage Master Plan. Located south of the Palermo community is Wyman Ravine, which may be a potential recharge area.

This project will assess the potential hydrologic benefits of detention strategies including the possible creation of seasonal wetland habitats and the potential for groundwater recharge within the Wyandotte Creek Subbasin and Feather River watershed.

Key considerations for groundwater recharge projects will include site feasibility, multi-benefits, water and land availability, water rights, water supply cost and certainty, opportunities for partnership, funding sources, optimal methods of recharge, and consistency with achieving the sustainability goals for the Subbasin. The component would also address the legal implications associated with actively managing recharge water in the Subbasin. Legal implications that would be addressed include identifying: the beneficial use(s) of the water, limitations of subsequent recovery and use, “leave behind” requirements, appropriate water right permits, terms of recharge or storage, water availability for overlying groundwater users, in-lieu recharge assumptions, CEQA requirements, and monitoring and reporting requirements.

The data evaluation will help interested parties throughout the Subbasin to determine the feasibility for groundwater recharge in different areas. The results of this analysis will be used to identify potential areas for recharge and/or recharge projects for implementation and to develop a minimum of one (1) groundwater recharge project that would result in design plans and specifications and include a construction phase.

This component will complete the following primary tasks in addition to project management activities:

1. Feasibility Analysis and Project Identification
2. Groundwater Recharge Investigation (geophysical survey) and Preliminary Design
3. CEQA/Permitting
4. Legal Implications Analysis and Policy Documentation
5. Final Design
6. Construction/Implementation Activities
7. Development of Monitoring Plan
8. Stakeholder Engagement, Education and Outreach

The **goal** of this component is to develop a prioritization list of groundwater recharge projects that can be timely implemented and optimize beneficial uses throughout the subbasin including in areas with URCs, SDACs, Tribes, habitats, domestic wells, and GDEs and supports the Human Right to Water policy of the State by reducing declines in groundwater levels and increasing groundwater storage. A primary **objective** of the component is to identify at least one (1) site to construct a groundwater recharge project. The **needs** for this component, consist of funding, and implementation by GSA staff with participation by the Wyandotte Creek Subbasin communities and stakeholders. The component’s needs will be met through grant money and the efforts of the GSA working with an engaged community. This component’s **timeline** includes completion by April 30, 2026 and is **feasible** as conducting projects of these type as scoped typically take less than 40 months based on professional experience with similar projects. The feasibility study will meet the goals, objectives, and needs stated above through an integrated approach to implementation including discussions with identified stakeholders, review of proposed projects documented in previous studies; conducting site visits and outreach with project proponents including willing landowners and relevant water purveyors; conducting cost-benefit analysis; and developing a prioritization list of types of recharge projects and locations. Key components of

development of the prioritization list include projects that will optimize benefits to URCs, SDAC, Tribes, habitats, domestic well users, and GDEs and support the State's Human Right to Water policy and State Water Board's SAFER program. Based on previous work in the ERR, this project is needed to refine the locations of potential groundwater recharge projects within the basin and will provide critical data to assess the types of groundwater recharge methods that will be successful in the basin based on the unique hydrogeological characteristics. The need for data to assess the types of groundwater recharge methods that will be successful within the subbasin will be met by conducting a groundwater recharge investigation as part of project development.

### ***Benefits and Location***

The results from this project will provide valuable information for identifying recharge construction projects that will enhance the ability for the GSA to maintain the MOs and MTs for groundwater levels, storage, and potentially groundwater quality and subsidence identified in the GSP. The project will also provide valuable information for evaluating these criteria in future updates to the GSP. In addition, recharge projects will be prioritized based on the ability for contributing to meeting the implementation schedule for sustainability established in the GSP.

As stated in the GSP, data gaps identified in the Subbasin include understanding of groundwater recharge mechanisms and the shallow groundwater aquifer system. This project will help fill these data gaps through performance of the groundwater recharge investigation, construction of the project, and ongoing monitoring. The site investigation will include conducting surface geophysical analysis and drilling soil boring samples. This data will be used to assess groundwater migration pathways from the surface to the shallow groundwater. In addition, groundwater and soil samples will be collected and analyzed for physical and chemical parameters that will provide needed data, permeability characteristics, and water quality for the shallow groundwater system. These data will also provide information needed to assess relationships between the shallow groundwater system and GDEs.

The feasibility study results will be used to determine the types of recharge projects that are compatible with the area, develop a prioritization list of groundwater recharge projects, and potential project locations and willing landowners (if applicable). In addition, once the site investigation is conducted and the appropriate type of recharge project (i.e., basin, pond, dry-well) is identified based on site specific characteristics, the method for determining the project's quantifiable benefits can also be identified and calculated. Determining the measurable benefits depends on available data, local geographic and topographic conditions, and spatial and temporal scale of monitoring. The benefits would be compared to the GSP targets for the sustainable management criteria, specifically for the area in which the project is located.

The site investigation and project operation will greatly assist in addressing data gaps, and even more importantly, contribute to groundwater recharge in the Subbasin and prepare for hydrologic changes in the region resulting from climate change.

The project area of this component spans the entire subbasin (Figure 1; Attachment 4, page 1) with current conditions of land use shown in **Figure 2** (Attachment 4, page 2).

### ***Communities and Human Right to Water***

Communities served by this project include all those within the Wyandotte Creek Subbasin in addition to areas in the adjacent groundwater subbasins (**Figure 1**; Attachment 4, page 1). The GSA is committed to addressing the needs, risks, and vulnerabilities of Underrepresented Communities (URCs) with the implementation of SGMA and subsequently the GSP.

The Wyandotte Creek Subbasin includes DACs, SDACs, the Berry Creek Rancheria of Maidu Indians and Mooretown Rancheria of Maidu Indians of California. The Berry Creek Rancheria and Mooretown Rancheria are federally recognized Tribes in the Subbasin. Portions of the Berry Creek Off-Reservation Trust Land and Mooretown Off-Reservation Trust Land are located along the northeastern boundary of the Subbasin. SDAC communities cover roughly half of the subbasin primarily in the City of Oroville area and including the Thermalito and Palermo communities. (**Figure 3**; Attachment 4, page 3). Using the DWR Mapping Tools ACS 2016-2020 datasets, the Median Household Income for the Wyandotte Creek Subbasin's DAC and SDAC communities ranges from as low as \$34,371 to \$52,234. Based on the ACS data in 2016-2020, 80% of the California Statewide MHI is \$62,938. The project area of this component spans the entire subbasin and is entirely a DAC or SDAC and thus 100% of the project benefits and the total cost of this component equaling \$1,840,000 will benefit DACs, SDACs and tribal lands.

This component furthers DWRs' goals for addressing the needs, risks, and vulnerabilities for URCs in medium and high priority basins. Similar to other efforts led by DWR to minimize impacts to URCs, i.e., URC Technical Assistance Program, this component would minimize risks and improve groundwater resources for URCs and other beneficial uses and users by identifying groundwater recharge projects that would reduce declining groundwater levels, increase groundwater storage, and potentially improve groundwater quality in these areas. Data collected from this project will also include shallow groundwater level monitoring, water quality testing, and assessment of shallow aquifer and vadose zone

parameters that will allow further assessment of long-term yield and supply for shallow domestic wells and potential impacts to GDEs.

In addition, recharge projects located within and north of the Palermo community are areas identified as DAC and SDAC. Areas outside of the City of Oroville and the unincorporated areas of Thermalito and Palermo are dependent on domestic wells for their water source. The yellow square in the middle of the subbasin on Figure 4 (Attachment 4, page 4) is the location of the Palermo community. Improving groundwater levels within these areas would directly benefit URCs, including DAC and SDAC communities.

The Human Right to Water was addressed in the Wyandotte Creek Subbasin GSP (Section 1.9) and will continue to be an important part of the GSP implementation through this component. Human Right to Water, states that “every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.” Private domestic well groundwater pumper representation on the Wyandotte Creek Board and community engagement via public workshops and outreach are venues through which those potentially most vulnerable to loss of clean drinking water are able to share information and concerns throughout the GSP implementation so that the GSA can address issues as they arise. The identification of groundwater recharge projects that can be implemented in the Subbasin will help address the Human Right to Water by maintaining groundwater levels in the aquifers that are used throughout the Subbasin for human consumption, cooking and sanitary conditions.

This project will positively impact issues associated with small water systems and private domestic wells by identifying groundwater recharge projects that will reduce aquifer drawdown and increase aquifer storage in these areas. **Figure 4** (Attachment 4, page 4) provides a map showing density of domestic wells and small water systems within the Subbasin. This project will also address the needs of the State Water Boards SAFER program by providing data that can be used to assess appropriate actions that are needed to rehabilitate or replace shallow domestic wells that are identified to be funded by this program.

## **PROJECT/COMPONENT DETAILS**

### **B. Scope of Work and Deliverables**

#### **COMPONENT 1: Grant Administration**

##### **Category (a): Component Administration**

Prepare reports detailing work completed during reporting period as outlined in the grant agreement. Progress Reports will include sufficient information for the DWR Grant Manager to understand and review backup documentation submitted with invoices. Quarterly invoices will accompany the Quarterly Progress Reports and will be submitted to the DWR Grant Manager for review to receive reimbursement of Eligible Project Costs. Collect and organize backup documentation by component, budget category, and task and prepare a summary Excel document detailing contents of the backup documentation organized by component, budget category, and task.

Develop all necessary documents to secure a contractor for one or more components (i.e. request for proposals). Facilitate selection committee to review proposals, select a contractor and award the contract(s).

Prepare and submit the Draft Component Completion Report and a Final Component Completion Report. The reports shall be prepared and presented in accordance with the provisions of the grant agreement. All deliverables listed within the Work Plan shall be submitted with each Final Component Completion Report unless a new deliverable due date was approved by the DWR Grant Manager. Prepare and submit the Draft Grant Completion Report and Final Completion Report.

##### Deliverables:

- Quarterly Progress Reports, Quarterly Invoices, and all required backup documentation
- Bid document(s)
- Executed contract(s)
- Draft and Final Component Completion Reports



## **COMPONENT 2: GSP Implementation, Outreach, and Inter-basin Coordination Activities**

Component 2 consists of activities to support implementation of SGMA in the Wyandotte Creek Subbasin. More specifically it includes conducting a fee study to identify long-term funding source for the GSA, preparing annual reports, updating the Butte Basin Groundwater Model, modifying the GSP in response to DWR Determination letter, refining and developing an approach to the interconnected surface water SMC, beginning the 5-Year GSP update, enhancing the data management system, conducting an analysis of neighboring subbasin GSPs to support inter-basin coordination, and conducting education and outreach in the subbasin. Interested parties will be informed through regular advisory committee, GSA Board and public meetings and thru email correspondence to the interested parties list, similar to the approach taken during GSP development. Efforts have begun on Task 1 for Long-term financing and Task 2 for the 2022 Annual Report. This project is in its initial stages (<1% complete).

### **Category (a): Component Administration**

Not applicable to this component

### **Category (b): Environmental / Engineering / Design**

#### **Task 1: Conduct a Fee Study for Long-term Financing of the Wyandotte Creek GSA**

Conduct long term financing options study for funding the Wyandotte Creek GSA. This will include an Engineers Report and/or Fee Study resulting in a selected funding mechanism for the GSA.

##### Deliverables:

- Fee Study or Engineers Report, as appropriate

### **Category (c): Implementation / Construction**

Not applicable to this component

### **Category (d): Monitoring / Assessment**

#### **Task 2: Prepare Annual Reports**

Prepare four (4) annual reports, as required by DWR, consisting of the following sections: Executive Summary, Introduction, Updated Groundwater Conditions, Water Supply and Use, and Plan Implementation Status.

##### Deliverables:

- Annual Reports for Water Years 2022, 2023, 2024, and 2025

#### **Task 3: Response to DWR GSP Determination**

Modify the GSP, as required, in response to DWR's determination letter, expected to be received by late 2023. Include coordination and technical support to respond to DWR's requests in a timely, organized, and adequate manner, including coordination calls with DWR representatives and developing written responses to comments on the GSP provided by DWR.

##### Deliverables:

- Amended GSP submitted to DWR

#### **Task 4: Develop Approach for Interconnected Surface Water Sustainable Management Criteria (ISW SMC)**

Activities will include regional coordination and technical work toward refining the SMC for Interconnected Surface Water to address expected DWR comments on the GSP related to the technical approach for the use of groundwater levels as proxies for measurable objectives and minimum thresholds in the GSP. This task will use new data to fill initial data gaps (as expanded by Component 4) and develop a refined approach to set the Interconnected Surface Water SMC for the updated GSP.

##### Deliverables:

- Technical Memorandum summarizing the data evaluation and detailing the approach used to set ISW SMC in the Wyandotte Creek GSP

#### **Task 5: Five-Year GSP Evaluation Report**

Develop an updated version of the GSP for submittal to DWR in January 2027, as part of the required 5-year update. This task will culminate in an initial draft of the GSP update by the end of the grant agreement.

##### Deliverables:

- Initial draft GSP Update report
- Board meeting presentations on GSP evaluation and update progress and findings

**Task 6: Update Butte Basin Groundwater Model (BBGM)**

Update the BBGM inputs using new data in the subbasin to improve understanding of the water budget, refinements to the hydrogeologic conceptual model, and to quantify benefits of potential implementation projects for the Wyandotte Creek Subbasin. Plan to incorporate data from DWR’s Airborne Electromagnetic surveys to integrate basin-specific and cross-basin geophysical data. Improve model boundary conditions. Address other potential model limitations identified in the GSP.

**Deliverables:**

- Presentation materials on BBGM Update included in public workshop/advisory committee/GSA Board meeting packets

**Task 7: Data Management System (DMS) Enhancements**

Complete enhancements to the DMS. Upgrade the DMS to produce reports for critical sustainability indicators for regular monitoring of the subbasin and viewing of the current status of subbasin sustainability by interested parties.

**Deliverables:**

- Link to DMS hosted on the Wyandotte Creek GSA website

**Task 8: Inter-basin Coordination - Conducting Joint Analysis and Evaluation of GSPs**

Evaluate and compare contents of GSPs in the Feather River Corridor region with a focus on establishing a common understanding of basin conditions at boundaries. Identify significant differences, uncertainties, and potential issues of concern related to groundwater interaction at the boundaries. Engage in analysis and evaluation of SMCs between GSPs to identify significant differences and possible impacts between subbasins that could potentially lead to undesirable results.

**Deliverables:**

- Technical Memorandum with results of joint analysis and evaluation of GSPs

**Category (e): Engagement / Outreach**

**Task 9: Outreach and Education Program**

Perform stakeholder outreach and engagement for fee study and during development of GSP updates through meetings of the Wyandotte Creek Advisory Committee, the GSA Board, public workshops and dissemination of information electronically or in hard copy form, as appropriate.

**Deliverables:**

- Meeting agenda and presentation materials
- Outreach materials such as fliers, website updates, videos

**Task 10: Inter-basin Coordination**

Participate in meetings with neighboring subbasins/GSAs, update Subbasin stakeholders on inter-basin coordination efforts and engage stakeholders during GSP evaluations and ISW SMC development to receive input and refine the approach.

**Deliverables:**

- Meeting agendas and presentation materials

## **COMPONENT 3: Regional Conjunctive Use Project**

### **Category (a): Component Administration**

Not applicable to this component

### **Category (b): Environmental / Engineering / Design**

#### **Task 1. Intra-Basin Water Exchange Feasibility Study: Planning and Feasibility**

Conduct planning, and design activities associated with diverting water exchange from intra-basin sources as required, as well as associated environmental permits and completion of environmental documentation such as CEQA, as required. Acquire necessary permits and coordination agreements required for expansion of water purveyors exchanges. Secure contracts with contractors and sub-contractors. Conduct feasibility study associated with intra-basin water exchanges to assess effectiveness of the program.

#### **Deliverables.**

- 100% Design, plans and specifications, if applicable
- Required environmental documentation
- Copies of required permits and access agreements
- Feasibility Study Summary Report

#### **Task 2. Agricultural Surface Water Supplies Feasibility Study: Planning and Feasibility**

Conduct planning, and design activities associated with the increased use of surface water for agricultural use for in-lieu recharge as required, as well as associated environmental permits and completion of environmental documentation like CEQA, as required. Acquire necessary permits and coordination agreements required for the transfers of water and an inventory of irrigation systems to be updated. Secure contracts with contractors and sub-contractors. Conduct feasibility study associated with the surface water supplies program.

#### **Deliverables.**

- 100% Design, plans and specifications, if applicable
- Required environmental documentation
- Copies of required permits and access agreements
- Feasibility Study Summary Report

#### **Task 3. Agricultural Irrigation Efficiency Piloting Program: Planning and Feasibility**

Perform comprehensive field-scale ground-based inventory of irrigation methods, crops, and water sources in the Wyandotte Subbasin. Review state of the art precision irrigation technology. In consultation with stakeholders and researchers, select the most appropriate precision irrigation technology. Develop precision irrigation piloting program for the Wyandotte Subbasin, including summary of ground-based inventory.

#### **Deliverables:**

- 100% Design, plans and specifications, if applicable
- Required environmental documentation
- Copies of required permits and access agreements
- Feasibility Study Summary Report including geospatial maps of results from field-scale ground-based inventory of irrigation methods, crops, and water sources for the Subbasin
- Agricultural irrigation efficiency pilot program plan

**Category (c): Implementation / Construction**

**Task 4. Agricultural Irrigation Efficiency Pilot Program**

Conduct activities associated with the precision irrigation pilot program plan developed as part of Task 3 with agricultural and academic partner cooperation. Disseminate remotely sensed ET to the Subbasin agricultural stakeholders.

Deliverables:

- Certification of completion letter(s)
- Implementation Summary Report summarizing results of the Agricultural Irrigation Efficiency pilot program

**Category (d): Monitoring / Assessment**

Not applicable to this component

**Category (e): Engagement / Outreach**

**Task 5. Grower Education and Outreach**

Perform grower engagement through workshops designed to educate participants on the three phases of the Component. Inform interested parties about study and pilot program progress through continued GSP-related outreach, relevant reports, and data. Develop public information materials to be distributed informing the public of the program and how they can participate. Hold workshops to discuss the program and hear the suggestions, questions, and concerns of the community.

Deliverables:

Education materials that can include webpages, mailers, and videos as applicable  
Workshop agenda and information materials

## **COMPONENT 4: Monitoring Network Enhancements**

Component 4 consists of installing monitoring sites and dedicated monitoring equipment to expand the understanding of basin conditions and address data gaps related to groundwater conditions, shallow monitoring and stream gages, domestic well database, and Groundwater Dependent Ecosystems (GDEs). Activities will be coordinated with neighboring subbasins. Component progress will be shared with the public and stakeholders through meetings of the Wyandotte Creek GSA and communications to the subbasin's interested parties list. This component is 0% complete.

### **Category (a): Component Administration**

Not applicable to this component

### **Category (b): Environmental / Engineering / Design**

#### **Task 1. Landowner Access Agreement/Site Access**

Acquire landowner access agreement(s) required to install monitoring wells, piezometers, and stream gages if applicable. Any access agreements obtained pursuant to this agreement shall allow for adequate long-term, access for construction and maintenance of the well, piezometer, or stream gage.

##### Deliverables:

- Landowner access agreement(s)

#### **Task 2. Multi-Completion Monitoring Wells Planning**

Conduct planning and design activities associated with the multi-completion monitoring well installation within the Subbasin. Perform a technical assessment of potential monitoring well locations, associated costs, and landowner participation to determine the final number and location of monitoring wells to be installed, and the final number of completions to be included in each monitoring well. Acquire necessary permits required for the installation of the wells. Prepare the required CEQA documentation and any other required permitting.

##### Deliverables:

- Map of approved locations for monitoring wells
- 100% Design, plans and specifications, if applicable
- Required permits and environmental documentation for CEQA compliance, if applicable

#### **Task 3. Shallow Wells and Stream Gages Planning**

Conduct planning and design activities associated with the shallow well or piezometer and stream gage installation/maintenance within the Subbasin. Perform a technical assessment of potential monitoring locations, associated costs, and landowner participation to determine the final number and location of sites to be installed, as well as the final number of stream gages to be installed. Acquire necessary permits required for the installation of the wells, piezometers, and gages. Prepare the required CEQA documentation.

##### Deliverables:

- Map of approved locations for shallow wells, piezometers, and stream gages
- 100% Design, plans and specifications, if applicable
- Required permits and environmental documentation for CEQA compliance, if applicable

### **Category (c): Implementation / Construction**

#### **Task 4. Multi-Completion Monitoring Wells Installation**

Install up to five (5) multi-completion monitoring wells. Two (2) to four (4) vertical zones will be installed per well. The final well location and design including the number of screen intervals, will be based on the HCM, water conditions and available budget, and access agreements.

##### Deliverables:

- Well completion reports
- Photos of completed wells
- Well installation report outlining all installation activities and acquired data during installation

### **Task 5. Shallow Wells and Stream Gages Installation**

Install ten (10) new interconnected surface water monitoring sites. Each stream gage installed will be paired with three (3) new shallow monitoring wells. The final site locations and well design including the depth and the distance of the wells from the stream gages will be based on the HCM, water conditions and available budget.

#### **Deliverables:**

- Well completion reports
- Photos of completed wells and stream gages
- Surface and groundwater monitoring site summary report outlining all equipment installation activities and data acquired during installation

#### **Category (d): Monitoring / Assessment**

### **Task 6. GDE Biological Field Surveys**

Develop an updated field-based survey of potential GDEs to better understand current and cyclical GDE trends as well as to improve estimation of interconnected surface water in the Subbasin. Conduct data collection using field mapping techniques supplemented by desktop research conducted during a planning phase. Compare these GDE estimates to potential GDE information provided in the GSP for consistency and update the comprehensive basin-wide dataset of GDEs.

#### **Deliverables:**

- Work Plan
- Technical Memorandum

### **Task 7. Create Community Monitoring Plan and Equip Volunteer Wells with Monitoring Equipment**

Create a monitoring program plan for domestic well owners. The plan will include methods for outreach and engagement, identify and meet education needs, identify methods for data management, and plan implementation. Purchase necessary monitoring equipment to track water levels in 25 domestic wells. Engage with domestic well owners who have volunteered to participate and install equipment necessary for monitoring.

#### **Deliverables:**

- Community monitoring plan
- Well Monitoring Equipment Summary Technical Memorandum

### **Task 8. Community Monitoring Data and Visualization**

Enhance the existing DMS to house the water levels collected as part of the community monitoring program. Include the capability for the DMS to produce materials of the status of subbasin sustainability for interested parties. Create a user interface with new or existing frontend software needed to visually communicate the water levels.

#### **Deliverables:**

- Link to DMS and visualizations hosted on the Wyandotte Creek GSA website

#### **Category (e): Engagement / Outreach**

### **Task 9. Community Monitoring Program Engagement and Education**

Perform public engagement through workshops designed to educate participants in the community monitoring program. Inform interested parties about implementation progress through continued GSP-related outreach, relevant reports, and data. Hold workshops to discuss the program and hear suggestions, questions, and concerns of the community.

#### **Deliverables:**

- Workshop agenda and information materials

### **Task 10: Inter-basin Coordination**

Participate in meetings with neighboring subbasins/GSAs to coordinate planning and monitoring well and stream gage site locations.

#### **Deliverables:**

- Meeting agendas and presentation materials

## **COMPONENT 5: Thermalito Water Treatment Plant Capacity Upgrade**

This component consists of installing additional membrane filter racks at the TWSD treatment plant, located at 535 Table Mountain Boulevard, Oroville, CA 95965 in the Wyandotte Creek Subbasin. The current maximum capacity of the treatment plant is 4 million gallons per day (MGD). When demand exceeds the plant capacity, the remaining demand is provided using wells throughout the area. The proposed project would double the treatment plant capacity to 8 MGD with the installation of two (2) filter racks and associated equipment and thereby reduce groundwater demand by about 600 acre-feet in the subbasin by expanding the ability to utilize available surface water.

Component progress and construction timing will be shared with the public and stakeholders through TWSD Board meetings and meetings of the Wyandotte Creek GSA. Component-specific communications may include public meetings, website updates, and email communications that will describe the component and its progress toward completion. The project is 25% complete but the construction phase is not yet started.

### **Category (a): Component Administration**

Not applicable to this Component

### **Category (b): Environmental / Engineering / Design**

Not applicable to this Component

### **Category (c): Implementation / Construction**

#### **Task 1: Construction**

Construct Component 5 per final design plans and specifications (100% complete). Conduct an inspection of the completed construction by a licensed professional and submit a Certification of Completion letter from the licensed professional to ensure that the component was constructed per the 100% design plans and specifications and that Component 5 will provide the benefits claimed.

#### **Deliverables:**

- Photo documentation
- Certification of Completion letter

### **Category (d): Monitoring / Assessment**

Not applicable to this Component

### **Category (e): Engagement / Outreach**

Not applicable to this Component

## **COMPONENT 6: Groundwater Recharge Feasibility Analysis, Design, and Construction**

This component includes planning through construction phases consistent with section 5.2.4.3 of the Wyandotte Creek GSP to create a recharge project that captures or slows storm water to enhance groundwater recharge and reduce flooding. The potential recharge areas are located throughout the Subbasin. The results of a feasibility analysis will be used to identify potential areas for recharge and to develop a minimum of one (1) groundwater recharge project that would result in design plans and specifications and include a construction phase.

The public and interested parties will be informed of the activities associated with this component through regular Advisory Committee Meetings, project workgroup meetings, meetings of the GSA Board, public workshops, and regular email correspondence to the interested parties list, similar to the approach taken during GSP development. In addition, targeted outreach will be conducted to stakeholders and landowners as needed. This project is not yet started (0% complete).

### **Category (a): Component Administration**

#### **Task 1: Component Administration and Management**

This Task is overseeing the implementation of the project that includes management of all project tasks and submittal of information and documentation to DWR as required by the grant agreement.

##### Deliverables:

- Quarterly Progress Reports, Quarterly Invoices, and all required backup documentation
- Bid documents, as appropriate (refer to Task 7 for complete list of deliverables)
- Executed and manage contract, as appropriate and in compliance with the grant agreement
- Draft and Final Component Completion Reports

### **Category (b): Environmental / Engineering / Design**

#### **Task 2: Feasibility Analysis and Project Identification**

Project evaluation and identification report including background data analysis, stakeholder/landowner outreach summary, site visit(s) review summary, water supply and water rights analysis, conveyance and cost analysis, determination of recharge potential, zones of benefit, description of beneficiaries of recharge, recharge project type (i.e., detention basin, drywell, etc.) and estimates for construction, operation, and maintenance.

##### Deliverables:

- Feasibility Report including Recharge Project Type and Location Prioritization List

#### **Task 3: Groundwater Recharge Investigation and Preliminary Design**

Groundwater Recharge Investigation including towed electromagnetic system (tTEM) or equivalent geophysical method survey), approximately 15 cone penetrating tests (CPT), 4 exploratory borings, and collection of groundwater and soil samples for physical and chemical testing. Preliminary design.

##### Deliverables:

- Geotechnical Investigation Report
- Develop 30% Design Plans

#### **Task 4: CEQA/Permitting**

Conduct applicable site specific biological and cultural studies. Prepare appropriate CEQA documentation. Identify and obtain necessary permits such as temporary water rights permits, Clean Water Act 404 and 401 permits, encroachment permits, construction permits.

##### Deliverables:

- CEQA Documentation, as applicable
- Copies of applicable regulatory permit(s)

#### **Task 5: Legal Implications Analysis and Policy Documentation**

Evaluate and document the limitations and legal considerations of subsequent recovery and use, "leave behind" requirements, appropriate water right permit (short-term and long-term), potential terms of recharge based on identification of beneficial uses/users, water availability for overlying groundwater users, in-lieu recharge assumptions, and monitoring and reporting requirements.

##### Deliverables:

- Legal Implications of Recharge Analysis Report



- Recharge project review and approval process
- Agreement Documents that may include a Memorandum of Understanding, Policy Document, and/or Ordinance for various types of recharge projects, as applicable

### **Task 6 – Final Design**

Complete the preliminary design plans and specifications along with the topographic survey. Develop the 50% design plans for Component 2 and submit them for review and concurrence prior to completing the final design plans and specifications. After review of the 50% design plans, prepare the 100% design plans and specifications in accordance with requirements for public bidding for construction.

#### Deliverables:

- Topographic Survey, if necessary
- 50% Design Plans and Specifications
- 100% Design Plans, Specifications, and Estimates

### **Category (c): Implementation / Construction**

### **Task 7: Bid Documents**

Develop all necessary documents to secure a contractor(s)

#### Deliverables:

- Bid Documents to procure contractor for construction of the project(s).
- Documentation for submittal to DWR including: proof of bid advertisement, Notice of Award, Executed Contract, Notice to Proceed, photo-documentation of pre-, during, and post-construction activities included within the appropriate Quarterly Progress Reports

### **Task 8: Construction/Implementation Activities**

Conduct mobilization and site preparation activities. Prepare appropriate plans and documents in compliance with design plans and regulatory permitting requirements. Conduct performance testing and site demobilization, following construction.

#### Deliverables:

- Regulatory permitting plans, notifications and reporting.
- Photo documentation
- Project Completion report(s) including: Notice of Completion with as-built drawings and site inspection letter or report.

### **Category (d): Monitoring / Assessment**

### **Task 9. Monitoring Plan**

Create a Monitoring Plan for the regular and systematic monitoring of applicable recharge project(s) for the long-term. The plan will identify the most appropriate methods for data collection, management, and analysis. The Monitoring Plan will be incorporated into the monitoring and reporting processes that have been developed for GSP implementation.

#### Deliverables:

- Monitoring Plan

### **Category (e): Engagement / Outreach**

### **Task 10: Stakeholder Engagement, Education, and Outreach**

Stakeholder and landowner outreach to review studies and reports, identify issues and concerns, determine interest and location(s) for potential projects, and discuss legal implications. Anticipated meetings may include 2-5 meetings with local landowner groups and/or advisory committee, and 3 meetings with GSA Board.

#### Deliverables:

- Meeting presentations and handouts

## C. Budget

Upon initiating the SGM Grant Program application process, the Wyandotte Creek GSA compiled the data needs and projects identified in the GSP that would be further developed for potential inclusion in the grant application. That process resulted in the refinement of 6 projects that were scoped and ranked with an estimated budget of \$7,367,284.

It was important to the GSA that the application include a diverse portfolio of projects that would allow the GSA to work toward sustainability through projects that filled data gaps and focused on conservation, water supply, recharge, and land management. In addition, the GSA anticipates that they will pursue additional funding opportunities for the other aspects of these projects that have not been included in this application. Other funding sources may include drought relief grant programs and the long-term funding mechanism being developed by the Wyandotte Creek GSA.

Provided below is a justification for proposed budgets for each component.

### **Component 1: Grant Administration**

The total Grant Amount requested is \$200,000. Assuming that all of the proposed components are funded, this budget estimate is less than 3% of the total budget and would be specific to administering the grant over the course of three years, as described in the Work Plan. It should be noted that only one of the other project components 6 also included a Grant Agreement Administration budget; Component 6 is a planning, design, and implementation project and would require additional administration and oversight by the grantee.

### **Component 2: GSP Implementation, Outreach, and Inter-basin Coordination Activities**

The total Grant Amount requested is \$1,175,000. This component consists of activities to support implementation of SGMA in the Wyandotte Creek Subbasin. More specifically activities primarily fall under the Monitoring / Assessment budget category. Tasks include: preparing annual reports, updating the Butte Basin Groundwater Model, modifying the GSP in response to DWR Determination letter, refining and developing an approach to the interconnected surface water SMC, beginning the 5-Year GSP update, enhancing the data management system, and conducting an analysis of neighboring subbasin GSPs to support inter-basin coordination. The Environmental / Engineering / Design budget category includes conducting a fee study to identify long-term funding source for the GSA and budget estimates for conducting education and outreach associated with the identified tasks.

### **Component 3: Regional Conjunctive Use Project**

The total Grant Amount requested is \$400,000. The Environmental / Engineering / Design budget category includes three phases: 1) Intra-Basin Water Exchange Feasibility Study, 2) Agricultural Surface Water Supplies Feasibility Study, and 3) Agricultural Irrigation Efficiency. The Implementation / Construction budget category would include an Agricultural Irrigation Efficiency Pilot Program. The overall component also includes an Engagement / Outreach budget for grower education workshops, identifying interested parties for pilot program participation, and development of public information materials.

### **Component 4: Monitoring Network Enhancements**

The total Grant Amount requested is \$1,433,750. Component 4 is a comprehensive program to address data gaps identified in the GSP and consists of planning, monitoring of groundwater levels and streams, inter-basin coordination, gaining a better understanding of groundwater dependent ecosystems (GDEs), a community monitoring program for domestic well owners, and enhancing the data management system with new data.

The Environmental / Engineering / Design budget category includes 1) landowner access agreement/site access and 2) Perform a technical assessment of potential monitoring well locations, associated costs, and landowner participation, and 3) planning and design activities associated with the shallow well or piezometer and stream gage installation/maintenance. The Implementation / Construction budget category includes installation and planning of multi-completion monitoring wells, shallow wells and stream gages. The Monitoring / Assessment budget category includes a community domestic monitoring program and GDE field surveys as well as outreach and education.

### **Component 5: Thermalito Water Treatment Plant Capacity Upgrade**

The total Grant Amount requested is \$2,318,534. This component is an Implementation / Construction project aimed at increasing the water treatment plant's capacity for treating surface water and reducing augmenting supplies from groundwater. The project design phase is complete but construction has not yet been initiated.

## **Component 6: Groundwater Recharge Feasibility Analysis, Design, and Construction**

The total Grant Amount requested is \$1,840,000. The goal of this component is to develop a prioritization list of groundwater recharge projects throughout the subbasin and identify a project for implementation and construction. This component is a comprehensive project that includes Environmental / Engineering / Design estimates for concept planning, feasibility, site studies and environmental analysis and regulatory permitting. The component also includes preliminary and final design that includes bid document preparation. Budgets have been estimated for project construction activities and monitoring and assessment. Stakeholder engagement is a critical task as part of this component. Given the complexity of this component Grant Agreement Administration is roughly 5 percent of the estimated budget. Another important aspect of this project is examining the legal implications of groundwater recharge; this task has been included as part of the Environmental / Engineering / Design budget category.

**Table 1a: Budget Summary**

**Grant Title: Wyandotte Creek Subbasin GSP Projects and Management Actions Implementation**

**Grantee: Wyandotte Creek Groundwater Sustainability Agency**

<b>Components</b>	<b>Grant Amount</b>
Component 1: Grant Administration	\$ 200,000
Component 2: GSP Implementation, Outreach, and Inter-basin Coordination Activities	\$1,175,000
Component 3: Regional Conjunctive Use Project	\$ 400,000
Component 4 : Monitoring Network Enhancements	\$1,433,750
Component 5 : Thermalito Water Treatment Plant Capacity Upgrade	\$2,318,534
Component 6 : Groundwater Recharge Feasibility Analysis, Design, and Construction	\$1,840,000
<b>Total:</b>	<b>\$7,367,284</b>

**Table 1b: Component Budget Summaries**

**Component 1: Grant Administration**

Component 1 serves a need of a DAC, SDAC, Tribe and/or Underrepresented Community?

(check all that apply): DAC, SDAC, Tribe, and/or Underrepresented Community

Budget Categories	Grant Amount
(a) Grant Agreement Administration	\$200,000
(b) Environmental / Engineering / Design	\$0
(c) Implementation / Construction	\$0
(d) Monitoring / Assessment	\$0
(e) Engagement / Outreach	\$0
<b>Total:</b>	<b>\$200,000</b>

**Component 2: GSP Implementation, Outreach, and Inter-basin Coordination Activities**

The budget for this component was based on professional judgement and experience with similar types of projects with similar designs.

Component 2 serves a need of a DAC, SDAC, Tribe and/or Underrepresented Community?

(check all that apply): DAC, SDAC, Tribe, and/or Underrepresented Community

Budget Categories	Grant Amount
(a) Grant Agreement Administration	\$0
(b) Environmental / Engineering / Design	\$100,000
(c) Implementation / Construction	\$0
(d) Monitoring / Assessment	\$1,005,000
(e) Engagement / Outreach	\$70,000
<b>Total:</b>	<b>\$1,175,000</b>

### Component 3: Regional Conjunctive Use Project

The budget for this component was based on professional judgement and experience with similar types of projects with similar designs.

Component 3 serves a need of a DAC, SDAC, Tribe and/or Underrepresented Community?

(check all that apply): DAC, SDAC, Tribe, and/or Underrepresented Community

Budget Categories	Grant Amount
(a) Grant Agreement Administration	\$0
(b) Environmental / Engineering / Design	\$280,000
(c) Implementation / Construction	\$100,000
(d) Monitoring / Assessment	\$0
(e) Engagement / Outreach	\$20,000
<b>Total:</b>	<b>\$400,000</b>

### Component 4: Monitoring Network Enhancements

The budget for this component was based on professional judgement and experience with similar types of projects with similar designs.

Component serves a need of a DAC, SDAC, Tribe and/or Underrepresented Community?

(check all that apply): DAC, SDAC, Tribe, and/or Underrepresented Community

Budget Categories	Grant Amount
(a) Grant Agreement Administration	\$0
(b) Environmental / Engineering / Design	\$70,000
(c) Implementation / Construction	\$1,200,000
(d) Monitoring / Assessment	\$118,750
(e) Engagement / Outreach	\$45,000
<b>Total:</b>	<b>\$1,433,750</b>

**Component 5: Thermalito Water Treatment Plant Capacity Upgrade**

Component 5 serves a need of a DAC, SDAC, Tribe and/or Underrepresented Community?

(check all that apply): DAC, SDAC, Tribe, and/or Underrepresented Community

<b>Budget Categories</b>	<b>Grant Amount</b>
(a) Component Administration	\$0
(b) Environmental / Engineering / Design	\$0
(c) Implementation / Construction	\$2,318,534
(d) Monitoring / Assessment	\$0
(e) Engagement / Outreach	\$0
<b>Total:</b>	<b>\$2,318,534</b>

**Component 6: Groundwater Recharge Feasibility Analysis, Design and Construction**

Component serves a need of a DAC, SDAC, Tribe and/or Underrepresented Community?

(check all that apply): DAC, SDAC, Tribe, and/or Underrepresented Community

<b>Budget Categories</b>	<b>Grant Amount</b>
(a) Grant Agreement Administration	\$90,000
(b) Environmental / Engineering / Design	\$650,000
(c) Implementation / Construction	\$1,050,000
(d) Monitoring / Assessment	\$20,000
(e) Engagement / Outreach	\$30,000
<b>Total:</b>	<b>\$1,840,000</b>

**Table 2 – Ranking of Proposed Components**

Rank	Name	SJV Funds Component Requirement	Readiness	Partnerships with Non-Profits, Non-Governmental Organizations (NROs), and/or Colleges/Universities	Benefactors	Cost
<i>Rank in order of importance with 1 being most important. Do not use rank # more than once each.</i>	<i>Provide a name for each proposed component.</i>	<i>Please check box if the component is eligible for SJV-funds</i>	<i>Please check if the component will be under construction by the end of 2023</i>	<i>Please list all partnering agencies that are collaborating on a component with the estimate amount of funding being provided to the nonprofit(s), NGO(s), and/or college(s)/ university (-ies)</i>	<i>Does this component benefit any of the following communities ? (Check all that apply)</i>	<i>Provide a cost estimate for the total component cost. Round to nearest hundred.</i>
1	Grant Administration	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/> Tribe(s) <input checked="" type="checkbox"/> URC(s) <input checked="" type="checkbox"/> SDAC(s)	\$200,000
2	GSP Implementation, Outreach, and Inter-basin Coordination Activities	<input type="checkbox"/>	<input type="checkbox"/>	GSAs in neighboring subbasins, Butte County	<input checked="" type="checkbox"/> Tribe(s) <input checked="" type="checkbox"/> URC(s) <input type="checkbox"/> SDAC(s)	\$1,175,000
3	Regional Conjunctive Use Project	<input type="checkbox"/>	<input type="checkbox"/>	South Feather Water and Power Agency, Thermalito Water and Sewer District	<input type="checkbox"/> Tribe(s) <input checked="" type="checkbox"/> URC(s) <input checked="" type="checkbox"/> SDAC(s)	\$400,000
4	Monitoring Network Enhancements	<input type="checkbox"/>	<input type="checkbox"/>	CSU Chico - \$ 50,000	<input checked="" type="checkbox"/> Tribe(s) <input checked="" type="checkbox"/> URC(s) <input checked="" type="checkbox"/> SDAC(s)	\$1,433,800
5	Thermalito Water Treatment Plant Capacity Upgrade	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Thermalito Water and Sewer District	<input type="checkbox"/> Tribe(s) <input checked="" type="checkbox"/> URC(s) <input checked="" type="checkbox"/> SDAC(s)	\$2,318,500
6	Groundwater Recharge Feasibility Analysis, Design, and Construction	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/> Tribe(s) <input checked="" type="checkbox"/> URC(s) <input checked="" type="checkbox"/> SDAC(s)	\$1,840,000
					<b>Total Cost:</b>	\$7,367,300



## D. Schedule

The following components are likely to have required environmental compliance and permitting:

**Component 4: Monitoring Network Enhancements.** This component identifies the installation of monitoring wells and stream gages. Typically the installation of equipment for information/data collection is exempt from the California Environmental Quality Act (CEQA). The CEQA Guidelines will be reviewed to determine the appropriate environmental documentation, likely a Notice of Exemption, which would be filed prior to the initiation of construction activities. The project proponent will work with the Butte County Division of Environmental Health to obtain the appropriate permit and notifications for monitoring well installation. Depending on the location of monitoring infrastructure, landowner access agreements may be necessary.

**Component 6: Groundwater Recharge Feasibility Analysis, Design, and Construction.** Depending on the type of pilot program that would result from the feasibility analysis, and the location of preliminary study activities (i.e., exploratory boring) the project could result in ground disturbing activities and thus would be subject to CEQA and would likely result in the preparation of a Mitigated Negative Declaration. Other entitlements that may be necessary, depending on source of water for recharge, conveyance, and location of the recharge infrastructure, include temporary water rights permits, Clean Water Act 404 and 401 permits, encroachment permits, and construction permits. Landowner access agreements would likely be necessary.

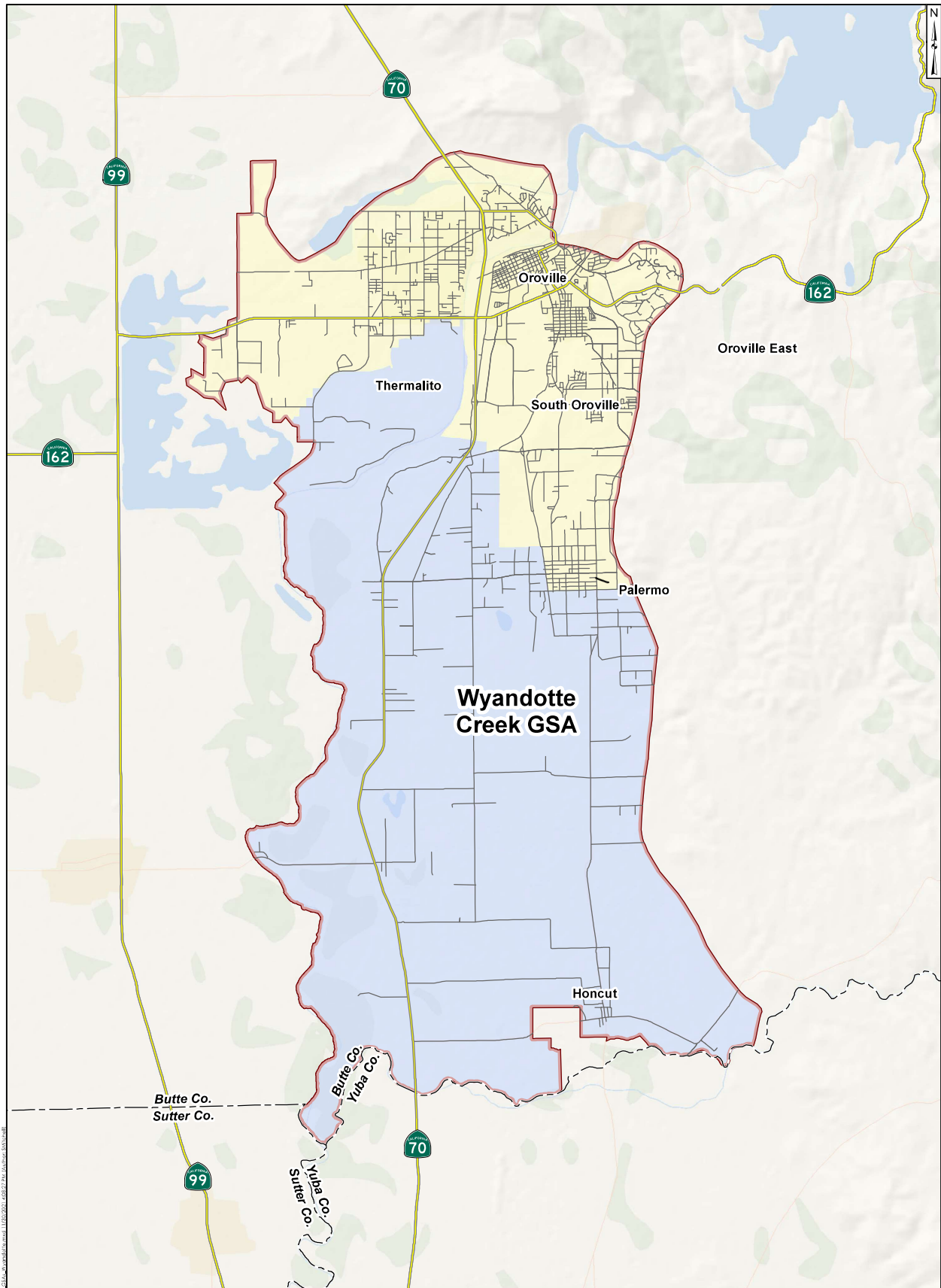
## SCHEDULE TABLE TEMPLATE

The Schedule for each component was based on professional judgement and experience with similar types of projects with similar designs. Completion of each component is feasible within the grant timeline.

### Grant Title: Wyandotte Creek Subbasin GSP Projects and Management Actions Implementation

Categories	Start Date	End Date
<b>Component 1: Grant Administration</b>	<b>May 1, 2023</b>	<b>June 30, 2026</b>
(a) Component Administration	05/01/2023	06/30/2026
(b) Environmental / Engineering / Design		
(c) Implementation / Construction		
(d) Monitoring / Assessment		
(e) Engagement / Outreach		
<b>Component 2: GSP Implementation, Outreach, and Inter-basin Coordination Activities</b>	<b>October 4, 2022</b>	<b>April 30, 2026</b>
(a) Component Administration		
(b) Environmental / Engineering / Design	10/04/2022	09/01/2023
(c) Implementation / Construction		
(d) Monitoring / Assessment	10/04/2022	04/30/2026
(e) Engagement / Outreach	10/04/2022	04/30/2026
<b>Component 3: Regional Conjunctive Use Project</b>	<b>October 4, 2022</b>	<b>April 30, 2026</b>
(a) Component Administration		
(b) Environmental / Engineering / Design	10/04/2022	04/30/2026
(c) Implementation / Construction	10/04/2022	04/30/2026
(d) Monitoring / Assessment		
(e) Engagement / Outreach	10/04/2022	04/30/2026
<b>Component 4: Monitoring Network Enhancements</b>	<b>October 4, 2022</b>	<b>April 30, 2026</b>
(a) Component Administration		
(b) Environmental / Engineering / Design	10/04/2022	04/30/2026
(c) Implementation / Construction	10/04/2022	04/30/2026
(d) Monitoring / Assessment	10/04/2022	04/30/2026
(e) Engagement / Outreach	10/04/2022	04/30/2026
<b>Component 5: Thermalito Water Treatment Plant Capacity Upgrade</b>	<b>October 4, 2022</b>	<b>June 1, 2024</b>
(a) Component Administration		
(b) Environmental / Engineering / Design		
(c) Implementation / Construction	02/01/2023	04/01/2024
(d) Monitoring / Assessment		
(e) Engagement / Outreach		
<b>Component 6: Groundwater Recharge Feasibility Analysis, Design, and Construction</b>	<b>January 1, 2024</b>	<b>June 30, 2026</b>
(a) Component Administration	01/01/2024	06/30/2026
(b) Environmental / Engineering / Design	03/01/2024	04/30/2025
(c) Implementation / Construction	03/01/2025	04/30/2026
(d) Monitoring / Assessment	01/01/2025	03/01/2025
(e) Engagement / Outreach	01/01/2024	04/30/2026

**Figure 1**



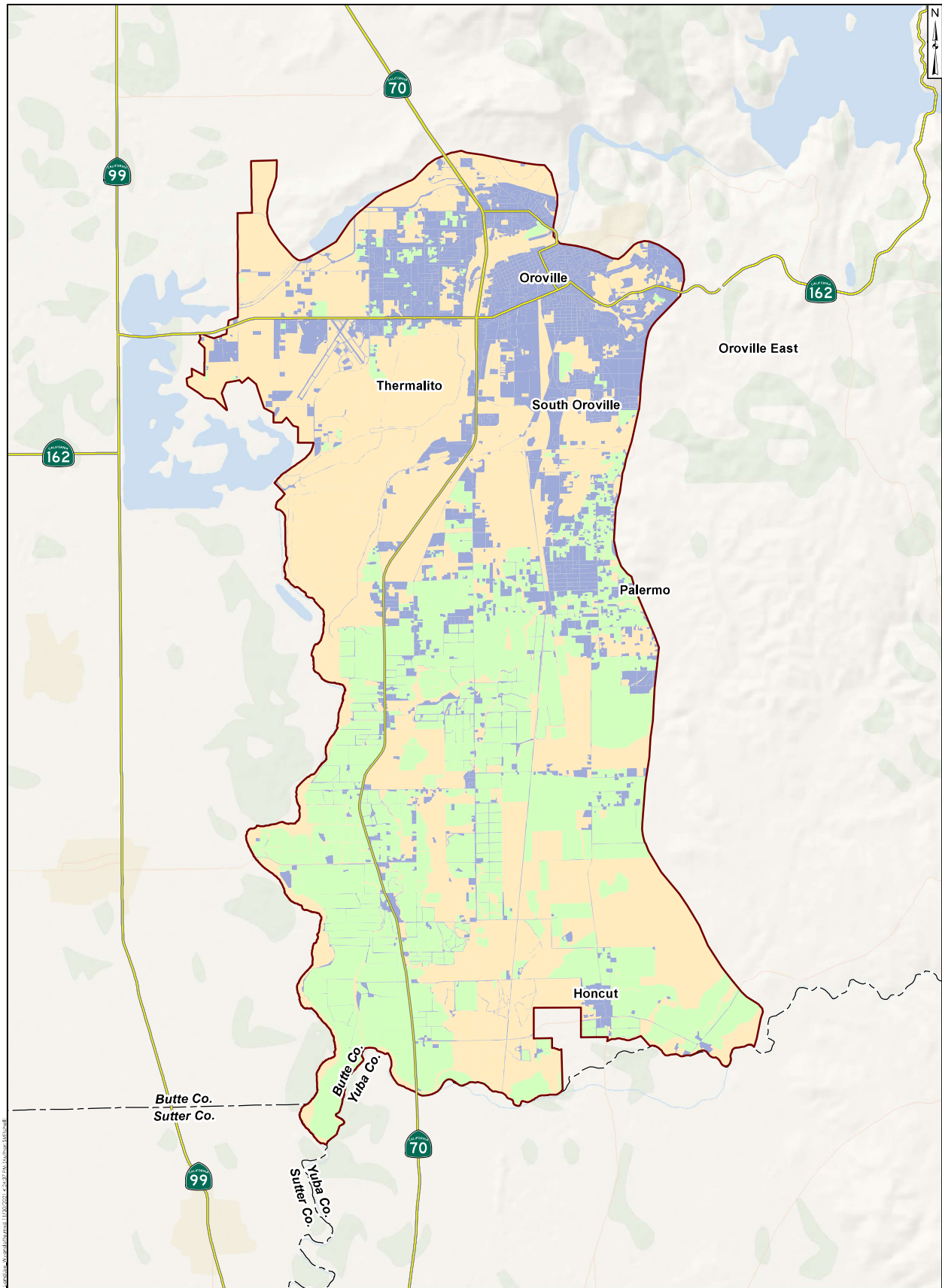
<b>Legend</b>	
<i>Groundwater Sustainability Agency (GSA)<sup>1</sup> Wyandotte Creek Groundwater Subbasin Management Areas</i>	
Wyandotte Creek GSA	Wyandotte Creek Oroville
Roads <sup>2</sup>	Wyandotte Creek South
Highways	<i>Boundaries<sup>2</sup></i>
Other roads	County boundaries

Notes:  
1) California Department of Water Resources (CA DWR).  
2) TIGER/Line, U.S. Census Bureau.









<b>Groundwater Sustainability Agencies</b> Wyandotte Creek Subbasin GSP	
Project No.: SAC282	December 2021
Figure <b>1-1</b>	

S:\GIS\Projects\2018\_GSP\Assets\Map\_Series\Map\_Series\_11032021\_082724.mxd

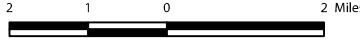

Figure 2

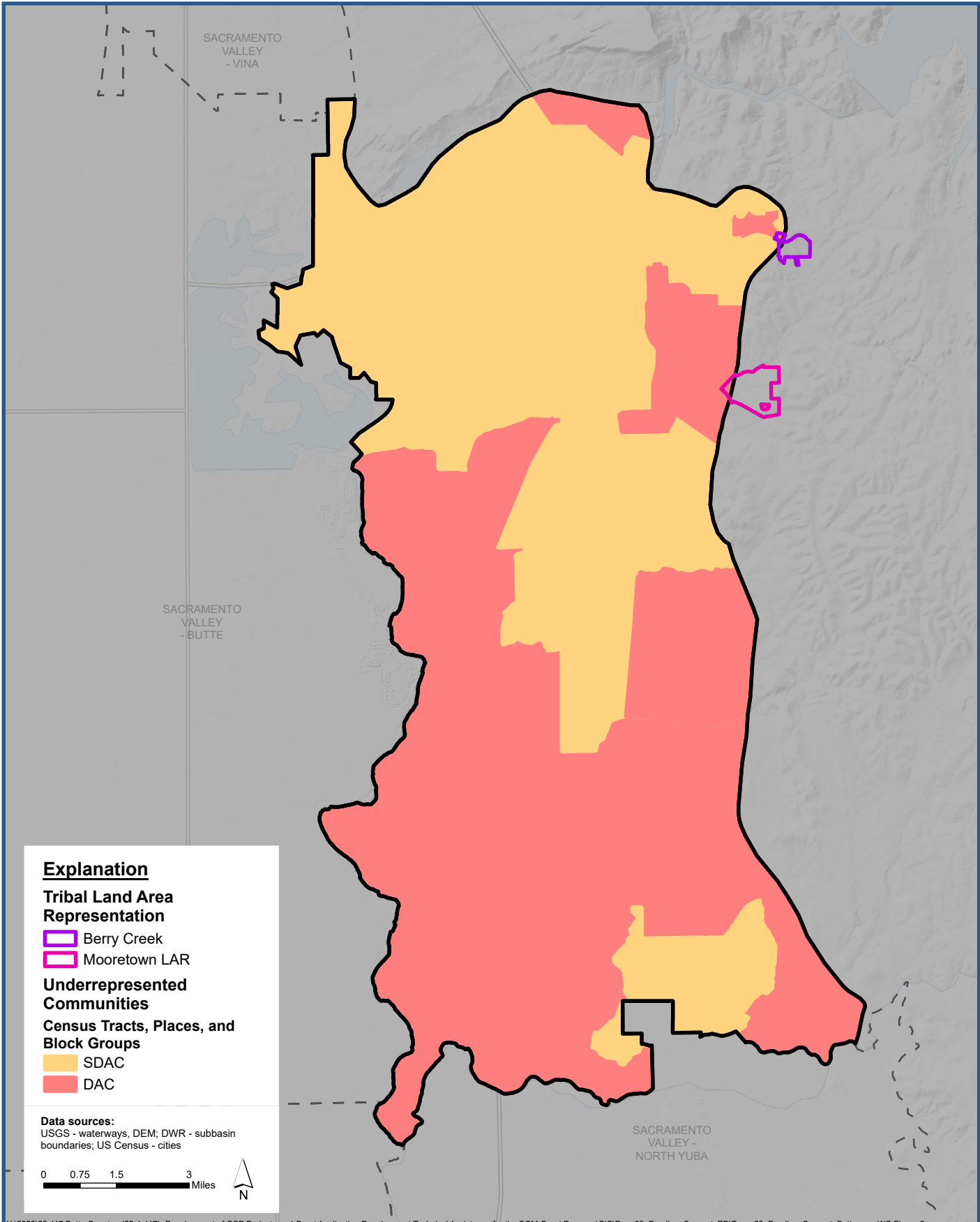


**Legend**

	Wyandotte Creek Subbasin <sup>1</sup>		Roads <sup>2</sup>
<b>Land Use</b>			Highways
	Agricultural areas		Boundaries <sup>2</sup>
	Developed areas		County boundaries
	Other land use		

Notes:  
 1) California Department of Water Resources (CA DWR).  
 2) TIGER/Line, U.S. Census Bureau.

 2 1 0 2 Miles	
<b>Land Use</b> Wyandotte Creek Subbasin GSP	
	
Project No.: SAC282	December 2021
Figure <b>1-7</b>	



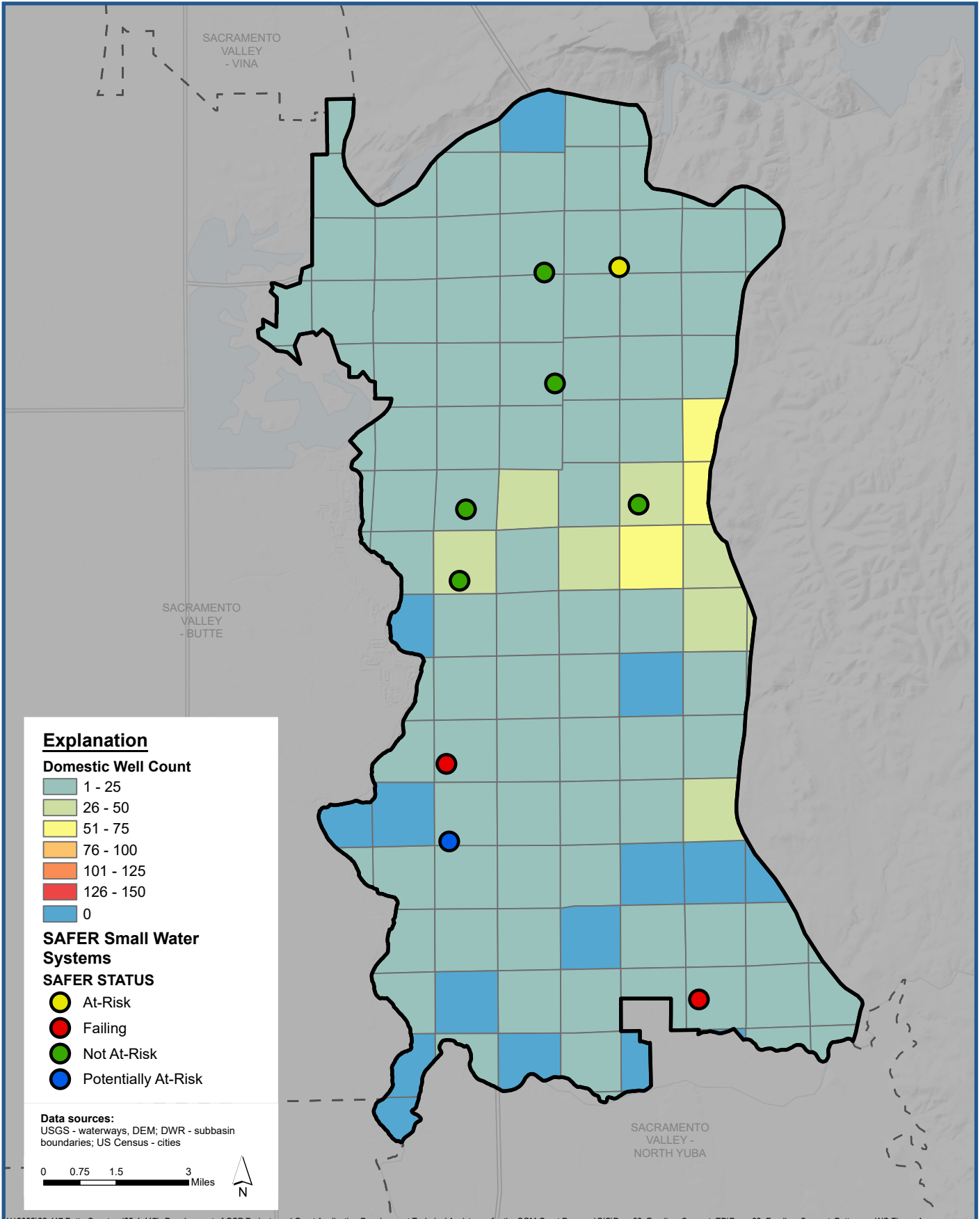
X:\2022\22-117 Butte County - (22-1-117) -Development of GSP Projects and Grant Application Development Technical Assistance for the SGM Grant Program\GIS\Pop\_68\_Funding\_Support\_ED\Prop\_68\_Funding\_Support\_Butte.aprx:WC Figure 3



**DACs and Tribes**

Wyandotte Creek Subbasin Proposition 68 Round 2 Grant Application

**Figure 3**



X:\2022\22-117 Butte County - (22-1-117) -Development of GSP Projects and Grant Application Development Technical Assistance for the SGM Grant Program\GIS\Pop\_68\_Funding\_Support\_ED\Prop\_68\_Funding\_Support\_Butte.aprx:WC Figure 4



**Domestic Wells and Small Water Systems**

Wyandotte Creek Subbasin Proposition 68 Round 2 Grant Application

**Figure 4**

Figure 5.

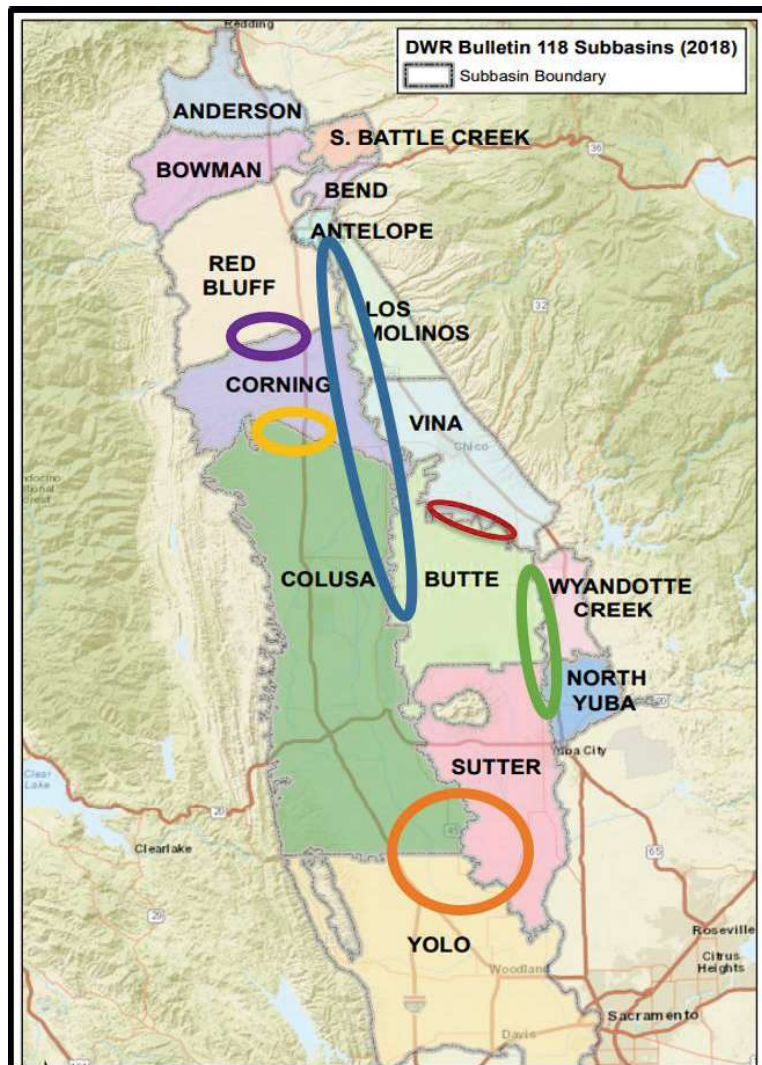
#### 4.1. Inter-basin Coordination Groups

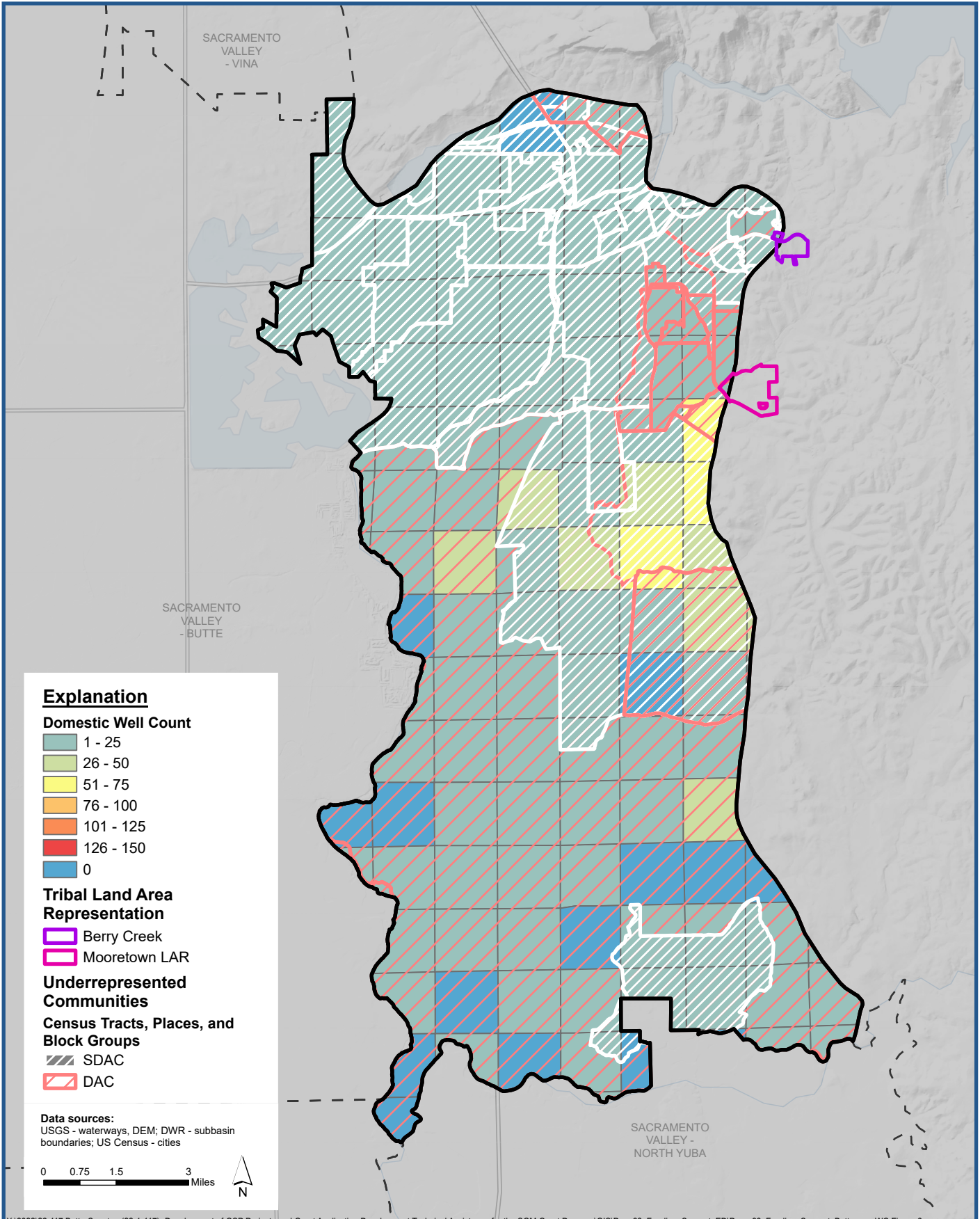
Inter-basin coordination efforts, as outlined in the pillars above, would require resources and technical support. Subbasin staff recommend organizing inter-basin coordination priorities by specific subbasin boundaries. One suggested approach identifies specific “Coordination Groups” (see Figure 3 and list below). Some of these groups are pairs and others include multiple subbasins around a river boundary.

1. **Feather River Corridor**- Butte, Wyandotte Creek, North Yuba, Sutter
2. **North Sacramento River Corridor**- Antelope, Los Molinos, Red Bluff, Corning, Vina, Butte, Colusa
3. **South Sacramento Corridor**- Colusa, Sutter, Yolo

Neighbor to Neighbor, examples:

4. **Stony Creek**- Corning, Colusa
5. **Thomes Creek**- Red Bluff, Corning
6. **Butte/Vina**- Vina, Butte





X:\2022\22-117 Butte County - (22-1-117) -Development of GSP Projects and Grant Application Development Technical Assistance for the SGM Grant Program\GIS\Pop\_68\_Funding\_Support\_ED\Prop\_68\_Funding\_Support\_Butte.aprx:WC Figure 6

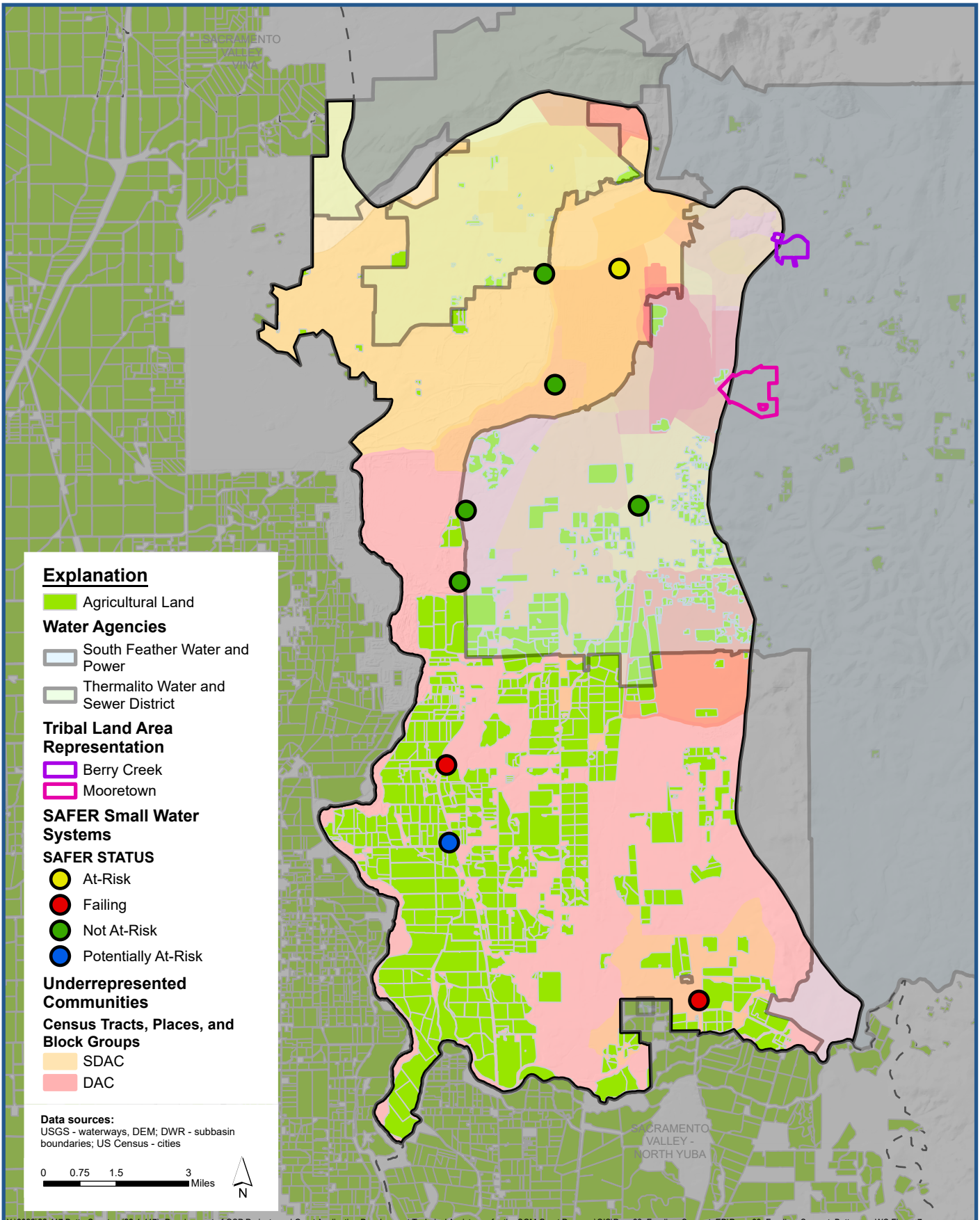


**Domestic Well Count by Section**

Wyandotte Creek Subbasin Proposition 68 Round 2 Grant Application

**Figure 6**





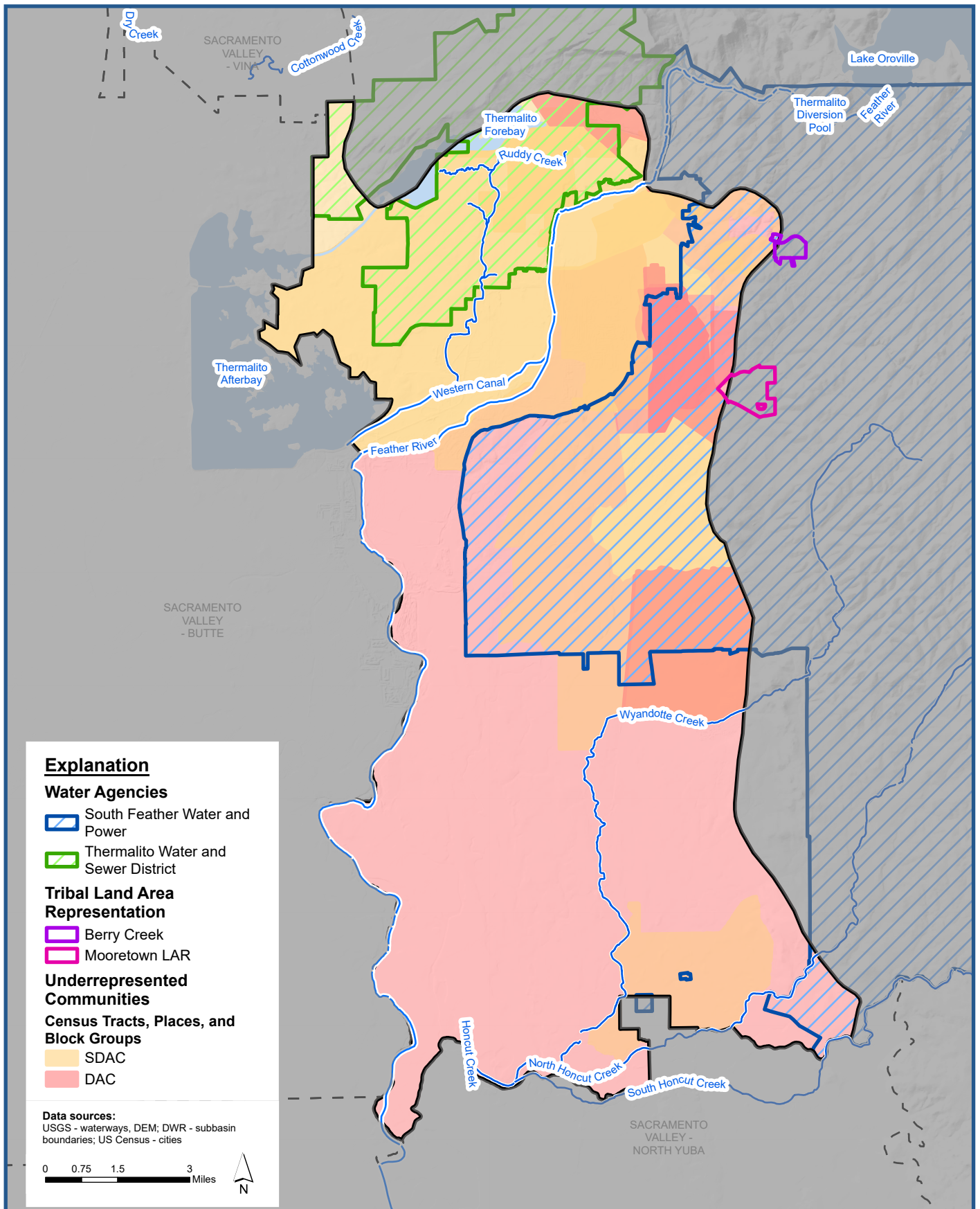
X:\2022\22-117 Butte County - (22-1-117) -Development of GSP Projects and Grant Application Development Technical Assistance for the SGM Grant Program\GIS\Pop\_68\_Funding\_Support\_ED\Prop\_68\_Funding\_Support\_Butte.aprx:WC Figure 7



**SAFER Small Water Systems Status and Agricultural Land**

Wyandotte Creek Subbasin Proposition 68 Round 2 Grant Application

**Figure 7**



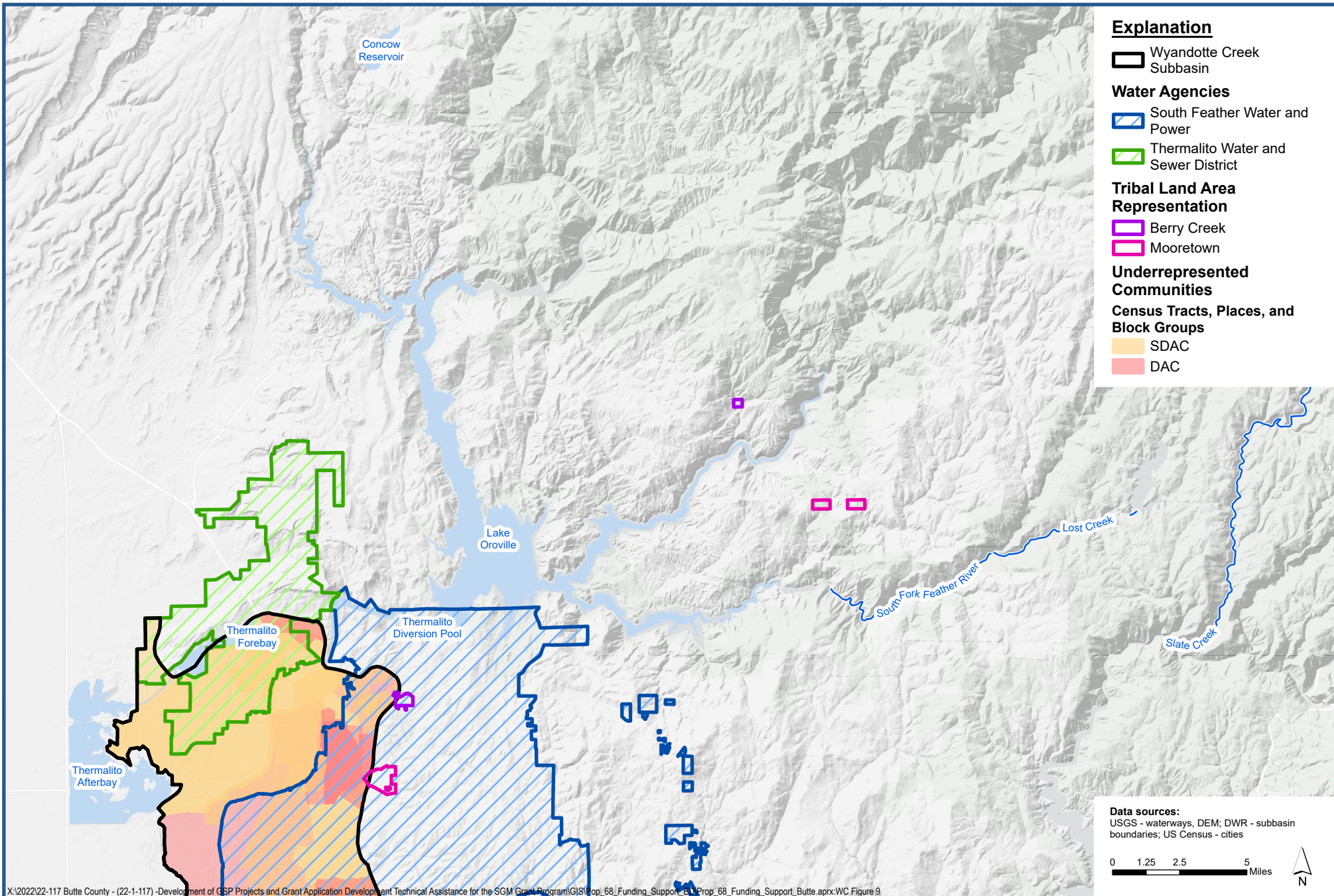
X:\2022\22-117 Butte County - (22-1-117) -Development of GSP Projects and Grant Application Development Technical Assistance for the SGM Grant Program\GIS\Pop\_68\_Funding\_Support\_ED\Prop\_68\_Funding\_Support\_Butte.aprx:WC Figure 8

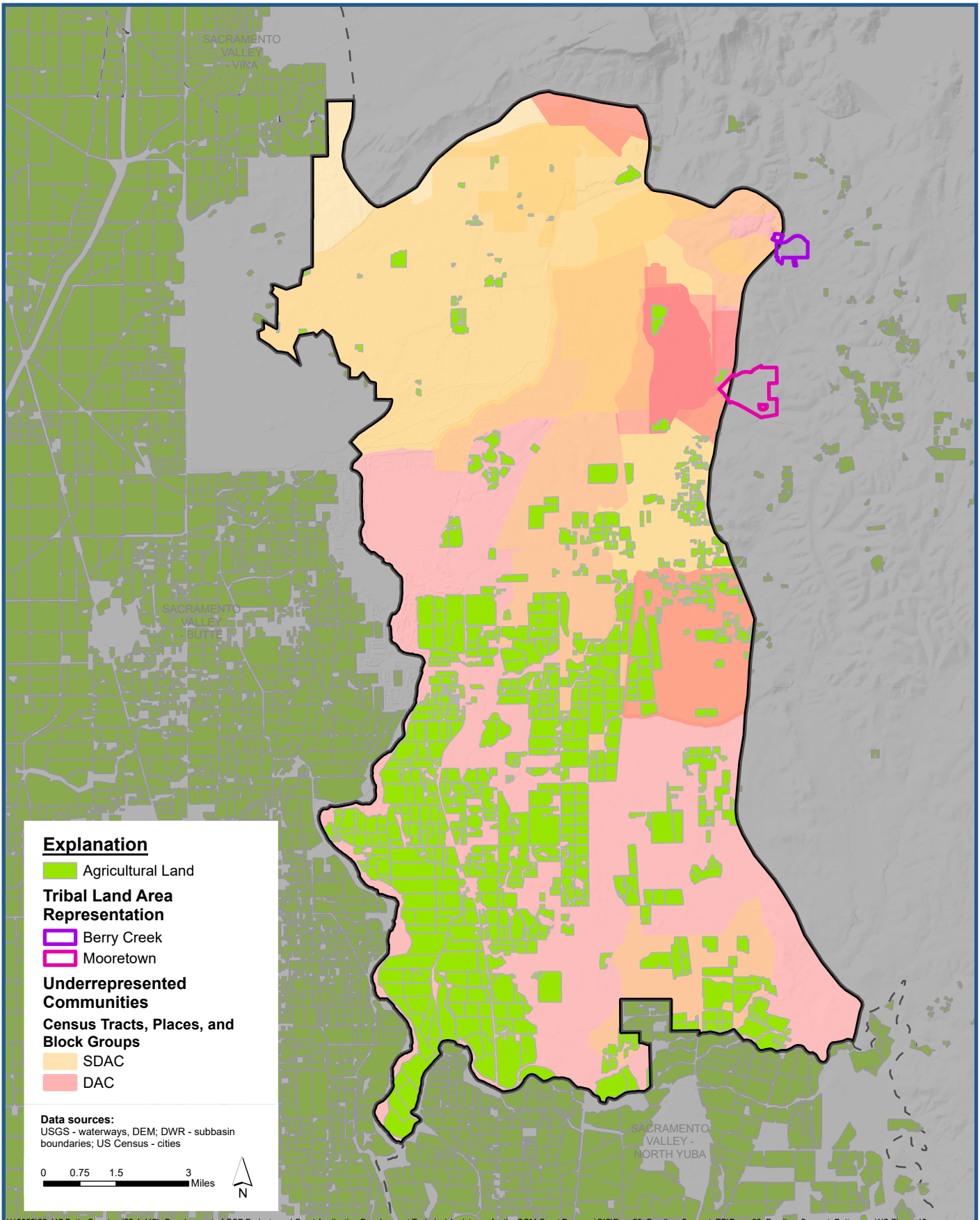


**Water Agencies For Intra-Basin Exchanges**

Wyandotte Creek Subbasin Proposition 68 Round 2 Grant Application

**Figure 8**





X:\2022\22-117 Butte County - (22-1-117) -Development of GSP Projects and Grant Application Development Technical Assistance for the SGM Grant Program\GIS\Pop\_68\_Funding\_Support\_ED\Prop\_68\_Funding\_Support\_Butte.aprx:WC Figure 10

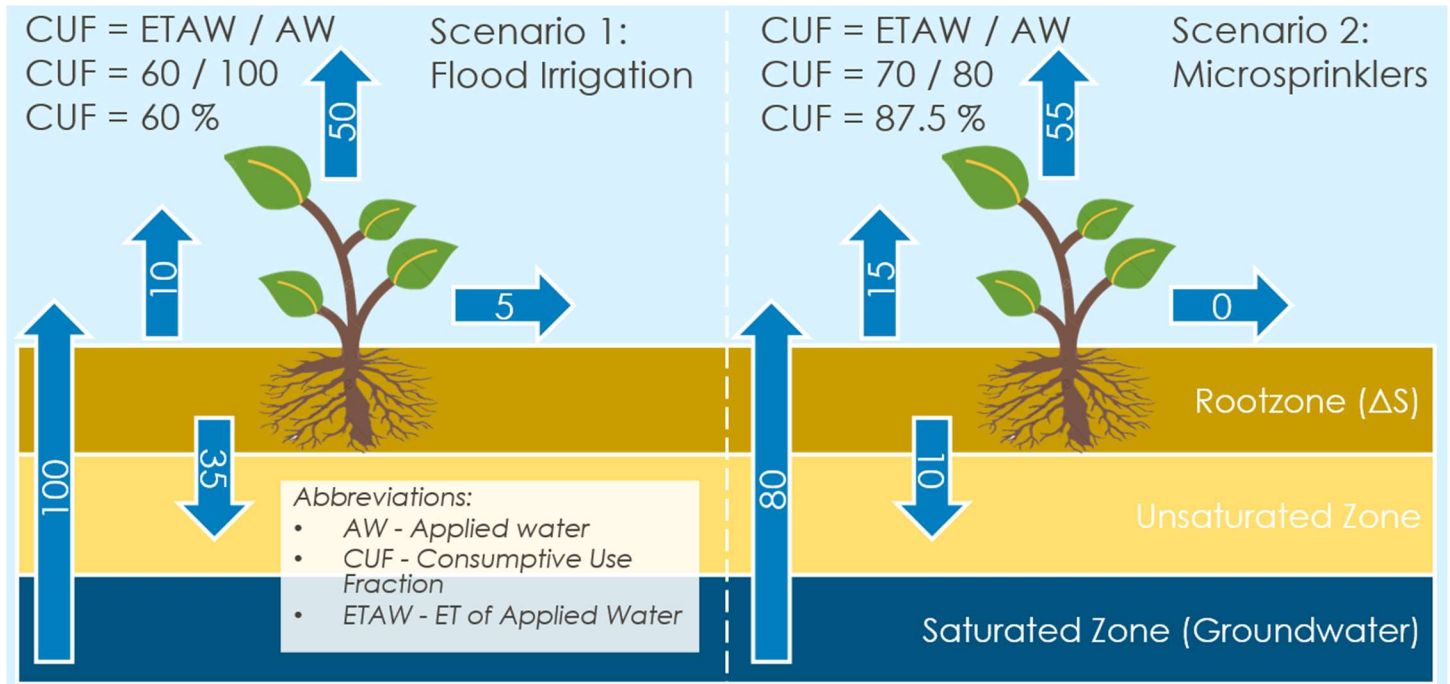


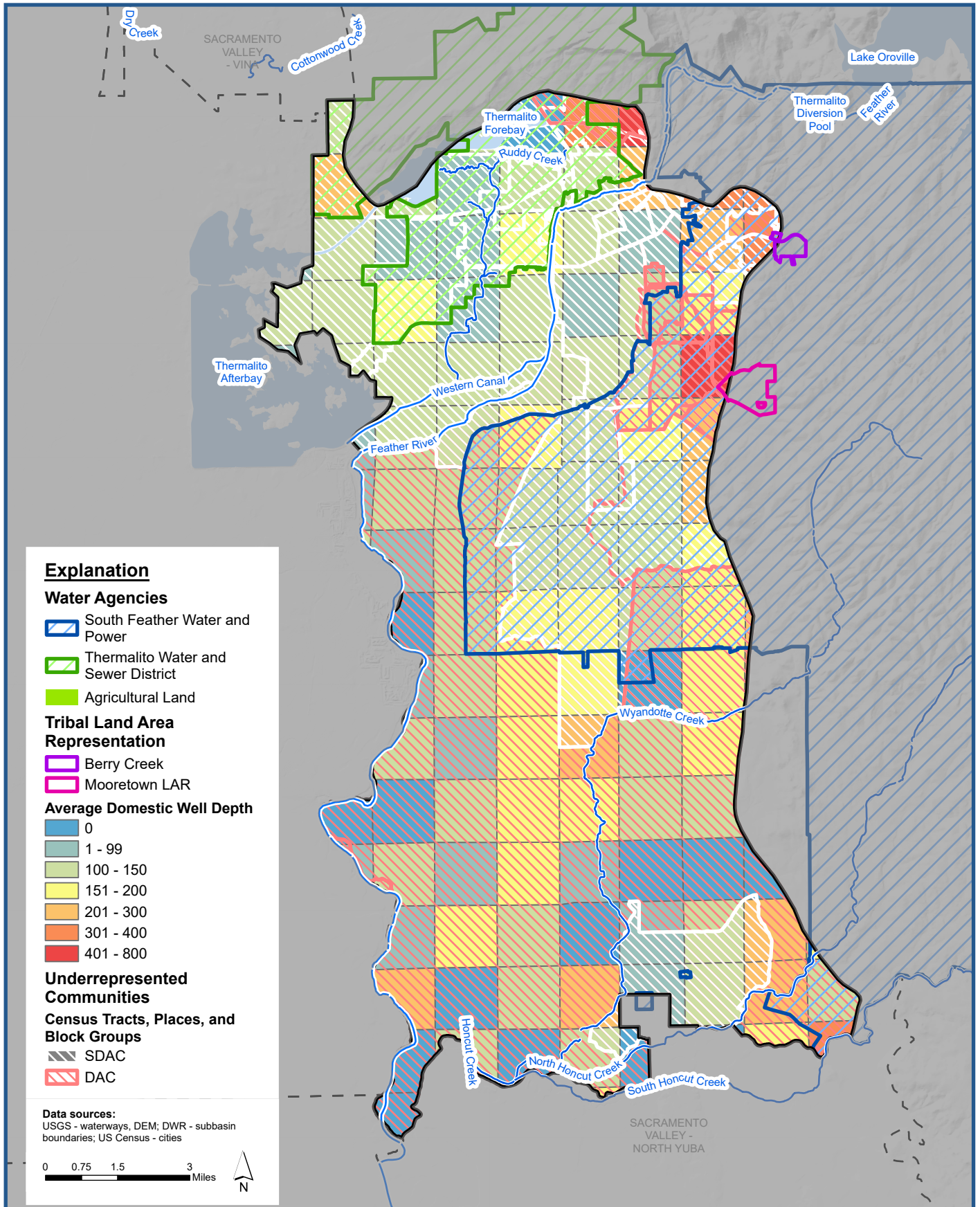
**Agricultural Lands for Surface Water Supply Feasibility and Agricultural Irrigation Efficiency**

*Wyandotte Creek Subbasin Proposition 68 Round 2 Grant Application*

**Figure 10**

**Figure 11.** Conceptual depiction of an agricultural system transitioning from flood irrigation (scenario 1 on the left) to microsprinklers (scenario 2 on the right). The irrigation efficiency, or more precisely the consumptive use fraction or CUF, increases from 60 % to 87.5 %. However, the total amount of consumptive use (i.e., evaporation and transpiration) increases from 60 units to 70 units. All else being equal, this increase in consumptive use will drive the subbasin farther away from sustainability.





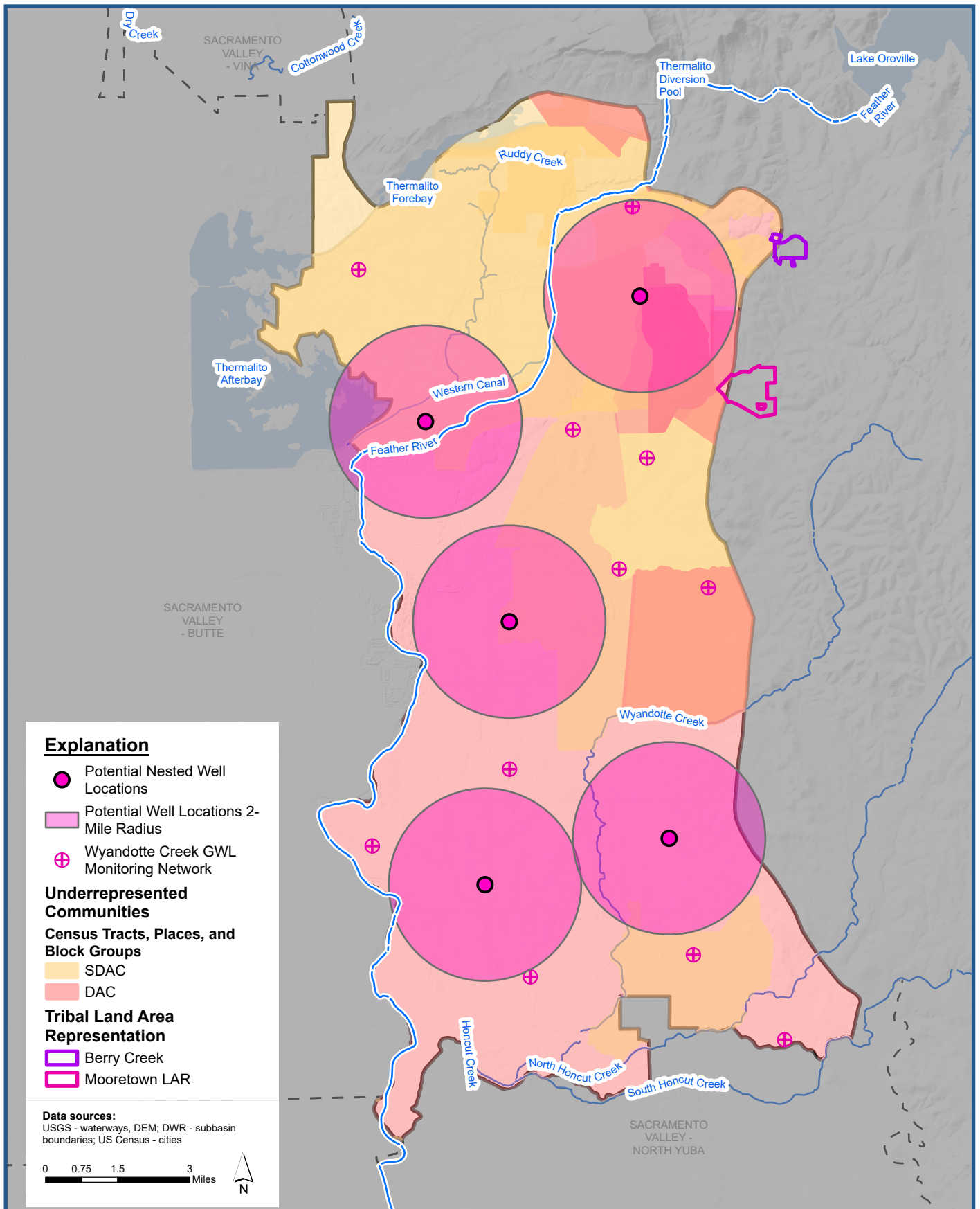
X:\2022\22-117 Butte County - (22-1-117) -Development of GSP Projects and Grant Application Development Technical Assistance for the SGM Grant Program\GIS\Pop\_68\_Funding\_Support\_ED\Prop\_68\_Funding\_Support\_Butte.aprx:WC Figure 12



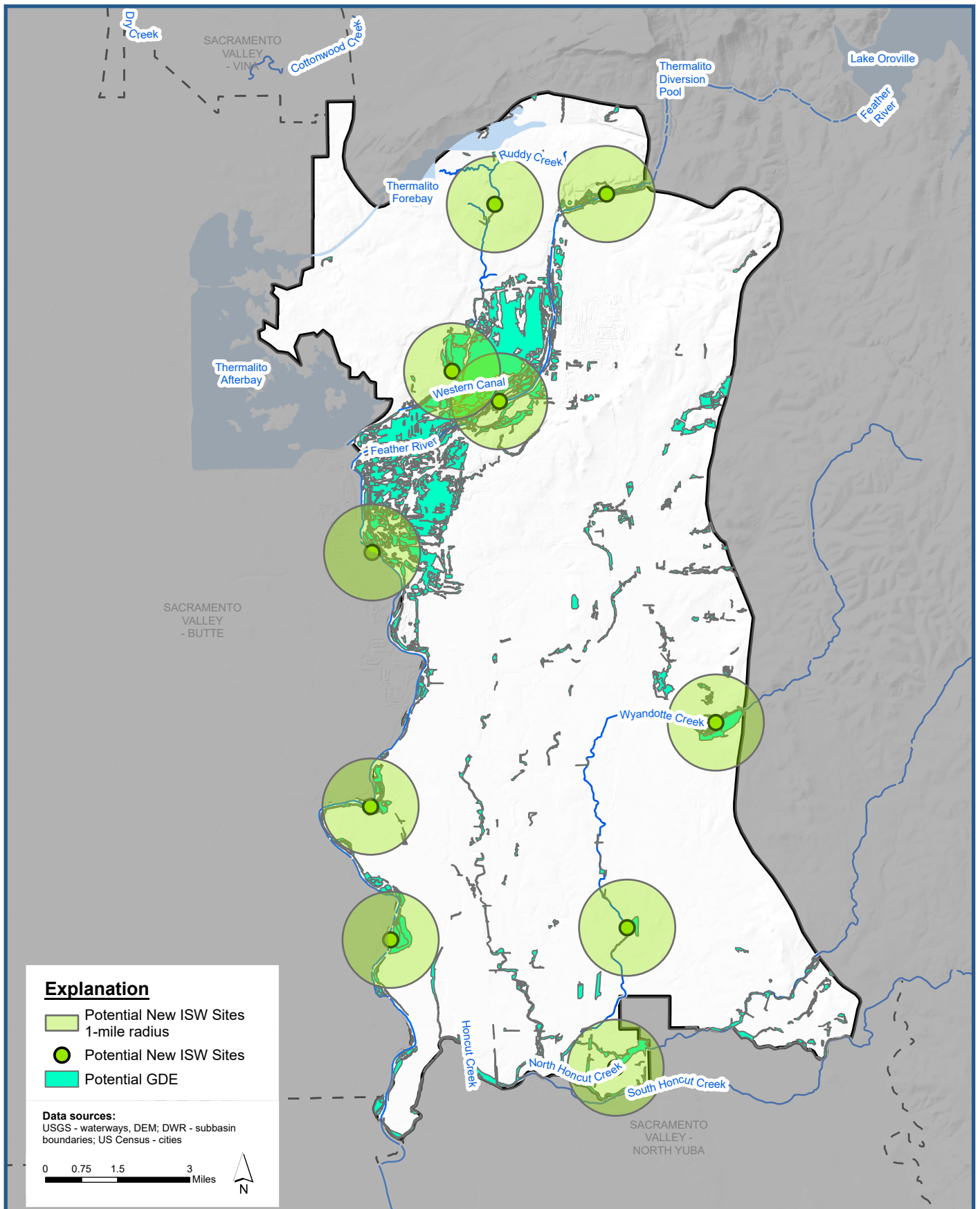
**Average Domestic Well Depths**

Wyandotte Creek Subbasin Proposition 68 Round 2 Grant Application

**Figure 12**



X:\2022\22-117 Butte County - (22-1-117) -Development of GSP Projects and Grant Application Development Technical Assistance for the SGM Grant Program\GIS\Pop\_68\_Funding\_Support\_ED\Prop\_68\_Funding\_Support\_Butte.aprx:WC Figure 13

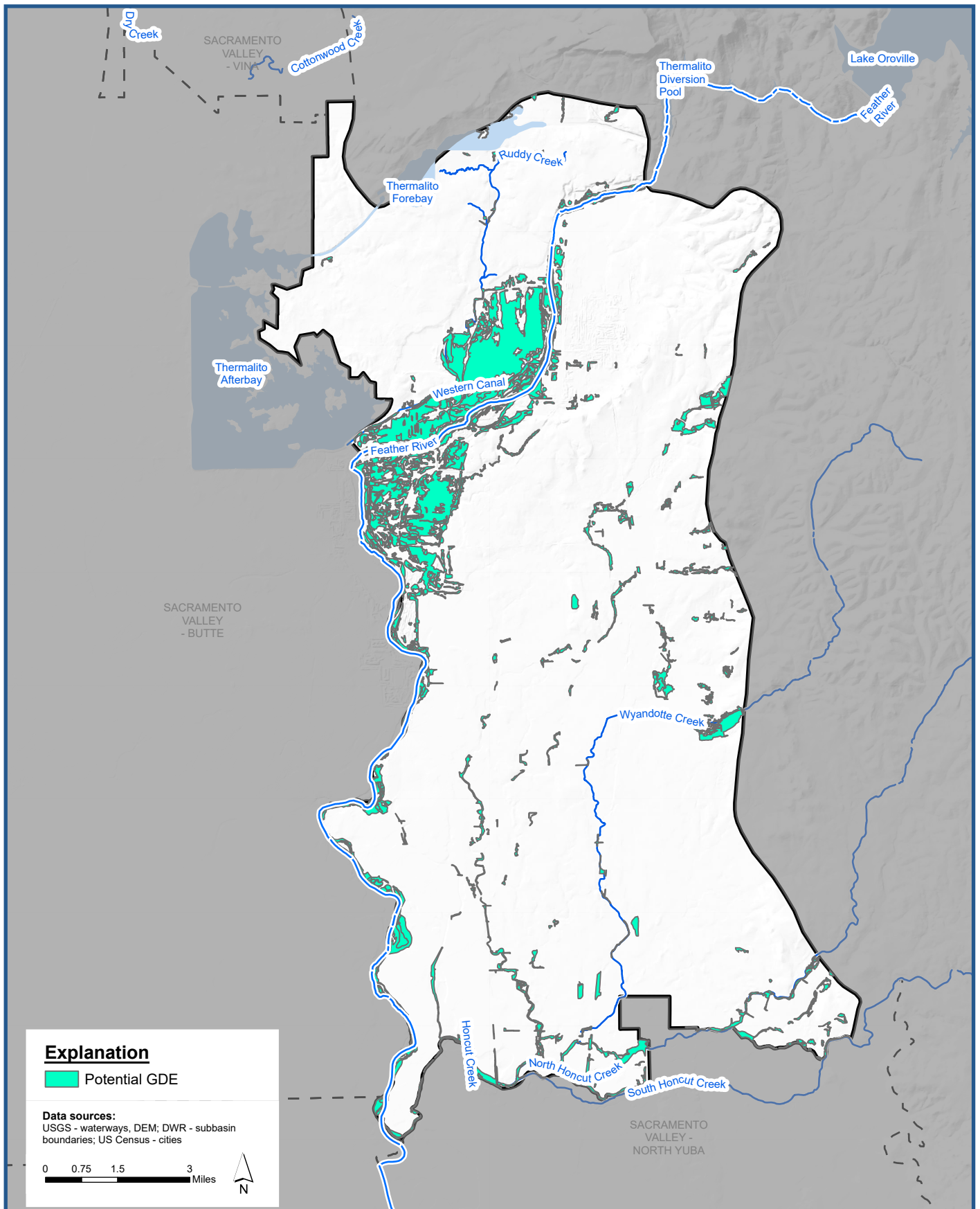


**Potential New Interconnected Surface Water Monitoring Sites**

Wyandotte Creek Subbasin Proposition 68 Round 2 Grant Application

**Figure 14**





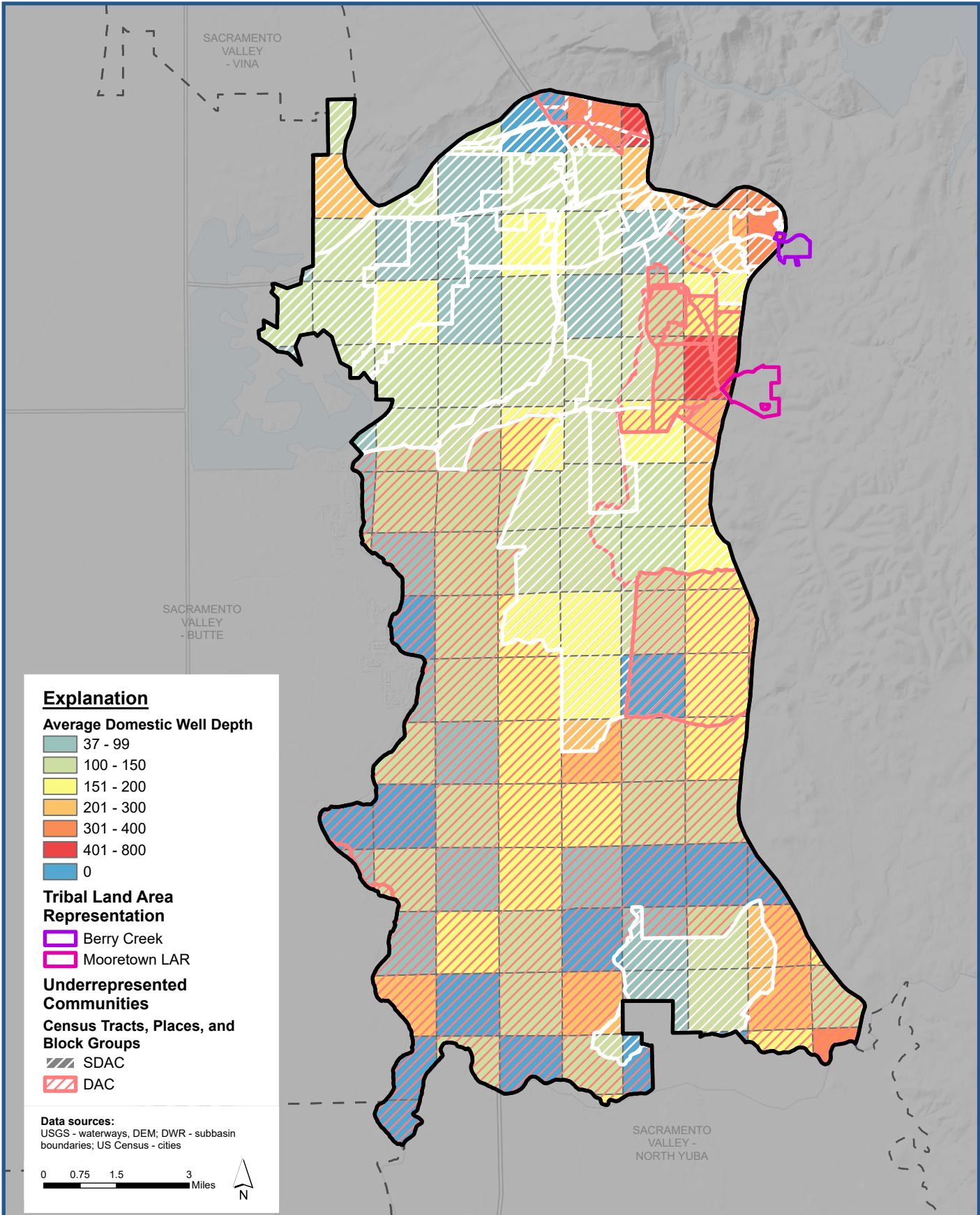
X:\2022\22-117 Butte County - (22-1-117) -Development of GSP Projects and Grant Application Development Technical Assistance for the SGM Grant Program\GIS\Pop\_68\_Funding\_Support\_ED\Prop\_68\_Funding\_Support\_Butte.aprx:WC Figure 15



**Potential GDE for Mapping**

Wyandotte Creek Subbasin Proposition 68 Round 2 Grant Application

**Figure 15**



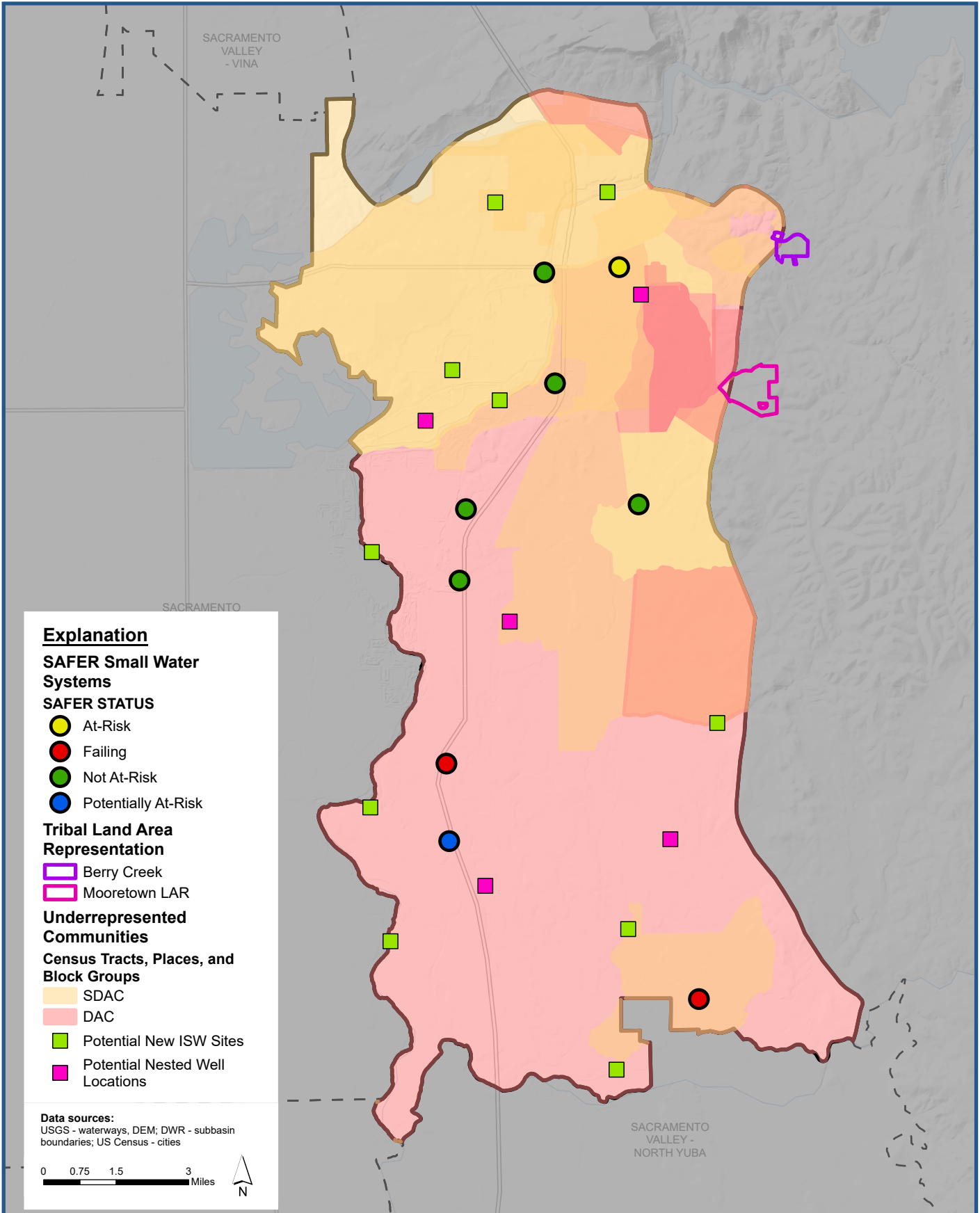
X:\2022\22-117 Butte County - (22-1-117) -Development of GSP Projects and Grant Application Development Technical Assistance for the SGM Grant Program\GIS\Pop\_68\_Funding\_Support\_ED\Prop\_68\_Funding\_Support\_Butte.aprx:WC Figure 16



**Domestic Well Depth by Section**

Wyandotte Creek Subbasin Proposition 68 Round 2 Grant Application

**Figure 16**



X:\2022\22-117 Butte County - (22-1-117) -Development of GSP Projects and Grant Application Development Technical Assistance for the SGM Grant Program\GIS\Pop\_68\_Funding\_Support\_ED\Prop\_68\_Funding\_Support\_Butte.aprx:WC Figure 17



**SAFER Small Water Systems**

Wyandotte Creek Subbasin Proposition 68 Round 2 Grant Application

**Figure 17**



*To advance the economic, social and environmental sustainability of Northern California  
by enhancing and preserving the water rights, supplies and water quality.*

December 13, 2022

Karla Nemeth, Director  
Department of Water Resources  
P.O. Box 942836  
Sacramento, CA 94236-0001

**RE: Support for Sustainable Groundwater Management (SGM) Grant Program Applications in the Sacramento Valley**

Dear Director Nemeth:

The Northern California Water Association (NCWA) strongly supports the grant funding applications by the Groundwater Sustainability Agencies (GSAs) for sustainable groundwater management within the Sacramento Valley.

The GSAs in the region have been working diligently since the Sustainable Groundwater Management Act (SGMA) was enacted to advance sustainable groundwater management as part of [ridgetop to river mouth water management](#). Through major cooperative efforts, Groundwater Sustainability Plans (GSPs) have been developed and submitted to DWR by the GSAs throughout the region. This funding will play a critical role in the successful implementation of SGMA, including completing required SGMA compliance activities, addressing data gaps, and implementing projects to ensure the avoidance of undesirable results and to better prepare for dry years.

The GSAs throughout the Sacramento Valley have been coordinating their efforts through our Groundwater Management Task Force to help ensure both policy, technical and regional consistency and to advance sustainable water management throughout the region as described in A [Pathway for the Future: Sustainable Groundwater Management in the Sacramento Valley](#). To help further these efforts, we strongly support the efforts and importance of the SGM Grant Program in providing funding to the GSAs throughout the region to promote healthy, sustainable groundwater basins through implementation of their GSPs.

We appreciate the Department of Water Resources' ongoing efforts on sustainable groundwater management. Please call if you have any questions or would like to discuss this further.

Sincerely yours,

David J. Guy  
President

cc: Paul Gosselin  
Kris Tjernell  
Kelley List  
Keith Wallace  
SGWP@water.ca.gov

# Butte Environmental Council



313 Walnut Street, #140

Chico, CA 95928

(530) 891-6424

[www.becnet.org](http://www.becnet.org)

Federal Tax ID

94-2309829

CA Charity Number

018005

## Activities & Events

Environmental Education

Environmental Advocacy

Park and Creek Cleanups

Urban Forest Program

Recycling & Rubbish Education  
Community Air Protection Education

Oak Way Community Garden

Community Composting

Endangered Earth Event

Chico Bicycle Music Festival

Community Forum Series

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*Natural Resources*

*Program Manager*

**Britany Lovio**

*Education and Outreach*

*Program Coordinator*

December 5, 2022

Department of Water Resources

Sustainable Groundwater Management Grant Program

P.O. Box 942836

Sacramento, CA 94236-0001

### **RE: Letter of Support – Sustainable Groundwater Management (SGM) Grant Program Application for the Wyandotte Creek Subbasin**

Dear SGM Grant Program,

Butte Environmental Council (BEC) encourages you to please accept this letter of support of the application of grant funds for the Wyandotte Creek subbasin.

The Groundwater Sustainability Agencies (GSAs) in this subbasin have worked diligently since SGMA was enacted to help protect groundwater resources over the long-term planning horizon. Through major cooperative efforts, Groundwater Sustainability Plans (GSPs) have been developed and submitted to DWR by the GSAs in each of these subbasins. Implementation of the GSP(s) will involve completing required SGMA compliance activities, addressing data gaps, and implementing projects to ensure avoidance of undesirable results in the subbasin. This funding will play a critical role in the successful implementation of SGMA in the Wyandotte Creek subbasin.

We support the efforts and importance of the SGM Grant Program in providing funding to the GSA(s) of this subbasin to promote healthy, sustainable groundwater basins through implementation of their GSPs. We specifically support this project as it will protect the sustainability of important water resources for the people and environment of our region, which aligns with Butte Environmental Council's mission. will protect the sustainability of important water resources for the people and environment of our region, which aligns with Butte Environmental Council's mission.

Butte Environmental Council is a 501(c)3 nonprofit organization with a mission to protect and defend the land, air and water of Butte County and the surrounding region through action, advocacy, and education. BEC has a strong interest in sustainable management of our region's water resources, particularly in the face of the climate crisis. BEC supports regional efforts for conservation and sustainable policy of our water resources. BEC recognizes that this project is an essential factor for a water smart and sustainable future.

The projects included in the GSPs and the proposals under your consideration will help the continued avoidance of undesirable results while also providing multiple benefits to improve and support local management of groundwater supply and quality.

Kindly,

Caitlin M. Dalby, Executive Director

[director@becnet.org](mailto:director@becnet.org)

## Data Sources for Layers in Maps

Layer	Source
Domestic Well Density and Depths	DWR WCR Map Application
Tribal Lands	Land Area Representation from Bureau of Indian Affairs US Census Bureau Tribal Designated Statistical Areas
SDAC and DAC	DWR DAC Mapping Tool (2016-2020 data)
Streams	National Hydrography Dataset Flowlines (USGS), Completed by hand with aerial imagery and joining where flowlines were broken
Small Water Systems	SWRCB SAFER Dashboard Mapping Tool
Monitoring Networks	Subbasin GSP (Available through Subbasin SGMA Portal)
GDE	NCCAG Data Used in GSP Development
Water District Service Areas	DWR SGMA Data Viewer "Water Agencies" Layer
Agricultural Land	Land IQ Data used for GSP development
Deep Percolation Potential	UC Davis SAGBI Dataset