1. AGENCY INFORMATION, PLAN AREA, COMMUNICATION

1.1 Introduction and Agency Information

1.1.1 Purpose of the Groundwater Sustainability Plan

The purpose of this Groundwater Sustainability Plan (GSP) is to meet the regulatory requirements set forth in the three-bill legislative package consisting of Assembly Bill (AB) 1739 (Dickinson), Senate Bill (SB) 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA). SGMA defines sustainable groundwater management as "management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results," which are defined by SGMA as any of the following effects caused by groundwater conditions occurring throughout the basin (Department of Water Resources [DWR], 2018a):

- Chronic lowering of groundwater levels, indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon
- Significant and unreasonable reduction of groundwater storage
- Significant and unreasonable seawater intrusion
- Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies
- Significant and unreasonable land subsidence that substantially interferes with surface land uses
- Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water

The Vina Groundwater Subbasin (Vina Subbasin) has been identified by DWR as a high priority basin. The Vina Groundwater Sustainability Plan (Vina GSP) was developed to meet SGMA regulatory requirements by the January 31, 2022, deadline for high priority basins while reflecting local needs and preserving local control over water resources. Requirements for the GSP are provided in California Code of Regulations Title 23, Division 2, Chapter 1.5, Subchapter 2, Article 5. Appendix 1-A provides a checklist of where to find the information required by these regulations.

The Vina GSP provides a path to achieve and document sustainable groundwater management within 20 years following Vina GSP adoption, promoting the long-term sustainability of locally managed groundwater resources now and into the future. While the Vina GSP offers a new and significant approach to groundwater resource protection, it was developed within an existing framework of comprehensive planning efforts. Throughout the Vina Subbasin, several separate, yet related, planning efforts have occurred previously or are concurrently proceeding. In November 1996, the voters in Butte County approved "An Ordinance to Protect the Groundwater Resources in Butte County." One of the stated purposes of the ordinance was that "the groundwater underlying Butte County is a significant water resource which must be reasonably and beneficially used and conserved for the benefit of the overlying land by avoiding extractions

which harm the Butte basin aquifers, causing exceedance of the safe yield or a condition of overdraft." Other significant reports prepared in the Vina Subbasin include integrated regional water management (IRWM), urban water management, habitat conservation, basin assessment, and general planning. The Vina GSP fits in with these prior planning efforts, building on existing local management and basin characterization. A description of prior planning efforts can be found in Section 1.2 of this document.

1.1.2 Sustainability Goal

A sustainability goal is the culmination of conditions resulting in a sustainable condition (absence of undesirable results) within 20 years. The sustainability goal reflects this requirement and succinctly states the GSP's objectives and desired conditions of the subbasin.

The sustainability goal for the Vina Subbasin is "to ensure that groundwater is managed to provide a water supply of adequate quantity and quality to support rural areas and communities, the agricultural economic base of the region, and environmental uses now and in the future."

Additional discussion of the sustainability goal can be found in Section 3: Sustainable Management Criteria (SMC).

1.1.3 Contact Information

The Vina Groundwater Sustainability Agency (GSA) has been tasked with submitting a single, jointly composed GSP to DWR on behalf of the entire subbasin. Contact information for the submitting agency and Plan Manger is provided below:

Submitting Agency:	Vina Groundwater Sustainability Agency 308 Nelson Avenue Oroville, California 95965 https://www.vinagsa.org
Plan Manager:	Dr. Christina Buck 308 Nelson Avenue Oroville, California 95965 530.552.3595 cbuck@buttecounty.net

1.1.4 Agency Information

The Vina GSA and the Rock Creek Reclamation District GSA are the two GSAs in the Vina Subbasin, as shown in Figure 1-1. The two GSAs intend to submit one GSP for the Vina Subbasin. The GSAs entered into a Cooperation Agreement for the purpose of developing and implementing a single GSP for the Vina Subbasin (Appendix 1-B).

Additional information for the two GSAs is provided below.

1.1.4.1 Vina GSA

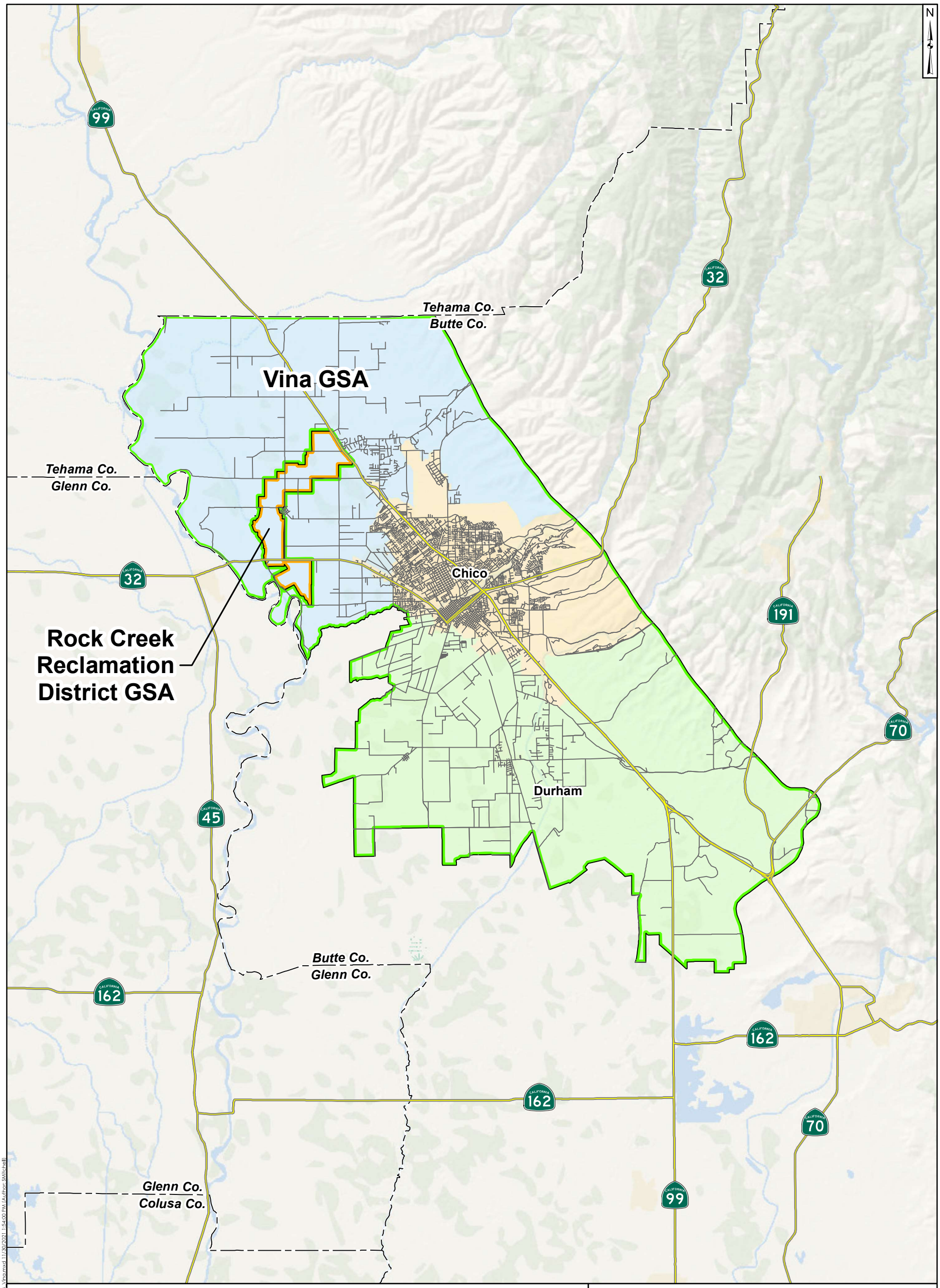
The Vina GSA was formed through the execution of a Joint Powers Agreement (Agreement) by the County of Butte, City of Chico, and Durham Irrigation District (Appendix 1-C). The Vina GSA filed to be a GSA on June 5, 2019. The purpose of the Agreement was to create the Vina GSA to: (a) develop, adopt, and implement a GSP for the Vina Subbasin in order to implement SGMA requirements and achieve the sustainability goals; and (b) involve the public and subbasin stakeholders through outreach and engagement in developing and implementing the GSP. The Vina GSA covers the portions of the Vina Subbasin outside of the Rock Creek Reclamation District GSA jurisdictional boundary. At the heart of the Agreement is the focus to maximize local input and decision-making and address the different water demands and sustainability considerations in the municipal and rural areas of the Vina Subbasin.

The Vina GSA Board serves as the policy-making role for SGMA implementation in the Vina GSA. All GSA Board meetings are subject to the Brown Act and are noticed and open to the public. The GSA Board is composed of five seats, each with equal and full voting rights, including:

1. Butte County – one seat (Member Agency)
2. City of Chico – one seat (Member Agency)
3. Durham Irrigation District – one seat (Member Agency)
4. Agricultural groundwater user – one seat (Butte County Appointed)
5. Domestic well user (non-agricultural) – one seat (Butte County Board Appointed)

The Vina GSA Board possesses the ability to exercise those powers specifically granted by the Joint Powers Act and SGMA. The Agreement states that the GSA shall possess the ability to exercise those powers specifically granted by the Joint Powers` Act and SGMA. Additionally, the GSA has the ability to exercise the common powers of its Members related to the purposes of the GSA, including, but not limited to, the following:

- To designate itself as the exclusive GSA for the Vina Subbasin pursuant to SGMA
- To develop, adopt, and implement a GSP for the Vina Subbasin pursuant to SGMA
- To adopt rules, regulations, policies, bylaws, and procedures governing the operation of the GSA and adoption and implementation of a GSP for the Vina Subbasin
- To adopt ordinances within the Vina Subbasin consistent with the purpose of the GSA as necessary to implement the GSP and otherwise meeting the requirements of the SGMA
- To obtain legal, financial, accounting, technical, engineering, and other services needed to carry out the purposes of this Agreement
- To perform periodic reviews of the GSP, including submittal of annual reports
- To require the registration and monitoring of wells within the Vina Subbasin



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- To issue revenue bonds or other appropriate public or private debt and incur debts, liabilities, or obligations
- To exercise the powers permitted under Government Code section 6504 or any successor statute
- To levy taxes, assessments, charges and fees as provided in SGMA or otherwise provided by law
- To regulate and monitor groundwater extractions within the Vina Subbasin as permitted by SGMA, provided that this Agreement does not extend to a Member's operation of its systems to distribute water once extracted or otherwise obtained, unless and to the extent required by other laws now in existence or as may otherwise be adopted
- To establish and administer projects and programs for the benefit of the Vina Subbasin
- To cooperate, act in conjunction and contract with the United States, the State of California, or any agency thereof, counties, municipalities, special districts, GSAs, public and private corporations of any kind (including, without limitation, Public Utilities Commission-regulated utilities and mutual water companies), and individuals, or any of them, for any and all purposes necessary or convenient for the full exercise of powers of the GSA
- To accumulate operating and reserve funds and invest the same as allowed by law for the purposes of the GSA and to invest funds pursuant to California Government Code section 6509.5 or other applicable State Law
- To apply for and accept grants, contributions, donations, and loans under any federal, state, or local programs for assistance in development or implementing any of its projects or programs for the purposes of the GSA
- To acquire by negotiation, lease, purchase, construct, hold, manage, maintain, operate, and dispose of any buildings, property, water rights, works, or improvements within and without the respective boundaries of the Members necessary to accomplish the purposes described herein
- To sue and be sued in the GSA's own name
- To exercise the common powers of its Members to develop, collect, provide, and disseminate information that furthers the purposes of the GSA, including but not limited to the operation of the GSA and adoption and implementation of a GSP for the Vina Subbasin, to the Members' legislative, administrative, and judicial bodies, as well as the public generally
- To perform all other acts necessary or proper to carry out fully the purposes of this Agreement

The Vina GSA Board aspires to seek consensus. If the Vina GSA Board cannot reach consensus, the Vina GSA Board defaults to the following voting structure.

- Quorum: A majority of the members of the Vina GSA Board members shall constitute a quorum for purposes of transacting business.
- Director Votes: Each member of the Vina GSA Board shall have one vote.
- Supermajority Voting Requirement (four affirmative votes) for the following:
    1. Bylaws adoption, modification, or alteration.
    2. GSP adoption, modification, or alteration.
    3. Adoption of assessment, charges, and fees.
    4. Adoptions of regulations and ordinances.
    5. Adoption or modification of annual budget, including capital projects.
    6. Property acquisition (excepting rights of way).
    7. Removal of Advisory Committee Members.
    8. Modifications to the composition and number of Advisory Committee Members.
    9. Removal of stakeholder board seats as is consistent with the Agreement.

The Vina GSA Board does not have the authority to limit or interfere with the respective Member Agency's rights and authorities over their own internal matters, including, but not limited to, legal rights to surface water supplies and assets, groundwater supplies and assets, facilities, operations, water management and water supply matters. The Member Agencies made no commitments by entering into the Agreement to share or otherwise contribute their water supply assets as part of the development or implementation of a GSP. Nothing in the Agreement modifies or limits a Member Agency's police powers, land use authorities, or any other authority. The Member Agencies cooperate to obtain consulting, administrative and management services needed to efficiently develop a GSP and to identify mechanisms for the management and funding commitments reasonably anticipated to be necessary for the purposes of this Agreement.

Each Member Agency (Butte County, City of Chico, and Durham Irrigation District) designates a staff person (in-kind support) to participate on the Vina GSA Management Committee. The Mechoopda Indian Tribe of Chico Rancheria, California (Tribe) is a federally recognized Tribe in the Vina Subbasin. The Vina GSA is collaborating with the Tribe on the development of the GSP, and the Tribe has a staff member designated as an ex-officio member of the Management Committee for the purpose of GSP development and implementation.

The Management Committee receives direction from the Vina GSA Board, makes recommendations and generates staff reports and proposals to the Vina GSA Board. The Management Committee staffs the Advisory Committee and reports to the Vina GSA Board recommendations and actions from the Advisory Committee. The Management Committee assures that staff and other resources are provided to prepare the GSP and administer the governance for the Vina GSA.

The Vina GSA does not and will not have any employees. However, the Vina GSA has the power to employ consultants to fulfill the objectives and purposes of SGMA and complete a GSP. Butte County is leading the development of technical aspects of the GSP, including contracting for professional services in coordination with the Management Committee and the Vina GSA Board. The Management Committee may form ad hoc technical working groups to provide input on technical matters pertaining to the GSP. Preparation of the Vina GSP and carrying out governance requires various administrative activities such as meeting management, website development and maintenance, public outreach, and communication.

The Vina Advisory Committee provides input and recommendations to the Vina GSA Board on GSP development and implementation as well as other items outlined in their Charter. There are 10 Advisory Committee members, including:

- Agricultural groundwater users (3)
- At-large domestic well users (2)
- At-large environmental representative (1)
- At-large business representative (1)
- Cal Water-Chico (1)
- California State University, Chico (CSUC) (1)
- Butte College (1)

The Management Committee participates in Advisory Committee meetings. The Vina GSA Board appoints at-large members to fill Advisory Committee seats. Eligible individuals interested in participating on the Advisory Committee from the community or organizations within the Vina Subbasin can apply to the Vina GSA to become a member. At-large members must live, farm, or be employed by a firm operating in the Vina GSA. To inform the Vina GSA Board and assist in decision-making, the Advisory Committee will provide written recommendations that will be included in Management Committee reports. The recommendations will identify areas of agreement and disagreement. The Advisory Committee will strive for consensus when possible, but reaching consensus is not necessary. Consensus means that everyone can at least "live with" the recommendation. When unable to reach consensus on recommendations, the Advisory Committee will outline the areas in which it does not agree, providing some explanation to inform the Vina GSA Board decision-making. The Vina GSA Board will consider Advisory Committee recommendations when making decisions. If that Board does not agree with the recommendations of the Advisory Committee, the Vina GSA Board shall state the reasons for its decision. The Advisory Committee will be staffed by a member of one of the Member Agencies. All Advisory Committee meetings are subject to the Brown Act and will be noticed and open to the public.

1.1.4.2 Rock Creek Reclamation District GSA

The Rock Creek Reclamation District (RCRD) provides flood control and groundwater sustainability services to approximately 4,625 acres of agricultural and single-family residential parcels in northern Butte County. The District is located in the Big Chico Creek and Pine Creek

watersheds. RCRD is governed by a seven-member Board of Trustees elected by the landowners to staggered four-year terms. The Board of Trustees conducts its regular meetings quarterly and holds special meetings as needed. Board meetings are open to the public and are conducted in accordance with the Brown Act. Members of the public regularly attend meetings virtually or in person. RCRD regularly contracts with a District Counsel and a Secretary to the Board, who provide professional services (legal and secretarial, respectively) at the discretion of and as directed by the Board of Trustees. Most other RCRD services, including reclamation and flood control work, are performed by contracted parties on a seasonal or ad-hoc basis at the direction of the Board of Trustees.

Initially formed in 1985 under the State Reclamation Act (California Water Code Section 50000 et seq.) and Butte County Board of Supervisors Resolution No. 85-167, RCRD has a long track record of undertaking flood projects for the benefit of its landowners and will continue to provide services and benefits to the community in this area. In 2018, RCRD expanded its Sphere of Influence (SOI) to approximately 19,027 acres (total 23,652 acres).

RCRD provides for repair, maintenance, and improvement of natural channel water conveyance and flood protection facilities within the area. RCRD is empowered to construct, maintain, and operate drains, canals, sluices, bulkheads, watergates, levees, embankments, pumping plants, dams, diversion, or irrigation works, and all other facilities reasonably necessary or convenient to accomplish District purposes.

As a local agency with water supply, water management, or land use responsibilities within the Vina Subbasin, RCRD is authorized to become a GSA over the Vina Subbasin, pursuant to Water Code sections 10723 and 10721(n). On October 18, 2016, RCRD elected to become a GSA over its boundaries, in accordance with the notice and hearing requirements of Water Code section 10723 and Government Code section 6066. On or around October 26, 2016, the RCRD GSA sent notice to DWR of its intent to undertake sustainable groundwater management, pursuant to Water Code sections 10723(d) and 10723.8. RCRD became the exclusive GSA over its jurisdictional boundaries.

The RCRD GSA is managed by the Board of Trustees of RCRD with meetings conducted in accordance with the Brown Act. The RCRD GSA formed an ad-hoc SGMA Committee to provide assistance to the RCRD Board of Trustees on development of the GSP. The ad-hoc committee consists of two RCRD trustees. The RCRD GSA's SGMA committee members are uncompensated and assist the Board of Trustees with in-kind contributions of time and resources. All GSA powers are retained and exercised by the Board of Trustees of RCRD. Upon formation, and as of 2021, the committee is staffed by RCRD's Chair, Hal Crain, and RCRD's Vice-Chair, Darren Rice. The function of the ad-hoc committee is to provide input and make recommendations to the RCRD Board of Trustees on development of the GSP and to serve as the point of contact between the Vina GSA and RCRD GSA. A member of the committee attends Vina GSA meetings and Vina GSA Stakeholder Advisory committee meetings. Additionally, several joint meetings of the boards of Vina GSA and RCRD GSA were held during the development of the GSP.

Development and implementation of the GSP is funded primarily by a DWR grant administered by Butte County on behalf of the GSAs and pursuant to a Cooperation Agreement between the

Vina GSA and RCRD GSA. RCRD GSA additionally provides in-kind contributions of its SGMA committee members' time and resources. Other incidental RCRD GSA costs are funded by RCRD's annual special assessment. RCRD GSA's implementation of the GSP will be funded by these sources and any additional sources of revenue or funding that the Board of Trustees of RCRD deems proper and consistent with applicable law and its obligations as a GSA and Reclamation District.

1.1.5 Memorandum of Understanding

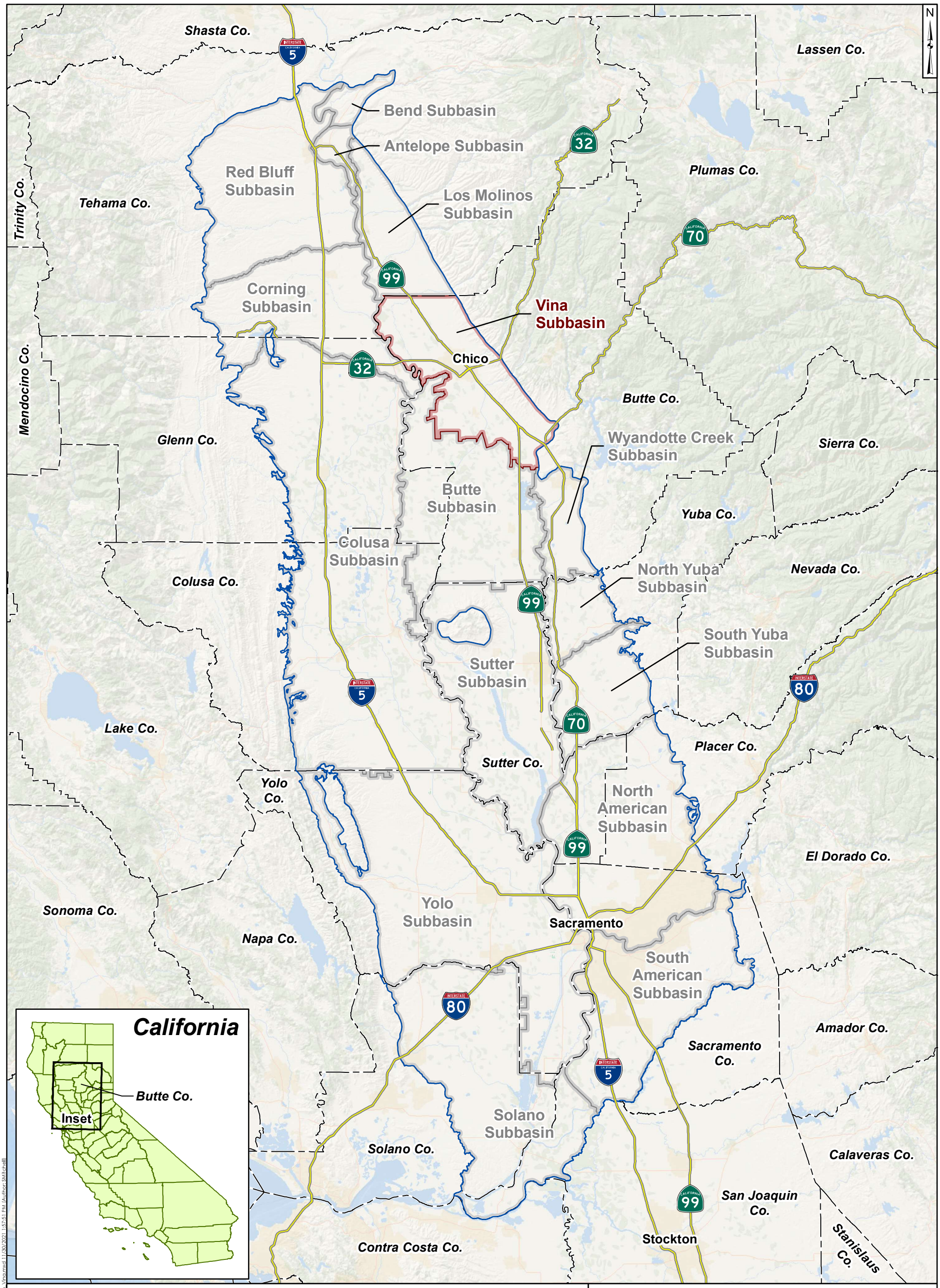
The Vina GSA also signed a Memorandum of Understanding (MOU) with Butte College to work cooperatively to advance the purposes of SGMA and groundwater sustainability. As part of the MOU, the Vina GSA agreed to the following conditions: not to impose fees, assessments, or other charges pertaining to groundwater management to Butte College, to not limit groundwater extraction, to not alter the current boundaries of the Vina Subbasin or consolidation of the Vina Subbasin or regulate or interfere with the surface water rights or groundwater rights of Butte College. These conditions could be altered upon written consent from Butte College. In addition, Butte College agreed to support the efforts of the Vina GSA, to provide associated data as it relates to the Vina Subbasin, and to work cooperatively with the GSA in the review, development, and implementation of the GSP. Butte College appointed a member to the Vina Advisory Committee to provide input and recommendations to the Vina GSA Board on GSA development and implementation.

1.2 Groundwater Sustainability Plan Area

This section provides a detailed description of the Vina Subbasin, including major streams and creeks, institutional entities, agricultural and urban land uses, locations of groundwater wells, and locations of state lands. The GSP Area document also describes existing surface water and groundwater monitoring programs, existing water management programs, and general plans in the GSP Area.

1.2.1 Summary of Jurisdictional Areas and Other Features

The Vina Subbasin falls within the larger Sacramento Valley Groundwater Basin (Figure 1-2). Basin designations by DWR were first published in 1952 in Water Quality Investigations Report No. 3, Ground Water Basins in California, and subsequently updated in Bulletin 118 in 1975, 1980, 2003, and draft update in 2020. As shown in Figure 1-3, the Vina Subbasin (Bulletin 118 Basin Number 5-021.57) is bordered to the north by the Los Molinos Subbasin (Bulletin 118 Basin Number 5-021.56), the Corning Subbasin (Bulletin 118 Basin Number 5-021.51), and the Butte Subbasin (Bulletin 118 Basin Number 5-021.40); to the south by the Wyandotte Creek Subbasin (Bulletin 118 Basin Number 5-021.69); and to the east by the Sierra Nevada geomorphic province.



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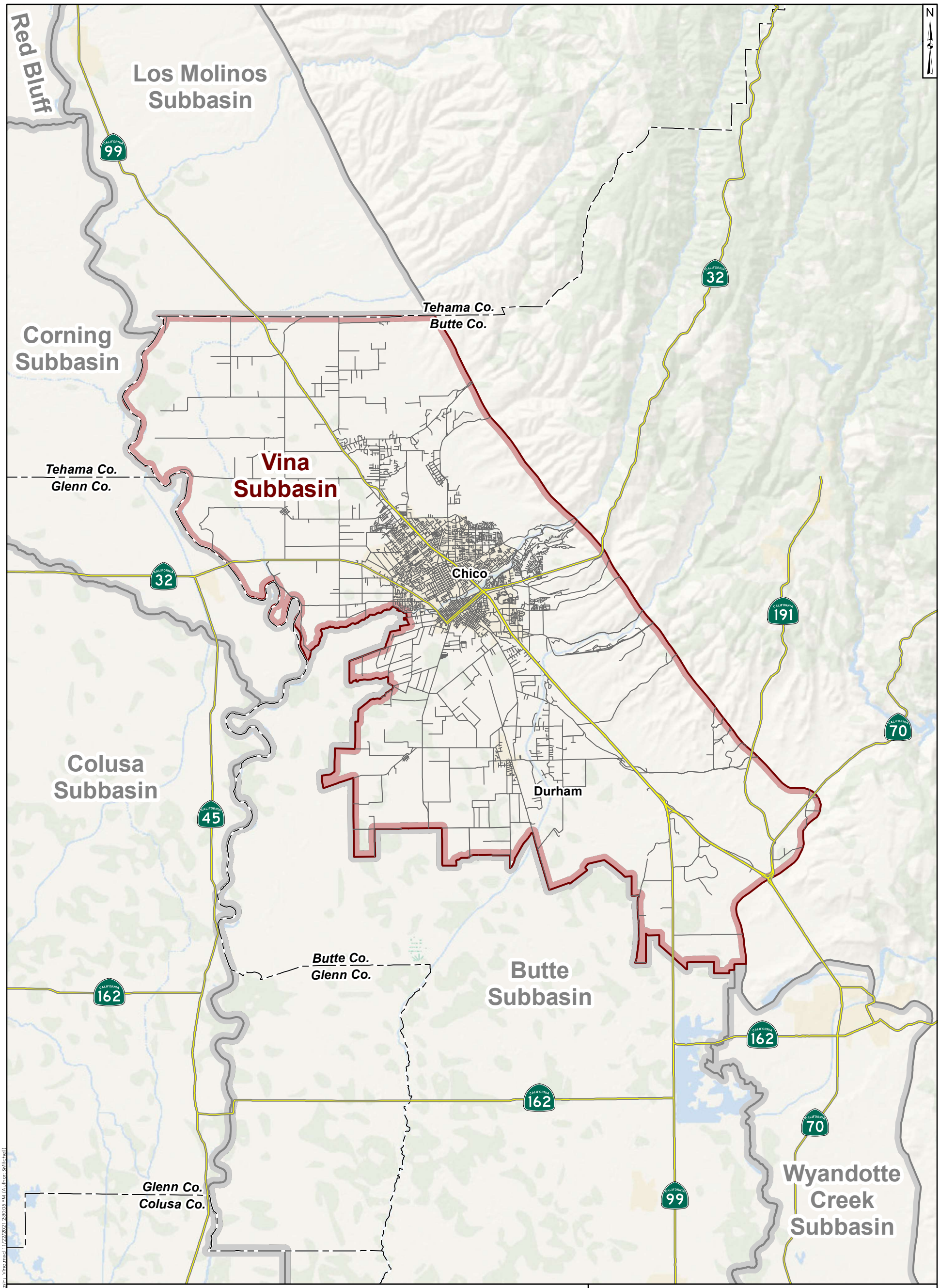

Legend

Groundwater Subbasins[1]

- Vina Groundwater Subbasin
- Neighboring Groundwater Subbasins

Roads[2]

- Highways
- Other roads

5 2½ 0 5 Miles

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

Neighboring Groundwater Subbasins
Vina Groundwater Subbasin GSP

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Figure **1-3**

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The Vina Subbasin is located within Butte County. Geologic units in the Vina Subbasin consist of consolidated rocks and unconsolidated deposits, as discussed in detail in Section 2. No adjudicated areas or areas covered by an alternative to a GSP exist within the Vina Subbasin.

Figure 1-4 shows the Vina Subbasin's key geographic features, including city boundaries. The Vina Subbasin encompasses an area of about 289 square miles. There are two entities within the Vina Subbasin with land use jurisdiction: Butte County and the City of Chico.

Figure 1-5 shows the tribal areas within the Vina Subbasin that includes the Mechoopda Tribal Designated Statistical Areas. Figure 1-6 shows the spatial extent of Disadvantaged Communities (DACs) and Severely Disadvantaged Communities (SDACs) in the Vina Subbasin. DWR defines DACs as census geographies (census tracts, census block groups, and census-designated places) with an annual median household income (MHI) that is less than 80% of the statewide annual MHI. SDACs are defined as census geographies with an MHI less than 60 percent of the statewide annual MHI. DWR uses the most recently available five-year American Community Survey (ACS) dataset to identify these areas. For this GSP, the 2012-2016 ACS dataset was used, establishing statewide MHI as $63,783 (DWR, Mapping Tools).

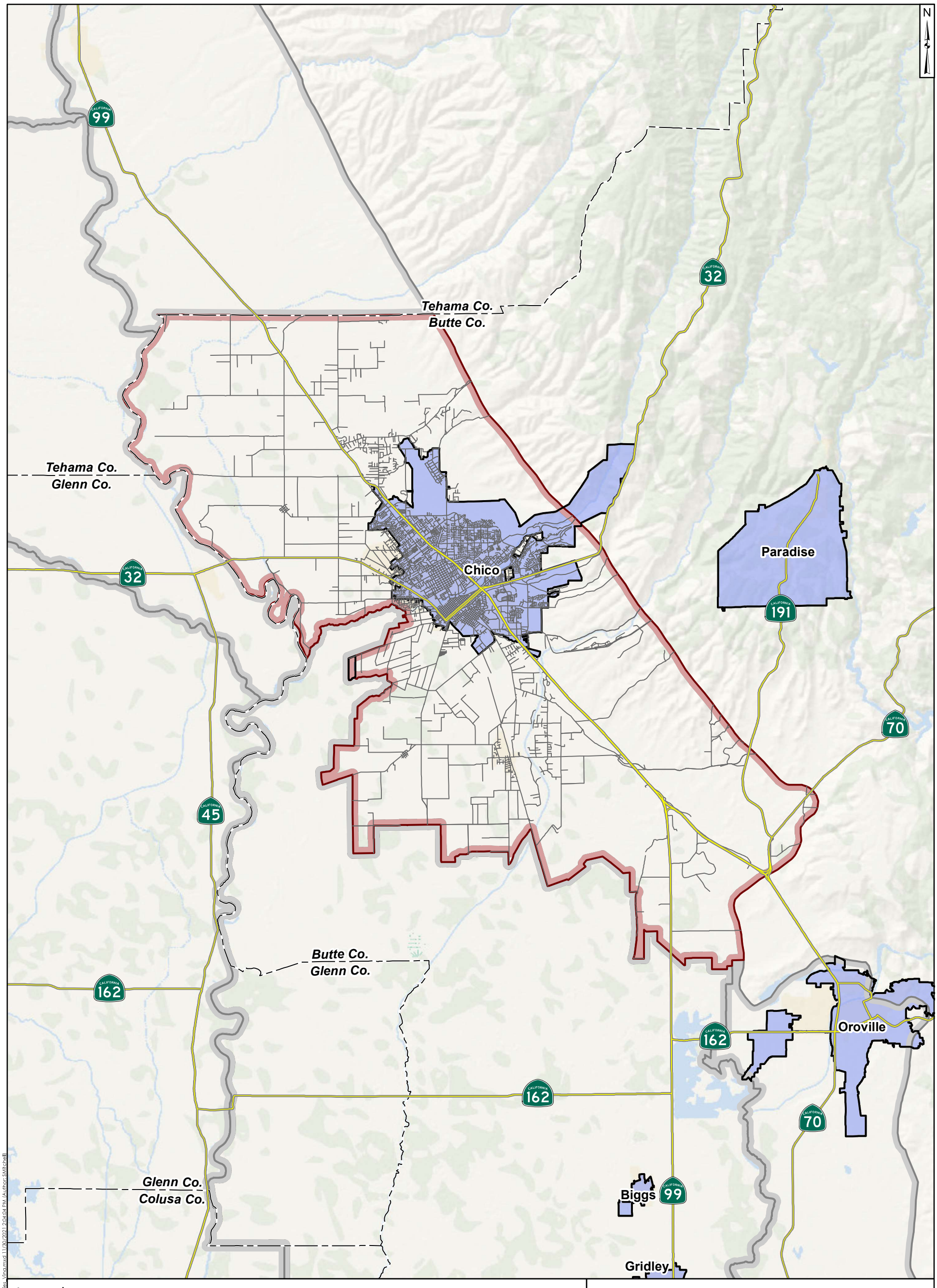
Figure 1-7 shows a map of land use in the Vina Subbasin across four general categories: cropland, industrial, undeveloped, and urban. These categories were mapped based on categories provided by 2015 land use from the United States Department of Agriculture's (USDA) CropScape 2015 dataset.

Land use patterns in the Vina Subbasin are dominated by agricultural uses, including nut and fruit trees, vineyards, row crops, grazing, and forage. Throughout the Vina Subbasin, both agricultural and urban land use rely on a combination of surface water and groundwater. Land use is primarily controlled by local agencies. Land use patterns in the low foothills to the east are dominated by native vegetation and unirrigated pasture lands (USDA, 2020).

Crop type varies by region, with fruit and nut trees and rice fields comprising the majority of agriculture in the Vina Subbasin. Almond and walnut orchards dominate the northern and central portion of the Vina Subbasin, and rice fields dominate the southern portion of the Vina Subbasin (Figure 1-8). Figure 1-9 shows a map with boundaries of federal and state public lands within the region that includes the Vina Subbasin.

Figure 1-10 to Figure 1-13 show the density of domestic, public, industrial, and irrigation wells per square mile in the Vina Subbasin, as classified by the DWR Online System for Well Completion Reports (OSWCR), which is discussed in Section 1.4.4. Though there are overlaps and discrepancies in the designation of wells, domestic wells are largely private residential wells, public wells are municipal operated wells, and production wells are for irrigation, municipal, public, and industrial purposes (DWR, 2019a). Areas with few wells exist in the Vina Subbasin, particularly in the northwestern corner of the Vina Subbasin and to the east. Wells containing groundwater level data are described further in Section 1.4.

Figure 1-14 shows locations of major rivers, streams, and creeks within the Vina Subbasin. The Sacramento River borders the Vina Subbasin on its western side. Other larger surface water bodies traversing the Vina Subbasin include Big Chico Creek and Butte Creek.



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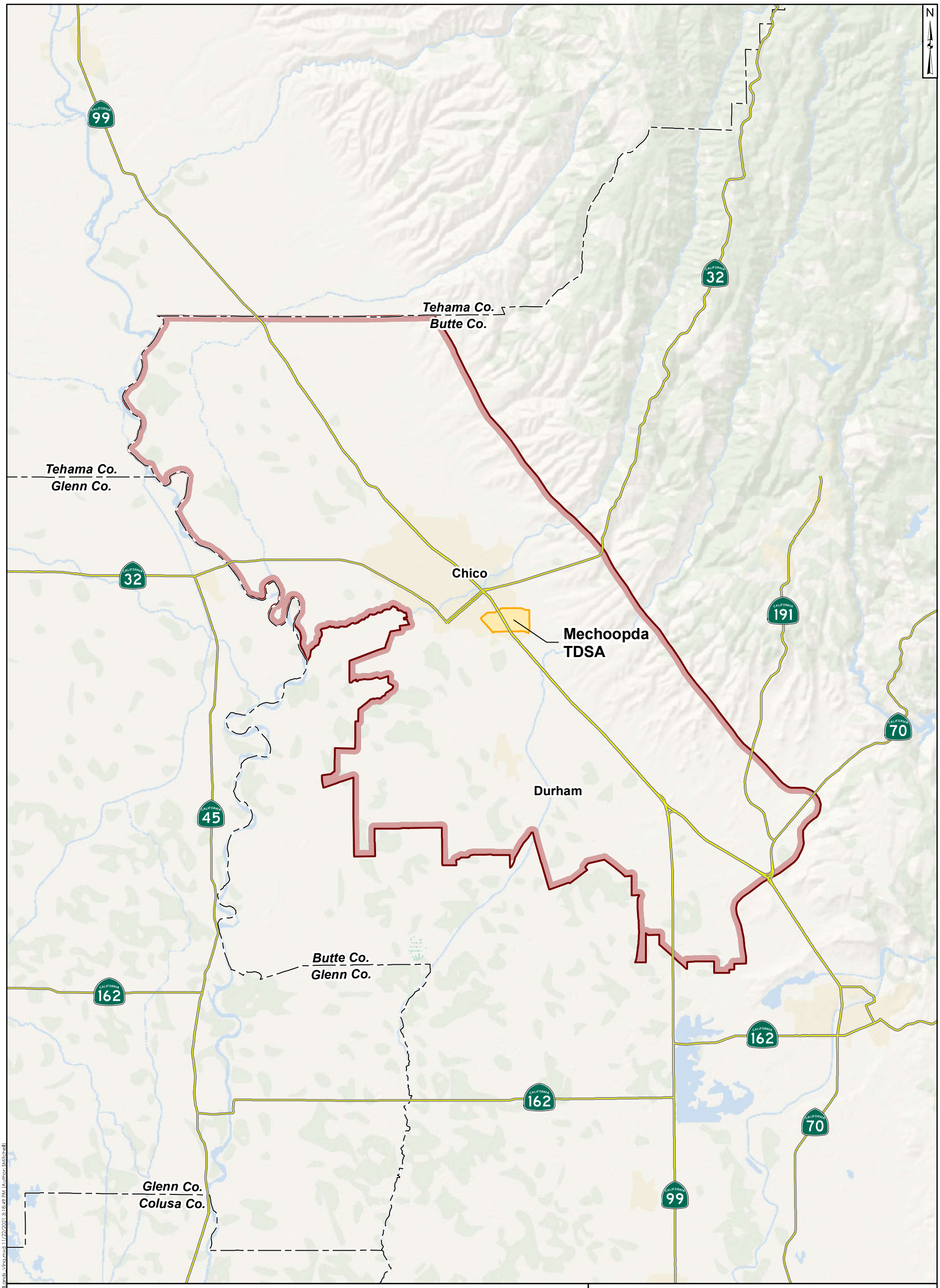

Legend

Groundwater Subbasin[1]

Vina Groundwater Subbasin

Tribal Areas[2]

Tribal Designated Statistical Areas (TDSAs)

Roads[2]

Highways

Boundaries[2]

County boundaries

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

5 2½ 0 5 Miles

Tribal Areas
Vina Groundwater Subbasin GSP

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Figure **1-5**

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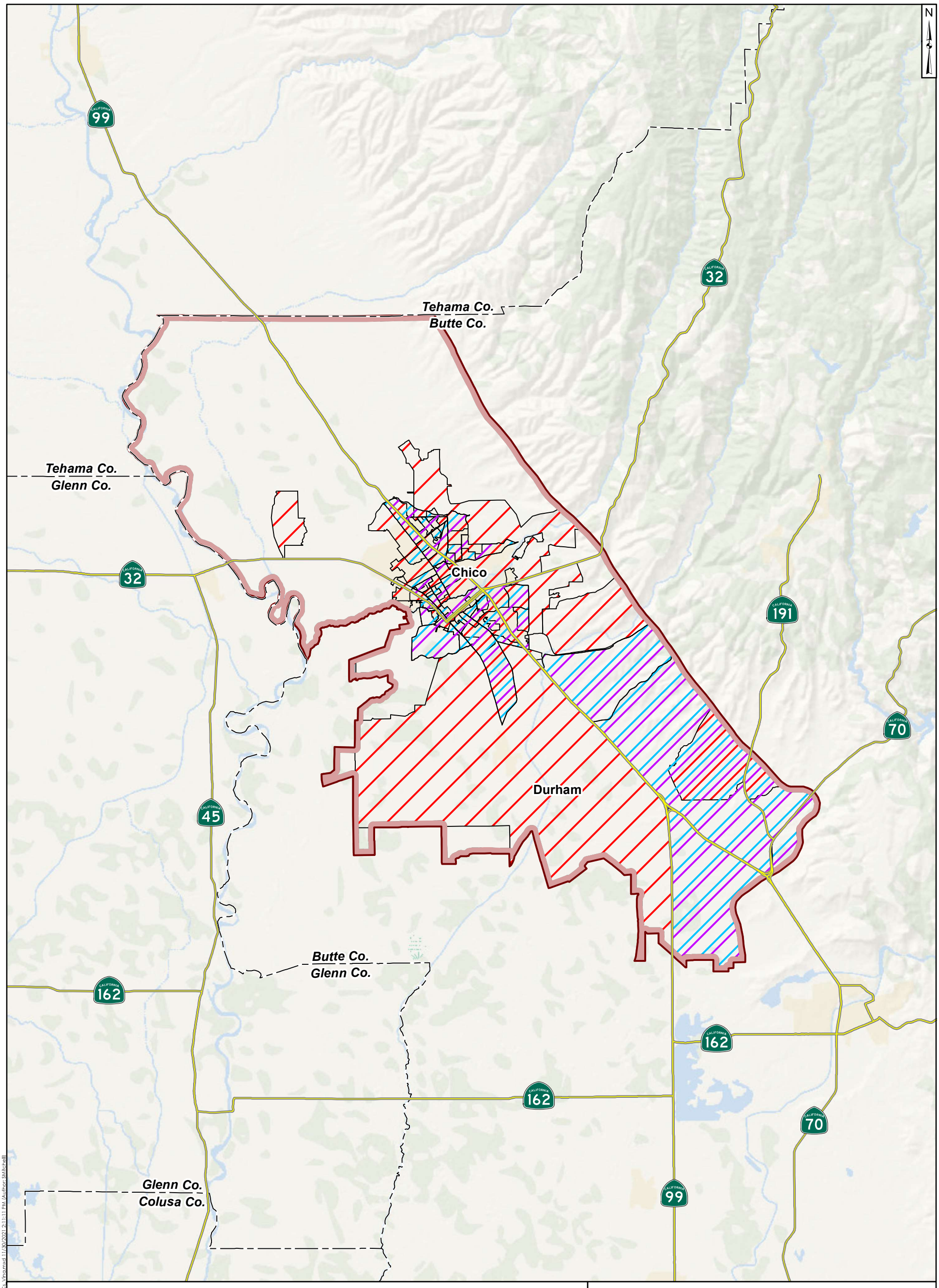

Legend

Groundwater Subbasin[1]

Vina Groundwater Subbasin

Disadvantaged Communities (2018)[1]

By census tract

By block group

By place

Roads[2]

Highways

Boundaries[2]

County boundaries

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

5 2½ 0 5 Miles

Disadvantaged Communities (2018)
Vina Groundwater Subbasin GSP

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Figure 1-6

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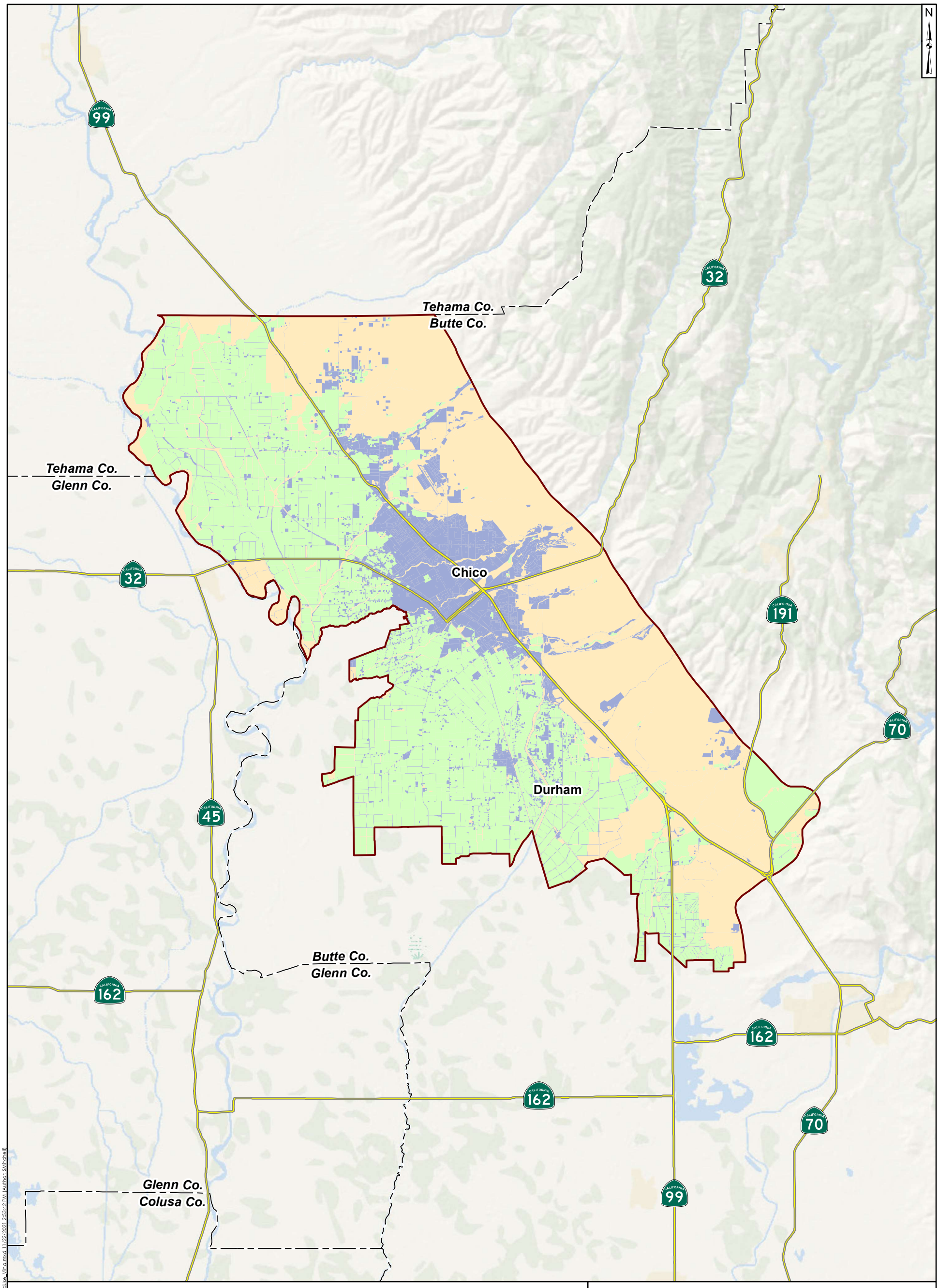

Legend

Groundwater Subbasin[1]
- Vina Groundwater Subbasin

Land Use
- Agricultural areas
- Developed areas
- Other land use

Roads[2]
- Highways

Boundaries[2]
- County boundaries

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

5 2½ 0 5 Miles

Land Use
Vina Groundwater Subbasin GSP

Geosyntec consultants

Project No.: SAC282 | December 2021

Figure **1-7**

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N

Tehama
Butte

Tehama
Glenn

Chico

Durham

99
32
45
162
191
70

Crops (2016)

Perennials

- Fruit tree crops
- Deciduous tree crops
- Grapes
- Young perennials

Annuals

- Field crops
- Grain crops
- Alfalfa and pasture
- Rice
- Truck, nursery, and berry crops

Other

- Fallow land

Legend

Groundwater Subbasin[1]

- Vina Groundwater Subbasin

Roads[2]

- Highways

Boundaries[2]

- County boundaries

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

5 2½ 0 5 Miles

Land Use by Crop Type
Vina Groundwater Subbasin GSP

Geosyntec consultants

Project No.: SAC282 | December 2021

Figure 1-8

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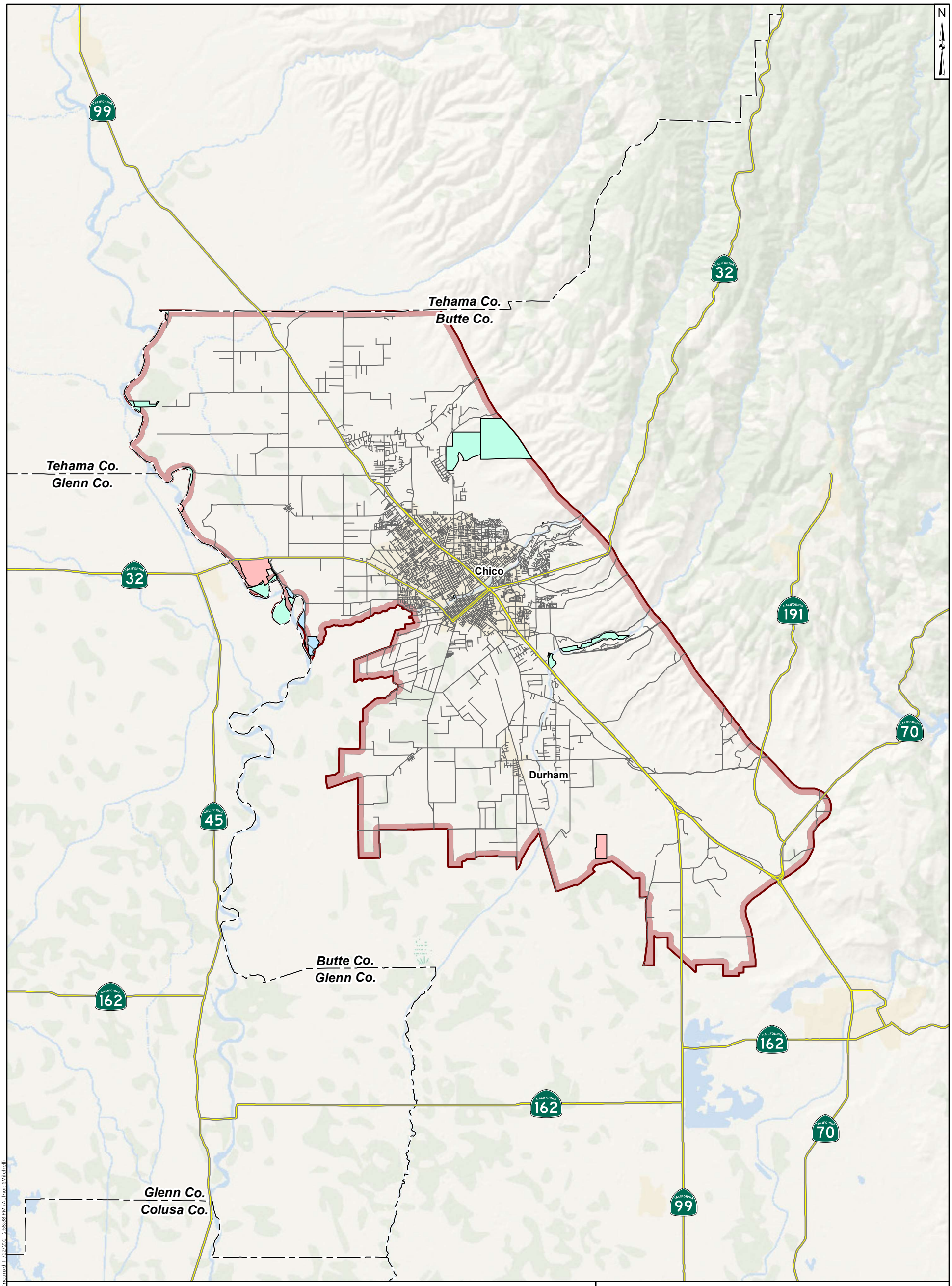


Legend

Groundwater Subbasin[1]

Vina Groundwater Subbasin

State and Federal Lands

U.S. Fish and Wildlife Service lands[2]

California Dept. of Fish and Wildlife lands[3]

California State Parks[4]

Roads[5]

Highways

Other roads

Boundaries[5]

County boundaries

Notes:
1) California Department of Water Resources (CA DWR).
2) U.S. Fish and Wildlife Service (US FWS).
3) California Department of Fish and Wildlife (CDFW).
4) California Department of Parks and Recreation (CDPR).
5) TIGER/Line, U.S. Census Bureau.

5 2½ 0 5 Miles

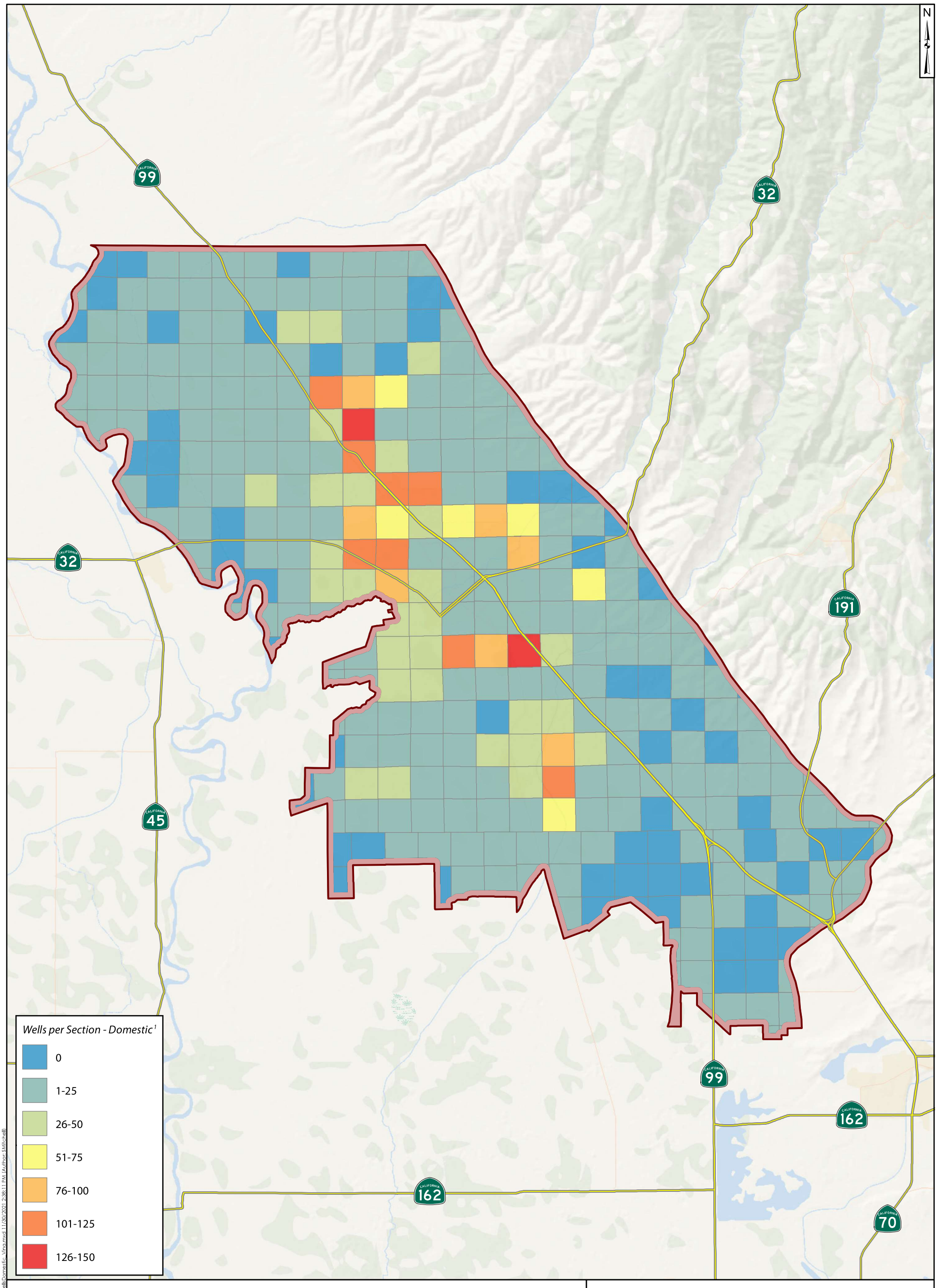
State and Federal Lands
Vina Groundwater Subbasin GSP

Geosyntec consultants

Project No.: SAC282 | December 2021

Figure **1-9**

P:\GIS\SAC282 - Butte County\Project\2021208 GSP - Maps\Vina\Ch1\Fig1-9_GovtLands_Vina.mxd 11/22/2021 2:58:38 PM (Author: SMitchell)



Legend

Groundwater Subbasin[1]

Vina Groundwater Subbasin

Roads[2]

Highways

2 1 0 2 Miles

Density of Domestic Wells per Section
Vina Groundwater Subbasin GSP

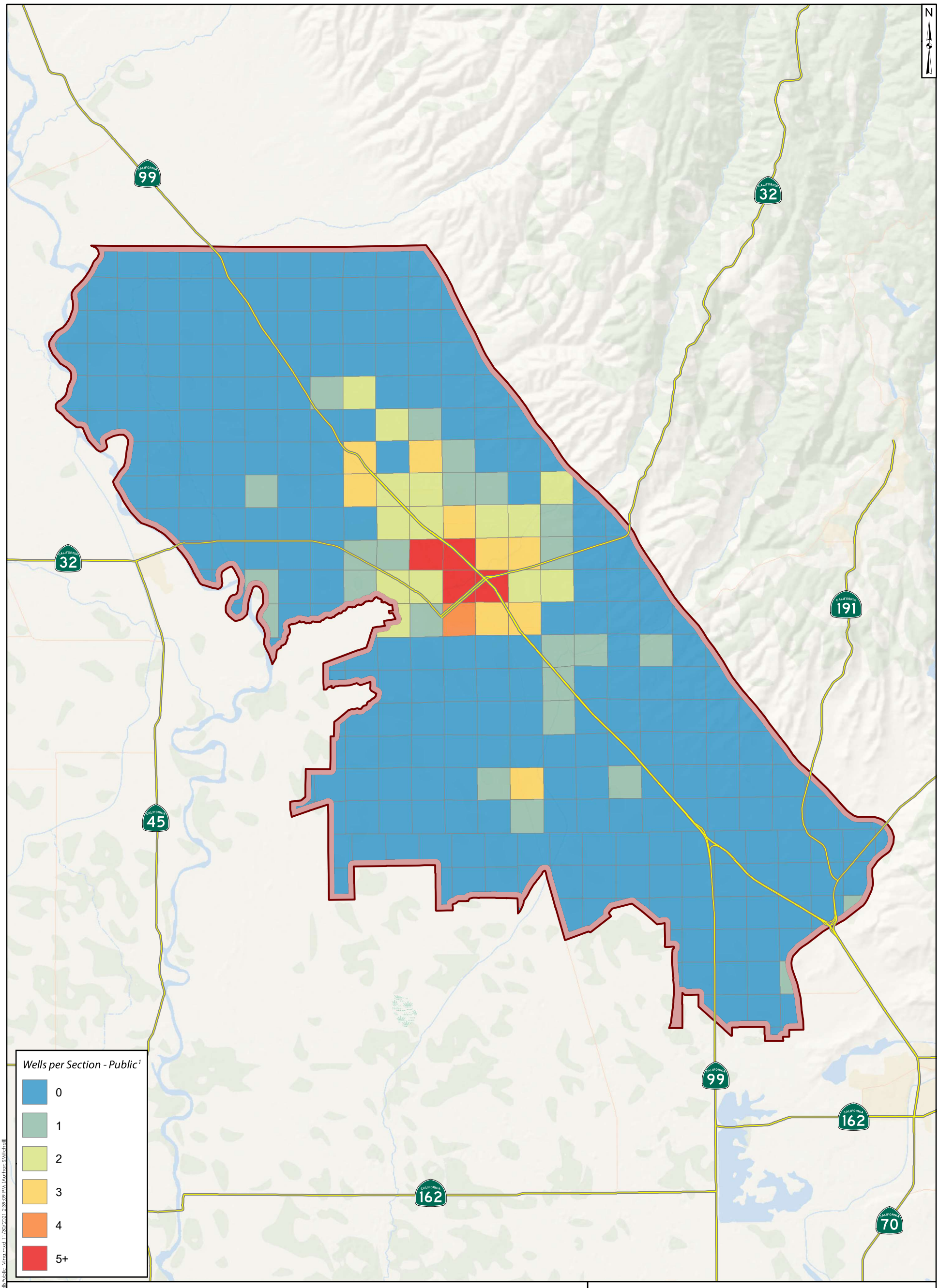
Notes:
1) California Department of Water Resources (CA DWR).
2) TIGER/Line, U.S. Census Bureau.

Geosyntec consultants

Project No.: SAC282 | December 2021

Figure 1-10

P:\GIS\SAC282 - Butte County\Project\20210108_GSP_Maps\Vina\Ch1\Fig1-10_WellsDomestic_Vina.mxd 11/30/2021 2:38:11 PM (Author: SMitchell)



Legend

Groundwater Subbasin[1]

Vina Groundwater Subbasin

Roads[2]

Highways

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

4 2 0 4 Miles

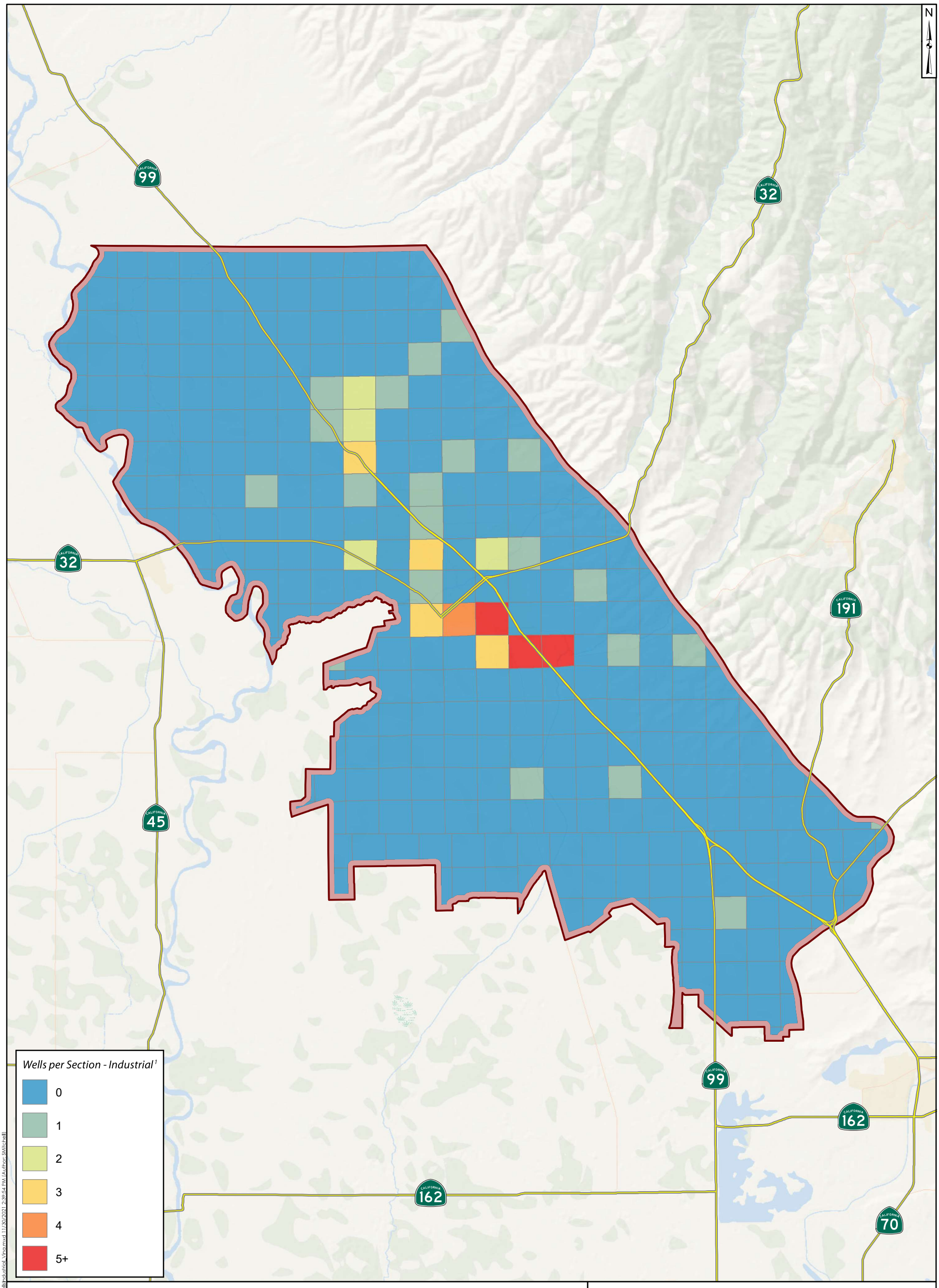
Density of Public Wells per Section
Vina Groundwater Subbasin GSP

Geosyntec consultants

Project No.: SAC282 | December 2021

Figure **1-11**

P:\GIS\SAC282 - Butte County\Project\202108_GSP_Maps\Vina\Ch1\Fig1-11_WellsPubEx_Vina.mxd 11/30/2021 2:39:09 PM (Author: SMitchell)



Legend

Groundwater Subbasin[1]

Vina Groundwater Subbasin

Roads[2]

Highways

2 1 0 2 Miles

Density of Industrial Wells per Section
Vina Groundwater Subbasin GSP

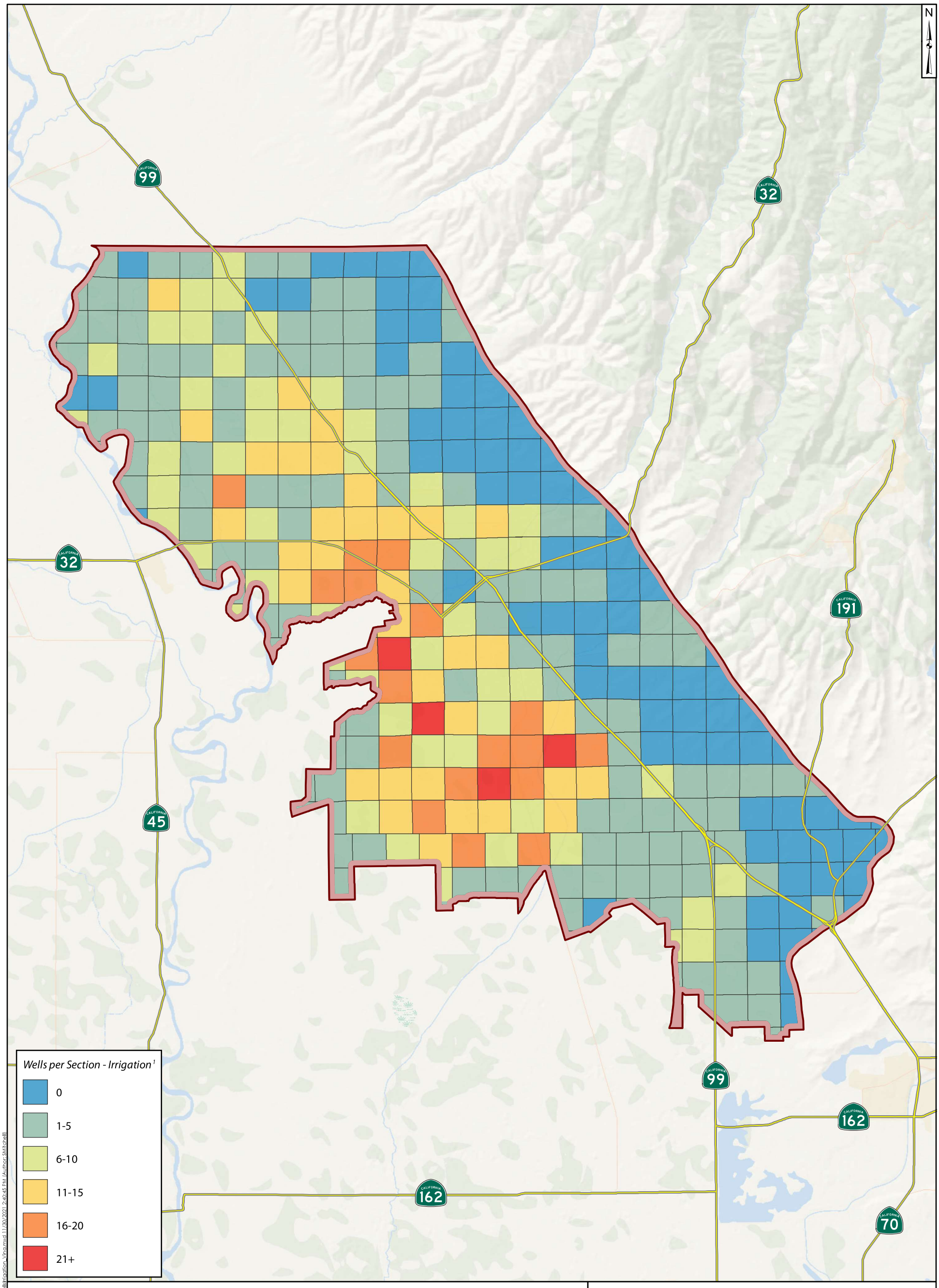
Notes:
1) California Department of Water Resources (CA DWR).
2) TIGER/Line, U.S. Census Bureau.

Geosyntec consultants

Project No.: SAC282 | December 2021

Figure 1-12

P:\GIS\SAC282 - Butte County\Project\202108_GSP_Maps\Vina\Ch1\Fig1-12_WellsIndustrial_Vina.mxd 11/30/2021 2:39:54 PM (Author: SMitchell)



Legend

Groundwater Subbasin[1]

Vina Groundwater Subbasin

Roads[2]

Highways

2 1 0 2 Miles

Density of Irrigation Wells per Section
Vina Groundwater Subbasin GSP

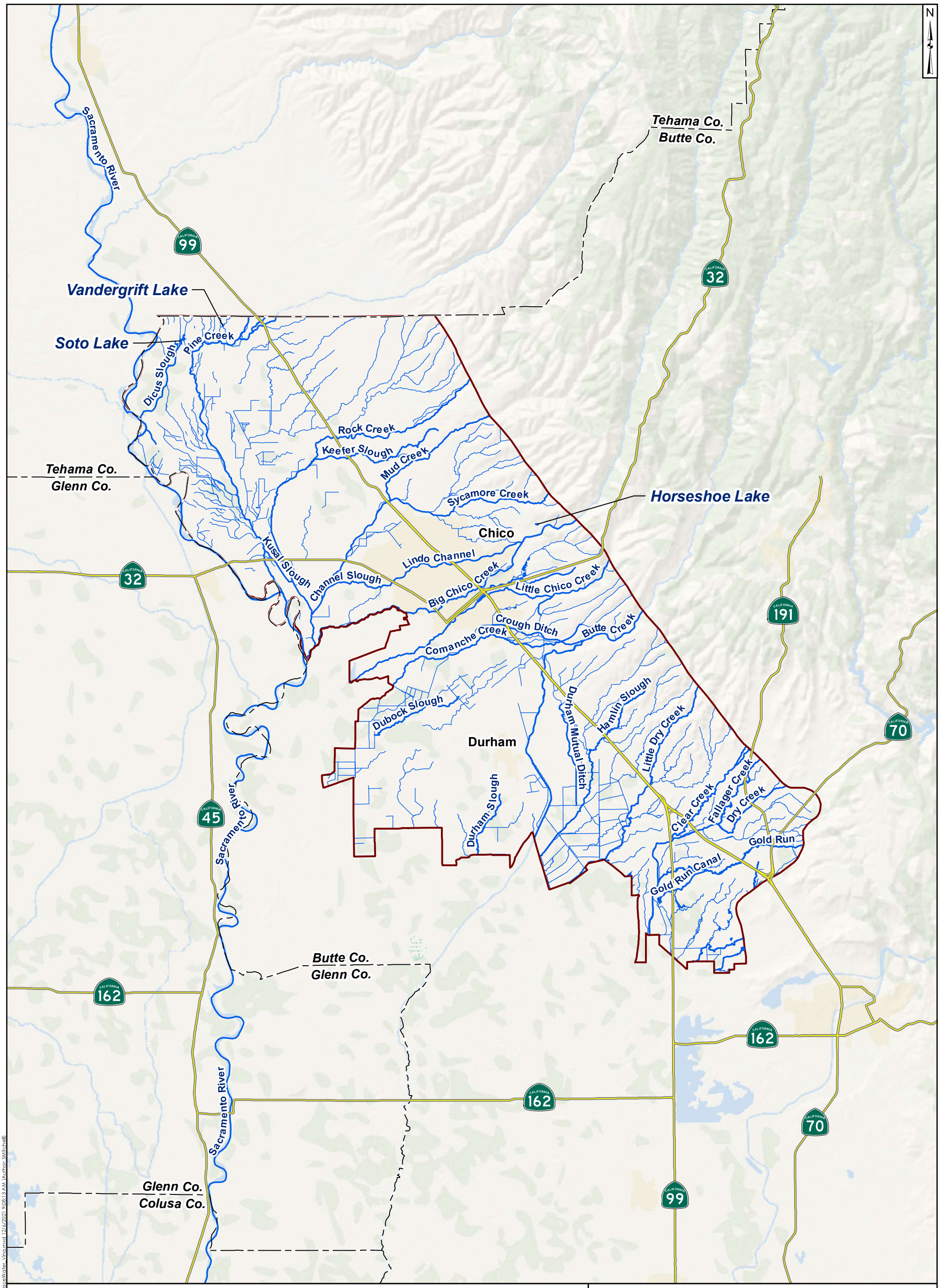
Geosyntec consultants

Figure **1-13**

Project No.: SAC282 | December 2021

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

P:\GIS\SAC282 - Butte County\Project\202108_GSP_Maps\Vina\Ch1\Fig1-13_WellsIrrigation_Vina.mxd 11/30/2021 2:40:45 PM (Author: SMitchell)



Legend

Groundwater Subbasin[1]
- Vina Groundwater Subbasin

Surface Water[2]
- Water bodies
- Named streams
- Other streams

Roads[3]
- Highways

Boundaries[3]
- County boundaries

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

5 2½ 0 5 Miles

Surface Water Bodies
Vina Groundwater Subbasin GSP

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Project No.: SAC282 | December 2021

Figure **1-14**

P:\GIS\SAC282 - Butte County\Project\20210108_GSP_Maps\Vina\Ch1\Fig1-14_SurfaceWater_Vina.mxd 12/6/2021 9:08:13 AM (Author:SMitchell)

Smaller local or ephemeral streams entering and traversing the Vina Subbasin include Pine Creek, Rock Creek, Mud Creek, Sycamore Creek, Little Chico Creek, Hamlin Slough, Little Dry Creek, and Clear Creek. Additional information regarding surface waters can be found in Section 2, Basin Setting.

1.2.2 Management Areas

A Management Area (MA) refers to an area within a basin for which a GSP may identify different minimum thresholds (MT), measurable objectives (MO), monitoring, and projects and actions based on unique local conditions or other circumstances as described in the GSP regulations. The GSP must describe each MA, including rationale for approach and demonstrate it can be managed without causing undesirable results within or outside the MA. Three MAs are defined in the Vina Subbasin: Vina North, Vina Chico, and Vina South (Figure 1-1).

Although all stakeholders have a shared interest in sustainable management of groundwater in this predominantly groundwater dependent Vina Subbasin, the landscape of beneficial users varies among MAs. The interests and vulnerability of stakeholders and groundwater uses in these MAs vary based on the nature of the water demand (agricultural, domestic, municipal), numbers and characteristics (i.e., depth) of wells supplying groundwater, and to some degree the hydrogeology and mix of recharge sources (i.e., the presence of Butte Creek in Vina South compared to ephemeral streams in Vina North). The reason for creating these MAs in the Vina Subbasin is to focus development of MT, MO, monitoring, and projects and actions in a way that best meets the mix of needs of the uses and users of groundwater unique to the MA. The defined MAs also allow Member Agencies to focus efforts and staff resources on development of portions of the GSP most relevant to stakeholders within their jurisdiction. These established MAs facilitate successful development and long-term implementation of the GSP by effectively targeting the needs, vulnerabilities, and opportunities of local conditions in these areas.

1.2.2.1 Vina North Management Area

The Vina North MA overlies the Butte County area north of the City of Chico and Big Chico Creek, within the jurisdictional boundary of the GSA. The Rock Creek Reclamation District GSA is situated in this MA. The Vina GSA and the Rock Creek Reclamation District GSA have committed through a Cooperation Agreement to develop a single GSP for the Vina Subbasin. The two GSAs will coordinate their efforts in the Vina North MA. Vina North is dominated by irrigated agriculture dependent on wells with sparsely distributed rural residential domestic well users and the small community of Nord. The Sacramento River flows along the western boundary but otherwise, ephemeral streams are present including Pine Creek, Rock Creek, and Mud Creek. It contains the jurisdictions of Rock Creek Reclamation District GSA and Vina GSA.

1.2.2.2 Vina Chico Management Area

The second MA encompasses the area that overlies the municipal area within and adjacent to the City of Chico (Vina Chico MA). The Vina Chico MA is predominantly an urban area with California Water Service (Cal Water) providing groundwater supplies for residential and municipal use. To a very limited extent, private domestic wells provide the primary source of water to households or in some cases provide a secondary supply for outdoor water use. Several

creeks traverse the Vina Chico MA including Big Chico Creek, Little Chico Creek, and Butte Creek. The Vina GSA is the exclusive GSA for the Vina Chico MA.

1.2.2.3 Vina South Management Area

The Vina South MA overlies the Durham Irrigation District and the Butte County areas south of the City of Chico. The Vina South MA is dominated by irrigated agriculture dependent on groundwater and to a lesser extent, surface water diversions primarily from Butte Creek. In and around the community of Durham, significant numbers of rural residents and ranchettes depend on groundwater typically from relatively shallow domestic wells interspersed with agricultural land uses. Both perennial and ephemeral streams traverse the Vina South MA, including but not limited to, Butte Creek, Little Dry Creek, and Dry Creek, which becomes the Cherokee Canal. The Vina GSA is the exclusive GSA for the Vina South MA.

1.3 Management Programs

Existing management programs within the Vina Subbasin are described below.

1.3.1 Groundwater Management Plan

The County of Butte has a Groundwater Management Plan (GMP) that covers the entire County except for areas covered by Urban Water Management Plans (UWMPs). The GMP supports the long-term maintenance of high-quality groundwater resources within the Plan Area for agricultural, environmental, rural domestic and urban needs. Specifically, the Butte County Groundwater Management Plan endeavors to:

- Minimize the long-term drawdown of groundwater levels;
- Protect groundwater quality;
- Prevent inelastic land surface subsidence from occurring as a result of groundwater pumping;
- Minimize changes to surface water flows and quality that directly affect groundwater levels or quality;
- Minimize the effect of groundwater pumping on surface water flows and quality; and
- Evaluate groundwater replenishment and cooperative management projects.

The Butte County Groundwater Management Plan can be found at:

http://www.buttecounty.net/waterresourceconservation/groundwatermanagementplan

1.3.2 Urban Water Management Plans

Urban Water Management Plans provide an assessment of long-term water supply reliability, demand management measures, water shortage contingency plans, progress towards reduced per capita consumption, and the planned use of recycled water. An UWMP has been developed for the City of Chico by Cal Water, 2020. This document provides water system descriptions, supplies and demands, and supply reliability to ensure that adequate water supplies are available to meet existing and future needs. An UWMP is prepared every five years by law to support Cal Water's long-term resource planning.

1.3.3 Northern Sacramento Valley Integrated Regional Water Management Plan

Six counties, including Butte, Shasta, Tehama, Glenn, Colusa, and Sutter counties (Figure 1-15), of the Northern Sacramento Valley have been working together for over 10 years to lay the foundation for an integrated regional plan to address water-related issues such as economic health and vitality; water supply reliability; flood, stormwater, and flood management; water quality improvements; and ecosystem protection and enhancement. The counties have completed the development of a valley-wide IRWM Plan and have committed to continuing the efforts of regional water management through this plan. The IRWM is a collaborative effort to enhance coordination of the water resources in a region. IRWM involves multiple agencies, stakeholders, tribes, individuals, and groups to address water-related issues and offer solutions which can provide multiple benefits to the region. Representatives of the six counties are working in partnership with community stakeholders, tribes, and the public to identify the water-related needs of the region. This information was used to develop goals and objectives of the IRWM Plan, and the identification of projects and programs to be included in the GSP. The IRWM Plan was adopted in April 2014 and will better position the region and local partners to receive funding for high-priority projects.

1.3.4 Drought Management Plan

The Butte County Drought Preparedness and Mitigation Plan (Drought Plan) was adopted in 2004 and was developed to protect the County from the effects of a drought. The Drought Plan includes: an overview of Butte County's drought background; institutional framework to approach drought; a monitoring plan; a response and mitigation plan; and a discussion of water transfers during a drought. The purpose of the Drought Plan is to provide an efficient and systematic process for Butte County that results in a short- and long-term reduction in drought impacts to the citizens, economy, and environment.

1.3.5 Conjunctive Use Programs

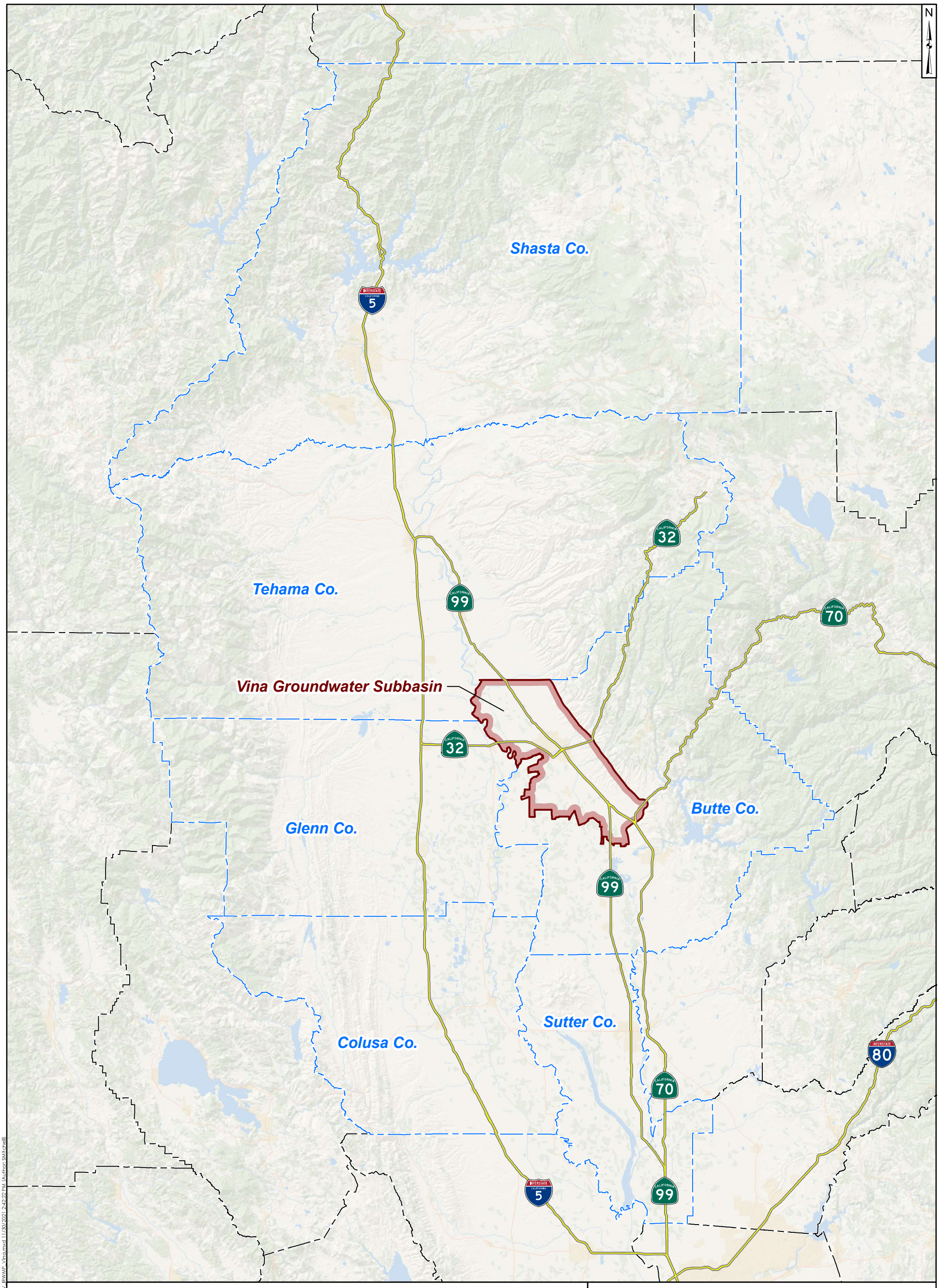
There are no conjunctive use programs in the Vina Subbasin.

1.3.6 General Plans in the Plan Area

The Vina Subbasin is subject to the Butte County General Plan 2030 and the City of Chico General Plan. In 2018, the Camp Fire destroyed 18,000 structures in Butte County, displacing over 27,000 residents. In 2020, the North Complex Fire destroyed homes in Berry Creek, Feather Falls, and other areas. While the Town of Paradise, Concow, Berry Creek, and other impacted areas rebuild, many residents have relocated to other parts of Butte County. The existing General Plans may not fully account for the relocation of wildfire survivors. The GSP accounts for changes in population and updates to General Plans during GSP implementation.

1.3.6.1 Butte County General Plan 2030

The Butte County General Plan 2030 was adopted by the Butte County Board of Supervisors in October 2010. The General Plan 2030 identifies the goals, policies, and actions governing land use in the unincorporated portions of Butte County. The General Plan 2030 reflects the community desire to conserve and enhance the legacy of their forebears, namely, sustainable development.



Legend

Groundwater Subbasin[1]

Vina Groundwater Subbasin

Integrated Regional Water Management Plan

Counties within the IRWMP

Roads[2]

Highways

Boundaries[2]

County boundaries

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

20 10 0 20 Miles

Northern Sacramento Valley
Integrated Regional Water Management Plan
(NSV IRWMP)
Vina Groundwater Subbasin GSP

Geosyntec consultants

Project No.: SAC282 | December 2021

Figure
1-15

P:\GB\SAC282 - Butte County\Project\2021108_GSP_Maps\Vina\Ch1\Fig1-15_NSV_IRWMP_Vina.mxd 11/30/2021 2:42:22 PM (Author: SMitchell)

To this end, the General Plan 2030 envisions and supports a Butte County in 2030 where:

- Urban development will be primarily centralized within and adjacent to the existing municipal limits and larger unincorporated communities. Urban development will have efficient, reliable public facilities and infrastructure. Employment centers and a range of services will be located near residential areas so that people spend less time in their cars. Residential communities will be walkable, bicycle facilities will be provided, and there will be access to public transit.
- Small unincorporated areas will be well-planned through community-driven planning processes so that community character is preserved and adequate public services and facilities are provided. Rural residential development will be limited and will strive to be compatible with agricultural and environmental uses and will address wildfire risks and public service's needs.
- Agriculture and open space will continue to dominate Butte County's landscape and be an important part of the County's culture and economy. Existing agricultural areas will be maintained, and an array of agricultural services will support agriculture while providing new jobs to Butte County residents.

The General Plan 2030 includes an optional Water Resources Element in addition to the mandatory elements of Land Use, Housing, Economic Development, Agriculture, Circulation, Conservation and Open-space, Health and Safety, and Public Facilities and Services. In adopting the Water Resources Element, the General Plan 2030 recognized the importance and interrelationship between land use and water resources management. The General Plan 2030 Water Resources Element has six goals:

1. Maintain and enhance water quality
2. Ensure an abundant and sustainable water supply to support all uses in Butte County
3. Effectively manage groundwater resources to ensure a long-term water supply for Butte County
4. Promote water conservation as an important part of a long-term and sustainable water supply
5. Protect water quality through effective stormwater management
6. Improve stream bank stability and protect riparian resources

Key Water Resources Element policies include:

- W-P1.4: Where appropriate, new development shall be Low Impact Development that minimizes impervious area, minimizes runoff and pollution, and incorporates best management practicesW-P2.1: The County supports solutions to ensure the sustainability of community water supplies.
- W-P2.3: Water resources shall be planned and managed in a way that relies on sound science and public participation.

- W-P2.5: The expansion of public water systems to areas identified for future development on the General Plan land use map is encouraged.
- W-P2.6: The County supports water development projects that are needed to supply local demands.
- W-P2.8: The County supports Area of Origin water rights, the existing water right priority system, and the authority to make water management decisions locally to meet the county's current and future needs, thereby protecting Butte County's communities, economy and environment.
- W-P2.9: Applicants for new major development projects, as determined by the Department of Development Services, shall demonstrate adequate water supply to meet the needs of the project, including an evaluation of potential cumulative impacts to surrounding groundwater users and the environment.
- W-P3.1: The County shall continue to ensure the sustainability of groundwater resources, including groundwater levels, groundwater quality, and avoidance of land subsidence through a basin management objective program that relies on management at the local level, utilizes sound scientific data, and assures compliance.
- W-P3.2: Groundwater transfers and substitution programs shall be regulated to protect the sustainability of the County's economy, communities and ecosystem, pursuant to Chapter 33 of the Butte County Code.
- W-P3.3: The County shall protect groundwater recharge and groundwater quality when considering new development projects.
- W-P4.1: Agricultural and urban water use efficiency shall be promoted.
- W-P4.2: Water conservation efforts of local Resource Conservation Districts, the Natural Resource Conservation Service, and irrigation districts should be coordinated.
- W-P4.3: The County shall work with municipal and industrial water purveyors to implement water conservation policies and measures.
- W-P4.4: Opportunities to recover and utilize wastewater for beneficial purposes shall be promoted and encouraged.
- W-P4.5: The use of reclaimed wastewater for non-potable uses shall be encouraged, as well as dual plumbing that allows graywater from showers, sinks, and washers to be reused for landscape irrigation in new developments.
- W-P4.6: New development projects shall adopt best management practices for water use efficiency and demonstrate specific water conservation measures.
- W-P5.2: New development projects shall identify and adequately mitigate their water quality impacts from stormwater runoff.
- W-P5.3: Pervious pavements shall be allowed and encouraged where their use will not hinder mobility.

Implementation of the Vina GSP will provide for sustainable groundwater management and is not anticipated to affect water supply assumptions in the General Plans. Information on the Butte County General Plan 2030 and related documents can be found at www.buttegeneralplan.net.

1.3.6.2 City of Chico

The Chico City Council adopted the Chico 2030 General Plan in April 2011. The General Plan was comprehensively reviewed and updated in 2017. Chico's 2030 General Plan reflects the community's commitment to meeting the challenge of creating and maintaining a sustainable community. Sustainability in Chico means maintaining a culture of stewardship to enhance our natural environment, economic strength, and quality of life for present and future generations. The Chico General Plan's goals, policies, and actions are intended to work together to achieve sustainability. The Chico General Plan recognizes that sustainability is an organizing principle, and that the City must consider the interdependent interests of protecting the environment, promoting social equity, and achieving a healthy economy in its actions and programs.

To establish a sustainable development trend for the community, the Chico General Plan identifies and promotes certain development patterns, including compact urban development, infill development and redevelopment, mixed-use development, complete neighborhoods, and a variety of housing types. The Chico General Plan further seeks to preserve and enhance its older neighborhoods, promote economic development, protect sensitive environmental resources, and provide open space and parks. To achieve these sometimes-competing goals, the Chico General Plan addresses three distinct areas of the City: areas of stability; areas of potential change; and areas for new growth.

The State General Plan Guidelines call for the Chico General Plan to address all land within the City limits, land within the City's designated SOI, and other land in unincorporated Butte County that relates to the City's planning efforts.

Chico General Plan Organization

State law requires the General Plan to address the subjects of land use, circulation, housing, noise, safety, conservation, and open space. Additional topics (or "elements") may be covered at the discretion of the jurisdiction, provided that they are consistent with one another. Chico's General Plan includes the following optional elements: Sustainability; Downtown; Community Design; Economic Development; Parks, Public Facilities and Services; and Cultural Resources and Historic Preservation.

Parks, Public Facilities, and Services Element

This Element addresses parks, greenways, preserves and recreational open space as well as wastewater service, water facilities, and storm drainage.

The Chico 2030 General Plan Parks, Public Facilities, and Services Element acknowledges:

> *The Tuscan aquifer is the primary groundwater reservoir underlying and providing municipal and agricultural water to the Planning Area. The groundwater supply is largely recharged by infiltration in the foothills located east of Chico, from Big Chico and Little Chico Creeks, Lindo Channel, and to a lesser extent from precipitation throughout the area. The California Water Service Company (Cal Water), the City's water supplier, has adopted a Water Master Plan (WMP) which analyzes the aquifer's*

supply. The WMP concludes that no substantial overdraft of the aquifer is currently occurring within the Planning Area. In addition, Butte County continually monitors the groundwater basin and maintains a series of monitoring and test wells located throughout the County to provide information on water supply.

Relevant Goals, Policies, Actions from the Water Supply and Water Quality section of the Element are provided below:

- Goal OS-3: Conserve water resources and improve water quality.
- Policy OS-3.1 (Surface Water Resources) – Protect and improve the quality of surface water.
- Action OS-3.1.1 (Comply with State Standards) – Comply with the California Regional Water Quality Control Board's (CRWQCB) regulations and standards to maintain, protect, and improve water quality and quantity.
- Policy OS-3.2 (Protect Groundwater) – Protect groundwater and aquifer recharge areas to maintain groundwater supply and quality.
- Action OS-3.2.1 (Protect Recharge Areas) – Avoid impacts to groundwater recharge areas through open space preservation, runoff management, stream setbacks, and clustering of development.
- Action OS-3.2.2 (Map Recharge Areas) – Work with local, state, and regional agencies to identify and map groundwater recharge areas within the SOI.
- Action OS-3.2.5 (Groundwater Protection) – Oppose regional sales and transfers of local groundwater.
- Policy OS-3.3 (Water Conservation and Reclamation) – Encourage water conservation and the reuse of water.
- Action OS-3.3.1 (Water Conservation Program Funding) – Work with Cal Water to implement a water conservation program to reduce per capita water use 20 percent by 2020 pursuant to the requirements of the State Water Plan.
- Action OS-3.3.4 (Reclaimed Water) – Determine the feasibility and costs and benefits of reusing the City's treated wastewater for irrigation.

The Chico 2030 General Plan Parks, Public Facilities, and Services Element acknowledges:

Water service in the City is provided by the California Water Service Company (Cal Water). Cal Water is a private company whose Chico District was formed in 1926. Residents not supplied by Cal Water obtain water through private wells. Cal Water currently uses a system of 65 wells which deliver approximately 27 million gallons of water to customers each day. The delivery system is composed of over 355 miles of pipeline, seven storage tanks and six booster pumps.

Cal Water maintains two primary management plans for the Chico area water system, as required by state law. Their Urban Area Management Plan, adopted in 2007, provides an

> *overview of Cal Water and the Chico area water system, establishes policies and programs concerning water delivery and treatment, as well as water conservation and management practices. The Water Supply and Facilities Master Plan, adopted in 2008, guides the growth and development of their water delivery system to meet the community's future needs.*[2]

Per California Water Code, which requires urban water suppliers to update their plan once every five years, the Cal Water Urban Water Management Plan (UWMP) was updated and adopted in June 2021.

The Water Supply and Facilities Master Plan will be updated in the near future along with a Reliability Study being planned for 2023 for the Cal Water Districts in the region.

Relevant Goals, Policies, Actions from the Water Facilities section are provided below:

- Goal Parks, Public Facilities, and Services (PPFS)-5: Maintain a sustainable supply of high-quality water, delivered through an efficient water system to support Chico's existing and future population, including fire suppression efforts.
- Policy PPFS-5.1 (Protect Aquifer Resources) – Protect the quality and capacity of the upper and Lower Tuscan and Tehama aquifers underlying the Chico Planning Area.
- Action PPFS-5.1.1 (Groundwater Protection Advocacy) – Oppose regional sales and transfers of local groundwater, including water export contracts, and actively participate in county-wide and regional discussions and advocacy for the protection of groundwater resources.
- Action PPFS-5.1.2 (Groundwater Supplies and Budgeting) – Support periodic evaluation of groundwater availability using the Butte Basin Groundwater Model (BBGM) and Cal Water's work to establish a water supply budget with specific measures to assure sustainable levels of groundwater.
- Action PPFS-5.1.3 (Groundwater Recharge and Quality) – Where feasible given flood management requirements, maintain the natural or existing condition of waterways and floodplains and protect watersheds to ensure groundwater recharge and water quality.
- Action PPFS-5.1.5 (Monitor Groundwater Levels) – Utilize the annual comprehensive groundwater monitoring data collected by the Butte County Department of Water and Resource Conservation (BCDWRC) to assess the quality and quantity of water for the Chico area.
- Policy PPFS-5.2 (Future Water System) – Consult with Cal Water to ensure that its water system will serve the City's long-term needs and that State regulations SB 610 and SB 221 are met.

[2] Per California Water Code, which requires urban water suppliers to update their plan once every five years, the Cal Water Urban Water Management Plan (UWMP) was updated and adopted in 2020.

- Action PPFS-5.2.3 (Water Services for New Development) – Work with Cal Water to ensure that water treatment and delivery infrastructure are in place prior to occupancy or assured through the use of bonds or other sureties to the City and Cal Water's satisfaction.
- Policy PPFS-5.3 (Water Conservation) – Work with Cal Water to implement water conservation management practices.
- Action PPFS-5.3.1 (Treated Wastewater) – Explore the feasibility of using treated wastewater to provide irrigation to landscaped areas and other suitable locations to reduce the demand for groundwater.

Implementation of the Vina GSP will provide for sustainable groundwater management and is not anticipated to affect water supply assumptions in the City's General Plan. Information on the City of Chico 2030 General Plan and related documents can be found at https://chico.ca.us/general-plan-other-planning-documents

1.3.6.3 Permitting of New Wells

The construction, repair, or destruction of wells are subject to permitting by the Butte County Division of Environmental Health pursuant to Chapter 23B of the Butte County Code, Water Wells. The chapter provides minimum procedures for the proper construction of water wells and for the proper destruction of abandoned wells to ensure that water obtained from wells within the County of Butte will be suitable for the purposes for which it is used, and that wells constructed or abandoned pursuant to this chapter will not cause pollution or impairment of the quality of the groundwater within the county. An additional purpose is to reduce potential well interference problems to existing wells and potential adverse impacts to the environment that could be caused by the construction of new wells or the repair or deepening of existing wells where a permit is required. Important provisions of the chapter include:

- The construction, repair, reconstruction, deepening, abandonment, or destruction of wells in Butte County must follow the standards in Bulletin 74-81 and its supplement bulletin 74-90, Water Well Standards, State of California.
- After July 25, 1996, the pumping capacity of a new well cannot be greater than 50 gallons per minute (gpm) per acre to reasonably serve the overlying land, including contiguous parcels of land under the same ownership as the land upon which the well is located.
- Wells can only be drilled by a person licensed to drill water wells pursuant to the provisions of Business and Professions Code section 7000 et seq. possessing a C-57 water well contractor's license required by section 13750.5 of the California Water Code.
- Domestic well owners are required to ensure that a new well will operate properly, assuming a repeat of the groundwater conditions experienced during the period 1987 through 1994 in the area in which the new well is located.
- Well drillers reports must be filed with Butte County as well as with DWR.

- Notification of well permit applications is required in specific instances to adjoining landowners and/or local agencies with an adopted groundwater management plan pursuant to part 2.75 of division 6 of the California Water Code (commencing at section 10750). Landowners and/or local agencies are provided 30 days to provide comments prior to permit issuance.
- Wells with a casing diameter greater than 8 inches are required to be drilled at specific distances away from existing wells.
- In addition to well sealing requirements specified within state well standards bulletin 74-81 and bulletin 74-90, the seal shall be extended 5 feet into the first consolidated formation encountered below 15 feet to a maximum required sealing depth of 50 feet.

1.3.6.4 Land Use Plans Outside of the Vina Subbasin

The Tehama County General Plan and the Glenn County General Plan and zoning ordinances are the land use plans adjacent to the Vina Subbasin. The Vina GSA will continue to monitor amendments to the Tehama County and Glenn County General Plans.

1.4 Groundwater Level Monitoring and Data Sources

Groundwater level programs predominantly used for development of the GSP include BCDWRC, Cal Water, California Statewide Groundwater Elevation Monitoring (CASGEM), and the CA DWR Water Data Library. Each of these programs are discussed below.

1.4.1 Butte County Department of Water and Resource Conservation Program

As discussed above, in November 1996, the voters in Butte County approved "AN ORDINANCE TO PROTECT THE GROUNDWATER RESOURCES IN BUTTE COUNTY." The ordinance is now codified as Chapter 33 of the Butte County Code relating to groundwater conservation. Section 3.01 of this code, Groundwater Planning Process, requires the preparation of a groundwater status report based upon the data gathered and analyzed pursuant to Section 3.02, Groundwater Monitoring. In 2000, the Butte County Board of Supervisors amended Chapter 33, the Groundwater Conservation Ordinance, to require the delivery of the Groundwater Status Report by February of each year. In 2010, the Water Commission designated the BCDWRC as the entity responsible for creating and submitting the annual report.

In February 2004, the Butte County Board of Supervisors adopted the Groundwater Management Ordinance, which was codified as Chapter 33A of the Butte County Code. Chapter 33A calls for the establishment of a monitoring network and Basin Management Objectives (BMOs) for groundwater elevation, groundwater quality related to saline intrusion and land subsidence. The BMO concept was incorporated into California Water Code §10750 et. seq., as a component of AB 3030 Groundwater Management Plans. On September 28, 2004, the Butte County Board of Supervisors formally approved Resolution 04-181 adopting the countywide AB 3030 Groundwater Management Plan that includes components of the BMO program.

In 2011, Chapter 33A was amended and retitled to "Basin Management Objectives" requiring a report each February describing conditions in the basin relative to established basin management objectives. The foregoing actions by the Board allow the consolidation of reporting of groundwater conditions from both Chapter 33 and 33A into a single report submitted by

BCDWRC on an annual basis in February. Groundwater level measurements occur four times per year following this program. Appendix 1-D provides the Groundwater Status Report for the 2020 Water Year following this program. With the new requirements of SGMA, revisions to Chapter 33A were approved in 2019 and will sunset on January 31, 2022, to continue the transition of groundwater management in Butte County from the BMO program to implementation of SGMA in each of the three subbasins in Butte County, including the Vina Subbasin.

1.4.2 California Statewide Groundwater Elevation Monitoring

DWR maintains several groundwater level monitoring programs, tools, and resources covering California. The CASGEM Program is DWR's primary resource for groundwater level data and has been used extensively in the development of this GSP. The CASGEM Program was authorized in 2009 by SB X7-6 to establish collaboration between local monitoring parties and DWR to collect and make public statewide groundwater elevation data. The program provides the framework for local agencies or other organizations to "assume responsibility for monitoring and reporting groundwater elevations in all or part of a basin or Subbasin" (Water Code §10927). The BCDWRC is the CASGEM monitoring entity for the Vina Subbasin. The groundwater monitoring program discussed above for BCDWRC complies with the reporting requirements of the CASGEM program.

1.4.3 Water Data Library

DWR's Water Data Library (WDL) contains measurements of groundwater elevations from water supply and monitoring wells monitored by numerous entities, such as DWR and local agencies. Groundwater level measurements available from the WDL are either continuously or periodically measured. Continuous measurements are provided by automatic water level measuring devices that take readings at wells; periodic measurements are manual recordings typically occurring at monthly or semi-annual time intervals. Measurements displayed through the WDL are taken through other programs, such as CASGEM. The WDL lists the organization responsible for collecting each water level measurement. The WDL water level measurements are available through the California Natural Resources Agency (CNRA) Open Data website as a bulk download, or through the WDL website on a per station basis.

1.4.4 Online System for Well Completion Reports

The OSWCR is a DWR program used to document and compile boring or well completion records throughout California. There are as many as two million domestic, irrigation, and monitoring water wells in California included in this dataset, including more than 4,000 domestic wells located in the Vina Subbasin. However, as discussed in Section 3, the well characteristics in this database are not always accurate or precise, and, unfortunately, it is not known which of the wells in the database are in use or have been abandoned or replaced. When a well is constructed, modified, or destroyed, drilling contractors are required to submit a Well Completion Report (WCR) to DWR for upload to the interactive OSWCR website. OSWCR is used as a data source for wells identified for monitoring. In this GSP, the OSWCR database was used to describe the GSP area and identify SMC.

1.5 Groundwater Quality Monitoring and Data Sources

Groundwater quality programs predominantly used for development of the GSP include BCDWRC, Sacramento Valley Water Quality Coalition (SVWQC), State Water Resources Control Board (SWRCB) Geotracker/ Groundwater Ambient Monitoring and Assessment Program (GAMA) and the DWR WDL. Each of these programs are discussed below.

1.5.1 Butte County Department of Water and Resource Conservation Program

As discussed in Section 1.4.1, the BMO program developed by Butte County includes groundwater quality monitoring that is presented annually in the Groundwater Status Reports. Appendix 1-D provides the Water Year 2020 Groundwater Status Report summarizing the results of this groundwater quality monitoring.

1.5.2 Sacramento Valley Water Quality Coalition

Because irrigated agriculture is the predominant land use in the Vina Subbasin, monitoring of the groundwater quality data developed through the Groundwater Quality Trend Monitoring Work Plan (GQTMWP) being implemented by the SVWQC for compliance with the Central Valley Regional Board's Irrigated Lands Regulatory Program (ILRP) is an important source of information to GSAs in the Vina Subbasin. This program is implemented by California Rice Commission that submits annual reports on groundwater quality throughout the region.

1.5.3 Geotracker/Groundwater Ambient Monitoring and Assessment

GeoTracker, operated by the SWRCB, contains records for sites that require cleanup, such as leaking underground storage tank (LUST) sites, Department of Defense sites, and cleanup program sites. GeoTracker also contains records for various unregulated projects as well as permitted facilities including ILRP, future CV-SALTS, oil and gas production, operating permitted underground storage tanks, and land disposal sites. GeoTracker receives records and data from SWRCB programs and other monitoring agencies.

The Geotracker System also contains links to GAMA. The GAMA Program is California's comprehensive groundwater quality monitoring program that was created by the SWRCB in 2000. It was later expanded by AB 599 - the Groundwater Quality Monitoring Act of 2001. AB 599 required the State Water Board, in coordination with an Interagency Task Force and Public Advisory Committee (PAC) to integrate existing monitoring programs and design new program elements as necessary, resulting in a publicly accepted plan to monitor and assess groundwater quality in basins that account for 95% of the state's groundwater use. The GAMA Program is based on interagency collaboration with the State and Regional Water Boards, DWR, Department of Pesticide Regulations, USGS, and Lawrence Livermore National Laboratory, and cooperation with local water agencies and well owners.

1.5.4 Water Data Library

DWR's WDL contains groundwater quality data in addition to the groundwater level records described previously. This information includes data from discrete groundwater quality samples collected by DWR and other cooperating entities. These water quality data list the entity responsible for taking the sample but do not specify what program the sample was taken under. The WDL water quality measurements are available through the CNRA Open Data website as a

bulk download or through the WDL website on a per-station basis. WDL water quality measurements in this GSP are utilized for basin characterization but are acquired from the other programs.

1.6 Subsidence

To determine whether subsidence is occurring, a subsidence monitoring network has been established throughout Butte County consisting of observation stations and extensometers managed by DWR. The observation stations are a result of DWR's efforts to establish a subsidence monitoring network across the valley to capture changes in the ground surface elevation. The observation stations are established monuments with precisely surveyed land surface elevations. They are distributed throughout the valley such that the entire county is well represented. In 2008, DWR along with numerous partners performed the initial Global Positioning System (GPS) survey of the observation stations to establish a baseline measurement for future comparisons. The network was resurveyed in 2017 using similar methods and equipment as those used in the 2008 survey and results were analyzed to depict the change in elevation at each station between those years. Results of the survey are available here, https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#landsub

Extensometers are installed in wells or boreholes and are a more site-specific method of measuring land subsidence as they can detect changes in the thickness of the sediment surrounding the well due to compaction or expansion. These instruments are capable of detecting very slight changes in land surface elevation on a continuous basis with an accuracy of +/- 0.01 feet or approximately 3 millimeters (mm). The three extensometers in Butte County have a period of record beginning in 2005 and were chosen by DWR based on a high likelihood of seeing subsidence in these areas if it were to occur, based on the presence of known clay and other fine-grained deposits in these areas. Data are available through July 2020 from the DWR Water Data Library. A summary of the historic information within the Vina Subbasin obtained from these networks is presented in Section 2, Basin Setting, and the monitoring network for implementation of the GSP is discussed in Section 4, Monitoring Networks.

1.7 Interconnection of Databases

Several of the databases discussed above utilize the same water level or water quality data. These records often specify the monitoring entity responsible for the measurement. Although these data overlap between databases, the correlation between databases is not specified. For example, water level data in the WDL are also in CASGEM, but this link is not mentioned in WDL records. This lack of connection poses problems for gathering water level and quality data throughout California. Efforts have been made in the development of this GSP to overcome the issue related to overlap and poor correlation between databases, but the issue remains. It is recommended that agencies work together to utilize a common unique identifier to ease use of multiple datasets.

1.8 Notice and Communication (23 California Code of Regulations § 354.10)

1.8.1 Notice of Intent to Adopt Groundwater Sustainability Plan

A notice of intent (NOI) to adopt a GSP was signed by the GSAs and distributed on June 28, 2021. The hard copies of the NOI were mailed to cities and counties within the Vina Subbasin including the following:

- Butte County
- City of Chico

Copies of the NOI are provided in Appendix 1-B.

1.8.2 Overview

California's SGMA of 2014 requires broad and diverse stakeholder involvement in GSA activities and during the development and implementation of GSPs for groundwater basins around the state, including the Vina Subbasin. The intent of SGMA is to ensure successful, sustainable management of groundwater resources at the local level, success of GSP development and implementation will require cooperation by all beneficial users (defined below). Therefore, coordinated communication and consistent messaging of valid information and facilitation of opportunities for the involvement of beneficial users will guide the path forward.

To facilitate stakeholder involvement in the GSA process, a Communication and Engagement Plan (C&E Plan) (Appendix 1-E) was created for the Vina GSA. The desired outcomes and goals of the C&E Plan were to:

Outcomes: The desired outcome of the C&E Plan was to achieve understanding and support for GSP adoption and implementation in consideration of the people, economy, and environment within the Vina Subbasin and in coordination with adjacent subbasins.

Plan Goals:

1. Enhance understanding and inform the public about water and groundwater resources in the Vina Subbasin, the purpose and need for sustainable groundwater management, the benefits of sustainable groundwater management, and the need for a GSP.
2. Engage diverse interested parties and stakeholders and promote informed feedback from stakeholders, the community, and groundwater-dependent users throughout the GSP preparation and implementation process.
3. Coordinate communication and involvement between the GSA (Board, Stakeholder Advisory Committee and Management Committee), Rock Creek Reclamation District GSA, and other local agencies, elected and appointed officials, and the general public.
4. Rely on the Stakeholder Advisory Committee to facilitate a comprehensive public engagement process.
5. Employ a variety of outreach methods that make public participation accessible and that encourage broad participation.

6. Respond to public concerns.
7. Provide accurate and up-to-date information.
8. Create public value and use GSA resources wisely by managing communications and engagement in a manner that is resourceful and efficient.

1.8.3 Description of Beneficial Uses and Users in the Vina Subbasin

SGMA calls for consideration of all interested parties that the GSA must consider when developing and implementing the GSP. GSAs must encourage the active involvement of diverse social, cultural, and economic elements of the population. Therefore, stakeholders or beneficial users are any stakeholders who have an interest in groundwater use and management in the Vina Subbasin. Their interest may be related to GSA activities, GSP development and implementation, and/or water access and management in general.

To assist in identifying categories of beneficial users in the Vina Subbasin, the C&E Plan listed broad categories of interested parties to be considered during development and implementation of the GSP. These include, but are not limited to:

- General public
- Agricultural users of water
- Domestic well owners
- Municipal well operators
- Public water systems
- Land use planning agencies
- Environmental users of groundwater
- Surface water users
- The federal government
- California Native American tribes
- Disadvantaged communities and historically underrepresented groundwater users (including those served by private domestic wells or small community water systems)

Table 1-1 further identifies potential stakeholder groups and engagement purpose.

Table 1-1: Stakeholder Engagement Chart for Groundwater Sustainability Plan Development

Category of Interest	Examples of Stakeholder Groups	Engagement purpose
General Public	• Citizens groups • Community leaders • Service clubs and professional organizations	Inform to improve public awareness of sustainable groundwater management
Private users	• Private pumpers • Domestic users • School/College systems; Butte College • Hospitals	Inform and involve to minimize negative impact to these users
Urban/ Agriculture users	• Water agencies • Colleges/Universities; Butte College, CSUC • Water associations; Groundwater Pumpers Advisory Committee, Agricultural Groundwater Users of Butte County • Irrigation districts; Durham Irrigation District (member agency), Rock Creek Reclamation District (a GSA within Vina Subbasin) • Mutual water companies • Resource conservation districts • Farm Bureau: Butte County Farm Bureau	Collaborate to ensure sustainable management of groundwater
Industrial users	• Commercial and industrial self-supplier • Local trade association or group	Inform and involve to avoid negative impact to these users
Land Use Planning Agencies	• Municipalities (City, County planning departments): • Regional land use agencies	Consult and involve to ensure land use policies are supporting GSPs
Environmental and Ecosystem	• Regional agencies: Butte County Resource Conservation District • Federal and State agencies: California Department of Fish and Wildlife (CDFW); National Oceanic and Atmospheric Administration; United States Fish and Wildlife Service • Environmental groups: Butte Environmental Council, The Nature Conservancy	Inform and involve to sustain a vital ecosystem
Economic Development	• Chambers of commerce: City of Chico • Business groups/associations • Elected officials (Board of Supervisors, City Council) • State Assembly members • State Senators	Inform and involve to support a stable economy
Human right to water	• Disadvantaged Communities • Small community systems • Environmental Justice Groups: Leadership Council for Justice and Accountability, Self-Help Enterprises, Community Water Center	Inform and involve to provide a safe and secure groundwater supplies to all communities reliant on groundwater
Tribes	• Federally Recognized Tribes and non-federally recognized Tribes with Lands or potential interests in the Vina Subbasin such as the Meechoopda Indian tribe of Chico Rancheria	Inform, involve and consult with tribal government

Category of Interest	Examples of Stakeholder Groups	Engagement purpose
Federal lands	• United States Bureau of Reclamation (USBR) • Bureau of Land Management • United States Fish and Wildlife Service (USFWS)	Inform, involve and collaborate to ensure basin sustainability
Integrated Water Management	• Regional water management groups (IRWM regions); Upper Feather River IRWM and the North Sacramento Valley IRWM group • Flood agencies	Inform, involve and collaborate to improve regional sustainability

1.8.4 Communications

1.8.4.1 Decision-making Processes

As noted above, two GSAs were formed in the Vina Subbasin for GSP development: the Vina GSA and the RCRD GSA. The two GSAs have jointly developed this coordinated GSP.

GSA Boards are the final decision-makers for the Vina Subbasin. To assist in GSP development, the Vina GSA convened a Stakeholder Advisory Committee (SHAC) in 2019. The composition of the SHAC is intended to represent the beneficial uses and users of groundwater in the Vina GSA. The SHAC is comprised of seven at-large members appointed by the GSA Board and three members representing Cal Water, City of Chico, CSUC, and Butte College. The SHAC is charged with actively engaging with the public for input and feedback. The SHAC has been meeting approximately monthly since its formation.

Generally, the representatives attending the GSA Management Committee meetings are designated staff from the member agencies. In addition to administering the SHAC and GSA Board, the GSA Management Committee assists the SHAC in identifying and clarifying recommendations for GSP development, which are presented to the GSA Boards in public meetings.

1.8.4.2 Public Engagement Opportunities

There were a number of different meetings at which the public had the opportunity to engage during the GSP development process:

- GSA Board meetings: The Vina GSA Board and the RCRD GSA Board in the Vina Subbasin held regular public meetings, including joint meetings, to facilitate public input. The RCRD GSA held regular public meetings in many cases in conjunction with the Reclamation District's standing board meetings.
- Subbasin-wide technical meetings.
- SHAC meetings.
- Farm Bureau Water Forum meetings.
- City of Chico meetings.
- Regional Water Management Group meetings.

1.8.4.3 Encouraging Active Involvement

The GSAs carried out community engagement during the development of the GSP, which included meetings and presentation materials to inform the public. The GSP has been revised to incorporate public feedback. There were also activities related to encouraging involvement and building capacity for engagement. The GSAs Management Committees used a variety of tools to solicit input, including maintaining an up-to-date website with announcements, calendar of events and meetings, and links to draft sections of the GSP; establishing an interested parties list; email newsletters; brown bag seminars, workshops, webinars, and public notices. These documents and events encouraged and prepared community members to participate in GSP development by providing technical information, as well as information about opportunities for engagement.

As part of the 40-day public review period initiated on September 10, 2021, with issuance of the Public Draft of the GSP, the GSA Management Committee worked with the numerous entities to inform them about the plan and encourage their involvement. Appendix 1-E lists the SGMA public meetings that were held throughout the GSAs formation and GSP preparation process.

1.8.4.4 Soliciting Written Comments

In addition to soliciting feedback at GSA meetings, opportunities were provided to offer written comments on the various sections of the GSP as draft versions became available. Stakeholders could provide comments via an online comment form, letter, or email. An informal comment period began when the draft of the first section of the GSP was released in April 2019, and an official 40-day comment period began with issuance of the Public Draft of the GSP on September 10, 2021, that continued through October 19, 2021. In addition, a special GSP Advisory Committee meeting was held after the 40-day public comment period on November 4, 2021, to solicit comments. All comments received via the comment form, letter, or email were provided to the SHAC and Vina GSA Board in agenda packets for review.

On November 15, 2021, the Vina and RCRD GSAs conducted a joint public hearing where the GSA Management Committee provided an overview of public comments and the methods for responding to these comments. In addition, three proposed revisions to the Public Draft were presented to GSA Boards. Additional public comments were received and recorded for each of the proposed revisions and to the overall Public Draft GSP.

A revised GSP based on the public comments was provided the GSAs on December 9, 2021. The GSA Boards reviewed the recommended changes and took action to approve the functional changes to the Public Draft GSP on December 15, 2021. The written comments and responses can be found in Appendix 1-F.

1.8.5 Informing the Public About Groundwater Sustainability Plan Development Progress

1.8.5.1 Interested Parties List

An email distribution list of Vina Subbasin-wide stakeholders and beneficial users was developed for outreach throughout the GSP planning process. Any interested member of the public may request to be added to the list via this link: Contact Us - Vina Groundwater Sustainability Agency (vinagsa.org)

1.8.5.2 Distribution of Flyers

Typically, before a public meeting in the Vina Subbasin, an email flyer was created with key information provided. The flyer was emailed out to the Interested Party list.

1.8.5.3 Press Outreach

Press releases were issued at key junctures and decision-making points for the Vina Subbasin.

1.8.5.4 A Centralized Vina GSA Website

Throughout the planning process (and beyond), the Vina GSA has maintained a website with information about Vina Subbasin-wide planning efforts related to SGMA.

The Vina Subbasin website contains:

- Homepage with links to key pages within the site
- About Us, with an overview of the Vina GSA and SGMA
- Governance that describes the structure of the GSAs, Board Members, SHAC Members, Meeting Dates and Agendas, and Transparency Documents
- Calendar of Board and SHAC Meetings and Workshops
- Library Links, including the GSP
- Contact Us page for email correspondence

1.8.5.5 Stakeholder Input and Responses

The engagement opportunities described above provided various avenues for stakeholders to provide input on GSP development. The matrix in Appendix 1-E summarizes the public comments received, organized by commenter, organization, section/line of comment location, comment, and location of where the comment was addressed or changed within the final document, as applicable.

1.9 Human Right to Water

Not formerly included in DWR's GSP checklist, but still important to address, is human right to clean water. California Water Code Section 106.3, 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 Advisory Committee 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 development and implementation. During preparation of this GSP public meetings were held at times, locations, and in a manner, both in-person and remotely online that supported and allowed for effective engagement of all stakeholders.