CABY Integrated Regional Water Management Plan

Proposition 84 2015 IRWM Round 3 Grant Solicitation

Attachment 7: Disadvantaged Community (DAC) Assistance

Attached, please find information and maps for the following DACs included in the following projects:

Project Name	DACs receiving benefits from the project
Meade Canal DAC Project	Smartsville
Drought Response Disinfection By-Product Project	Colfax North Auburn Newcastle

Project 2: Meade Canal DAC Project
Implementing Agency: Nevada Irrigation District
DAC DIRECTLY AFFECTED: SMARTSVILLE

Attached is documentation for three DACs including:

- Information that supports the determination of each DAC including a map showing the project service area is congruent with a DAC.
- Census Data that represents the community.
- A description of the critical water supply needs of the identified DACs.
- Other supporting documentation.

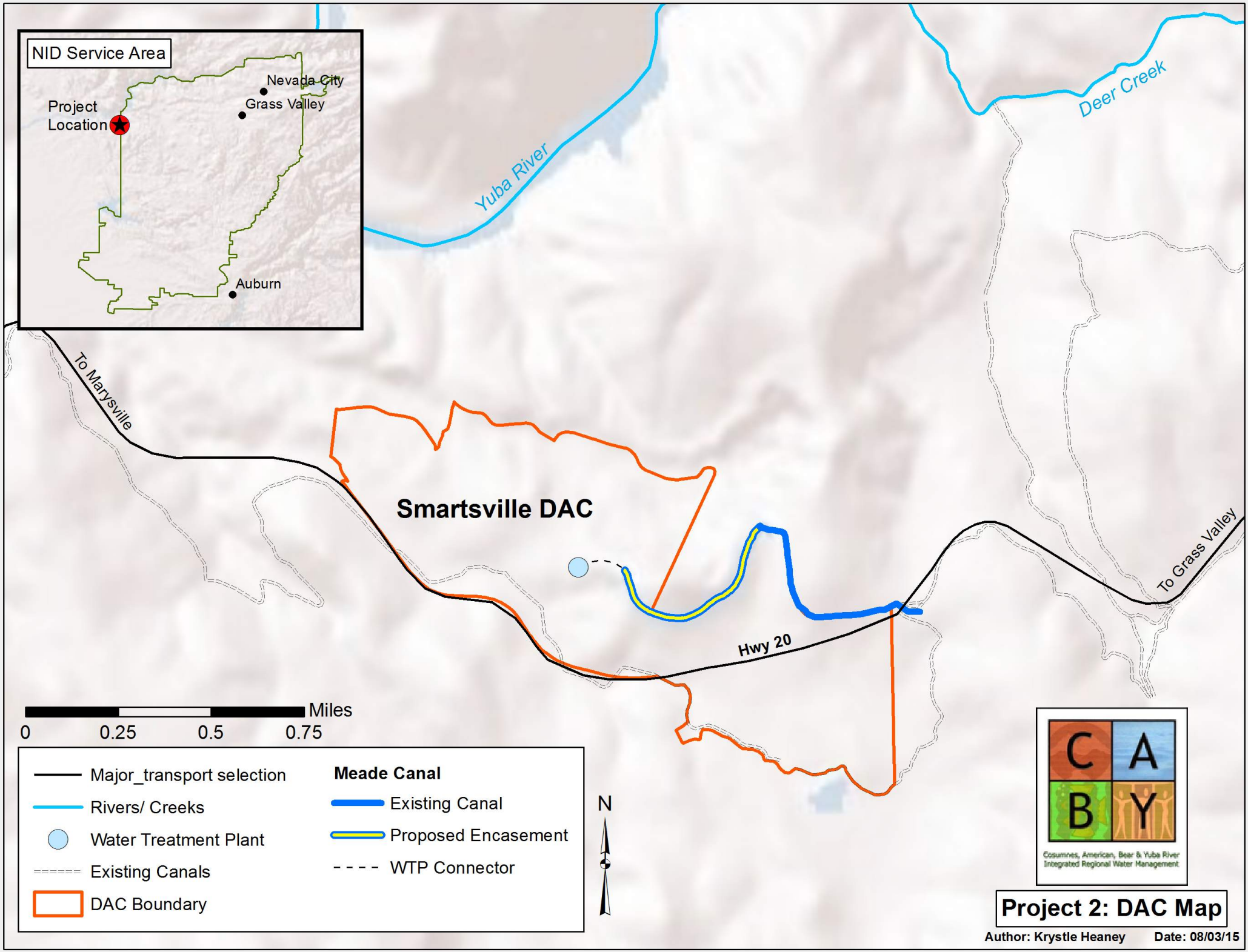
Summary: The Meade Canal encasement to serve the needs of Disadvantaged Communities in the CABY region Project is eligible for Disadvantaged Community Assistance. The community of Smartsville is a DAC recognized by DWR. The project boundaries and the area to be served by the project lie within the DWR DAC Places boundary. The project proposes to solve critical water supply needs of the community. **For this project, we are requesting a waiver of the matching funds requirement.**

DAC status: The community of Smartsville is recognized by DWR as a DAC, with the following GIS attributes:

- **Place ID Number**: 0672282
- **Place Name**: Smartsville CDP
- **Population**: 287
- **Households**: 99
- **Median Household Income**: $41,181

Alignment of the Project and the DAC: A map of the project is attached. This map shows the project boundaries, the service area of the water system, key road and geographic features of the area. This map shows the project boundaries and the DAC boundary.
These features are drawn on an image of the DAC map taken from the Disadvantaged Communities (DAC) Mapping Tool using the DAC Places, available at this address: https://gis.water.ca.gov/app/dacs/

The project area and the area served by the project lies entirely within the DAC boundaries as shown on the attached map. Therefore 100% of the project service area benefits a water-related need of the Smartsville DAC.


NID Service Area
Nevada City
Grass Valley
Project Location
Auburn
Yuba River
Deer Creek
To Marysville
Smartsville DAC
Hwy 20
To Grass Valley
Miles
0
0.25
0.5
0.75
Major_transport selection
Rivers/ Creeks
Water Treatment Plant
Existing Canals
DAC Boundary
Meade Canal
Existing Canal
Proposed Encasement
WTP Connector
N
C A B Y
Cosumnes, American, Bear & Yuba River Integrated Regional Water Management
Project 2: DAC Map
Author: Krystle Heaney
Date: 08/03/15

Description of Smartsville

Smartsville is a disadvantaged community located in the Sierra Nevada Foothills. Its population is 287. Its median household income is $41,181 per year (see attached Census documentation). The MHI of Smartsville is $7,694 below what is required for a community to be considered a DAC. The Nevada Irrigation District (NID) has the responsibility of providing treated water for domestic use and fire protection to the residents of Smartsville.

Description of the NID Water System

Located on the western slope of the Sierra Nevada Mountain Range, NID encompasses 287,000 acres and covers portions of three counties: Nevada, Placer, and Yuba. Defined as "a special district operated by and for the people who own land within its 287,000 acre boundary", NID was established as an irrigation district in 1921. NID also supplies water for municipal, domestic, and industrial purposes.

NID's retail potable water system consists of seven service areas:

- Loma Rica
- E. George
- Lake Wildwood
- North Auburn
- Lake of the Pines
- Cascade Shores
- **Smartsville**

The Smartsville Wastewater Treatment Plant (WTP) is located in Smartsville, and receives water from the Meade Canal. Deer Creek passes through Scotts Flat Reservoir and Nevada City. Water is diverted from Deer Creek in to the Newtown Canal (upstream of the Nevada City WTP) to feed the Lake Wildwood WTP. Further downstream, water is diverted from Deer Creek into the Tunnel Canal down to Squirrel Creek, then to China Union Canal. This then feeds the Meade Canal to the Smartsville WTP.

Description of Critical Water Supply Needs

Water supply for NID is currently derived from mountain snowpack from Northern California's Sierra Nevada Mountains, and is stored in an extensive system of ten reservoirs that provide surface water supply to NID's seven water treatment plants as well as the raw water supply for NID's raw water system.

NID was originally organized for the purpose of storing and delivering irrigation water to farmers and ranchers. NID's water supplies are derived principally from the Yuba River, Bear River, and Deer Creek watersheds. In the early 1920's NID acquired storage and regulating

facilities in the upper reaches of the Middle and South Yuba Rivers. In 1926, NID acquired most of its Canyon Creek holdings including the Bowman, Sawmill, French, and Faucherie Reservoirs. Associated water rights were also obtained.

All wastewater treated within the NID service area is discharged to local watercourses. Recycled water discharge mixes with NID water being transported in the creeks. The combined waters are then diverted from the creek into a canal. This supply of water augments NID's overall water supply. NID uses recycled water exclusively for agricultural uses with the exception of Smartsville, since they currently do not have any alternate distribution system for recycled water installed.

Nevada City's WTP discharges into Deer Creek upstream of the Smartsville WTP intake. The intake for the Smartsville plant is located downstream from grazing lands and cattle have access to the canal[1].

The past, current, and projected water demands for NID are described in the NID 2010 Urban Water Management Plan[2]. Total retail treated water production in 2009 was 11,863 acre-feet (ac-ft). This is the gross water use by NID. From 2005 to 2009, NID total water demands fluctuated, with an overall increase of 2.7 percent, which is an average annual growth rate of approximately 0.7 percent per year. Annual average total NID treated water retail demands are expected to increase at an approximate average annual growth rate of 0.5 percent per year from 2009 to 2035.

Canal encasement is necessary to meet SWRCB Safe Drinking Water SRF Priority List Ranking Criteria B for water systems that have repeatedly violated the Total Coliform Rule (TCR) due to active sources contaminated with coliform bacteria (fecal, E. coli, or total coliform).

The Yuba/Bear River Watershed Sanitary Survey 2012 Update[1] explains how E. coli monthly medians remained at similar levels seen previously within the watershed, with only the Smartsville WTP having consistently elevated source water levels. The raw water data for the Smartsville WTP continue to indicate that there appears to be a source of fecal contamination between Deer Creek and the plant, which warrants further consideration. In fact, livestock grazing in the watershed has increased slightly, 11 percent, during the 2012 study period. All of the WTPs, except the Smartsville WTP, met the alternative compliance criterion for enhanced coagulation by having raw and treated water total organic carbon (TOC) levels less than 2

[1] PCWA & NID 2012 Yuba/Bear River Watershed Sanitary Survey 2012 Update (pages ES-8, 3-3, 3-20, 4-3-10)
[2] NID 2010. Nevada Irrigation District 2010 Urban Water Management Plan (section 3.3)

milligrams per liter (mg/L). Out of 60 months, Smartville WTP had nine monthly medians greater than 200 MPN/100mL for E. coli, exceeding the Total Coliform Rule.

Infrastructure renovations to the NID Water System are necessary to assure continued reliability of the minimum quality and quantity of water.

The NID 2005 Master Plan Update[3] noted that system losses account for approximately 15 percent of the District's total water demand, and recommended that the District undertake conservation measures that would address water loss management, including "installing impervious linings or converting to conduits where applicable."

This project will help address NID's water conservation goals and will allow the District to better serve its raw water and treated water customers through a more reliable supply while continuing to meet drinking water and environmental regulations with a margin of safety and achieve NID's internal long-term water quality goals.

Modification of the NID Water System is necessary for the system to address drought conditions.

The extended drought currently experienced by the state of California has led many water providers to re-examine their water conservation policies and practices. Article X, Section 2 of the California state constitution requires "that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare." Furthermore, NID, as a responsible manager of this vital public resource, has undertaken a thorough analysis of its raw water delivery system through the Raw Water Master Plan Updates provided in 2005[3] and 2011[4]. These updates identify canal improvements, which can provide multiple benefits that improve water system reliability, improving water supply and water quality.

Existing Studies: The Yuba/Bear River Watershed Sanitary Survey 2012 Update[1] was a collaborative effort between NID and the Placer County Water Agency (PCWA) to assess the source water quality of the Yuba/Bear River to ensure the ability of the existing WTP's to continue to provide customers with drinking water that meets all drinking water standards. The NID 2010 Urban Water Management Plan[2] addresses NID's water system and includes a description of the water supply sources, magnitude of historical and project water use, and water supply water demands. The Raw Water Master Plans[34] includes technical analyses to

[3] Kleinschmidt 2005 Nevada Irrigation District Raw Water Master Plan Update, Phase I Technical Analysis (Pages ES-8, ES-17/18)

[4] Kleinschmidt 2011 Nevada Irrigation District Raw Water Master Plan Update, Phase II

verify NID's existing water supply, quantify future demands, evaluate the adequacy of and identify potential constraints within the current system, and provides a range of capital improvement projects.

Matching Fund Waiver Request: As allowed by DWR, a waiver of matching funds is requested for this project.

How the Project Will Address the DAC's Needs: This Project will help NID preserve essential public services and minimize the effects on water quality for public health and safety, economic activity, and environmental resources to the DAC of Smartsville. The project will contribute to drought preparedness, which is an essential element of water supply planning.

Project 3: Drought Response Disinfection By-Product Project
Implementing Agency: Placer County Water Agency
DACs DIRECTLY AFFECTED: COLFAX, NORTH AUBURN, NEWCASTLE

Attached is documentation for this DAC including:

- Information that supports the determination of each DAC including a map showing the project service area is congruent with a DAC.
- Census Data that represents the community.
- A description of the critical water supply needs of the identified DACs.
- Other supporting documentation.

Summary

The communities of Colfax, North Auburn and Newcastle are DACs recognized by DWR. The project boundaries and the area to be served by the project lie within the DWR DAC Places boundary. The project proposes to solve critical water supply and quality needs of these communities.

For this project, we are not requesting a waiver of matching funds. This section of the Attachment has been included with information about the DACs in the project area and to show that *more than 25% of the area served by the project (by geography) meets the definition of a DAC.*

DAC Status

- **City of Colfax:** The City of Colfax is recognized by DWR as a DAC, with the following GIS attributes:
  - Place ID Number: 0614498
  - Place Name: Colfax city
  - Population: 2,183
  - Households: 927
  - Median Household Income: $47,175

- **North Auburn** The community of North Auburn is recognized by DWR as a DAC, with the following GIS attributes:
  - Place ID Number: 0651637
  - Place Name: North Auburn CDP
  - Population: 13,381
  - Households: 4,980

- Median Household Income: $46,939

- **Newcastle:** The community of Newcastle is recognized by DWR as a DAC, with the following GIS attributes:
  - Place ID Number: 0651000
  - Place Name: Newcastle CDP
  - Population: 1,359
  - Households: 627
  - Median Household Income: $45,987

Alignment of the Project and the DACs: A map of the project is attached. This map shows the project boundaries, the service area of the water system, key road and geographic features of the area. These features are drawn on an image of the DAC map taken from the Disadvantaged Communities (DAC) Mapping Tool using the DAC Places, available at this address: https://gis.water.ca.gov/app/dacs/

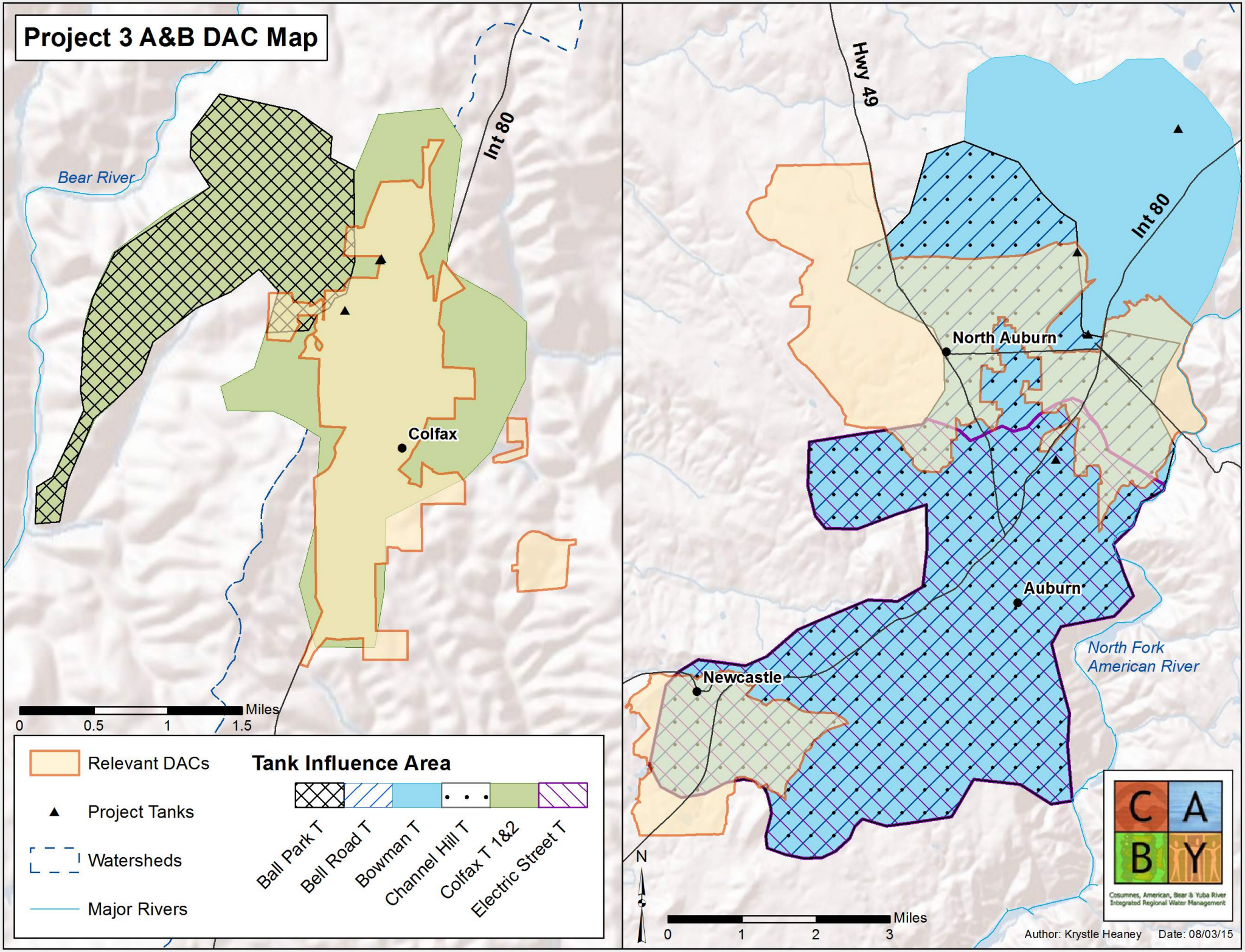
The map shows that ***more than 25% of the area served by the project (by geography) meets the definition of a DAC as follows:***

- The tank and clearwells' area of influence within PCWA's Colfax water distribution system is approximately 2,100 acres; approximately 37% (4,021 acres) of which is designated as a DAC.
- The tanks areas of influence within the Auburn/Bowman water distribution system is approximately 16,091 acres; approximately 25% (4,021 acres) of which is designated as a DAC.

Description of DACs

According to the US Census Bureau's American Community Survey's (ACS) 5-year compilation of data from 2009-2013, the Colfax, North Auburn and Newcastle Census Places are all classified as DACs with a median household income (MHI) of $47,175 for Colfax, $46,939 for North Auburn, and $45,987 for Newcastle. Both the Colfax and North Auburn DAC Census Places are 77% of the Statewide MHI of $61,094 while Newcastle DAC is 75% of the Statewide MHI. The state's threshold for a DAC is to have a MHI that is 80% (i.e. $48,875) or less of the Statewide MHI. Placer County Water Agency is responsible for providing water to all three DACs. All three DACs are aware of the problem and fully support PCWA's actions to ensure that their water supply is of high quality and support their efforts to conserve water supply.

Project 3 A&B DAC Map



Description of the PCWA Water System

PCWA is a public water agency that provides untreated, treated and irrigation water directly and indirectly to wholesale and retail customers throughout Placer County. The area served by the Western Water System extends from the community of Alta on the east, down the interstate 80 corridor, to the Sutter and Sacramento county lines on the west and south. The service area includes retail treated water deliveries to the communities of Alta, Monte Vista, Applegate, Colfax, Auburn, Loomis and Rocklin and much of the surrounding unincorporated areas. PCWA currently delivers approximately 116,500 acre-feet per year within its Western Water System.

The PCWA service area includes five zones, each of which have unique water supply characteristics. The DACs included in this project are in the following zones:

- Zone 1 consists of the City of Auburn and surrounding communities including **North Auburn and Newcastle.** The primary water supply for lower Zone 1 is PG&E water from the Drum-Spaulding hydroelectric system. PCWA also uses water from the American River pursuant to its own water rights.
- Zone 3 includes the communities of Applegate, Weimar, Meadow Vista, **Colfax**, Gold Run, Monte Vista, Dutch Flat, and Alta and in surrounding areas. Water for this zone is purchased from PG&E enters PCWA's Boardman Canal from the Drum-Spaulding system. The Boardman Canal begins near Alta and runs along I-80 to Zone 1. The Boardman Canal serves as the main delivery method for water to users and treatment plants in Zone 3. The predominant demand in Zone 3 is for untreated water, with only about 1,400 accounts served with retail treated water.

Description of Critical Water Supply Needs:

PCWA's primary surface water supplies consist of Middle Fork Project water from the American River, water purchased from Pacific Gas & Electric Company (PG&E) from the Yuba and Bear Rivers, and Central Valley Project water from the American River. PCWA also uses a limited amount of surface water from small creeks under pre-1914 water rights.

As an urban water purveyor, Placer County Water Agency must meet the minimum health and safety requirements of a drinking water purveyor to Placer County communities at all times. PCWA has created a water shortage contingency plan to help meet this goal during water shortages. PCWA's Water Shortage Contingency Plan consists of a normal water supply condition and four stages of varying conservation actions and use restrictions intended to meet target demands.

Modification of PCWA's public water supply system is necessary for the system to meet primary drinking water standards for the DACs of Colfax, North Auburn and Newcastle.

A reduction in water use, in response to the statewide drought, has increased temperatures and the disinfectant residence time within PCWA's water storage tank systems causing the levels of disinfection byproduct, specifically total trihalomethanes (TTHM), formation to approach, and in some cases exceed, the primary Maximum Contaminant Level (MCL) of 0.080 mg/L. TTHMs are a regulated public health concern based on evidence that drinking water containing TTHMs in excess of the MCL over many years could experience liver, kidney, or central nervous system problems and increased risk of cancer[5],[6].

The project entails installing tank mixers and ventilation systems in seven tanks throughout its service area where TTHMs are reaching unacceptable concentrations and where the service areas are identified as Disadvantage Communities (DAC).

Infrastructure renovations to a public water supply system necessary to assure continued reliability of the minimum quality and quantity of water

In order to maintain water quality, PCWA has to drain and refill the tanks on a monthly basis, leading to a loss of 696 acre feet of water per year since none of the water is recaptured. To reduce the TTHM levels in the water supply storage tanks and to conserve water, the project will include the installation of a tank mixer and ventilation system at seven tanks in PCWA's service area – specifically in the Auburn/Bowman and Colfax distribution systems.

Modification of the PCWA Storage Tank System is necessary for the system to address drought conditions.

PCWA and its customers have increased water conservation in response to Governor Browns April 1, 2015 Executive Order mandating a 25 percent reduction in water use in comparison to 2013. In response to the Governor's action, on April 16, 2015 the PCWA Board adopted Resolution 15-10 declaring a water shortage emergency. As water use has decreased substantially across PCWA's system due to these water conservation efforts in response to the drought, PCWA has noticed consistently lower average daily flows and corresponding elevated levels of TTHMs in its water distribution systems. As the flow through the distribution system decreases, the residence time and water age increases thereby providing more time for TTHM formation. In order to maintain water quality, PCWA has no alternative but to drain and refill the tanks on a monthly basis leading to a loss of 696 acre feet of water per year. Therefore, the

[5] U.S. EPA. Initial Distribution System Evaluation Guidance Manual for the Final Stage 2 Disinfectant and Disinfection Byproducts Rule. Appendix A. January 2006.

[6] U.S. EPA. Basic Information about Disinfection Byproducts in Drinking Water: Total Trihalomethanes, Haloacetic Acids, Bromate, and Chlorite. July 2015.

next step is to implement a mechanical solution in the distribution system.

Existing Studies: The Placer County Water Agency 2010 Urban Water Management Plan addresses PCWA's water system and includes a description of the water supply sources, magnitude of historical and project water use, and water supply water demands. The Placer County Water Agency Water Shortage Contingency Plan was created to help meet the minimum health and safety requirements of communities at all times, especially during water shortages.

Matching Fund Waiver Request: PCWA is not asking for a match waiver. This section of the Attachment was included to show DAC status and the fact that ***more than 25% of the area served by the project (by geography) meets the definition of a DAC.***

How the Project Will Address the DACs' Needs: This Project will help PCWA preserve essential public services and minimize the effects on water quality for public health and safety, economic activity, and environmental resources to the DACs of North Auburn, Colfax, and Newcastle. The seven project tanks are located within designated DACs and/or provide water service to a DAC area. More than 25% of the project service area serves the need of DACs. The percentage of DAC influence was determined geographically by the tank and clearwell area of influence in each water distribution system. The project will contribute to drought preparedness, which is an essential element of water supply planning.