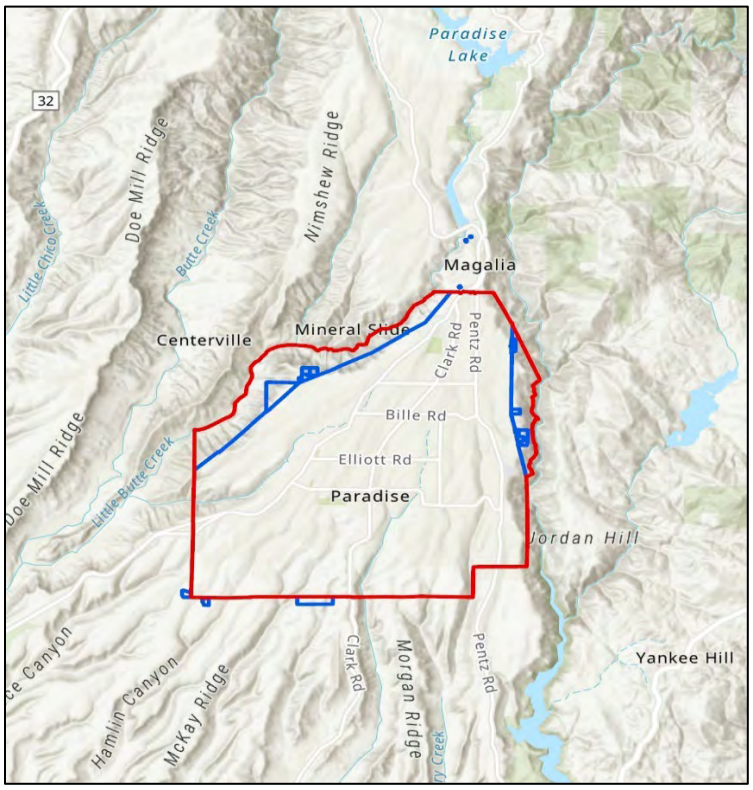
Paradise Irrigation District

MUNICIPAL SERVICE REVIEW UPDATE

Final



Prepared for:

Butte LAFCO

Hearing Date: February 1, 2024

LAFCO Resolution #2-2023/24

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FINAL
Municipal Service Review Update

PARADISE IRRIGATION DISTRICT

Prepared for:

BUTTE LAFCO

1453 Downer Street, Suite C
Oroville, CA 95965

https://www.buttelafco.org/

Prepared by:

SWALE inc

Report Date: November 27, 2023 (Updated December 23, 2023)

LAFCO Hearing Date: February 1, 2024

Approved – Resolution # 2-2023/24

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APPENDICES

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ACS	American Community Survey
ACWA-JPIA	Association of California Water Agencies Joint Powers Insurance Authority
ADD	Average Day Demand
ADWF	Average Dry Weather Flow
AF	Acre Feet
AF/Yr	Acre Feet Per Year
AFS	Annual Financial Statement
AMP	Asset Management Plan
AWMP	Agricultural Water Master Plan
BCAG	Butte County Association of Governments
BMP	Best Management Practices
CAFR	Comprehensive Annual Financial Report
CAGR	Compound Annual Growth Rate
CA DOF	California Department of Finance
CA DOC	California Department of Conservation
CDF	California Department of Forestry
CDP	Census Designated Place
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CFS	Cubic foot per second
CIP	Capital Improvement Plan
CKH	Cortese-Knox-Hertzberg Reorganization Act of 2000
CPUC	California Public Utilities Commission
CTR	California Toxics Rule
CVP	Central Valley Project
CY	Calendar Year
DAC	Disadvantaged Community
DOC	California Department of Conservation
DUC	Disadvantaged Unincorporated Community
DWR	Department of Water Resources
EDU	Equivalent Dwelling Unit
EPA	U. S. Environmental Protection Agency
FAR	Floor Area Ratio
FERC	Federal Energy Regulatory Commission
FTE	Full-Time Equivalent
FY	Fiscal Year
GAAP	Generally Accepted Accounting Principles

GAMA	Groundwater Ambient Monitoring and Assessment Program
GASB	Government Accounting Standards Board
GHG	Greenhouse Gas
GIS	Geographic Information System
GPM	Gallons per Minute
GSA	Groundwater Sustainability Agency
HUC	Hydrological Unit Code
I/I	Infiltration and Inflow
IMS	Irrigation Management System
JPA	Joint Powers Authority
LAFCO	Local Agency Formation Commission
MCL	Maximum Contaminant Level
MDD	Maximum Daily Demand
MGD	Million Gallons per Day
MHI	Median Household Income
MOU	Memorandum of Understanding
msl	Mean sea level
MTP/SCS	Metropolitan Transportation Plan/Sustainable Communities Strategy
MSR	Municipal Services Review
NACWA	National Association of Clean Water Agencies
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
OEM	Office of Emergency Management
PID	Paradise Irrigation District
PRPD	Paradise Recreation and Park District
PSPS	Public Safety Power Shutoff
PRC	California Public Resources Code
PUD	Public Utility District
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition; a software application
SCS	Sustainable Communities Strategy
SCO	State Controller’s Office
SFR	Single Family Residence
SGMA	Sustainable Groundwater Management Act
SOI	Sphere of Influence
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDS	Total dissolved solids
USBR	U.S. Bureau of Reclamation
USFS	U.S. Forest Service

WARN	Water and Wastewater Agency Response Network
WRF	Water Recycling Facility
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

CHAPTER 1: EXECUTIVE SUMMARY

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1.1: OVERVIEW

This Municipal Service Review (MSR) examines how municipal water services are delivered to the Paradise community by the Paradise Irrigation District (PID). This MSR Update discusses service delivery and efficiency, including an analysis of each of the following analytical factors:

- Growth and population projections for the three affected areas;
- Disadvantaged unincorporated communities;
- Present and planned capacity of public facilities;
- Financial ability of each agency to provide services;
- Opportunities for shared facilities;
- Accountability for government service needs; and
- Any other matter related to service delivery as required by Commission Policy.

The Paradise Irrigation District has been previously reviewed by Butte LAFCo in the following MSR:

- Butte Local Agency Formation Commission (LAFCO). 2006. *Final Municipal Service Review: Butte LAFCO Domestic Water and Wastewater Service Providers*. 492-pages.

Additionally, the LAFCO approved an MSR for the Town of Paradise in August 2007. This previous MSR and any other Sphere of Influence (SOI) studies are available upon request to LAFCO as listed at <*https://www.buttelafco.org/contact*>.

This MSR presents a written statement of conclusions, known as determinations, for the affected service provider. The key facts that support each determination are discussed in Chapters 4 through 9. The areas of description and analysis contain the essential operational and management aspects of the PID and constitute a review of the provider's ability to meet the service demands of the customers within its respective boundaries. Only municipal water services are considered in this MSR Update. PID provides domestic water service to local residents, businesses, and visitors.

Location and Demographics

PID is located in Butte County, as shown in Figure 1-1 (next page), and its boundary encompasses the Town of Paradise. Demographic information for Butte County and the Town of Paradise is provided in Appendix A. Population data directly related to PID is provided in Chapter 5. Laws and regulations related to the provision of Municipal Water are described in Appendix C. Public Water Systems in Butte County are listed in Appendix E. U.S. EPA Drinking Water Regulations related to water quality are described in Appendix D. Appendix F describes the Little Butte Creek watershed. Appendix G shares Water Recommendations from the American Society of Civil Engineers.

In recent years, PID has had to address numerous crises, including:

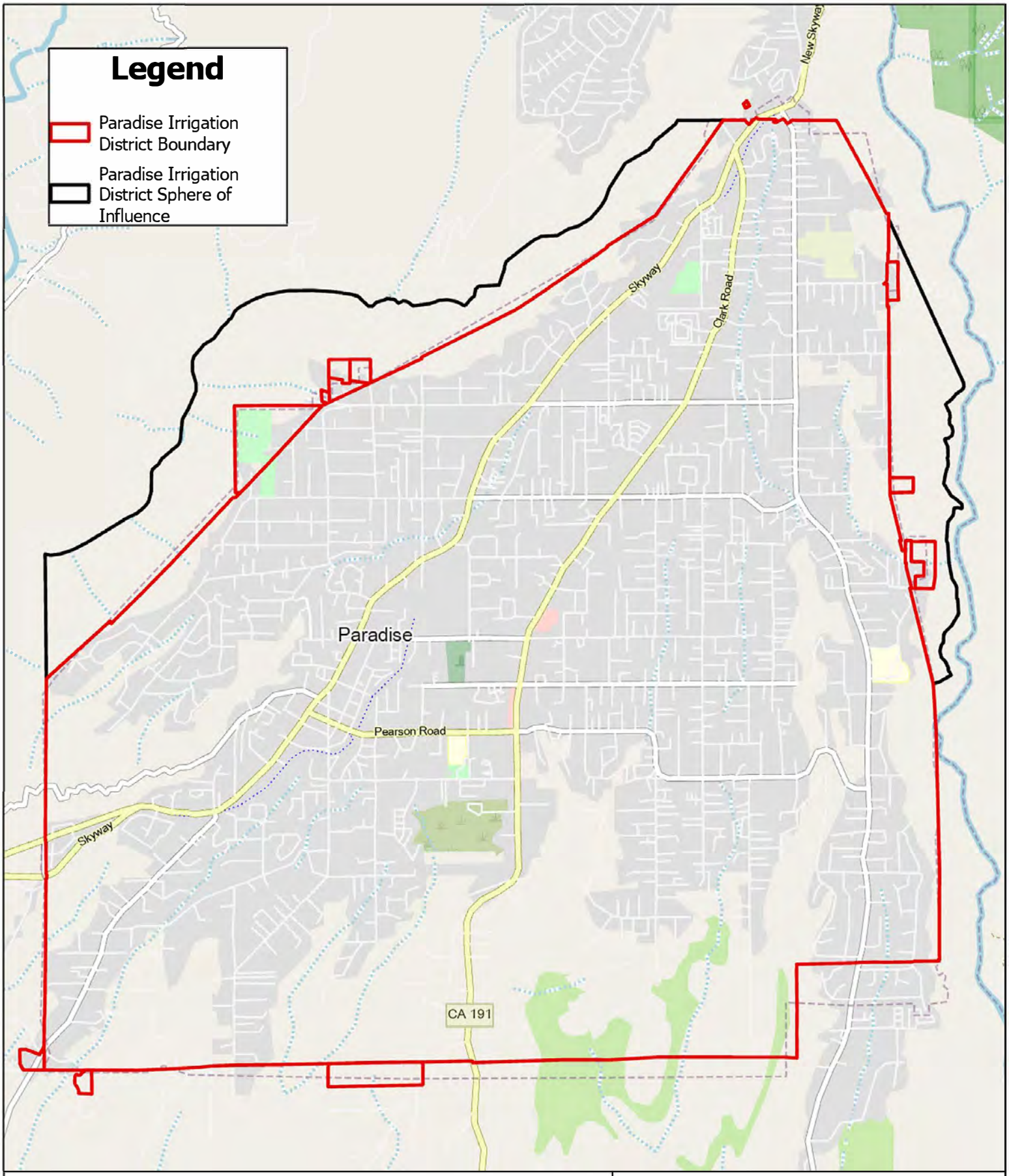
- 2017 Oroville Dam Crisis
- 2018 Wall Fire
- 2018 Camp Fire
- 2019 Public Safety Power Shutoffs
- 2020 COVID-19 Stay-at-Home Executive Order

These events created challenges for local government agencies. However, PID has met and addressed its obligations. For example, PID and other agencies have coordinated with the Butte County Office of Emergency Services to create a chapter in the Local Hazard Mitigation Plan.

Map Date: 01/04/2023

Data Source: Butte County LAFCO. Butte County GIS Department.

Figure 1-1
PID Region



Map Date: 01/31/2023

Data Source: Paradise Irrigation District GIS data from Butte LAFCO, 2022.

N

0 0.5 1 Miles

Figure 1-2
Paradise Irrigation District
Boundary & Sphere of Influence

The Agency Profile presented in Table 1.1 below describes details related to the geographic size of PID. The Butte County Assessor establishes assessor parcel numbers (APNs) for every lot in Butte County for tax purposes. The cumulative number of APNs was summed for the service provider as listed in Table 1.1 below. The number and type of customers PID serves is also listed in Table 1.1.

1.2: NARRATIVE SUMMARY

The text on the following pages summarizes key features of the PID as discussed in this MSR.

Figure 1.3: Aerial Image of Reservoirs with Remnant Snow

Paradise Irrigation District Services

Table 1.1: Agency Profile

Type of Agency:	Irrigation District
Principal Act:	California Water Code, Division 11, Section 20500 et seq.
Functions/Services:	Provides domestic water. Also authorized to provide recreation services via a 25-year lease with the Park and Recreation District.
Main Office:	6332 Clark Road Paradise, CA 95969
Mailing Address:	P.O. Box 2409, Paradise, CA 95967
Phone No.:	530-877-4971
Web Site:	https://pidwater.com/
District GM:	Tom Lando, Email: tlando@paradiseirrigation.com
Alternate Contact:	Assistant District Manager, Mickey Rich Phone No.: 530-876-2040
Meeting Schedule:	Regular District Board of Directors meetings on the third Wednesday of every month at 5:30 p.m. (exceptions for meetings in July and December, which are held at 8:30 a.m.)
Meeting Location:	PID Board Room, 6332 Clark Road, Paradise, CA 95969
Date of Formation:	The District was formed in 1916
Principal LAFCO:	Butte LAFCO
Other LAFCO:	None
# of Parcels (APNs) in boundary	Approximately 10,649
Area Served:	11,438.5 acres in boundary
# of parcels in SOI only	130
Area in the SOI only	1,325 acres
Total Net Position (as of 6-30-22)	$163,612,296

FY 21/22 Total Revenue	$6,973,013
FY 21/22 Expenditures	$8,964,238
Parcel Assessment (i.e., Property Tax $ Received FY 21/22)	$330,320
Per Capita Expenditures (FY 21/22)	$1,163.43
Estimated Population (2022)	Approx. 9,142 (Town of Paradise)
Number of Customers for Domestic Water (prior to 2018 Camp Fire)	10,649 legal parcels in the Town of Paradise
Number of Customers for Domestic Water (June 2023)	4,881 Active Customers 5,758 "Sealed" Standby Customers pay $21.49 per month 1,555 Disconnected Customers
Note 1: The difference between (1) assets and deferred outflows of resources, and (2) liabilities and deferred inflows of resources is called net position.	
Sources for Table 1.1: • *PID, 2023* • *Butte County and Butte LAFCO GIS Data, 2023* • *PID's Annual Financial Statements* • *PID, personal communication, Tom Lando, June 14, 2023*	

ACCOUNTABILITY FOR COMMUNITY SERVICE NEEDS, INCLUDING GOVERNMENT STRUCTURE AND OPERATIONAL EFFICIENCIES

56 percent (i.e., 13) of the meetings of the PID Board of Directors included closed sessions during the year 2022. Although this number exceeds the 50 percent accountability indicator, PID held many closed sessions due to Fire Victims Trust settlement issues as well as employee turnover resulting from the Camp Fire. Compliance with the 2016 updates to the Brown Act described in Government Code §54954.2 was evaluated in this MSR. The District's website agenda distribution does comply with the requirements of the Brown Act 2016 Updates described in AB2257, in that meeting agendas are retrievable, downloadable, searchable, and indexable. PID makes its agenda and minutes available in .pdf format on its website, under a tab entitled "Your District" under its "Meetings" section, at the following URL: <*https://pidwater.com/meetings*>. Agendas are also found directly on its homepage at the bottom. Board packets for both regular and special meetings are listed.

Compliance with the Special District Transparency Act (Gov. Code, §53087.8 and see also §7928.8) was evaluated in this MSR. The PID currently maintains a website that lists contact information for staff and the Board. Financial reports are also available at: <*https://pidwater.com/docs/district-operations/budgets-audits/audits*>. The PID website contains a link to the State Controller's website, which provides detailed information about employee compensation. Therefore, the PID mostly complies with the Special District Transparency Act. PID's Board committee appointments are readily available online at <*https://pidwater.com/board*>. Terms of office and appointment dates are disclosed for each District Board member on the District website. The next election date is disclosed for Board members by year, but not by the specific month and day, and this item could be improved by updating the website.

Compliance by PID Board members in submitting required forms and receiving required training as prescribed by the three state laws regarding accountability and ethics was assessed in this MSR. PID Board members comply with the Political Reform Act by submitting required economic interest forms to the PID Finance Dept. Assembly Bill 1234 (Salinas, 2005) requires ethics training. PID Board members received this training, and certificates of training are available on PID's website. Government Code 53237 et. seq. mandates sexual harassment prevention training. As of September 2023, these certificates have been posted to PID's website.

PID was subject to Butte County Grand Jury reports for two years recently (2019-2020, 2021-2022), and both of these reports address issues related to the 2018 Camp Fire. PID is continuing to work with its partners to recover from this disaster. Past litigation cases were reviewed and discussed with PID staff. The past litigation cases were primarily related to the Camp Fire. PID has been able to fully resolve these past litigation cases as it has moved towards recovery and rebuilding. LAFCO may reconsider this metric in a future MSR for the District.

GROWTH AND POPULATION PROJECTIONS FOR THE AFFECTED AREA

The District's existing population (2023) is 9,142. In the growth estimate, the DOF's population projection for the County of Butte is utilized to extrapolate population growth rates for the District of Paradise Irrigation District. By 2045, it is estimated that PID's existing boundary could encompass a population of 10,236 persons under the low growth scenario. This represents an average annual growth rate (i.e., compound rate) of 0.51 percent between 2023 and 2045.

The Town of Paradise has a General Plan adopted in 1994. The Town's General Plan anticipates a population of 29,752 at buildout. The District should encourage the Town to consider removing minimum home sizes to encourage rebuilding by Camp Fire-affected residents and new homeowners. Currently, the District's boundary area supports an average of 0.67 persons per acre, which is considered low population density. The Town's General Plan suggests that future growth may occur within the PID's boundary. Given that the 2018 Camp Fire destroyed much of the community, there is vacant land available to accommodate rebuilding and projected future growth. PID adopted its 2020 Urban Water Management Plan on June 21, 2021, through Resolution #2021-08.

LOCATION AND CHARACTERISTICS OF ANY DISADVANTAGED UNINCORPORATED COMMUNITIES WITHIN OR CONTIGUOUS TO THE SPHERE OF INFLUENCE

The statewide annual MHI in California for 2022 was $88,930 (ESRI, 2022). The DUC threshold is 80 percent of the MHI, which calculates to less than $71,144. Relevant data were reviewed for Paradise and adjacent areas. There are Disadvantaged Unincorporated Communities within or contiguous to the PID boundary and sphere of influence. Nine census blocks intersect with PID's SOI and have a MHI below the threshold, indicating status as a disadvantaged community. DUCs within PID's SOI can access water (private wells), wastewater (small septic systems), and fire protection services (CALFIRE). Public health and safety issues are being addressed, and improvements are being made.

Concern has been expressed that the relatively slow rebuilding process and the Town's rules about rebuilding are particularly difficult for economically disadvantaged residents. To support the recovery of PID's customer base and equitable housing options, the MSR Authors suggest the following recommendations:

- LAFCO and the Town of Paradise should work together to update the MSR and SOI for the Town of Paradise within the next two years, with particular attention paid to the following issues:
  - Briefly document the many successful recovery projects the Town has built, such as the building resiliency center and approval of the November 2022 Long-Term Recovery Plan update.
  - Post-fire recovery by low-income families and disadvantaged communities both within the Town boundaries and within the SOI (i.e., address questions about equity in recovery),
  - Review of the Town's current rebuilding restrictions, such as minimum home size, to promote a more rapid and economically just rebuild for all landowners.
  - Evaluate the pace of the rebuilding process on PID's customer base, fee-based revenue, and service provision.
  - Assess progress in meeting the Regional Housing Needs Plan (2020), including the Allocation of Income Tiers (BCAG, 2020).
  - Develop methods to promote a more economically diverse pallet of residential rebuild options.
  - Coordination with Butte County Association of Governments and PID.
  - Include a SOI analysis that further evaluates a recommendation from the Options Study Report (GEI, 2022) Agency Reorganization sub-options to merge/consolidate the Town of Paradise with PID as described in Appendix I of this MSR. The Options Study Report reached preliminary findings that reorganizing PID into the Town would allow the two entities to leverage existing managerial and technical capabilities and funding and optimize operating expenses. However, this option needs additional analysis to address the progress towards recovery that both the Town and PID have made and to address current barriers to reaching a full equitable recovery.

PID should closely coordinate with the Town of Paradise and LAFCO on: 1) the rebuilding process and policies, and 2) updating the Town's MSR/SOI.

PRESENT AND PLANNED CAPACITY OF PUBLIC FACILITIES AND ADEQUACY OF PUBLIC SERVICES, INCLUDING INFRASTRUCTURE NEEDS OR DEFICIENCIES

PID has a Capital Improvement Plan Development Memorandum (CIP) prepared by Waterworks Engineers and dated January 6, 2022. This CIP describes PID's major assets, including pipes, valves, pump stations, reservoirs, tanks, land, and the water treatment plant. The CIP contains a table listing 24 planned improvement projects with a total cost of approximately $33.7 million. Implementation of the CIP in the future will help PID continue its post-fire recovery and will ensure that infrastructure needs are addressed in a timely manner.

PID provides sufficient services to meet current and future demand as follows: Based on the water supply and water demand assessments conducted by the District, PID believes that its sources of developed water supply will be sufficient to meet current and future demands in the foreseeable future. PID's water supply is derived from surface water diverted from the Little Butte Creek watershed and stored in Paradise Lake and Magalia Reservoir, permissible through PID's three water rights. PID prepared an Urban Water Management Plan in 2021 and a 2021 Water Shortage Contingency Plan. Based on the data described in these plans and historic weather patterns, PID believes the local watershed is a reliable, sustainable water source. In 2023, water supply exceeds demand.

The PID is the only water service provider within its specific boundary area. The nearest public water providers are the Del Oro Water Company and Cal Water Chico, both private water companies. Additionally, there are several mutual water companies located in close geographic proximity to PID, as described in Chapter 3, Introduction.

The District's water quality can be characterized as good; it meets all state and federal regulations for water quality. The District conducts preventative maintenance on its infrastructure. Additionally, sufficient funds have been allocated towards Capital Improvement Projects (CIP), as detailed in Chapter 8.

The PID has demonstrated the capacity to assist other nearby agencies. For example, PID successfully communicates with nearby local agencies such as the Town of Paradise, Butte County, and TWSD. PID's leadership capacity was demonstrated through its negotiations with PG&E to settle claims that arose from the 2018 Camp Fire. As of June 1, 2020, Paradise Recreation and Park District has taken over the provision of recreation services at Paradise Lake, which was previously under the auspices of PID. This is accomplished via a 25-year lease. The boundaries of the two districts have some geographic overlap. **Recommendation**: When LAFCO next evaluates PID’s future SOI, consider determining that PID's recreation service become latent and allow Paradise Recreation and Park District to assume direct responsibility.

FINANCIAL ABILITY TO PROVIDE SERVICES

PID's Consolidated Financial Statement and budgets are prepared for a one-year timeframe, and they clearly and transparently present financial information. PID's Reserve Fund Policy was adopted in October 2016, and it facilitates the attainment of program and financial goals relative to the prudent accumulation and management of designated reserves and reserve funds. This Reserve Fund Policy was developed to clearly identify specific designated reserve funds. The Reserve Fund Policy is posted on the District website.

PID's Annual Financial Statements contain a list of its numerous accounting policies, including Financial Reporting Entity, Basic Financial Statements, Basis of Presentation, Measurement Focus and Basis of Accounting, Cash and Cash Equivalents, Restricted Assets, Receivables, Capital Assets, Long-Term Debt, Investments, and several other policies. Additionally, the District Code describes its purchasing Policy, with specific procedures for purchases and procurement practices. Chapters 11 through 14 of PID's Policy And Procedures Manual also provide guidance on fiscal matters. Employee wage scale by bargaining unit and the unrepresented employee wage scale are available on the PID website. Required reports are sent to the California State Controller for Government Compensation.

The District has multiple sources of revenue, including service fees, fees and adjustments, outside water sales, recreation fees, backflow charges, meter charges, and non-operating revenues. In FY21/22, PID's total revenue was $6,973,013. Additionally, PID received revenue from extraordinary items relating to disaster recovery, totaling approximately $127 million. In FY21/22, PID had both operational and non-operational expenses. Adding to operating expenses (8,858,907) and non-operating expenses ($105,331) brings PID's total expenses for FY 21/22 to $8,964,238. A comparison of PID's annual total revenue to total expenses shows that annual expenses exceeded total revenue in seven of the eight study years (i.e., FY14/15 to FY21/22). A comparison of PID's annual total revenue to total expenses should be recalculated in LAFCO's next MSR.

Changes to PID's Total Net Position are highly variable in recent years. This variability is due to the loss of revenue experienced immediately following the 2018 Camp Fire and also due to an influx in disaster recovery funds from federal, State, and other sources. PID received property tax revenue for $330,320 in FY21/22. With 10,639 total customers (including active and non-active customers), the ratio of tax revenues per service connection calculates to $31.00.

PID Board of Directors adopted current rates during a public meeting. PID is an enterprise district, and rates cover the costs of service provision with very few exceptions. The rates and other charged fees cover the costs of water supply, water treatment, distribution service, and capital improvement costs. Information regarding water rates is provided on the PID's website at <https://pidwater.com/rates>. To comply with State legal requirements in rate setting, in 2015, PID prepared a 53-page study entitled Final Cost of Service And Water Rate Plan. This Water Rate Plan guided PID to set rates that provide adequate revenue to meet PID's costs of continuing

to serve its customers in a manner consistent with Proposition 218 (PID, 2015). PID's current rates are posted to the District website at: <*https://pidwater.com/rates*>. Rates are also provided in its annual budget document, available on the District's website at <*https://pidwater.com/open*>.

Other fees (not related to property) have been updated as follows:

- 09/15/2021 (Effective 10/15/2021): Increased Construction Hydrant Use-Fee deposit to $2,000. Increase the cost of water to 3 x. Addition of $70 backflow fee for 'Private Installation and Inspection Administration.'
- 01/18/2023 Update to Capacity fee charges following Board action.

The District reports Stand-by Customers pay $21.49 per month, generating $1.4 million/year, which is allocated towards fixed costs and estimated annual expenses of $7.8 million and contributing to the Net Position of $163,612,296 (Net Position is all of the District's assets, deferred outflows of resources, liabilities, and deferred inflows of resources.) LAFCO staff has received indications of concern about PID's Stand-by Charges from members of the public. LAFCO recommends that PID study and carefully consider reducing or removing the stand-by charges for the following reasons:

- The PG&E Fire Settlement provides a financial cushion that allows the District to be fiscally sustainable. Ideally, PID will continue to remain viable even if it does not receive additional new customers. Given the large PG&E financial settlement and the District's fiscal stability, it is possible that the District can function with a reduced level of stand-by fees.
- The District currently maintains a very high Net Position and reserve funds.
- To address the community concerns described in this MSR.

PID should submit a report to LAFCO about the Stand-by Rates within one year (i.e., prior to December 2024).

STATUS OF, AND OPPORTUNITIES FOR, SHARED FACILITIES

PID collaborates with multiple other agencies for the delivery of services within its boundary. For example, PID coordinates with the Paradise Recreation and Park District to provide land for recreational use. In addition, the District has a joint agreement with the Town of Paradise for fire hydrant maintenance. PID is a part of a California Water and Wastewater Agency Response Network mutual aid agreement. This mutual assistance agreement provides personnel, equipment, materials, and services during emergencies. PID Staff should periodically review these mutual aid agreements to ensure continued fiscal neutrality.

Recently, PID has implemented an array of cost avoidance techniques that each contributes incrementally towards keeping costs at a reasonable level, including cooperation with the Town of Paradise for fire hydrant maintenance. Other significant cost avoidance work includes staff training to ensure efficiency and participation in the Butte County Local Hazard Management Plan. Aside from the efficiency measures described in this chapter, no other opportunities have been identified for shared facilities or cost avoidance that would benefit the PID or improve service provisions within the region.

It is recommended that PID keep LAFCO informed about the current status of its water rights applications and its permitted "place of use." It is recommended that when LAFCO considers updates to MSR/SOIs, service expansion, or other applications from PID, the Town of Paradise, Paradise Park & Recreation District, or other nearby service providers, LAFCO and the subject provider should review the reorganization options and the SOI update options listed in Appendix I. In addition, PID should periodically review its relationship with the Town of Paradise and consider if a reorganization is appropriate.

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CHAPTER 2: RESOLUTION

LAFCO adopted Resolution #2-2023/24 on February 1, 2024 as shown on the following pages.

RESOLUTION NO. 2 2023/24

ADOPTION OF A MUNICIPAL SERVICE REVIEW UPDATE AND WRITTEN DETERMINATIONS FOR THE PARADISE IRRIGATION DISTRICT

RESOLVED, by the Butte Local Agency Formation Commission of the County of Butte, State of California, that

WHEREAS a proposal for an update to the Paradise Irrigation District's Municipal Service Review was heretofore requested by the Paradise Irrigation District and accepted by the Executive Officer of this Local Agency Formation Commission pursuant to Title 5, Division 3, commencing with Section 56000 of the Government Code; and

WHEREAS the Paradise Irrigation District identified a need to update the Municipal Service Review in anticipation of possible amendments to the District's Sphere of Influence to accommodate the anticipated growth of the unincorporated community of Paradise as projected in the Butte County 2030 General Plan; and

WHEREAS, a service review mandated by Government Code Section 56430 was conducted by the Local Agency Formation Commission of the County of Butte (hereinafter referred to as "the Commission") for the Paradise Irrigation District on November 6, 2006, in accordance with the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Government Code Sections 56000 et seq.) and due to recent changes in Paradise Irrigation District management, operations, and finances brought about by the 2018 Camp Fire, it was determined that the 2006 MSR needed to be updated to reflect current District service capabilities; and

WHEREAS, at the times and in the form and manner provided by law, the Executive Officer has given notice of the public hearing by the Commission on this matter; and

WHEREAS, the Executive Officer, pursuant to Government Code Section 56430 has reviewed this proposal and prepared a report, including his recommendations thereon, and has furnished a copy of this report to each person entitled to a copy; and

WHEREAS, a public hearing by this Commission was duly published and called for February 1, 2024, and at the time and place specified in the notice of public hearing; and

WHEREAS, Acting as Lead Agency pursuant to the California Environmental Quality Act Guidelines, the Commission finds that the Municipal Service Review Update for the Paradise Irrigation District is Categorically Exempt from the provisions of CEQA under Section 15306, "Information Collection"; and

WHEREAS, at the hearing, this Commission heard and received all oral and written protests; the Commission considered all plans and proposed changes, objections and evidence which were made, presented, or filed; and all persons present were given an opportunity to hear and be heard in respect to any matter relating to the proposal, in evidence presented at the hearing; and

NOW, THEREFORE, BE IT RESOLVED, that pursuant to powers provided in §56430 of the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, the Local Agency Formation Commission of the County of Butte adopts the Municipal Service Review Update for the Paradise Irrigation District, dated December 23, 2023.

PASSED AND ADOPTED by this Local Agency Formation Commission of the County of Butte, on the 1st day of February 2024, by the following vote:

AYES: Commissioners Bolin, Johnson, Kimmelshue, McGreehan, Betts, Bradley and Chair Connelly

NOES:

ABSENT: Commissioner Duncan

ABSTAINS:

ATTEST:

Clerk of the Commission

Bill Connelly

Bill Connelly, Chair
Butte Local Agency Formation Commission

CHAPTER 3: INTRODUCTION

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3.1: ROLE AND RESPONSIBILITY OF LAFCO

Local Agency Formation Commissions (LAFCOs) are independent agencies established by state legislation in 1963 in each county in California to oversee changes in local agency boundaries and organizational structures. It is LAFCO's responsibility to:

- oversee the logical, efficient, and most appropriate formation of local cities and special districts;
- provide for the logical progression of agency boundaries and efficient expansion of municipal services;
- assure the efficient provision of municipal services; and
- discourage the premature conversion of agricultural and open space lands. (Government Code [GC] §§ 56100, 56301, 56425, 56430, 56378).

The Cortese-Knox-Hertzberg (CKH) Local Government Reorganization Act of 2000 (CKH Act) requires each LAFCO to prepare a Municipal Service Review (MSR) for its cities and special districts. MSRs are required prior to and in conjunction with a Sphere of Influence (SOI) update. This MSR Update is intended to provide Butte LAFCO with the necessary and relevant information related to the Paradise Irrigation District (PID) in order to evaluate future boundary or service requests.

3.2: ABOUT BUTTE LAFCO

Each LAFCO works to implement the CKH Act, and there is flexibility in how these state regulations are implemented to adapt to local needs. As a result, Butte LAFCO has adopted Policies and Guidelines that guide its operations, which were adopted on May 6, 2010. LAFCO's Policies and Guidelines can be found on Butte LAFCO's website (<*https://www.buttelafco.org/resources*>). This MSR Update was written under the auspices of Butte LAFCO. The mission of Butte LAFCO is to coordinate logical and timely changes in local governmental boundaries (§56001); conduct special studies which review ways to reorganize, simplify, and streamline governmental structures (§56301); and prepare spheres of influence for each city and special district within the County (§56425). The Commission promotes the provision of efficient and economical services while encouraging the protection of agricultural and open space lands (§56001, §56300). Further efforts include discouraging urban sprawl and encouraging orderly formation and development of local agencies based upon local conditions and circumstances (§56301) (Butte LAFCO, 2010).

An MSR is an information tool that can be used to facilitate cooperation among agency managers and LAFCO to achieve efficient delivery of services. Describing existing efficiencies in service deliveries and suggesting new opportunities to improve efficiencies is a key objective of this MSR Update, consistent with Butte LAFCO's purpose. Since this MSR Update will be published on the LAFCO website, it also contributes to Butte LAFCO's public accessibility and accountability. Butte

LAFCO will conduct a noticed public hearing on this MSR Update, thereby contributing to the aim of encouraging an open and engaged process.

Commissioners

Butte LAFCO is composed of seven regular Commissioners: two members from the Board of Supervisors; two members who represent cities; two members who represent special districts; and one public member who represents the public as a whole. In addition, there are four alternate Commissioners, one from each of the above membership categories. County representatives (regular and alternate) to LAFCO are selected as part of the Board of Supervisors' committee assignment process. Since Butte County has five cities (Biggs, Chico, Gridley, Oroville, and Paradise), the City Selection committee, made up of the mayor of each incorporated city within Butte County, appoints two city council members and one alternate. Special district representatives (regular and alternate) to LAFCO are elected by the governing boards of the special districts. The regular county, city, and special district members of LAFCO select one person to represent the public at large and one person to serve as his/her alternate. The public member and alternate cannot be an elected or appointed official of any public agency in the County of Butte. Commissioners are listed in Table 3.1 below.

Table 3.1: Members of Butte LAFCO

Commissioner Name	Representing	Date Term Expires
Bill Connelly (Chair)	County Supervisor	May 2027
Tod Kimmelshue (Vice-Chair)	County Supervisor	May 2025
Al McGreehan	Special District Appointment	May 2025
Ruth Duncan	Special District Appointment	May 2027
Bruce Johnson	City Appointment	May 2026
Greg Bolin	City Appointment	May 2027
Steve Betts	Public Member Appointment	May 2024
Larry Bradley	Alternate Special District Appointment	May 2025
James R. "Bo" Sheppard	Alternate City Appointment	May 2026
Tami Ritter	Alternate County Supervisor	May 2027
Don Rust	Alternate Public Member	May 2024

Source: PID, 2023

Staff / Administrative

LAFCO's staff work to implement the CKH Act, and they can be contacted at the Oroville office at (530) 538-7784. LAFCO staff includes:

- Stephen Lucas, Executive Officer
- Shannon Costa, Deputy Executive Officer
- P. Scott Browne, Legal Counsel
- Krystal Bradford, Commission Clerk

Funding

The funding for this MSR Update was provided directly by Paradise Irrigation District.

LAFCO Policies Affecting Service Delivery

Butte LAFCO adopted a Policies and Procedures document on May 6, 2010, that describes the process for preparing a municipal service review and sphere of influence study. None of LAFCO's policies affect service delivery for the Paradise Irrigation District in relation to this MSR. However, should PID ever wish to expand its SOI, the District is encouraged to read LAFCO's policies prior to submitting an application. LAFCO's 2010 Policies and Procedures document is available on-line at <*https://www.buttelafco.org/resources*>.

3.3: PURPOSE OF THE MUNICIPAL SERVICE REVIEW

MSRs are intended to provide a comprehensive analysis of services provided by each of the special districts and other service providers identified within an MSR and that fall under the legislative authority of the LAFCO. With this MSR Update, Butte LAFCO can make informed decisions based on the best available data for the service provider and area. As required by law, written determinations are presented following the analysis in Chapters 4 to 9. LAFCO is ultimately the decision maker on approval or disapproval of any determinations, policies, boundaries, and discretionary items. This review provides technical and administrative information to support Butte LAFCO's future evaluation of the existing boundary and sphere of influence for the Paradise Irrigation District (PID).

This updated MSR makes determinations in each of the seven mandated areas of evaluation for MSRs. The analysis in Chapters 4 to 9 provides the basis for Butte LAFCO to consider future potential changes to the boundaries or SOI. This MSR Update does not include a review of the Irrigation District's SOI. Please note that an SOI is defined in GC § 56425 as "a plan for the probable physical boundary and service area of a local agency or municipality as determined by the Commission." The CKH Act indicates that LAFCO should review and update a sphere of influence every five years, as necessary, consistent with GC § 56425(g) and § 56106[1]. When reviewing and determining SOI for the Paradise Irrigation District in the future, LAFCO will consider and make recommendations based on the following information:

- The present and planned land uses in the area, including agricultural and open-space lands;
- The present and probable need for public services and facilities in the area;

[1] The CKH Act (GC § 56106) states that all timeframes are directives. Any provision governing the time in which Commission is to act, is deemed directory rather than mandatory.

- The present capacity of public facilities and adequacy of public services that the agency provides;
- The existence of any social or economic communities of interest in the area if LAFCO determines that they are relevant to the service provider; and
- The presence of disadvantaged unincorporated communities for those agencies that provide water, wastewater, or structural fire protection services.

In addition to the above, Butte LAFCO's Policies and Procedures include special criteria for review of the sphere of influence amendments, including the following:

- Sphere Boundaries (3.1.4): When establishing the boundaries of a sphere of influence for an agency, LAFCO will consider the factors listed in Section 56425 of the Government Code as well as the following factors:
    - LAFCO will discourage including lands that are:
        - Unlikely to require the services provided by the agency, for example, lands not designated for inclusion to a city by the applicable general plan;
        - Areas where topographical factors constrain development;
        - Areas where the projected and/or historical growth rates do not indicate a need for service within the time frame of the Sphere Plan;
        - Areas in an agency's sphere of influence that cannot feasibly be served by the agency within a 20-year time frame, consistent with the Sphere Plan (3.1.4.1).

    (Source: LAFCO, 2010)

Ideally, an MSR will support LAFCO and will also provide the following benefits to the subject agencies:

- Provide a broad overview of agency operations, including the type and extent of services provided;
- Serve as a prerequisite for a sphere of influence update;
- Evaluate governance options and financial information;
- Demonstrate accountability and transparency to LAFCO and the public; and
- Allow agencies to compare their operations and services with other similar agencies.

3.4: METHODOLOGY FOR THIS MSR UPDATE

This 2023 MSR Update evaluates the structure and operation of the Paradise Irrigation District and determines the capacity of this water service provider to serve existing customers and accommodate additional service demands.

Types of Service Providers

There are four main types of public service providers operating in Butte County, including:

- An independent special district is independent of other government bodies. It is important to note that independent special districts are not part of state or county governments. They are only directly accountable to the people residing within the districts' boundaries. They are governed by an elected board that oversees the district's functions and finances.
- A dependent special district is governed by other governmental entities. For example, members of city councils or county boards of supervisors would serve on the board of a dependent special district. Another way to view a dependent district is that they are components of other government bodies. This MSR does not include any dependent special districts.
- The third type of special district is a joint powers authority, commonly referred to as a JPA. Joint powers authorities are permitted under California Government Code § 6502. The code allows two or more public authorities, such as utility or transport districts, to jointly exercise any power common to all of them, even though they reside in different counties. While each public authority involved has its own governing board, a JPA also has a board of directors.
- The fourth type of service provider is a municipality (i.e., a City or a County). A municipality is usually a single administrative division having corporate status and powers of self-government or jurisdiction as granted by national and State laws to which it is subordinate. California Government Code (commencing with Section 34100) dictates that cities may be organized under either the general laws of the State or under a charter adopted by the local voters. Cities that are organized under the general laws of the State (Section 34102) have less autonomy compared to those that adopt their own charter (Section 34101). General law cities follow the rules described in the CA Government Code commencing with Section 34000. For example, the Town of Paradise is a municipality.

In addition to the four types of public service providers listed above, private companies can also provide municipal services.

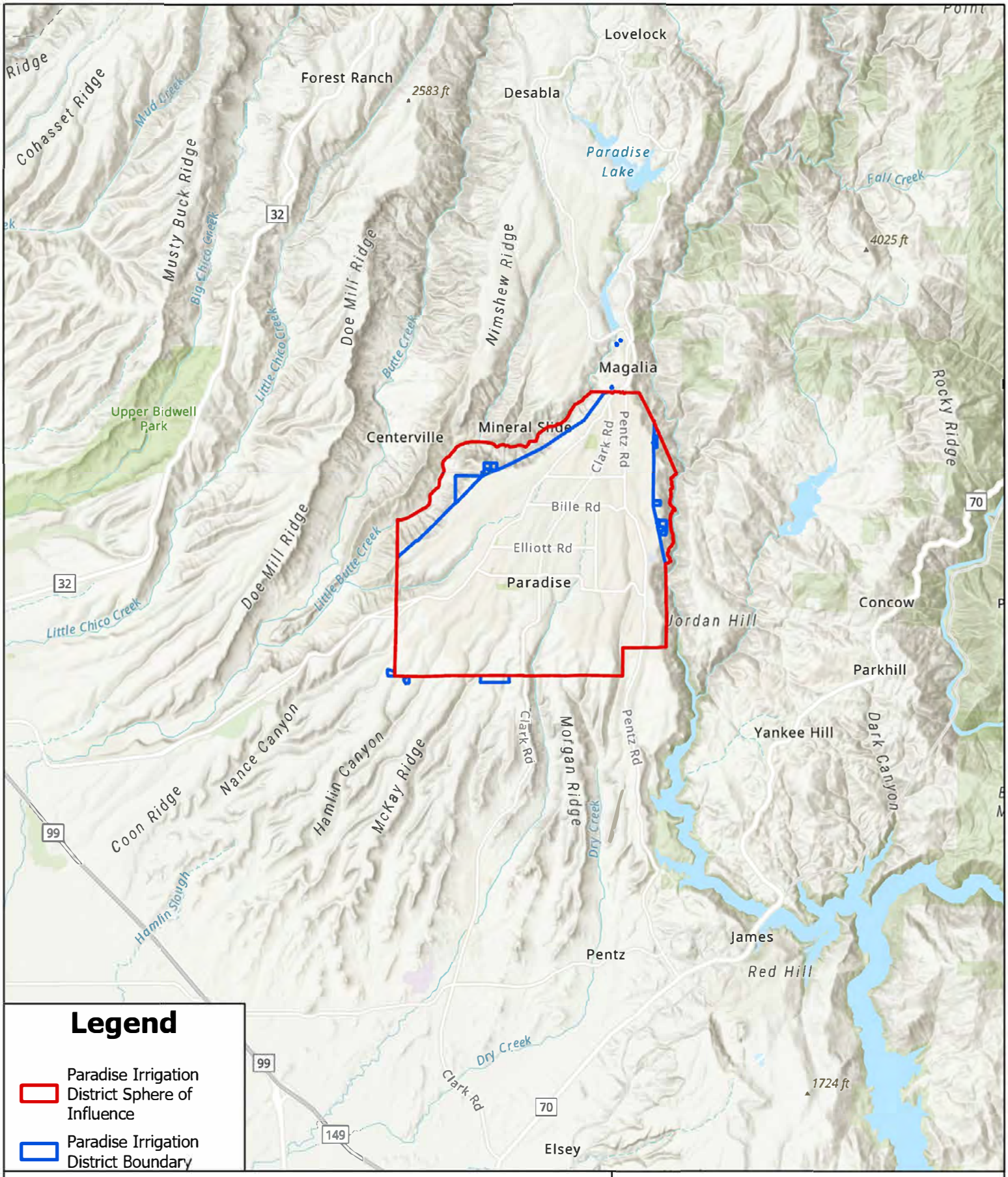
Paradise Irrigation District

The Paradise Irrigation District (PID) is the focus of this MSR. PID is an independent special district formed in 1916, as described in Chapters 4 and 5 of this MSR. PID is located in Butte County, as shown in Figure 3.1 (next page). LAFCO has established boundaries for PID, as shown in Figure 3.2 and as described in Chapter 5 of this MSR.

Map Date: 01/04/2023

Data Source: Butte County LAFCO. Butte County GIS Department.

Figure 3-1
PID Region



Map Date: 01/06/2023

Data Source: PID Boundary and Sphere of Influence from Butte County LAFCO.

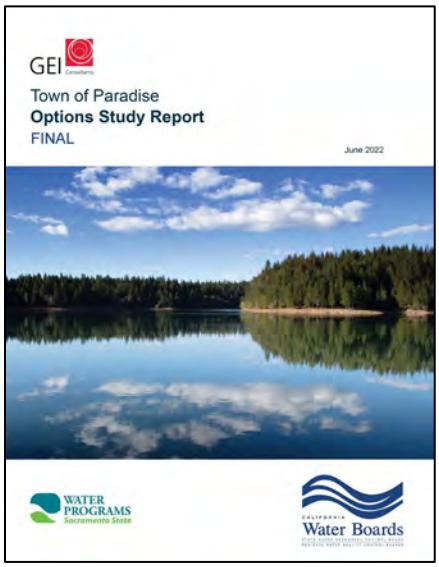
Figure 3-2: PID Boundary & SOI Tographic Area

Data Collection

This MSR has been compiled using a three-step data-gathering process. This process included a comprehensive review of pre-existing plans and data, a Request for Information (RFI) distribution to the District, in-person interviews, and periodic discussions with agency staff, LAFCO staff, and the consulting team. Key references and information sources for this study were gathered and include: published reports; review of agency files and databases (agendas, minutes, budgets, contracts, audits, etc.); master plans; capital improvement plans; engineering reports; environmental impact reports; finance studies; general plans; and state and regional agency information (permits, reviews, communications, regulatory requirements, etc.).

The" Options Study" was an important source of information about PID that was utilized in this MSR analysis. The Options Study (GEI, 2022) was prepared to evaluate options for improvements to its water system infrastructure and finances to ensure the long-term sustainability of the community's water system(s) and to support recovery from the 2018 Camp Fire and redevelopment of the community.

GEI Consultants, Inc. June 2022. Final Town of Paradise Options Study Report. Prepared by Sacramento State University, Office of Water Programs. Funded by Calif Water Board. 133-pages.



MSRs were previously adopted by LAFCO for PID, as listed in Table 3.2 below. The Town of Paradise has also been the subject of a LAFCO MSR adopted in 2007. Reviewing previous MSRs was a key feature of the data collection process.

Table 3.2: Butte LAFCO's Previous MSRs for Paradise Irrigation District

Name of Service Provider	Link to Previous MSR	Date of MSR
Paradise Irrigation District	https://www.buttelafco.org/paradise-irrigation-district	June 1, 2006
Town of Paradise	https://www.buttelafco.org/paradise	August 2007

Source: Butte LAFCO, 2023

An RFI was completed by staff from the Paradise Irrigation District in February 2023. Additionally, the MSR consultant visited PID's office for an in-person meeting and tour on June 14, 2023. All data were reviewed and analyzed by a team of municipal management and water resource

professionals to provide a fair and honest analysis of key metrics and the development of realistic determinations. This MSR forms the basis for specific judgments, known as determinations, about each agency that LAFCO is required to make (GC § 56425, 56430). These determinations are described in the MSR Guidelines from the Office of Planning & Research (OPR) as set forth in the CKH Act, and they fall into seven categories, as listed below:

1. Growth and population projections for the affected area;
2. Location and characteristics of any disadvantaged unincorporated communities within or contiguous to the sphere of influence;
3. Present and planned capacity of public facilities and adequacy of public services, including infrastructure needs or deficiencies;
4. Financial ability of an agency to provide services;
5. Status of, and opportunities for, shared facilities;
6. Accountability for community service needs, including government structure and operational efficiencies; and
7. Any other matter related to effective or efficient service delivery, as required by commission policy.

An MSR must include an analysis of the issues and written determination(s) for each of the above determination categories.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is contained in Public Resources Code § 21000, et seq. Under this law, public agencies must evaluate their actions' potential environmental effects. Typically, MSRs are exempt from CEQA under a Class 6 categorical exemption. CEQA Guidelines §15306 states that "Class 6 consists of basic data collection, research, experimental management, and resource evaluation activities that do not result in a serious or major disturbance to an environmental resource."

Other Service Providers

Residents of the Paradise area also receive public services from an array of service providers such as the Town of Paradise, County of Butte, several school districts, Butte County Association of Governments, Butte Regional Transit (B-Line), Butte County Mosquito and Vector Control District, Paradise Recreation and Park District, Paradise Cemetery District, Kimshew Cemetery District, private utility companies, Butte County/CALFIRE Fire Department, and several state and regional agencies. This list shows that residents interact with a networked array of private and public service providers. Understanding and documenting the space within this network for water and other service providers is one of the objectives of this MSR Update. LAFCO may utilize this information to support its determination regarding accountability for community service needs, including government structure and operational efficiencies.

Watershed Context

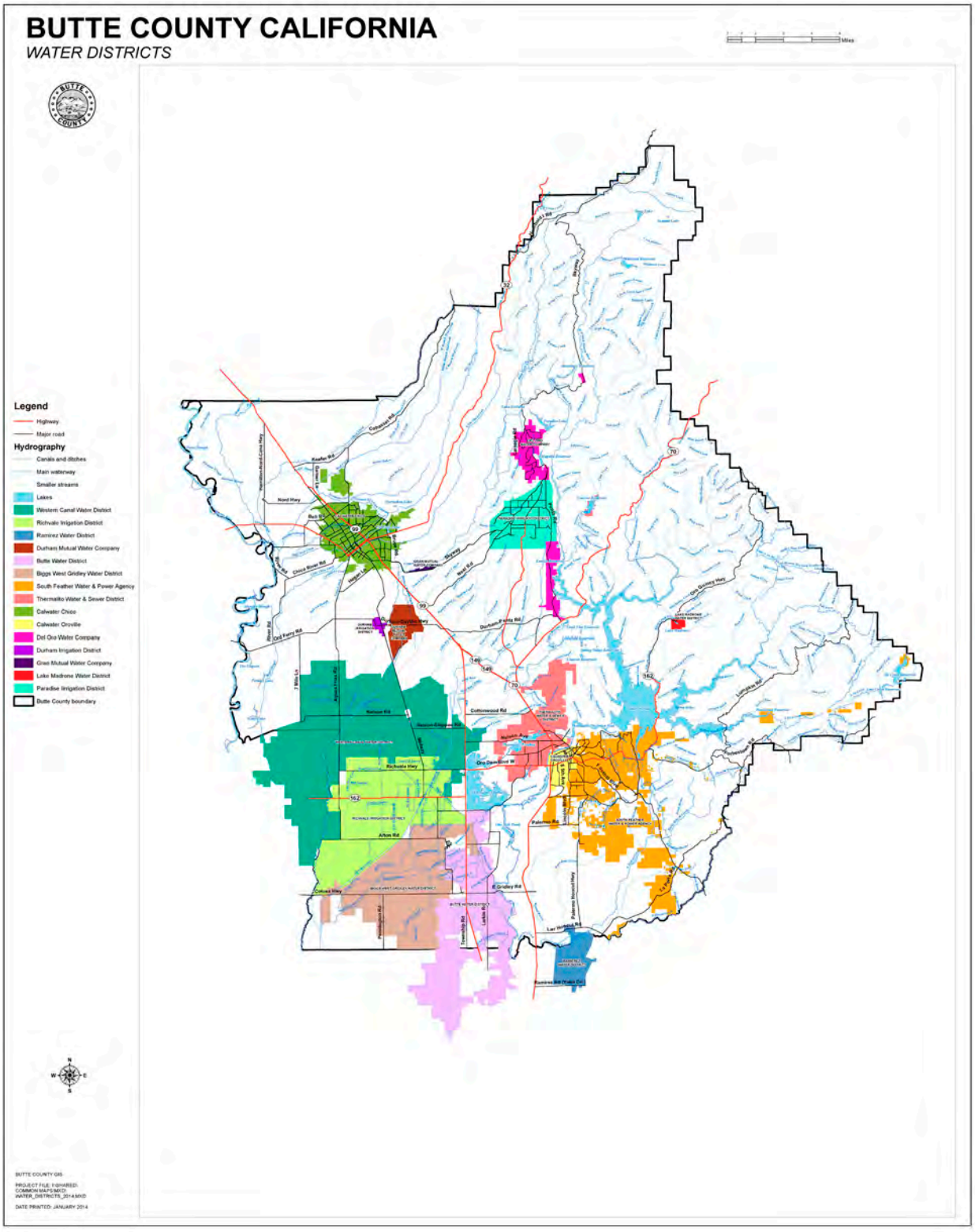
A watershed is the land area that drains into a river (aka catchment area). In this case, the PID is located in the Butte Creek Watershed. The Butte Creek Watershed encompasses smaller streams, ultimately combining at a common point. Butte Creek flows into the Feather River/Sacramento River. (The Feather River Basin is a crucial part of California's water supply system and a major water contributor to Lake Oroville.) Wastewater from the Paradise area is discharged into the Butte Creek watershed. Regulations pertaining to drinking water collection and treatment are summarized in Appendices C and D. Additional details about the Butte Creek watershed and maps are provided in Appendix F.

Domestic Water Districts in Butte County

There are 15 water districts in Butte County, as shown in Figure 3.3. LAFCO's 2023 MSR on Water and Wastewater Providers in the Oroville Area lists all the water service providers in Butte County in its Appendix E, "Public Water Systems in Butte County" at: <*https://www.buttelafco.org/domestic-water-wastewater*>. Six of these 15 districts are irrigation providers. Ten provide municipal water service as listed below. Two districts of the California Water Service Company, Cal Water Chico and Cal Water Oroville, also provide domestic water service.

1) South Feather Water & Power Agency
2) Thermalito Water & Sewer District
3) Calwater - Chico Region
4) Calwater - Oroville Region
5) Del Oro Water Company (Buzztail, Paradise Pines, Magalia, Lime Saddle)
6) Durham Irrigation District
7) Gran Mutual Water Company
8) Lake Madrone Water District
9) Paradise Irrigation District
10) Berry Creek Community Services District

Figure 3.3: Water Districts in Butte County



Source: Butte County GIS, 2023

Local Hazard Mitigation

Butte County collaborated with five incorporated communities and ten special districts to prepare the November 2019 Local Hazard Mitigation Plan (LHMP). The LHMP aims to reduce risks from hazards and to serve as a tool to help decision-makers direct mitigation activities and resources. Protecting community assets such as public water and wastewater infrastructure, schools, transportation infrastructure (railroad tracks and roads), and hospitals is another important aim of an LHMP. The LHMP Update allows the participating agencies to continue to be eligible for federal disaster assistance, such as the FEMA Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program (Butte County, 2019). Butte County continues to be vulnerable to numerous hazards, including floods, earthquakes, drought, levee failures, landslides, wildfires, heat waves, smoky air, and other severe weather events. In the past, these types of hazard incidents have had significant economic and social impacts on the County. Recent local hazards experienced in Butte County are listed below in Table 3.3.

Table 3.3: List of Recent Local Hazards

Name of Hazard Incident	Type of Hazard	Date
Dixie Fire	Wildland Fire	July - August 2021
Camp Fire	Wildland Fire destroyed Town of Paradise	November 2018
North Complex Fire	Wildland Fire caused evacuation of some SFWPA residents	September 2020
Oroville Dam main and emergency spillway crisis	Risk of potential flooding necessitated a large-scale evacuation	February 2017
Drought 2019 to 2022	Drought with State-wide water availability concerns and dry soils	March 2019 to December 2022

Source: Butte County, 2019

In addition to the above hazards, Butte County and local water and wastewater districts have faced smaller challenges that don't reach the "hazard" level but are nonetheless difficult. For example, in 2021, the drought caused local hydropower facilities to be shut down temporarily due to a lack of water. Another example is the PG&E Public Safety Power Shutoff (PSPS) power outages that occurred during the summers of 2019, 2020, and 2021 during high wind conditions and high temperatures that were conducive to supporting wildland fires. Other hazards that the Sacramento Valley could experience include air quality degradation, soil dryness, extreme precipitation, extreme heat, landslides, and decreased snowpack.

The State Budget (FY 21/22) contained funding allocated to the implementation of pilot projects and shovel-ready projects listed in a General Plan Safety Element. State funds are to be granted on a competitive basis. It is important for the County and the City to regularly update their General Plan Safety Elements to remain eligible for these state grants that could help protect lives, property, and economic productivity in Butte County.

Drought

Drought is one of the issues addressed in the County's Local Hazard Mitigation Plan. In addition, the California Dept of Water Resources and the State Water Resources Control Board have recently developed several databases with associated mapping tools to assess drought risk for California's water suppliers. These databases were queried, and the results are summarized here.

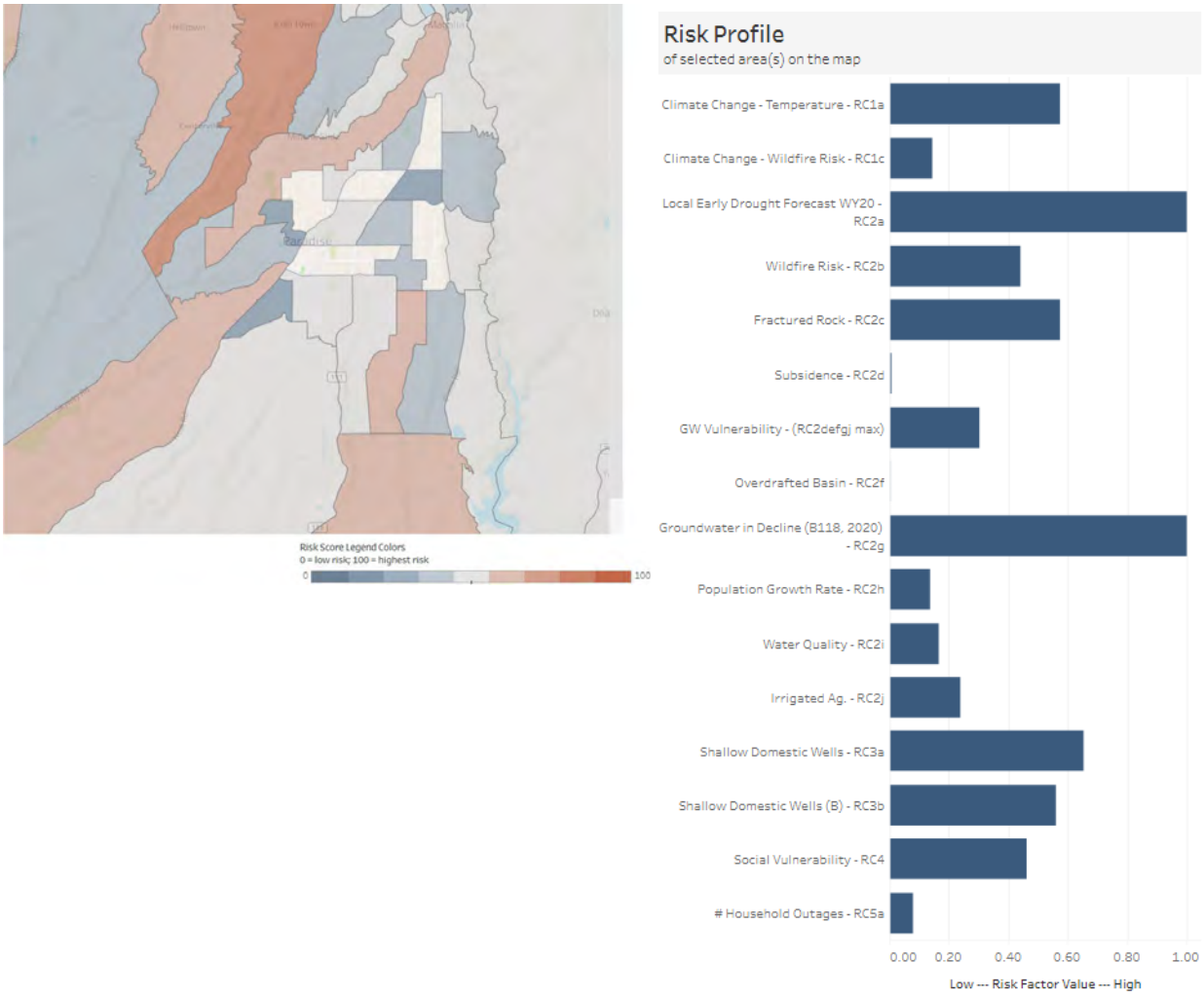
DWR Self-Supplied Communities

The California interactive site for the Drought and Water Shortage Risk of Self-Supplied Communities database was queried for Butte County. The California Dept. of Water Resources (DWR) developed this on-line database to support drought resilience planning among rural communities. Indicators were developed through a stakeholder participation process as part of the legislative requirements (AB 1668) to identify rural communities in California at risk of drought and water shortage.

Database query results show the relative risks of drought in the Paradise area, as shown in Figure 3.4 below. The Paradise area has a moderate drought risk (DWR, 2021). Butte County has approximately 10,867 domestic wells utilizing groundwater resources on record with DWR since 1970. This yields a domestic well reliance of 21% of the households in Butte County. DWR estimates a poverty rate of 13% in Butte County, indicating there are sensitive populations who could experience risk during a drought (DWR, 2021a).

The DWR database depicts the drought risk profile for the Paradise area, as shown in Figure 3.4 (next page). The risk profile indicates that Paradise has a high degree of risk for the following variables: Local Early Drought Forecast and Groundwater in Decline.

Figure 3.4: DWR Drought Risk in the Paradise Area

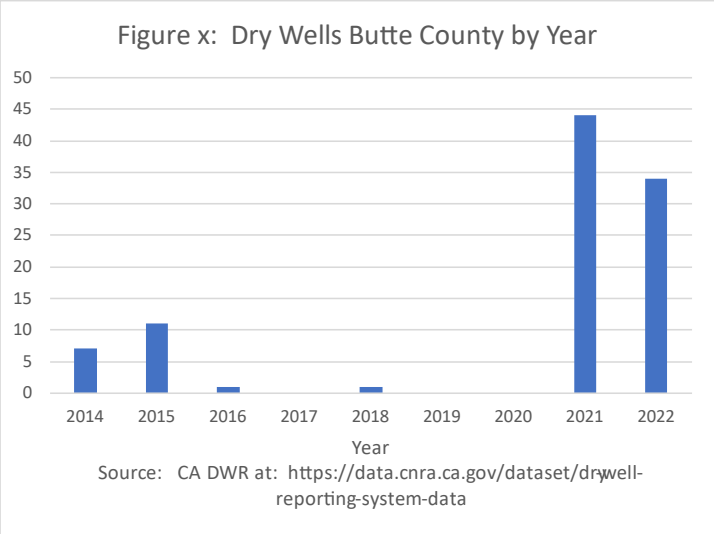


Data Source: DWR, 2021a

Dry Wells

Butte County has approximately 10,867 domestic water wells, with approximately 65,018 residents reliant upon these wells as described in Appendix F, Butte Creek Watershed Description. Between the years 2014 to 2022, there were a total of 109 wells in Butte County that were reported "dry" to the DWR database. In the year 2022, a total of 34 dry wells were reported, and none of these reports were derived from the Paradise area. As seen in Figure 3.5, the year 2021 had the greatest number of reported dry wells. The years 2017, 2019, and 2020 did not have reported dry wells. The wells are primarily used for households, but some are used for schools and agricultural purposes. From the database query, it is evident that many of the wells are no longer producing water or their pumps are not functioning properly (DWR, 2022).

Figure 3-5: Dry Wells in Butte County by Year

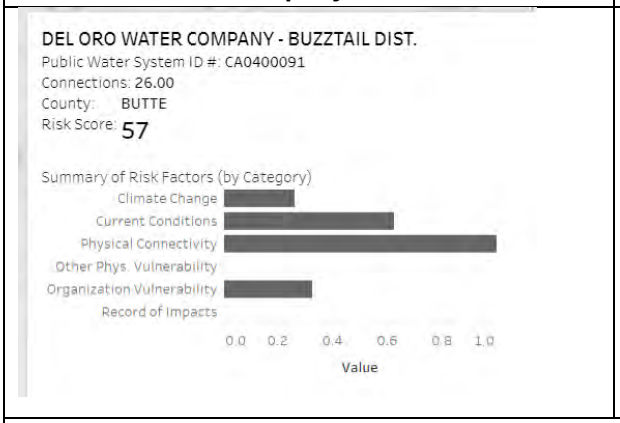
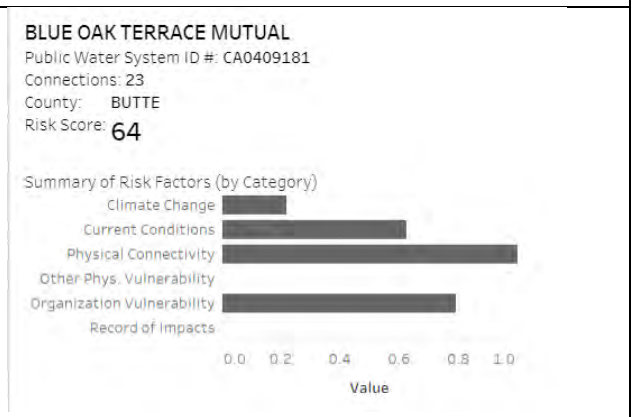


Source: DWR, 2022

DWR Small Water Suppliers

DWR provides a database entitled "Drought and Water Shortage Risk of Small Water Suppliers in California." DWR developed this database to support drought resilience planning among small water suppliers. Indicators of risk and scoring were developed through an extensive stakeholder participatory process as part of fulfilling state law, Assembly Bill 1668. This database was queried for Butte County. In the localized Paradise area covered by this MSR, there are two small water suppliers at risk of drought and water shortage, as listed below:

Table 3.4: DWR Small Supplier Drought Risk

Del Oro Water Company – Buzztail District	Blue Oak Terrace Mutual
	

Source: DWR 2021b

Although this MSR's study area has only two small water supplies at risk of drought and water shortage, Butte County has over 45 small suppliers at risk, including the Cities of Biggs and Gridley (DWR, 2021b).

SWRCB Human Right to Water List

On September 25, 2012, Governor Edmund G. Brown Jr. signed Assembly Bill 685, making California the first State in the nation to legislatively recognize the human right to water (HR2W). Now in the Water Code as Section 106.3, the State statutorily recognizes that "every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes." The human right to water extends to all Californians, including disadvantaged individuals, groups, and communities in rural and urban areas. An HR2W system is defined as a Community Water System and Non-Community Water System that serve schools and daycares and was identified as out of compliance for consistently failing to meet primary drinking water standards. The HR2W list criteria were expanded in March 2021 to better align with statutory definitions of what it means for a water system to "consistently fail" to meet primary drinking water standards. The SWRCB maintains an interactive GIS map that identifies systems out of compliance. The site includes historical violation information as well.

The MSR consultants reviewed this list, and five water systems in Butte County were identified: Farm Labor Housing (Water System No. CA0400012), Honcut Elementary School (Water System No. CA0400060), Thermalito Water & Sewer District (Water System No. CA0410008), Feather River School (Water System No. CA0400067), Spring Valley School (Water System No. CA0400065). None of these are located in this MSR's study area (California Water Boards 2023).

Drought Resilience

Infrastructure improvement projects can improve drought resilience. Examples include: installing water-efficient appliances, installing water reuse infrastructure, installing drought-resistant landscaping, educating on water conservation, outreach to educate about recycled water safety, building alternative forms of water recreation, diversifying water supply sources, developing a groundwater sustainability plan, and implementing local water recycling.

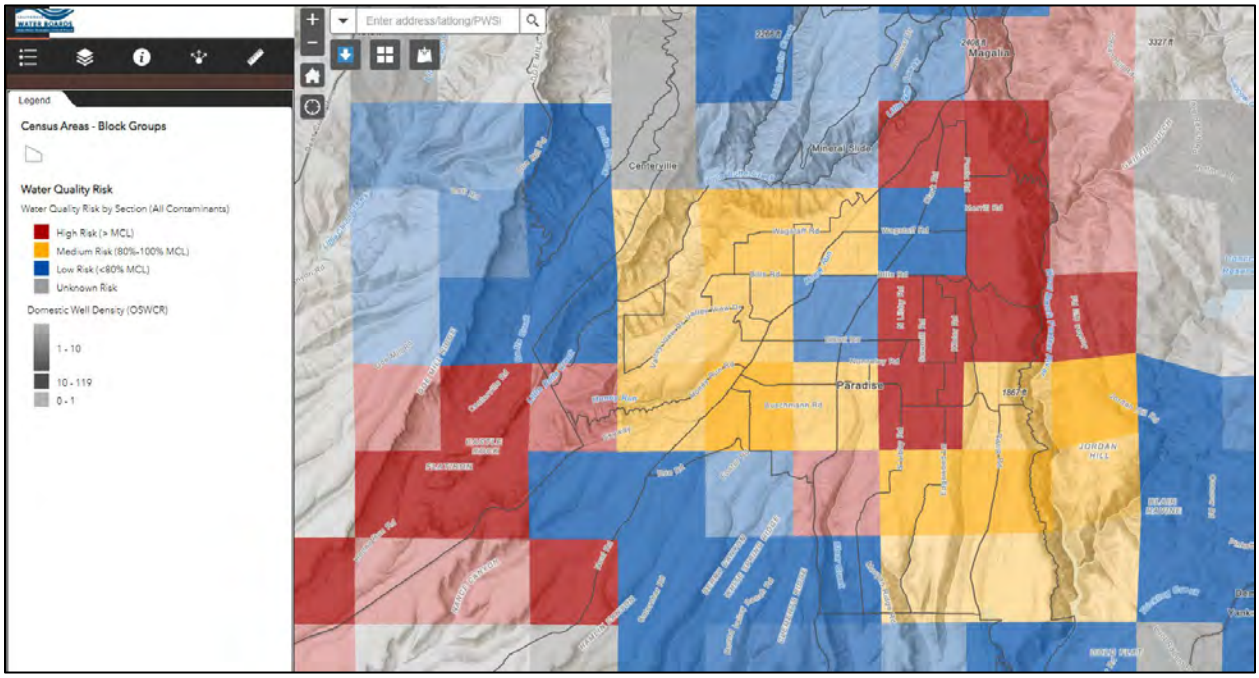
Drinking Water Systems with Violations Tool

The State Water Board has developed an interactive database to provide information on Drinking Water Systems with violations. Information includes the type of violation, system population and service connections, median household income, amount and type of financial assistance a system is receiving from the State and more. The MSR consultants queried this database and found no drinking water systems with violations in the Paradise area (SWRCB, 2021a). Butte County contains only one drinking water system with violations, the Feather Ridge Estates Water Co., located outside the MSR study area.

Aquifer Risk Map

The State Water Board has developed an interactive mapping tool called the Aquifer Risk Map. This Aquifer Risk Map was developed by the SWRCB to fulfill the requirements of Senate Bill (SB) 200 and is intended to help prioritize areas where domestic wells and state small water systems may be accessing groundwater that does not meet primary drinking water standards. In accordance with SB-200, the risk map is updated annually. The CA Fund Expenditure Plan states that the risk map will be used by the Water Boards staff to help prioritize areas for available SAFER funding. The MSR consultants queried the Aquifer Risk Map for the Paradise area, and the query results are shown in Figure 3.6 below.

Figure 3.6: Aquifer Risk Map



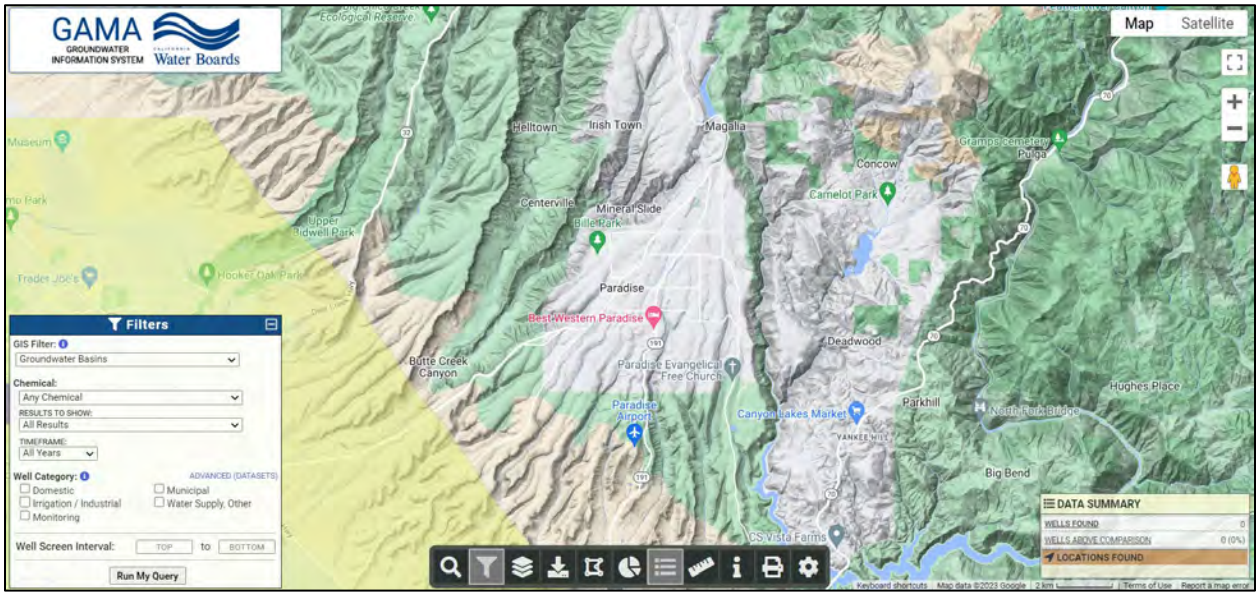
Source: (SWRCB, 2021b)

As shown in Figure 3.6 above, many portions of the Paradise area aquifer have a medium to high risk of poor water quality. A "High" water quality risk represents areas where contaminants are above the maximum contaminant level (MCL). A "Medium" risk represents areas where contaminants are between 80 to 100 percent of MCL. "Low" risks occur in areas where MCL is below 80 percent. The MCL is the enforceable limit of any contaminant.

Groundwater Ambient Monitoring and Assessment Program

The State Water Board's Groundwater Ambient Monitoring and Assessment Program (GAMA) and the U.S. Geological Survey have created tools to help users understand groundwater quality in California. There are no groundwater basins in the Paradise area, as shown in Figure 3.7 below (SWRCB, 2021c).

Figure 3.7: Groundwater Basins in the Paradise Area

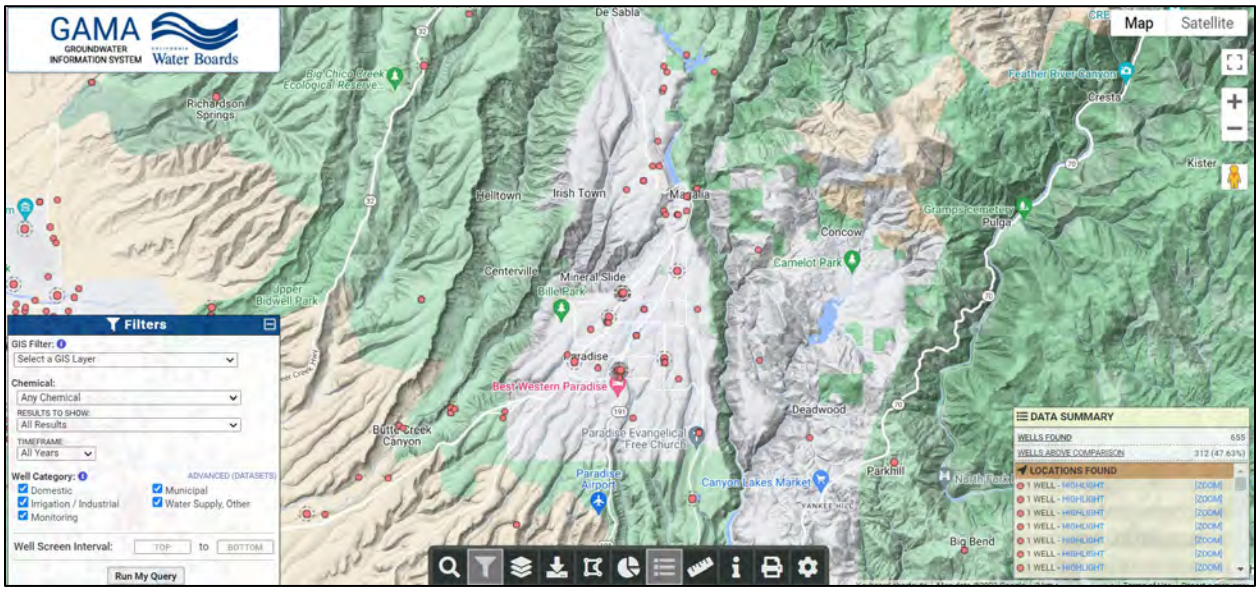


Source: SWRCB, 2021c

Sustainable Groundwater Management Act (SGMA)

Vina Groundwater Sustainability Agency (GSA) is responsible for sustainable groundwater within its region. The Vina GSA provides the public with information on its website at: <https://www.vinagsa.org/>. SGMA is described in more detail in Appendix C, Municipal Water Regulations. Wells in the local area are shown below in Figure 3.8.

Figure 3.8: Spatial Distribution of Groundwater Wells in the Paradise Area



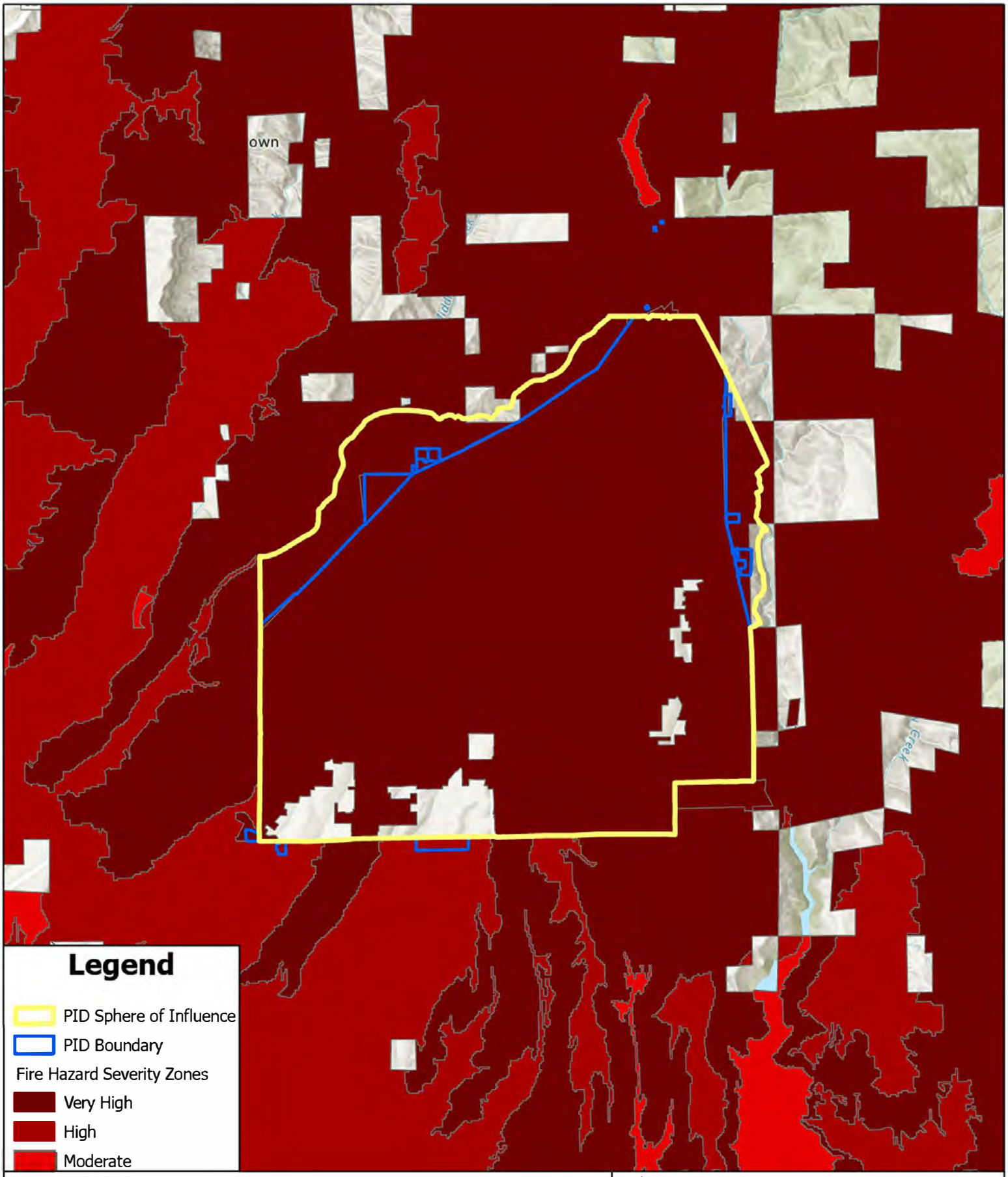
Source: SWRCB, 2021c

Regional Dischargers - Water Quality

Discharges to local rivers and streams can sometimes degrade water quality if pollutant discharges exceed state and national standards or if discharges are not carefully monitored. Regulations aim to prevent these types of discharges, which can potentially put water supplies at risk. The EPA's enviroatlas database at:
<*https://enviroatlas.epa.gov/enviroatlas/interactivemap/*> was queried. Query results show NO water dischargers who operate under a permit from the CA Water Board or EPA in the Paradise area (US EPA, 2023).

Camp Fire – 2018

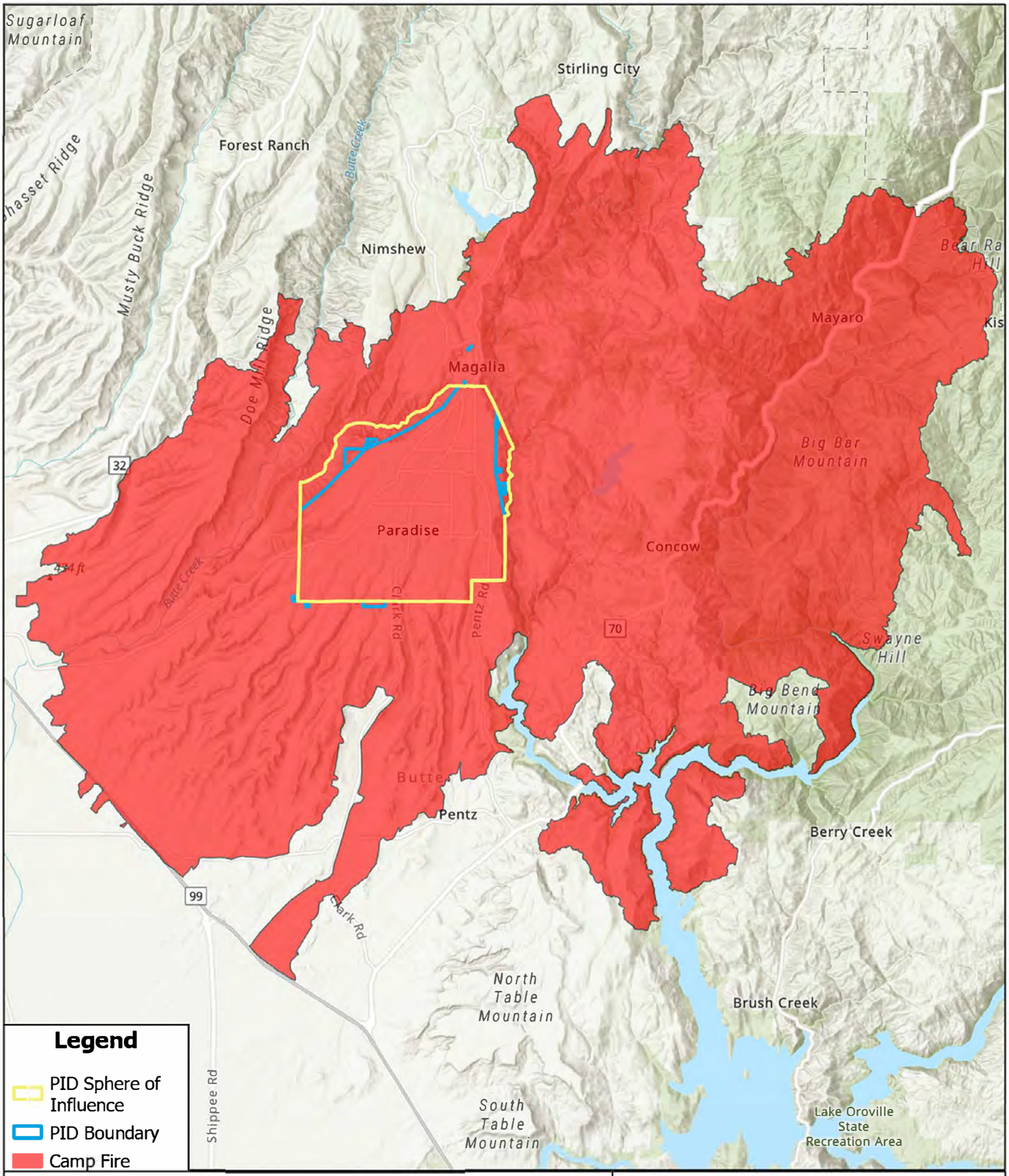
The Paradise community is located in an area classified as a high fire severity zone by CAL FIRE, as shown in Figure 3.9 (next page). The Camp Fire began on November 8, 2018, near the community of Pulga in Butte County. The Camp Fire eventually burned a total of 153,336 acres throughout Pulga, Concow, Magalia, the Town of Paradise, and the east Chico outskirts, as shown in Figure 3.10. CAL FIRE later determined that the Camp Fire was initiated by electrical transmission lines owned and operated by Pacific Gas and Electric (PG&E). A significant loss of life and property in the Town and surrounding communities was experienced. The Paradise Irrigation District was significantly affected by the 2018 Camp Fire. The California State Legislature provided aid to PID for two years through the State Water Resources Control Board (SWRCB). PID has also received aid from other federal and state agencies, and a settlement from PG&E.



Map Date: 01/05/2023

Data Sources: CAL FIRE Fire Hazard Severity Zones.
Butte County LAFCO.

Figure 3-9
Fire Hazard Severity Zones in the Local Responsibility Area and State Responsibility Area



Map Date: 01/06/2023

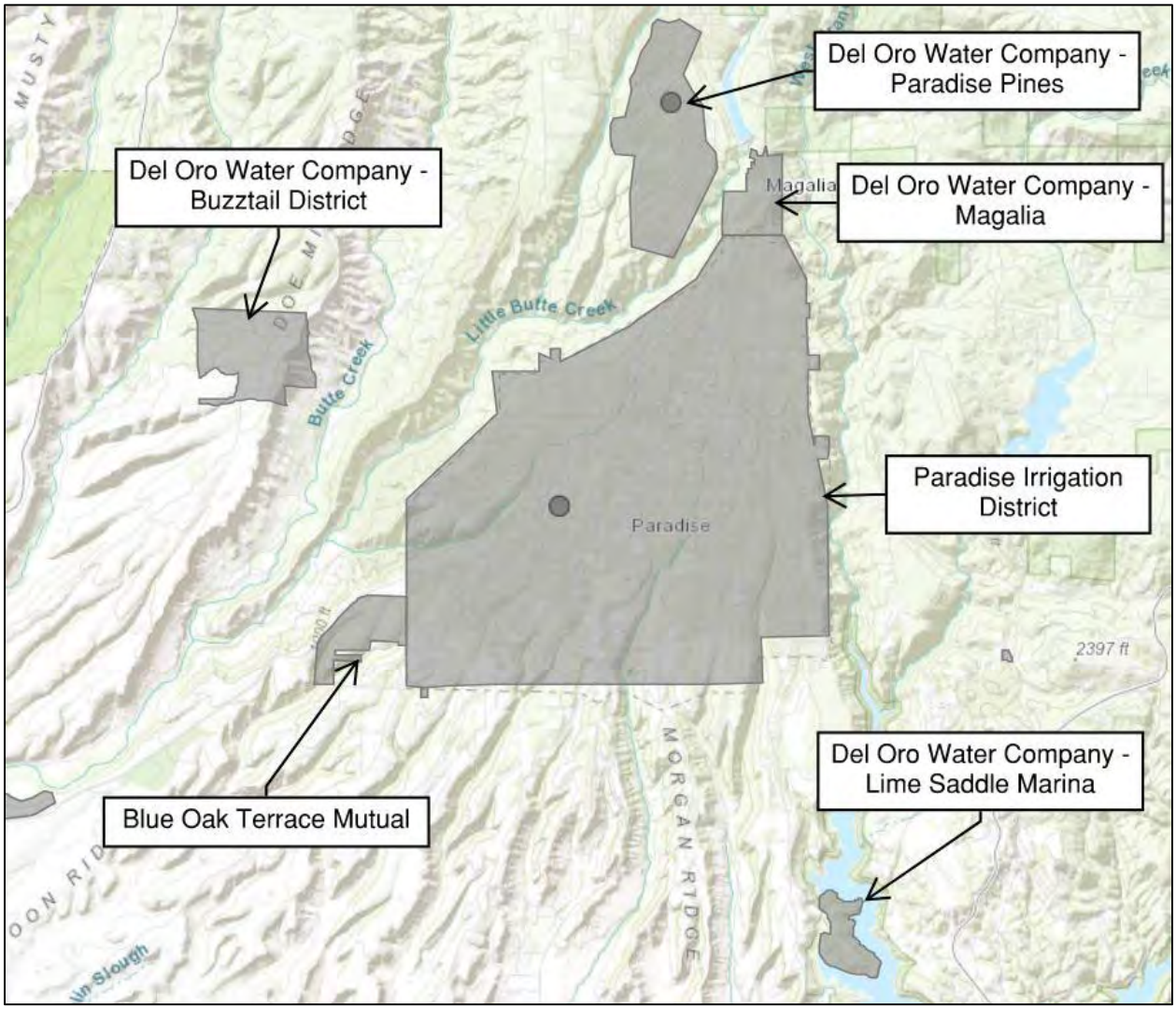
Data Source: CAL FIRE Fire Perimeters through 2021 Data. Butte County LAFCO.

Figure 3-10
Camp Fire 2018

Municipal Water Regional Context

This MSR studies the Paradise Irrigation District. However, the region has ten additional water providers, including several small mutual water companies located in close proximity to the PID, as shown in Figure 3.11 below.

Figure 3.11: Potable Water Providers in the Paradise Area



Source: SWRCB, 2022

Each of the ten small water providers is described in more detail in the following table.

Table 3.5: Water Providers in the Paradise Area

Water System Name	**Del Oro Water Co.-Magalia**
Water System Number	CA0410009
Regulating Agency	District 21 - Valley
County	Butte
State Classification	Community
Population	337
Service Connections	102
Last Edited Date	10/19/2020
Water System Name	**Del Oro Water Co.-Paradise Pines**
Water System Number	CA0410011
Regulating Agency	District 21 - Valley
County	Butte
State Classification	Community
Population	10,808
Service Connections	3,275
Last Edited Date	10/19/2020
Water System Name	**Del Oro Water Company - Buzztail Dist.**
Water System Number	CA0400091
Regulating Agency	District 21 - Valley
County	Butte
State Classification	Community
Population	106
Service Connections	32
Last Edited Date	10/19/2020
Water System Name	**Humboldt Highlands Mutual**
Water System Number	Ca0400123
Regulating Agency	LPA34 - Butte County
County	Butte
State Classification	Community
Population	58
Service Connections	28
Last Edited Date	10/19/2020
Water System Name	**Forest Knolls Mutual Water Co**
Water System Number	Ca0400078
Regulating Agency	LPA34 - Butte County
County	Butte
State Classification	Community
Population	46
Service Connections	21
Last Edited Date	10/19/2020
Water System Name	**Hartley Mutual Water System**
Water System Number	Ca0400003
Regulating Agency	LPA34 - Butte County
County	Butte

State Classification	Community
Population	41
Service Connections	15
Last Edited Date	10/19/2020
Water System Name	**Forest Ranch Charter School**
Water System Number	Ca0400079
Regulating Agency	LPA34 - Butte County
County	Butte
State Classification	Non-Transient Non-Community
Population	125
Service Connections	4
Last Edited Date	10/19/2020
Water System Name	**Humboldt Woodlands Mutual**
Water System Number	CA0400149
Regulating Agency	LPA34 - Butte County
County	Butte
State Classification	Community
Population	55
Service Connections	31
Last Edited Date	10/19/2020
Water System Name	**Blue Oak Terrace Mutual**
Water System Number	PWSID: CA0409181
Regulating Agency	Butte County
County	Butte
State Classification	Community
Population	50
Service Connections	29
Last Edited Date	10/19/2020

Source: SWRCB, n.d.

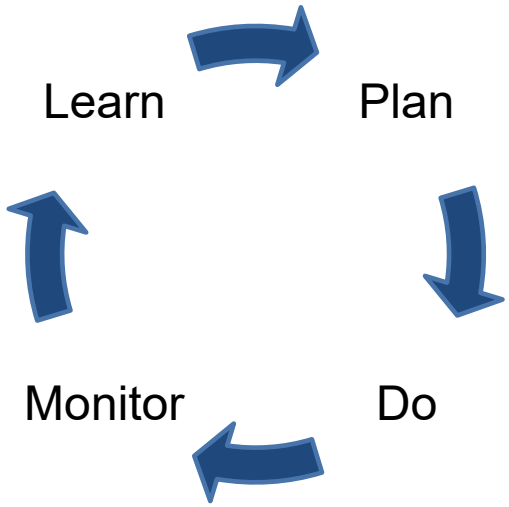
Table 3.5 provides additional details on these smaller water suppliers, which are not studied in this MSR. Several local water providers listed in the above tables are very small, such as the Forest Ranch Charter School. Providing water is not the primary business of the school. Sometimes, in situations where a very small water system is operated by an organization whose staff may be too busy to closely monitor the water system, it might make sense for them to form a partnership with a nearby water service provider to operate the water system. Given LAFCO's interest in efficiency and public safety, such collaborations and partnerships often involve LAFCO. LAFCO also promotes other types of partnerships, such as sharing managerial responsibilities. More recently, the California Water Board has developed a staffing unit dedicated to the concept of water provider consolidation. Consolidation, as defined by the SWB, occurs when one water system is dissolved, and their customers are provided service by another existing water system. The California Water Board's website at <*https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/consolidation.html*> describes a step-by-step approach for those water systems that are committed to consolidation. This commitment may be due to water quality or quantity problems or because the community simply no longer feels it can meet the requirements of being

a public water system. Consolidation can take many months to several years depending on the location of pipelines, availability of private versus public funding, concerns of community members, etc.

Metrics

This MSR utilizes key metrics to support LAFCO's determinations related to governance, social, environmental, and financial factors prescribed by the CKH Act. These key metrics were selected to help nudge local activities toward addressing items consistent with LAFCO's values of transparency and efficiency. The use of key metrics can result in cost savings by leveraging and building upon the financial resources dedicated to local infrastructure and the provision of public services. Through improved communication and coordination, costly duplication of efforts and conflicting actions can be reduced; this is a standard goal of LAFCOs throughout the State. The continual improvement of a product, process, or service is often depicted as a Deming Wheel, or Deming Cycle, as shown in Figure 3.12 below. This is an integrated learning-improvement model described by Dr. Deming and Walter Shewhart from Bell Laboratories in New York (Deming, n.d.).

Figure 3.12: Continuous Learning Cycle



California water scientists and the CA Department of Water Resources use a similar continuous learning cycle called adaptive management. LAFCO's role in the above continuous learning cycle is the "monitor" phase through the use of MSRs, which monitor an agency's adherence to specific laws and other LAFCO criteria. This MSR standardizes metrics to enable cross-comparison among other water districts in Butte County which have similar MSRs. Metrics have been assigned to each of LAFCO's determination criteria as listed in Table 3.6 below.

Table 3.6: Metrics Utilized in this MSR	
Determination Topic	**MSR Metrics**
Local Accountability and Governance	• Number of closed sessions during the past six months. • Agency website complies with the 2016 updates to the Brown Act described in Government Code §54954.2 and enacted by Assembly Bill 2257. • Compliance with the Special District Transparency Act (SB 929 or California Government §53087.8 and see also §7928.8), which requires special districts to have a functional website that lists contact information and contains financial statements, compensation reports, and other relevant public information. • Terms of office and next election date are disclosed for District Board members, and committee appointments are on-line. • Do elected Board members submit required forms and receive required trainings as prescribed by the three state laws regarding accountability and ethics, including: 1) the Political Reform Act; 2) Assembly Bill 1234 (Salinas, 2005), which requires ethics training; and 3) Government Code 53237 et. seq. which mandates sexual harassment prevention training? • Current litigation, grand jury inquiry, and/or censure from a state agency.
Growth and Population	• Existing boundary • Overlapping services • Existing Sphere of Influence • Extra-territorial services • Present and projected service population over a 20-year time frame • Land use and significant growth areas
Disadvantaged and Unincorporated Communities	• Location and Characteristics • Public services provided to DUC
Present and Planned Capacity	• Description of services (water, wastewater) • Age and condition of facilities • Preventative maintenance measures • Plans for expansion and/or upgrades (i.e., plans to replace aging infrastructure) • Capacity Analysis • Sufficiency for present and projected need (i.e., reserve capacity) • State databases [wastewater = sanitary sewer overflow; water = CA Drinking Water Watch, California Integrated Water Quality System Project (CIWQS), and Environmental Working Group's Tap Water Database]
Financial Ability, Constraints, and Opportunities	• Finance policies clearly articulated

	• Compensation reports and financial transaction reports (including audits) that are required to be submitted to the State Controller's Office are posted to the district website. • Revenues exceed expenditures in 50% of studied fiscal years • Pension Payments (contributions in relation to actuarially covered payroll) • Rates • Current Rate Structure Basis • Connection fees • Tax Revenues/Service Ratio • Rates/Service Ratio
Shared Facilities	• Currently Shared Resources, Facilities, Personnel, and Systems • Opportunities for Expanded Sharing • Government Structure Options • Cost Avoidance Opportunities • Other practices and opportunities that may help to reduce or eliminate unnecessary costs

Brown Act

As part of the Local Accountability and Governance determination listed in Table 3.6 above, this MSR determines whether the public service provider complies with the Brown Act originally approved by the California State Legislature in 1953 (California Government Code § 54950). The Ralph M. Brown Act requires, with specified exceptions, that all meetings of a legislative body of a local agency be open and public and that all persons be permitted to attend and participate. The Act also requires the legislative body of a local agency to post an agenda containing a brief general description of each item of business to be transacted or discussed at a regular meeting in a location that is freely accessible to members of the public. Agendas must be posted 72 hours prior to the meeting. The State Legislature updated the Brown Act in 2016 as codified in Government Code §54954.2 (see also Assembly Bill 2257). The 2016 update added new requirements for posting meeting agendas on the local agency's website. Additional requirements govern the location, platform, and methods by which an agenda must be accessible. The new requirements include that the agenda be retrievable, downloadable, searchable, and indexable. This MSR interprets these new requirements as follows:

- Prominent Direct Link: With one click from the agency's homepage, the current agenda opens up. That one click does not take the individual to another page, which would require the user to perform an additional action to reveal the agenda link.
- Downloadable: the agenda can be downloaded and saved to a computer.
- Searchable: the agenda document can be searched for specific terms using the search-on-the-page function provided in browsers.

- Indexable: commonly used search engines will respond to a search with the agenda for that legislative body.

Website

As part of the Local Accountability and Governance determination listed in Table 3.6 above, this MSR considers compliance with a new state law called the Special District Transparency Act (SB 929 or California Government Code, §53087.8 and see also §7928.8). The Special District Transparency Act aims to improve information transparency by local government agencies by requiring special districts to have a functional website before January 1, 2020. The Act requires a district website to list contact information and also suggests that agendas and minutes, budgets and financial statements, compensation reports, and other relevant public information and documents be posted to the website. A district may exempt itself from the law by adopting a resolution by a majority vote of its governing body, including findings regarding any hardships that prevent the district from establishing or maintaining a website. Such a resolution must be adopted annually as long as the hardship exists. For additional information, see a legal analysis article at: <*https://www.jdsupra.com/legalnews/ab-2257-new-brown-act-requirements-for-35346/*>.
Chapters 3 to 8 evaluate each district's compliance with the Special District Transparency Act (Gov Code §53087.8 and see also §7928.8), and the results of this evaluation is a metric utilized in the determinations for the District.

3.5: PUBLIC PARTICIPATION

LAFCO conducted a noticed public hearing on the Draft MSR Update on February 1, 2024 to solicit input from the community. Comments from the public are addressed in Chapter 10. This MSR Update is finalized and it is published on the Commission's website (*https://www.buttelafco.org*), thereby making the information contained herein available to anyone with access to an internet connection. A copy of this MSR Update may also be viewed during posted office hours at LAFCO's office located at 1453 Downer Street, Suite C, Oroville, CA 95965. In addition to this MSR Update, LAFCO's office maintains files for each service provider and copies of many of the planning documents and studies that were utilized in developing this MSR. These materials are also available to the public for review.

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CHAPTER 4: GOVERNMENT STRUCTURE AND ACCOUNTABILITY

TABLE OF CONTENTS

This Chapter describes how performance, accountability, transparency, and public engagement relate to the public's trust in local government. LAFCO is required to make specific determinations regarding a municipality's government structure and accountability. A summary of these determinations is provided in Table 4.3 at this chapter's end.

4.1: GOVERNMENT STRUCTURE

The PID is a local independent special district structured as an Irrigation District consistent with its Principal Act: Irrigation District Law, Division 11, of the Water Code (Section 20500 to 29978 et seq.) of the State of California. The District was originally formed by an election in 1916 (PID, 2023b). Today, the District is governed by an elected five-member Board of Directors, which serves as the decision-making authority for PID. The General Manager is appointed by the Board of Directors.

District Board

PID operates under the Board-manager system of government, which includes a five-member District Board elected by geographic division, as shown in Figure 4.2. The District Board is directly responsible to the voters and citizens of PID, as shown in the Organization Chart, Figure 4.2. The Board's election schedule complies with PID's policies and procedures manual Chapter 2, which states they are to hold elections, and every post lasts four years. PID has five board members

elected at-large. Board members are required to live within their specific division. However, voters throughout the District can choose who to vote for on an at-large basis. In recent years, several board members have resigned for personal reasons (for example, house burned down during the 2018 Camp Fire). For this reason, several current Board members are appointed. While there has been a slate of candidates to run at election time, the number of interested residents is few, and at times, candidates run unopposed or are appointed. This is not uncommon among rural local agencies. The demographics within each division area may have changed due to the population loss associated with the Camp Fire. However, people are rebuilding, and the population is rebounding. Therefore, on the advice of legal counsel, the current spatial configuration of the divisions is being retained. Board duties include adopting an annual budget and forming and evaluating policies. The Board also appoints a Secretary of the Board and a Treasurer of the District, as well as commission and committee members. The Board hires the District Manager.

The Paradise Irrigation District prides itself on being an accessible government body and having open and positive communication with its residents. The District provides a fully disclosed budget. The District Board holds regular public meetings on the third Wednesday of each month at 5:30 p.m. For the months of July and December, regular board meetings are held at 8:30 a.m. (PID, n.d.b). Board meetings are held in the board room located at 6332 Clark Road, Paradise, CA 95969 (PID, n.d.b). Approved minutes are posted on the PID website. Meeting agendas are distributed in multiple communication venues, including the following:

- Posted online at: <*https://pidwater.com/meetings*>.
- Emailed to a distribution list that is an at-request list.
- Snail mailed upon request only.
- Hardcopy is on view on the PID bulletin board outside the Board meeting room and at the PID Office.
- Shared with the local newspaper (via email).

(PID, 2023b)

Figure 4.1 Lantana plant from PID's Demonstration Garden

Terms of office and appointment dates are disclosed for District Board members on the District website. The Board's committees include Finance, Recovery Support, Administration and Personnel, Town of Paradise/PID Liaison, Community Relations, and various ad hoc committees. Committee appointments are also found on the District website (PID, n.d.a).

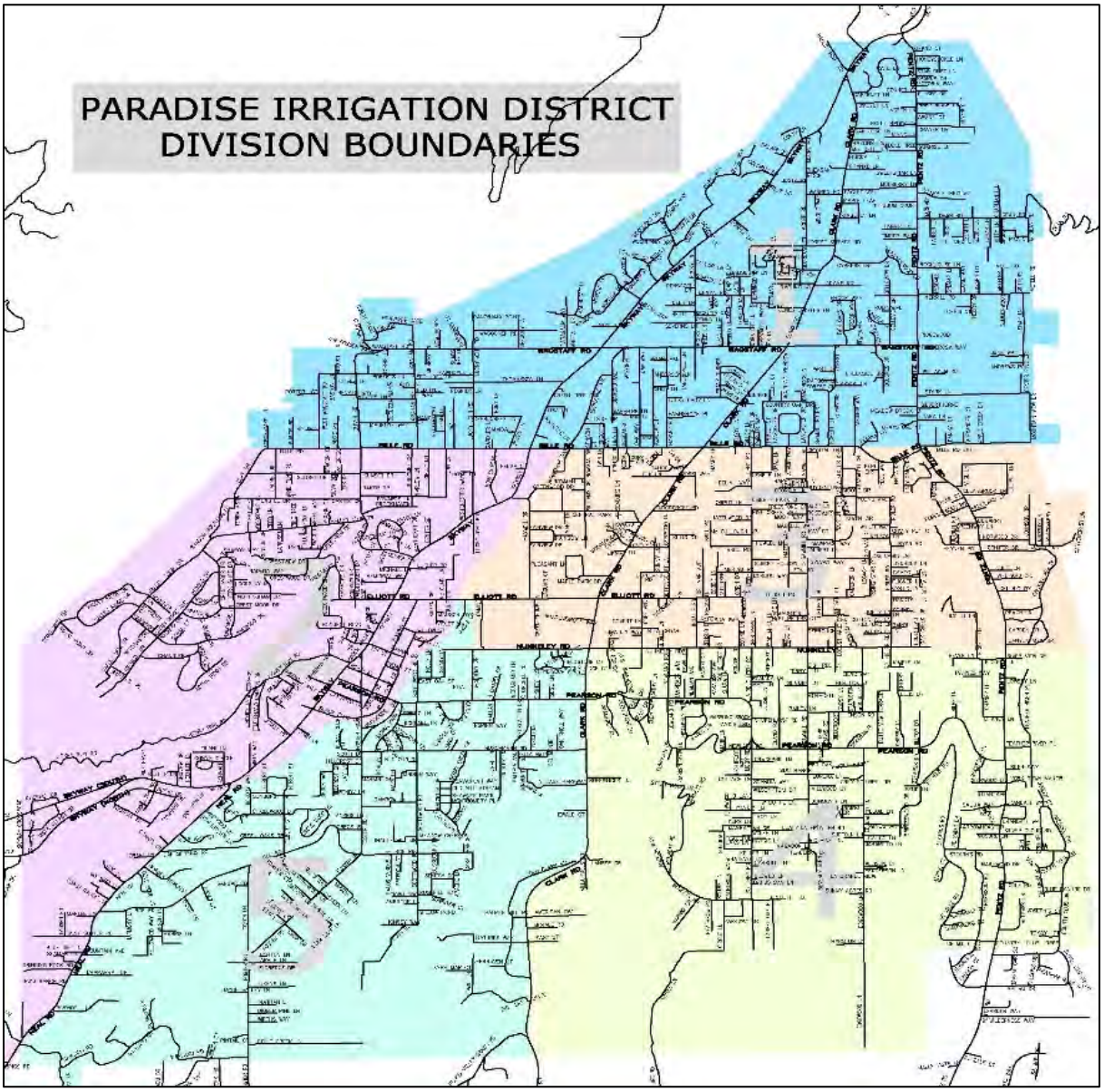
Table 4.1: Paradise Irrigation District Board of Directors			
Name	**Title**	**Term End**	**Committee Appointments**
Chris Rehmann	Director (Division 1)	Term expires 12/06/2024	Finance Committee, Ad Hoc Strategic Planning Committee (Chairperson), Ad Hoc Customer Recovery Support Committee
Elliott Prest	Director (Division 2)	Term expires 12/04/2024	Committees not yet assigned
Shelby Boston	Vice President (Division 3)	Term expires 12/04/2026	Administration and Personnel Committee (Chairperson), Town of Paradise/ PID Liaison Committee (Chairperson), Ad Hoc Negotiating Committee (Chairperson), Ad Hoc District Manager Recruitment Committee
Patricia Guillory	Director (Division 4)	Term Expires 12/04/26	Community Relations Committee (Chairperson), Ad Hoc Customer Recovery Support Committee (Chairperson), Ad Hoc District Manager Recruitment Committee (Chairperson)
Robert Matthews	President (Division 5)	Term expires 12/06/2024	Administration and Personnel Committee, Finance Committee, Ad Hoc Strategic Planning Committee, Town of Paradise / PID Liaison Committee
Source: https://pidwater.com/board			

Payments to the Directors

Board Compensation is detailed in Chapter 2.22 of the PID Policies & Procedures Manual. Directors do not receive an annual salary. Rather, the Directors are eligible to receive compensation not to exceed $100 per day. Compensation taken may be less than $100; down to a minimum amount of one cent for either:

- Up to $100 per day for attending a regular or special Board meeting, or acting under its orders; and
- Up to $100 per day for attending a Board approved standing committee meeting, an established Ad Hoc committee, or an outside Board approved meeting requiring a Board member in attendance when there is no regular or special Board meeting that day.
- Regardless of either per-day event, the per-day amount(s) shall not exceed a total of six (6) meeting days in any calendar month. No fees are to be paid for seminars or conferences, but the out-of-pocket costs associated with attending those meetings on a Board pre-approval basis can be reimbursed through a District claim form.

Figure 4.2: Board of Directors Divisions Map



PID's website contains links to additional information about PID's compensation to employees and the Board. In 2021, three Board members chose not to receive any compensation. Two Board members received compensation that ranged from an annual total of $2,200 to $2,600 (California State Controller, 2021).

Closed Sessions

The Ralph M. Brown Act[1] was originally adopted in 1953 to assure that the public has access to information on the actions under consideration by public legislative bodies and that the actions are conducted in open public forums. Under the Brown Act, closed sessions of Board meetings are not encouraged; however, the Act does provide guidance about exceptions when closed sessions can be held under special circumstances. Commonly, LAFCO utilizes the number of closed sessions a Board holds during a year as an indicator of transparency since fewer closed sessions indicate better levels of transparency. In the year 2022, PID held a total of 23 public meetings. Of these, the number of closed sessions was 13. This calculates to having 56 percent of the Board meetings having a closed session. Although this exceeds LAFCO's standard indicator for this performance measure, these closed sessions were held due to Fire Victims Trust settlement issues, as well as employee turnover resulting from the Camp Fire. Due to these extraordinary circumstances, LAFCO's performance measure is not directly applicable in this case.

Advisory Boards, Commissions, and Committees

The PID District Board has established other local advisory bodies to assist the District in its decision-making processes. Specific responsibilities for each advisory body are established by their respective ordinance or resolution. Board participation in these advisory bodies is listed in Table 4.1 above.

4.2: ACCOUNTABILITY

In California, elected members of independent district boards are required to comply with three laws regarding accountability and ethics including: 1) the Political Reform Act; 2) Assembly Bill 1234 (Salinas, 2005), which requires ethics training; and 3) Government Code 53237 et. seq. which mandates sexual harassment prevention training. A description of each of these three state laws is provided in Chapter 3, Introduction. An assessment regarding the compliance with these three ethics and accountability laws by elected board members of each of the subject agencies is made as part of this MSR process.

- Political Reform Act: Per California's Political Reform Act, each special district is required to have a conflict-of-interest code/policies. The adopted conflict of interest policies for the Board of Directors are typically described in the Board of Directors Policy Manual. Many

[1] In the initial legislation for the Brown Act, and through amendments adopted over the years, provisions were included to permit the legislative bodies to meet in closed session for very specific purposes. These included personnel matters, labor negotiations, existing litigation, potential litigation and real property negotiations. The closed sessions are not open to public participation, but the general topics to be discussed must be publicly announced in advance. Also, if any final action is taken by the legislative body in closed session, the action and any vote must be reported to the public in an open meeting immediately following the closed session.

special districts make their conflict-of-interest policies available to the public on the internet. The Political Reform Act also requires district board members to disclose all personal economic interests by filing a "Statement of Economic Interests" with their District or the County Board of Supervisors consistent with Fair Political Practices Commission (FPPC) requirements. PID's compliance with this law was assessed by the MSR authors by querying the FPPC Complaint and Case Information Portal at: <https://www.fppc.ca.gov/enforcement/complaint-and-case-information-portal.html>. According to the FPPC online search portal, no cases or complaints were filed for any PID Board of Directors as of January 30, 2023.

- Assembly Bill 1234 (Salinas, 2005): Local government officials are required to take ethics training every two years, with a requirement that they take their first training no later than a year after they start their first day of service with the district. Government Code Section 53235 et. seq., states that ethics training must cover laws related to conflicts of interest, gifts, reimbursements, government transparency, and fair processes, including but not limited to incompatible offices and competitive bidding practices. PID conducts ethics training, consistent with AB 1234 (Salinas, 2005), for the Board of Directors and District staff on a biannual basis. The most recent training was conducted on October 31, 2022 (PID, 2022d). Completed training certificates for each Board member are posted on PID's website at: < *https://pidwater.com/open*>.
- Government Code 53237 et. seq.: This government code section was enacted by AB 1661 (McCarty) of 2016 and mandates sexual harassment prevention training. Special district board members must receive the required two-hour training every two years. All sexual harassment prevention training must include practical guidance regarding the federal and state statutory provisions concerning the prohibition against, and the prevention and correction of, sexual harassment and the remedies available to victims. The training includes practical examples aimed at instructing the board members in the prevention of sexual harassment, discrimination, and retaliation. PID's compliance with this law was assessed by the MSR authors. The MSR authors analyzed PID's website in January 2023, and no specific certificates were posted regarding sexual harassment prevention pursuant to Government Code 53237 et. seq. Subsequently, PID corrected this oversight. Currently, these certificates are readily accessible to the general public via the PID website at: <*https://pidwater.com/open*>.

In addition to the required training listed above, elected board members should develop competency in the following: Governance Foundations, Setting Direction/ Community Leadership, Board's Role in Human Resources, and Board's Role in Finance and Fiscal Accountability.

All meetings of the District Board and other advisory boards are open to the public in accordance with the Brown Act. The agenda for each District Board meeting includes a public comment period. All meetings are publicly posted on the website at <*https://pidwater.com/*>. Agendas are also distributed via email upon request. The District and its representatives have a solid record of adherence to the requirements of the Brown Act, the Political Reform Act, and similar laws. The PID website is a communication vehicle for District Board meeting agendas, meeting minutes and associated documents, and information on the District's services and programs.

Website

The Special District Transparency Act (SB 929 or California Government Code, §53087.8 and see also §7928.8) requires that special districts have a functional website and meet the requirements of this Act. Compliance with the Special District Transparency Act is used by LAFCO as one indicator to determine the accountability and transparency of a District. This state law aims to improve information transparency by local government agencies by requiring that special districts have a functional website prior to January 1, 2020. The Act requires a district website to list contact information and suggests that agendas and minutes, budgets and financial statements, compensation reports, and other relevant public information and documents be posted to the website. A district may exempt itself from the law by adopting a resolution by a majority vote of its governing body, including findings regarding any hardships that prevent the district from establishing or maintaining a website. Such a resolution must be adopted annually as long as the hardship exists. For additional information, see: <*https://www.jdsupra.com/legalnews/ab-2257-new-brown-act-requirements-for-35346/*>. The District's website is kept updated and is easily navigable, with current and past agenda packets available for download. Additionally, the homepage contains a link to its "Transparency Page." The "Transparency Page" provides links to copies of the certified annual financial statements or compensation reports. On the homepage, the District has a tab entitled "Contact Us" that provides a directory, address, and other contact information, ensuring compliance with the Special District Transparency Act requirements. It is recommended that the District consider adopting a policy requiring the PID website to be user-friendly and contain accurate and up-to-date information.

In addition, for all meetings occurring on or after January 1, 2019, AB 2257 adds additional requirements governing the location, platform, and methods by which an agenda must be accessible on the agency's website. For purposes of this MSR, we interpret AB 2257 to mean the following:

- Prominent Direct Link: With one click from the agency's homepage, the current agenda opens up. That one click does not take the individual to another page, which would require the user to perform an additional action to reveal the agenda link.
- Downloadable: the agenda can be downloaded and saved to a computer.
- Searchable: the agenda document can be searched for specific terms using the search-on-the-page function provided in browsers.
- Indexable: commonly used search engines will respond to a search with the agenda for that legislative body.

Paradise Irrigation District makes its agenda available on its main page through a "View Meetings" icon at the following URL: *https://pidwater.com/meetings/regular-board-meetings*. This webpage contains meeting minutes and agendas for the previous and current year. The District does have a dedicated webpage that provides the necessary agenda information, with the most current agenda located at the top of the page. Therefore, the District website agenda distribution does comply with the requirements of the Brown Act 2016 Updates described in AB 2257. Most notably

in 2023, the Special District Leadership Foundation awarded PID with a Special District Transparency Certificate as shown in Figure 4.3.

Figure 4.3: Transparency Certificate

COVID-19

During the COVID-19 global pandemic experienced in the years 2020 to 2023, the PID allowed community members to fully participate in meetings via email and Facebook Livestream (PID, 2020). Today, in 2023, meetings are conducted in person and virtually (PID, 2023). The District allows the public to meet virtually via Zoom and provides a meeting link on its agenda. Additionally, public comments are accepted via email or telephone.

4.3: MANAGEMENT EFFICIENCIES AND STAFFING

The District operates under the direction of the elected District Board. The District Manager is appointed by and reports to the Board and is responsible for directing District operations and overseeing and implementing policies on behalf of the District Board. In addition, the District Manager serves at will and oversees PID's employees.

An important part of management effectiveness is having a District-wide mission and vision statement that appears regularly in District documents and serves to guide the District's strategic decisions. PID's District Mission statement is apparent online and is provided within the District's annual budget as follows: "We are dedicated to producing and delivering a safe, dependable supply of quality water in an efficient, cost-effective manner with service that meets or exceeds the expectation of our community."

Listening to and addressing feedback from customer suggestions and complaints is an important administrative function for local governments because it demonstrates concern for the constituents. PID offers customers several ways to communicate suggestions or complaints, including:

PID Mission Statement

"We are dedicated to producing and delivering a safe, dependable supply of quality water in an efficient, cost-effective manner with service that meets or exceeds the expectation of our community."

- Website Contact Form submitted to the PID Secretary (Georgeanna Borrayo, gborrayo@paradiseirrigation.com) at: <*https://pidwater.com/contact/3*>

- U.S. postal mail to: PID, Attn: District Manager, 6332 Clark Road, Paradise, CA 95969
- Directly to the General Manager: Email: tlando@paradiseirrigation.com, or mrich@paradiseirrigation.com
- Phone at (530) 205-8706 (automated system) or (530) 877-4971 (during office hours)

Grand Jury

The 2021-2022 Grand Jury Report addresses that the Paradise Irrigation District Manager was interviewed in order to understand how the District managed public crises since 2017 (County of Butte, 2022). The 2019-2020 Butte County Grand Jury Report describes that the Camp Fire has an ongoing recovery process that includes a water component. The report addresses that PID issued a water advisory in December 2018 that followed the Fire. Paradise Irrigation District has worked with federal agencies, scientists, and engineers to form a recovery plan. The recovery plan addresses a rigorous process of inspecting all main lateral connections that enable water to enter an owner's property (County of Butte, 2020). Paradise Irrigation District was not subject to the Butte County Grand Jury Report for the following years: 2018-2019, 2017-2018, and 2016-2017 (County of Butte, 2016-2018).

Litigation

Litigation is expensive for public agencies due to the costs associated with preparing an administrative record, retaining attorneys, and preparing briefs. Avoidance of litigation is an indicator of management's effectiveness in utilizing alternative dispute resolution mechanisms. Past litigation cases were reviewed and discussed with PID staff. The past litigation cases[2] were primarily related to the Camp Fire. PID has been able to fully resolve these past litigation cases as it has moved towards recovery and rebuilding. LAFCO may reconsider this metric in a future MSR for the District.

Staffing and Training

PID has a total of 42 employee positions in the following staff sections:

- Administration (7)
- Customer Service/Metershop (11)
- Transmission / Distribution (17)

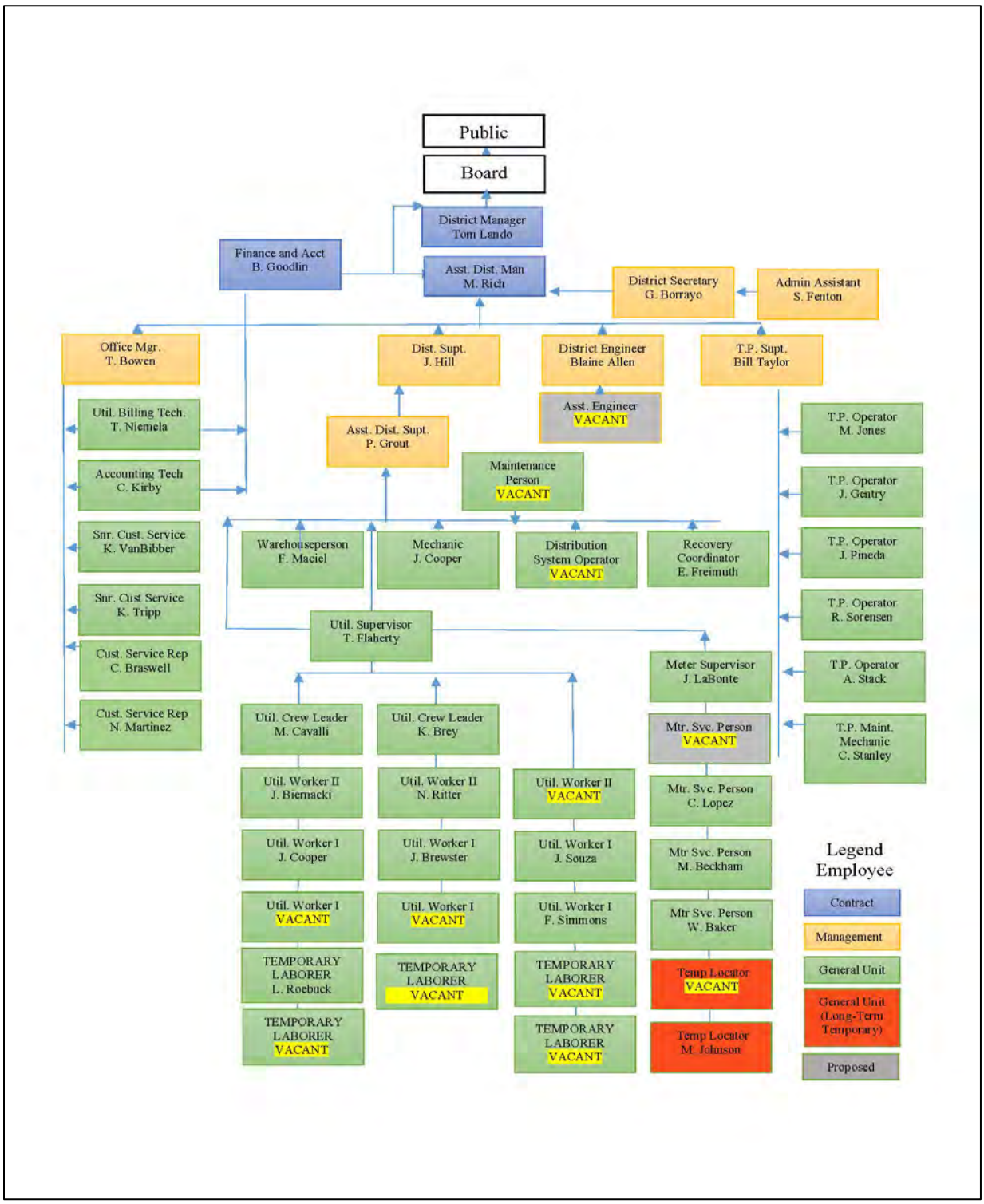
[2] To assess the status of litigation, the MSR authors reviewed PID Board agendas for the year 2022 and counted the number of legal cases. In 2022 there was litigation regarding Pacific Gas & Electric Company Bankruptcy Proceedings, including a PID claim against Fire Victim Trust (PID, 2022b). Additionally, in 2022, there was anticipated litigation with the Town of Paradise regarding financial responsibility for the cost of relocating of valve boxes (PID, 2022c). Towards the end of 2022, there was anticipated litigation pursuant to paragraph (3) of subdivision (d) of California Government Code Section 54956.9 (PID, 2022a). This litigation relates to the 2018 Camp Fire. As of Feb 2024, this litigation has been fully resolved (personal communication, M. Rich, 2024).

- Water Treatment Plant (7)
- (PID, 2023b)

However, some of these staff positions remain vacant. The organizational chart for the District is shown in Figure 4.5 (PID, 2023b). The State Controller's Government Compensation website reports that in 2021 PID had 48 employees, although several of these employees were part-time and/or temporary. In 2021 there was a combined payroll totaling wages of $2,685,677 and Total Retirement & Health Contribution of $751,319 (California State Controller, 2021). Ten employees earned more than $100,000 in the year 2021. Additional information is provided in the Finance Chapter.

Figure 4.4: PID's Office

Figure 4.5: Organization Chart



Source: PID, 2023b

Awards

The Paradise Irrigation District has been recognized for its ongoing efforts to provide District services in a financially competent and environmentally sensitive manner. The District has received numerous awards and grants in the past five years, as listed in Table 4-2 below. Most recently, in October 2023, PID won the Special District Transparency Certificate from the Special District Leadership Foundation. Through this award, the Foundation is recognizing PID's dedication to being fully transparent as well as open and accessible to the public and other stakeholders.

Table 4.2: Summary of Awards & Grants – Paradise Irrigation District

Program	Grant Title	Amount Awarded
Special District Leadership Foundation	Special District Transparency Certificate in 2023	None
FEMA - Public Assistance	Emergency Response/Protective Measures	$1,613,440.70
FEMA - Public Assistance	PID Management Costs	$68,779.00
FEMA - Public Assistance	Arborist	$9,954.75
FEMA - Public Assistance	District-wide Fencing	$93,750.00
FEMA - Public Assistance	Road Damage Caused by Fire	$125,787.19
FEMA - Public Assistance	Contaminant Testing by PID	$1,737,287.86
FEMA - Public Assistance	Vehicles, Equipment, and Buildings	$33,695.93
FEMA - Public Assistance	Donated Resources	$373,409.26
FEMA - Public Assistance	Magalia Dam Burn Damage	$33,404,27
FEMA - Public Assistance	Meters, Meter Boxes & AMI System	$1,956,875.50
FEMA - Public Assistance	Service Laterals	$40,118,608.12
FEMA - Public Assistance	Water Mains	$28,006,040.62
FEMA - Public Assistance	Initial Service Laterals	$4,300,718.00
FEMA – PA Subtotal		$78,471,751.20
FEMA - Hazard Mitigation Grant Program	Paradise Water Supply Hazard Mitigation Project	$4,694,486.25
FEMA - Hazard Mitigation Grant Program	Advance Assistance - Magalia Dam Study and Design	$1,207,931.25
FEMA – HMGP Subtotal		$5,902,417.50
CalOES – Community Power Resiliency Grant	Solar Panels on Water Tanks & Update of Emergency Response Plan	$269,200.00
California Water Boards – Drinking Water State Revolving Fund	Almond Street Project, Reservoir B, and Local Cost Share on FEMA PWs for Water Distribution System	$23,367,540.00
TOTAL ALL		$108,010,908.70

Source: PID, 2023c

4.4: DETERMINATIONS: GOVERNMENT STRUCTURE AND ACCOUNTABILITY

Based on the information in Sections 4.1 through 4.3 above, the following written determinations make statements involving each service factor that the Commission must consider as part of a municipal service review. The determinations listed below in Table 4.3 are based upon the data presented and are recommended to the Commission for consideration. The Commission's final MSR determinations will be part of a Resolution that the Commission formally adopts during a public meeting.

Table 4.3: MSR Determinations: Accountability for Community Service Needs, Including Government Structure and Operational Efficiencies

Number	Indicator	Determination
PID-Acc-1	Number of closed sessions during the year 2020 (ideally fewer than 50%).	56 percent (i.e., 13) of the meetings of the PID Board of Directors included closed sessions during the year 2022. Although this number exceeds the 50 percent accountability indicator, PID held many closed sessions due to Fire Victims Trust settlement issues as well as employee turnover resulting from the Camp Fire.
PID-Acc-2	Does the agency's Website comply with the 2016 updates to the Brown Act described in Government Code §54954.2 and enacted by Assembly Bill 2257?	Compliance with the 2016 updates to the Brown Act described in Government Code §54954.2 was evaluated in this MSR. The District's website agenda distribution does comply with the requirements of the Brown Act 2016 Updates described in AB2257, in that meeting agendas are retrievable, downloadable, searchable, and indexable. PID makes its agenda and minutes available in .pdf format on its website, under a tab entitled "Your District" under its "Meetings" section, at the following URL: <*https://pidwater.com/meetings*>. Agendas are also found directly on its homepage at the bottom. Board packets for both regular and special meetings are listed.
PID-Acc-3	Compliance with the Special District Transparency Act (SB 929 or California Government Code, §53087.8 and see also §7928.8) requires special districts to have a functional website that lists contact information and contains financial statements, compensation reports, and other relevant public information.	Compliance with the Special District Transparency Act (Gov. Code, §53087.8 and see also §7928.8) was evaluated in this MSR. The PID currently maintains a website that lists contact information for staff and the Board. Financial reports are also available at: <*https://pidwater.com/docs/district-operations/budgets-audits/audits*>. The PID website contains a link to the State Controller's website, which provides detailed information about employee compensation. Additionally, PID received a Special District Transparency Certificate from the Special District Leadership Foundation. Therefore, the PID complies with the Special District Transparency Act.

PID-Acc-4	Terms of office and the next election date are disclosed for District Board members, and committee appointments are online.	PID's Board committee appointments are readily available online at <*https://pidwater.com/board*>. Terms of office and appointment dates are disclosed for each District Board member on the District website. The next election date is disclosed for Board members by year, but not by the specific month and day, and this item could be improved by updating the website.
PID-Acc-5	Do elected Board members submit required forms and receive required training as prescribed by the three state laws regarding accountability and ethics, including: 1) the Political Reform Act; 2) Assembly Bill 1234 (Salinas, 2005), which requires ethics training; and 3) Government Code 53237 et. seq. which mandates sexual harassment prevention training?	Compliance by PID Board members in submitting required forms and receiving required training as prescribed by the three state laws regarding accountability and ethics was assessed in this MSR. PID Board members comply with the Political Reform Act by submitting required economic interest forms to the PID Finance Dept. Assembly Bill 1234 (Salinas, 2005) requires ethics training. PID Board members received this training, and certificates of training are available on PID's website. Government Code 53237 et. seq. mandates sexual harassment prevention training. As of September 2023, these certificates have been posted to PID's website.
PID-Acc-7	Current litigation and/or grand jury inquiry	PID was subject to Butte County Grand Jury reports for two years recently (2019-2020, 2021-2022), and both of these reports address issues related to the 2018 Camp Fire. PID is continuing to work with its partners to recover from this disaster. In 2022, PID was involved in three litigation cases related to the Camp Fire. As of February 2024, these litigation cases have been fully resolved. LAFCO may wish to reassess this metric in a future MSR.

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CHAPTER 5: POPULATION AND GROWTH

TABLE OF CONTENTS

5.1: SERVICES, FORMATION, AND BOUNDARY

Services and Location

Type and Extent of Services

Water Services

The PID provides several municipal water-related services to its customers, including water storage, treatment to drinking water standards, distribution to its customers, infrastructure maintenance, vegetation management for fire protection and water conservation purposes, and billing. As an Irrigation District, PID operates consistent with its principal act, the California Water Code, Division 11, Section 20500 et seq. (see <*http://leginfo.legislature.ca.gov/*>). This principal act provides that a "A majority in number of the holders of title to land susceptible of irrigation from a common source and by the same system of works, including pumping from subsurface or other water, who are also the holders of title to a majority in value of the land may propose the formation of a district under the provisions of this division" (CWC Section 20700). More detailed information about the type of services that irrgation districts can generally provide is listed in California Water Code Sections 22075-22982.

The District operates and maintains an important local municipal water distribution system. As part of its municipal water service, PID operates an on-site demonstration garden which provides water-wise landscaping advice.

Recreation Service

Paradise Lake, one of two sources of surface water for PID, has been the site of passive recreation activities. Additionally, as of June 1, 2020, Paradise Recreation and Park District has taken over the provision of recreation services at Paradise Lake, which was previously under the auspices of PID. This is accomplished via a 25-year lease. The boundaries of the two Districts have some geographic overlap.

The Paradise Ridge/Backbone Trail connects Paradise Lake to Magalia Reservoir to Lake De Sabla. PID has informally coordinated with the Plumas National Forest and the Bureau of Land Management regarding this trail, but Paradise Recreation and Park District is heading up the trail program and planning, and is actively designing the trail as of this writing.

It is recommended that LAFCO consider transferring PID's active recreation services to latent powers and allow Paradise Recreation and Park District to assume direct responsibility.

Formation and Boundary

This section summarizes the history about how PID was formed and its boundary. The District was formed in 1916. PID operates as an Irrigation District under California Water Code, Division 11, Section 20500 *et seq.* The District boundary covers approximately 11,438.5 acres, as shown in Figure 5.1. Table 5.1 provides a summary of PID's boundary expansions from 2015 to 2022.

Table 5.1: Past Annexations (2015 to 2022) To PID Approved by LAFCO

Date	Action
December, 2016	Sphere of Influence Amendment and Annexation adding four parcels totaling 8.2 acres
February, 2017	Annexation of one parcel totaling 6.7 acres
May, 2018	Sphere of Influence Amendment and annexation of one parcel totaling 40.94 acres

Sphere of Influence

The District's SOI is 1,325 acres in size and contains 130 assessor parcels (APNs). The average parcel size within the SOI is 10 acres.

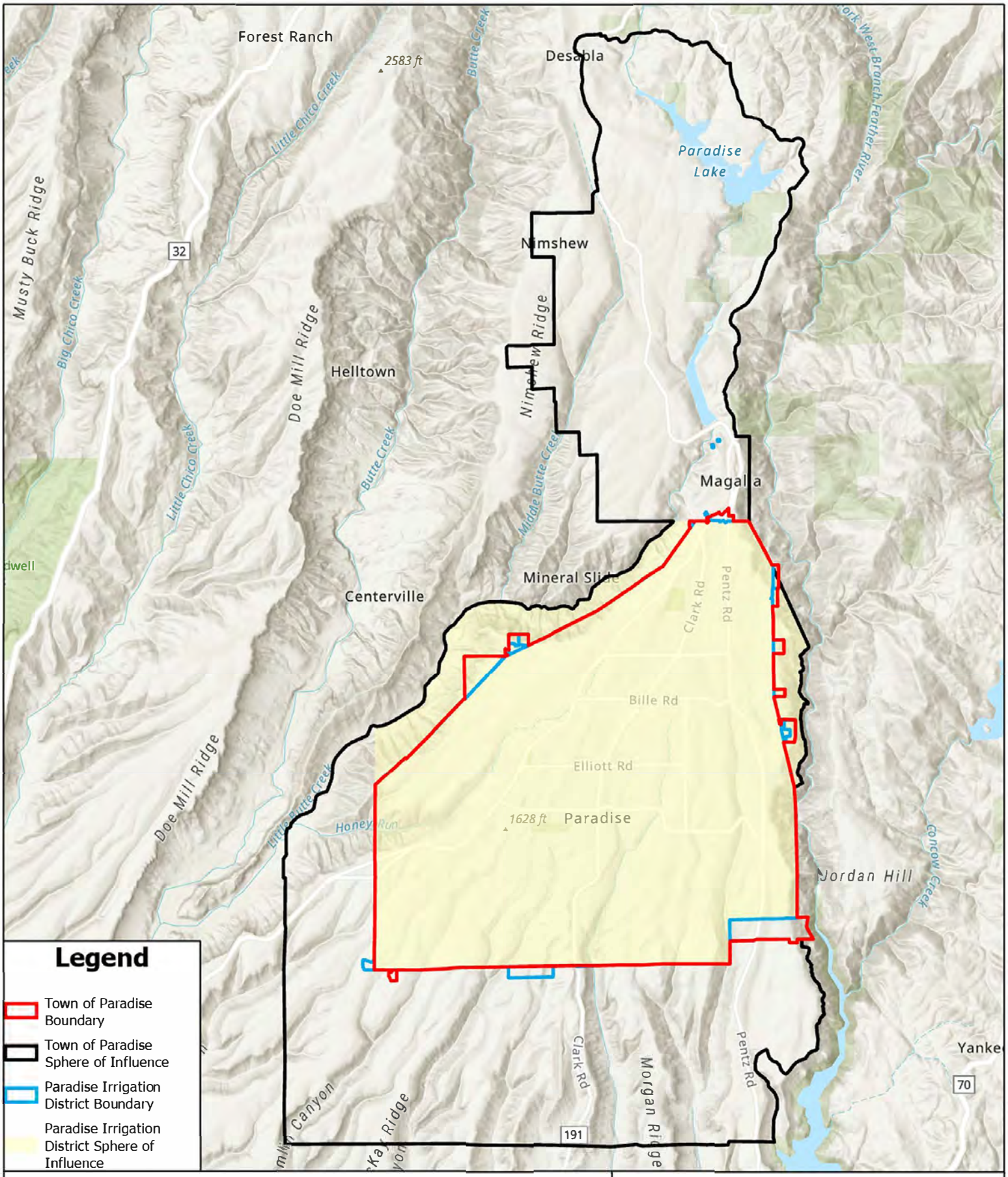
Extraterritorial Services

The PID does not currently provide water service to areas outside its existing boundary.

Proposed Extra Territorial Service - Tuscan Ridge Project

One proposed extra-territorial service area is the proposed Tuscan Ridge Project. The project site consists of approximately 163 acres located on the previous Tuscan Ridge Golf Club at 3100 Skyway Road, Paradise, CA 95969. The project site is located outside of PID's boundary and SOI. The site is in unincorporated Butte County on the southeast side of Skyway Road, between Chico and Paradise. The proposed project could include a subdivision to develop a total of 165 single family residential lots. The lots could potentially range in size from 4,000 square feet (SF) to 40,000 square feet. Additionally, the proposed project would also include:

- Commercial development occupying approximately 31 acres of the project site,
- Landscaping would comprise approximately 3.1 acres of the site
- Recreational trails and open space would be located on 65.6 acres of the site.
- Vehicular access to the site would be provided through the existing driveway from Skyway Road near the center of the site.



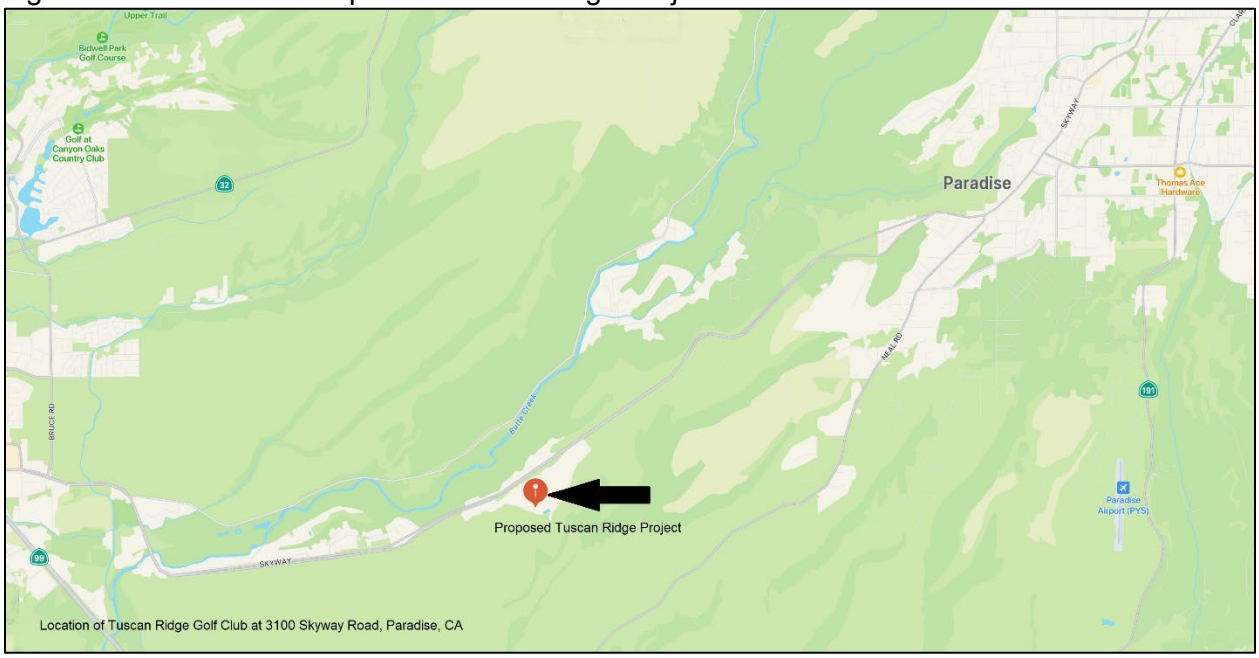
Map Date: 01/30/2023

Data Source: Paradise Irrigation District GIS data provided by Butte LAFCO, 2022. Town of Paradise GIS data provided by Butte LAFCO, 2023.

Figure 5-1: Town of Paradise SOI & Paradise Irrigation District SOI

Water and wastewater treatment infrastructure are proposed to be constructed on the Tuscan Ridge project site. Water service would be provided by existing private wells. The project developer has asked PID to oversee and manage the wells and future water service to the residences and businesses within this project. The project site currently has an existing sewage system which was developed for post-fire recovery efforts. The existing on-site wastewater treatment system was designed to treat up to 100,000 gallons per day with capacity to expand up to 150,000 gpd. The wastewater treatment system has an existing permit from the Central Valley RWQCB. New modifications to the wastewater treatment system and the construction of service laterals to individual lots will be needed to accommodate the development proposal. There will be no new off-site pipelines. All collection and treatment will be onsite. However, it is not clear how this wastewater would be treated and disposed of. Disposal into existing ponds is one option. Another option would be subsurface disposal. The RWQCB would need to review the design options. Regardless, the developer has asked PID to manage and maintain the wastewater infrastructure. This is complicated by the fact that the PID does not currently have the power to provide waste collection or treatment services, which would require an application to LAFCo for consideration to activate sewer service powers and may require a vote of the majority of the PID registered voters. Given the distance from the proposed project, extending the PID boundary would require consideration of any growth inducing impacts that might arise on the intervening or adjacent lands.

Figure 5-2: Location of Proposed Tuscan Ridge Project



Additionally, PID could also request permission from LAFCo to provide new or extended services by contract or agreement outside its jurisdiction. LAFCO shall not accept for review any proposal, which is outside of the agency's sphere of influence except as provided under § 56133(c) of the Government Code. LAFCO would consider whether annexation is a logical alternative to

extending services beyond the jurisdictional boundaries of a local agency, or if neither scenario is appropriate at this time.

5.2: POPULATION

Growth and population projections for the affected area is a determination which LAFCO is required to describe, consistent with the MSR Guidelines from the Office of Planning & Research (OPR) as set forth in the CKH Act. This section provides information on the existing population and future growth projections for the Paradise Irrigation District and including the SOI. Historical and anticipated population growth is a factor that affects service demand. Appendix B at the end of this MSR/SOI Update provides detailed demographic and socio-economic information for the County of Butte.

Historic Population

In the past, population growth in Paradise was fairly slow until 1980. The historic population from 1980 to 2020 is shown in Figure 5.3 below.

Figure 5.3. Town of Paradise Historic Population from 1980 to 2020

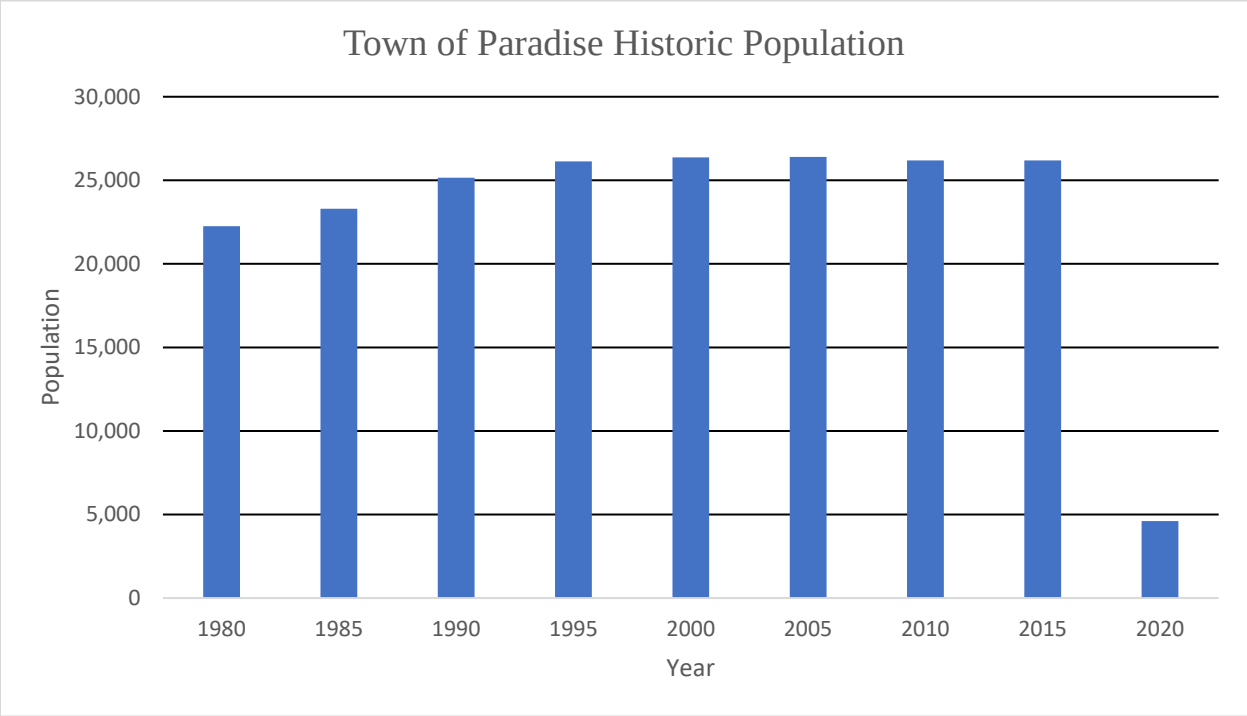


Figure 5.3 above shows that by 2020, the Town of Paradise had experienced a significant displacement of its population due to the 2018 Camp Fire. To study the effect of the Camp Fire, in 2021, the Butte County Association of Governments (BCAG) completed the Post Camp Fire

Regional Population & Transportation Study to analyze regional population, housing, employment, and traffic patterns for pre and post Camp Fire time periods. Readers can view this study at: <*http://www.bcag.org/Planning/Post-Camp-Fire-Study/index.html*>. The objectives of the study were to update the regional travel data, develop forecasts and travel patterns, inform the 2024 RTP/SCS, and update the Butte County Transit and Non-Motorized Plan. Prior to the Camp Fire (as of January 2018), the Town of Paradise had a population of a population of 26,400. However, due to the Fire, most residential, and commercial structures in Paradise were destroyed. Within the Town of Paradise, single-family structures were reduced by 85%, multi-family structures reduced by 71%, and mobile homes were reduced by 96%. Between 2018 and 2019 it is reported that Butte County experienced an employment reduction of 1,800 jobs. However, there has been an increase in employment in recent years. The BCAG study forecasts that by the year 2025 the employment total should return to the 2018 employment total (BCAG, 2021).

The Post Camp Fire Regional Population and Transportation Study findings revealed that vehicle activity rose for the surrounding communities but decreased by 43% for the Town of Paradise. Since the 2018 Camp Fire, cars remained the dominant mode of transportation due to the lack of significant capital expenditures for other modes. The Post Camp Fire Study also addressed some proposed changes in the Butte County Transit and Non-Motorized Plan Update. The near-term transit service strategy aims to maintain existing service intercity routes while connecting to the isolated parts of Butte County. The near-term service plan also seeks to potentially restore the transit services in Paradise and other surrounding communities that have been impacted by wildfires. The long-term service plan considers the potential for future travel patterns, transit markets and ridership. Some proposed plans in the long-term service plan include an improved employer vanpool program, an increase in park and rides, and a commuter bus service from Chico to Sacramento. The non-motorized plan focuses on enhancing the walking and bicycling connections to transit, prioritizing non-motorized improvements, and coordinating with local jurisdictions (BCAG, 2021).

Existing Population in PID Boundary

There are approximately 9,142 residents within the District boundaries as of January 2023 (CA DOF, 2023). This is an increase in population of 51.4% percent from the 2021 population of 6,046 (CA DOF, 2021a). Detailed information regarding population demographics in Butte County is provided in Appendix B. Since the Town of Paradise and the Paradise Irrigation District have similar boundaries, it is assumed that they have the same population count.

Table 5.2: Existing Permanent Population in PID Boundaries, 2023			
Name of District	**Population in Boundary (1)**	**Number of Registered Voters in Boundary (2)**	**Population in SOI only (3)**
Paradise Irrigation District	9,142	6,011	250-275
Sources: *(1) California Department of Finance. E-1 Population Estimates for Cities, Counties, and the State: January 1, 2022 and 2023. Sacramento, California. <https://dof.ca.gov/Forecasting/Demographics/estimates-e1/>.* *(2). District Voter Registration data, Butte County Registrar of Voters, 2023.* *(3): Calculated estimate based on an average of 2.11 persons per parcel in Butte County.*			

Existing Population in SOI

PID's SOI population (outside the District Boundary) is estimated to be a range from 250 to 275 people based upon an average of 2.11 persons per Assessor's Parcel in Butte County, as listed in Table 5.2, above. The population estimate was determined by multiplying the parcel count within the SOI (outside the District Boundary) by the County of Butte people per parcel multiplier. Additionally, the population was determined by multiplying the acres within the SOI (outside the District Boundary) to the County of Butte people per acre multiplier. The SOI's comparatively small size is 1,325 acres containing 130 of parcels (County of Butte, 2023c).

Projected Population Growth

Projecting a District's future population is complicated due to varying annexation rates and census tracts that do not match District boundaries. When considering future population growth, it is helpful to consider future housing development. BCAG has prepared a study that considers different housing types. BCAG completed the Regional Housing Needs Plan (RHNP) for the cities of Biggs, Chico, Gridley, Oroville, the Town of Paradise, and Butte County. Readers can view this Plan at: <*http://www.bcag.org/planning/regional-housing-need-plan/index.html*>.

During the Regional Housing Needs Allocation (RHNA) process, local jurisdictions are mandated to create a plan that will allocate a 'fair share' of housing units at various affordability levels. Initially, the California Department of Housing and Community Development (HCD) allocates a number of housing units to a region and segments the units into four income-affordability levels including very low-income, low-income, moderate-income, and above moderate-income. Within the 6th cycle RHNA, the BCAG region received an allocation of 15,506 units, including 6,703 units to accommodate normal growth and 8,803 additional units to rebuild units lost in the 2018 Camp Fire. The final Butte County allocation by income indicates that the Town of Paradise received an allocation of potential future of 7,179 housing units (BCAG, 2020). The Town of Paradise received an allocation of 383 very-low affordability units, 374 low affordability unit, 1,319 moderate affordability units, and 5,103 above-moderate affordability units (BCAG, 2020).

The base housing unit allocation for the Town of Paradise, including the influence of other factors, was 342 housing units. The Camp Fire rebuild allocation added 6,837 housing units to create a total of 7,179 units. Other allocation factors that influence the normal growth allocation of housing units include jobs-housing balance, childhood poverty rates, transit connectivity, and various others. Within the Town of Paradise, 50.6% of the total 342 housing units allocated were distributed to above-moderate income affordability. The moderate-income affordability distribution received the lowest allocation of housing units of 9.4%. In assessing the jobs to housing balance within the BCAG region, the RHNP addresses that no jurisdiction has achieved the balance. Specifically, the Town of Paradise had an excess of jobs in comparison to housing (BCAG, 2020). For this MSR analysis, data from the California Department of Finance (DOF) was used to project population growth for Butte County, as shown in Table 5.3 below.

In Table 5.3, Butte County's population is utilized to extrapolate population growth rates for the Paradise Irrigation District under a "Low Growth" scenario. By the year 2045, it is estimated that PID's existing boundary could encompass a population of 10,236 persons. This represents an average annual growth rate (i.e., compound annual growth rate) (CAGR) of 0.51 percent between the years 2023 and 2045.

The "High Growth" scenario shown Table 5.3 is based on BCAG's 2021 study of the Post-Camp Fire demographics. The 2021 BCAG report projects the Town will reach a population of approximately 23,503 by 2045, less than its pre-fire population of approximately 26,500. Also, approximately every four years, the BCAG prepares long-term regional growth forecasts of housing, population, and employment for the Butte County area. The BCAG's Planning Directors Group contributed towards the development of low, medium, and high scenario forecasts of housing, population, and employment. Additionally, the Town of Paradise 1994 General Plan anticipates an "annual growth rate of approximately 1.5 percent" and describes the location and policies to guide this growth. The addition of more people to the PID by 2045 is possible as the Paradise area has underdeveloped areas within existing boundaries that could potentially be available for more intensive residential development.

The Town of Paradise indicates that through December 13, 2023, Paradise has issued Certificates of Occupancy to 462 single family homes and 85 multi-family units for a total of 547 units constructed in 2023. The household size to dwelling unit ratio demonstrated by the 2022 to 2023 CA DOF growth numbers shows an average of 2.68 persons per unit. With the number of Certificates of Occupancy issued thus far in 2023, the Town has the capacity for over 1,400 residents to join the community come 2024 (Personal communication, Susan Hartman, Community Development Director, December, 2023).

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Table 5.3: Total Estimated & Projected Population (2022 – 2045)

	2023 ([3])	2025	2030	2035	2040	2045	Percent Increase 2023 to 2045	Numeric Increase 2022 to 2045	CAGR 2020 to 2045
County of Butte[1]	207,615	208,768	211,002	216,702	244,028	232,443	12%	24,828	0.51%
Paradise Irrigation District (Low Growth)[2]	9,142	9,913	9,291	9,542	9,865	10,236	12%	1,094	0.51%
Paradise Irrigation District (High Growth)[4]	n/a	14,101	18,867	21,446	22,562	23,503			

Sources:

1: California Department of Finance. Demographic Research Unit. 7/19/2023. Report P-2A: Total Population Projections, California Counties, 2020-2060 (Baseline 2019 Population Projections; Vintage 2020 Release). Sacramento, California.

2: Population projection for PID calculated as 4.4 percent of The County of Butte's population.

3: California Department of Finance. E-1 Population Estimates for Cities, Counties, and the State: January 1, 2022 and 2023. Sacramento, California, May 1, 2023.

4. Projections for the High Growth scenario are from the 2021 BCAG report entitled Post Camp Fire Regional Population and Transportation Study as listed in its Table 3: Population Forecast 2018 – 2045.

5.3 LAND-USE AND DEVELOPMENT

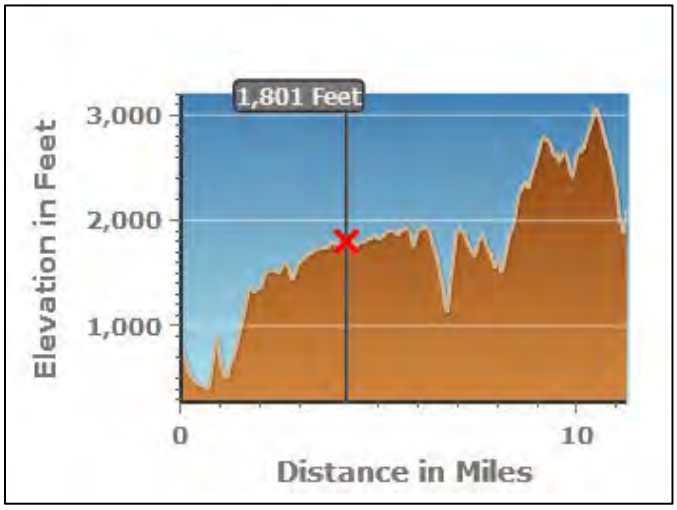
Present Land Uses

Paradise Irrigation District

The PID does not have land-use authority. Land use is described herein because it relates directly to projected population growth of the District, which can influence the demand for municipal water. Land use decisions are one of the most important legal authorities available to cities and counties. Because the existing PID boundary and SOI closely align with the Town of Paradise, the Town's land use and planning documents are briefly described on the next page. Butte County's land use and planning documents are also briefly described to provide context.

The Paradise Irrigation District is located in north central Butte County in the northern Butte Valley (see Figure 3.1 in Chapter 3). Paradise is located at approximately 1,800 feet in elevation within the foothills of the Sierra Nevada Mountains, approximately 15 miles east of Chico and 90 miles north of the City of Butte. As shown in Figure 5.4, the foothills to the east of Paradise climb steeply to an elevation exceeding 3,000 feet above mean sea level (msl). The Paradise Irrigation District boundary overlaps directly with that of the Town of Paradise.

Figure 5.4: Elevation Profile for Paradise Irrigation District Area



Source: EPA, 2023.

Land Use in Town of Paradise

The Town of Paradise was incorporated in 1979. The Town is located within Butte County and encompasses roughly 18.2 square miles. The Town functions as the regional center for transportation, business, commerce, and tourism. Although much of the community burned down during the 2018 Camp Fire, the community continues to retain a range of land-uses, including

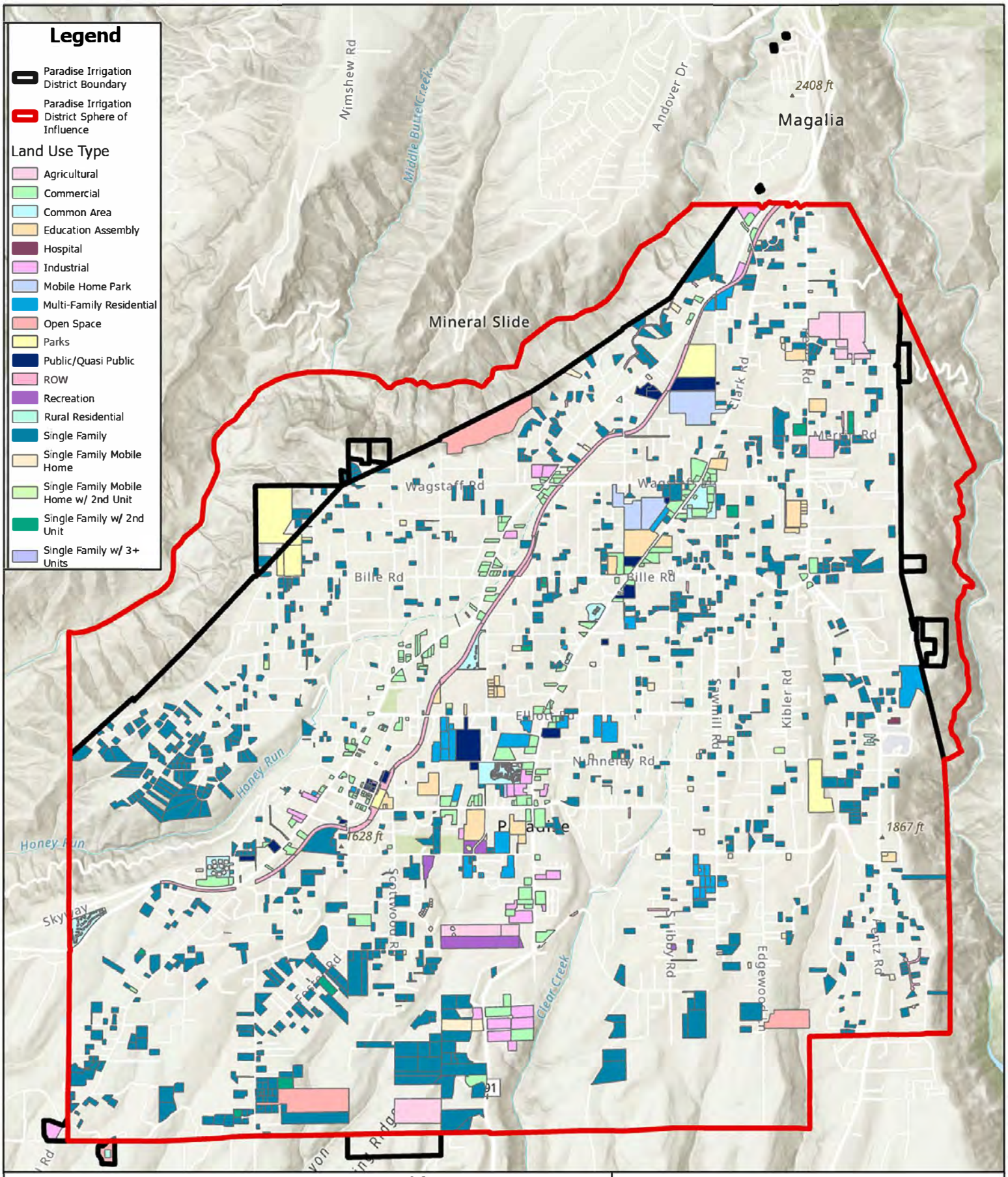
residential, commercial, and open space as shown in Figure 5.6. Paradise's downtown district contains shops and cafés. Immediately surrounding the downtown core are single-family and multi-family residential homes. The Town anticipates new multi-family development along Clark Road and Skyway (Paradise, 2022). The U.S. Post office is located at 6469 Clark Rd, Paradise, CA 95969. The commercial corridor located along Skyway is intended to contain grocery stores, fast food facilities, and other consumer amenities. Many of these commercial businesses are still in the process of re-building after the fire.

The Town of Paradise includes several important public service buildings. The Paradise Irrigation District administrative office is located at 6332 Clark Road Paradise, CA 95969 (PID, n.d.). The Paradise Town Hall is located at 5555 Skyway, Paradise, CA 95969 (Paradise, n.d.a). The police station is located at 5595 Black Olive Dr, Paradise, CA 95969 (Paradise, n.d.c). There are two fire stations within the Town of Paradise. Fire Station 81 is located at 767 Birch St., Paradise, CA 95969. Fire Station 82 is located at 5545 S. Libby Rd, Paradise, CA 95969 (Paradise, n.d.b).

Within the Town of Paradise there are several sensitive receptors, defined to include land uses which host populations that may be vulnerable to noise, heat waves, or other environmental conditions. In Paradise, sensitive receptors include residential areas, hospitals, convalescent homes and facilities, schools, and other similar land uses. Adventist Health Feather River closed its main campus at 5974 Pentz Road, Paradise, CA 95969 following the 2018 Camp Fire. The company currently operates two health clinics located at 6283 Clark Rd Paradise, CA 95969 and 5125 Skyway, Paradise, CA 95969. There are two elementary schools, one junior high school, and two high schools operated by the Paradise Unified School District (PUSD, n.d.). Prior to the Camp Fire, there were several private and charter schools.

Transportation Land Use: A significant amount of land within the Paradise Irrigation District boundary area is dedicated to vehicle transportation including rural roads. Major roadways in Paradise include Skyway, Neal Road, and Pearson Road. State Route 191 is a state highway that provides a connection to the Town of Paradise. As the highway leads to the Town of Paradise, it becomes Clark Road. Paradise Skypark is a private use airport that is located at 4340 Airport Road, Paradise, CA 95969. This airport covers an area of 35 acres and is at an elevation of 1,300 feet msl.

Figure 5.5: Town of Paradise Administrative Building



Map Date: 02/25/2023

Data Source: Land use data from Butte County Association of Governments, 2023.

Figure 5-6
Land Use

Nearby Communities: There are several communities located in close geographic proximity to Paradise including Magalia, Paradise Pines, Lovelock, Stirling City and Inskip.

- Magalia is an unincorporated community and is located north of the Town of Paradise and receives domestic water from the Del Oro Water Company (DOWC). The community of Magalia experienced extensive damage in the Camp Fire in 2018.
- Paradise Pines is an unincorporated community located north of the Town of Paradise, and receives domestic water from the DOWC. The community of Paradise Pines is forested and has a small proportion of residential areas.
- Lovelock is an unincorporated community within Butte County that is west/southwest of Stirling City. The community of Lovelock is densely forested and has very little residential areas.
- Stirling City is a Census Designated Place (CDP) within Butte County located on the western foothills of Sierra Nevada.
- The Town of Inskip is an unincorporated community with very little residential area.

Butte County

A portion of PID's boundary and SOI is located within unincorporated Butte County. Butte County's total land area is 1,677 square miles with approximately 83 percent privately owned and 17 percent publicly owned (County of Butte, 2010). The incorporated areas of the Cities of Chico, Oroville, Gridley, and Biggs, and the Town of Paradise make up 68 percent of the County's population, with the remainder living in outlying unincorporated areas (County of Butte, 2023a). The County contains an array of land-use types, including residential, commercial, industrial, agricultural, and public lands. Much of the land in PID's SOI is currently utilized for rural land-uses such as agriculture or is vacant. Since much of the SOI remains unincorporated, the Butte County General Plan is the guiding land use document, as described in the following pages. It's possible that land available in the SOI may be suitable for future development, pending future studies and permits.

Agricultural Land Use: Agricultural land is an important resource in California and the CKH Act suggests that an aim of LAFCO is to protect open space and agriculture. LAFCO's MSRs consider the present and planned land uses in the area, including agricultural and open-space lands. State law empowers LAFCO to "discourage urban sprawl, preserve open-space and prime agricultural lands, and encourage the orderly formation and development of local agencies based upon local conditions and circumstances" through the implementation of LAFCO's tools such as MSRs and SOIs.

LAFCo notes that there are two similar definitions for "Prime Agricultural Land" set forth in California statute. On one hand, State law defines "Prime Agricultural Land" (PAL) for cities and counties in Government Code sec. 51201 as any of the following:

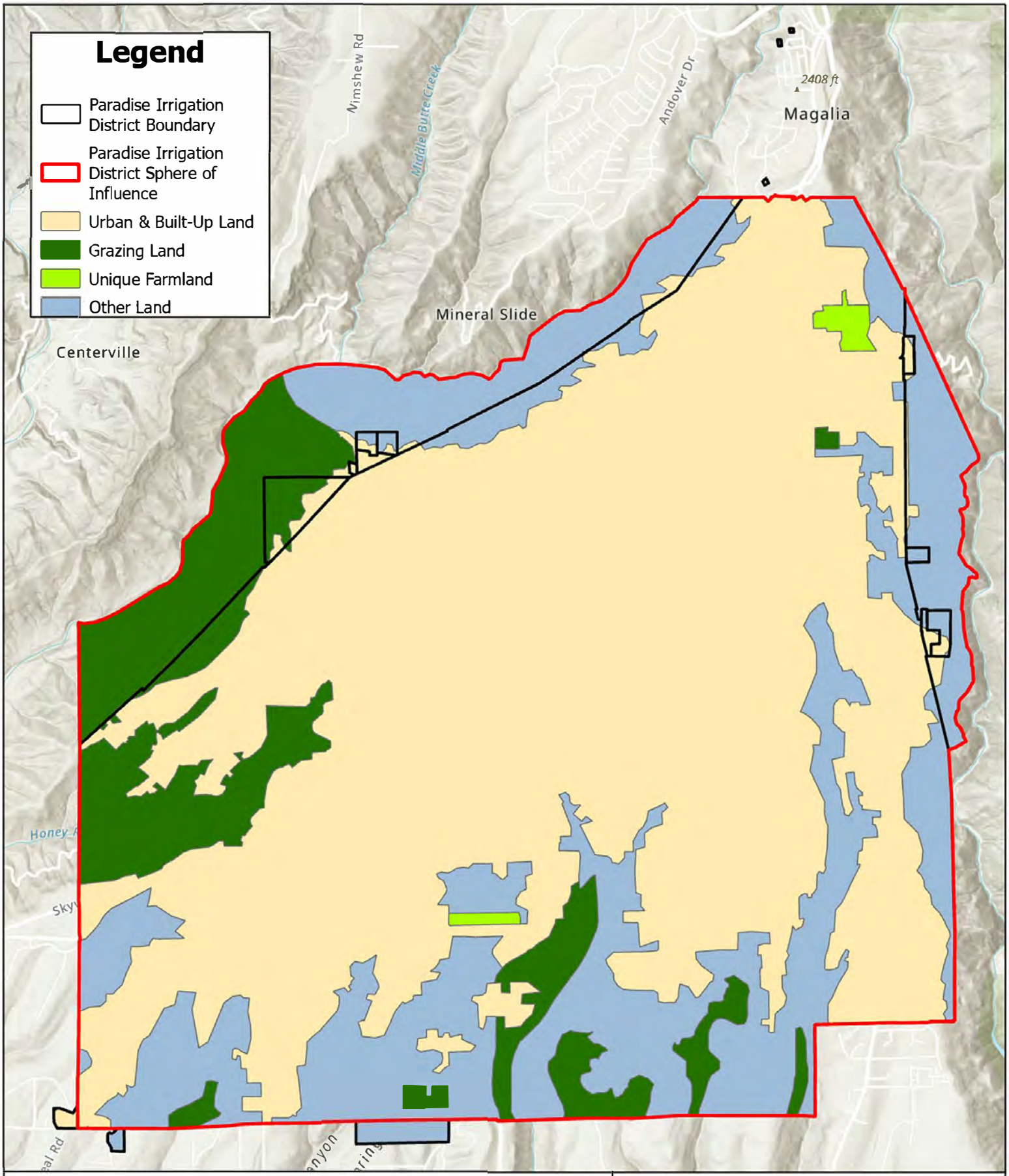
a) All land that qualifies for rating as class I or class II in the Natural Resource Conservation Service land use capability classifications.
b) Land which qualifies for rating 80 through 100 in the Storie Index Rating.
c) Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture.
d) Land planted with fruit- or nut-bearing trees, vines, bushes, or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars ($200) per acre.
e) Land which has returned from the production of unprocessed agricultural plant products and annual gross value of not less than two hundred dollars ($200) per acre for three of the previous five years.

In contrast, LAFCo law provides a similar but not identical definition: Cortese-Knox-Hertzberg Local Government Reorganization Act, Government Code sec. 56064 defines PAL as an area of land, whether a single parcel or contiguous parcels, that has not been developed for a use other than an agricultural use and that meets any of the following qualifications (substantive differences with GC sec. 51201 are italicized):

a) Land that qualifies, if irrigated, for rating as class I or class II in the USDA Natural Resources Conservation Service land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible.
b) Land that qualifies for rating 80 through 100 Storie Index Rating.
c) Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the National Range and Pasture Handbook, Revision 1, December 2003.
d) Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars ($400) per acre.

LAFCO aims to protect open space and agriculture. For purposes of this MSR analysis, agricultural data is displayed in the farmland map, Figure 5.7. The GIS data utilized for this map was obtained from the CA Department of Conservation. The CA Department of Conservation utilizes the definition of “Prime Agricultural Land” set forth in California statute in Government Code sec. 51201.

California’s Farmland Mapping and Monitoring Program (FMMP) provides data to decision makers for use in planning for the present and future use of California's agricultural land resources. This data is for general planning purposes and has a minimum mapping unit of ten acres (CA Dept of Conservation, 2016). The FMMP data for the Paradise area is summarized herein. Within the Paradise Irrigation District boundary, there is Unique Farmland, Grazing Land,



Map Date: 02/14/2023

Data Source: Farmland data from CA Dept. of Conservation 2020. PID Boundary and Sphere of Influence from Butte County LAFCO.

Figure 5-7
PID Farmland

Urban & Built-Up Land, and parts under the "Other Land" designation. Based on the USDA-NRCS definition, Unique Farmland consists of lesser quality soils and produces leading agricultural crops within the state. The Urban & Built-Up Land designation is described by the USDA-NRCS as land that is occupied with structures that have a building density of at least 1 unit to 1.5 acres or 6 structures to a 10-acre parcel. The USDA-NRCS describes Grazing Land as land that has existing vegetation suited for livestock to graze on. The USDA-NRCS describes Other Land as land with low density rural developments, timber, wetlands, brush, riparian areas, livestock, poultry, and a few other features. Although the Other Land designation consists of riparian areas and low-density developments, the land is nonagricultural. (CA Department of Conservation, n.d.)

Within the District boundary, there are 912.8 acres of Grazing Land, 54.9 acres of Unique Farmland, and 8,087.3 acres of Urban & Built-Up Land (CA Dept. of Conservation, 2020). The only land suitable for agriculture is the 54.9 acres of Unique Farmland and 912.8 acres of Grazing Land.

Within the PID sphere of influence, the FMMP designations are Grazing Land (528.6 acres), "Other Land" (755.1 acres), and Urban & Built-Up Land (40.9 acres). (CA Dept. of Conservation, 2020).

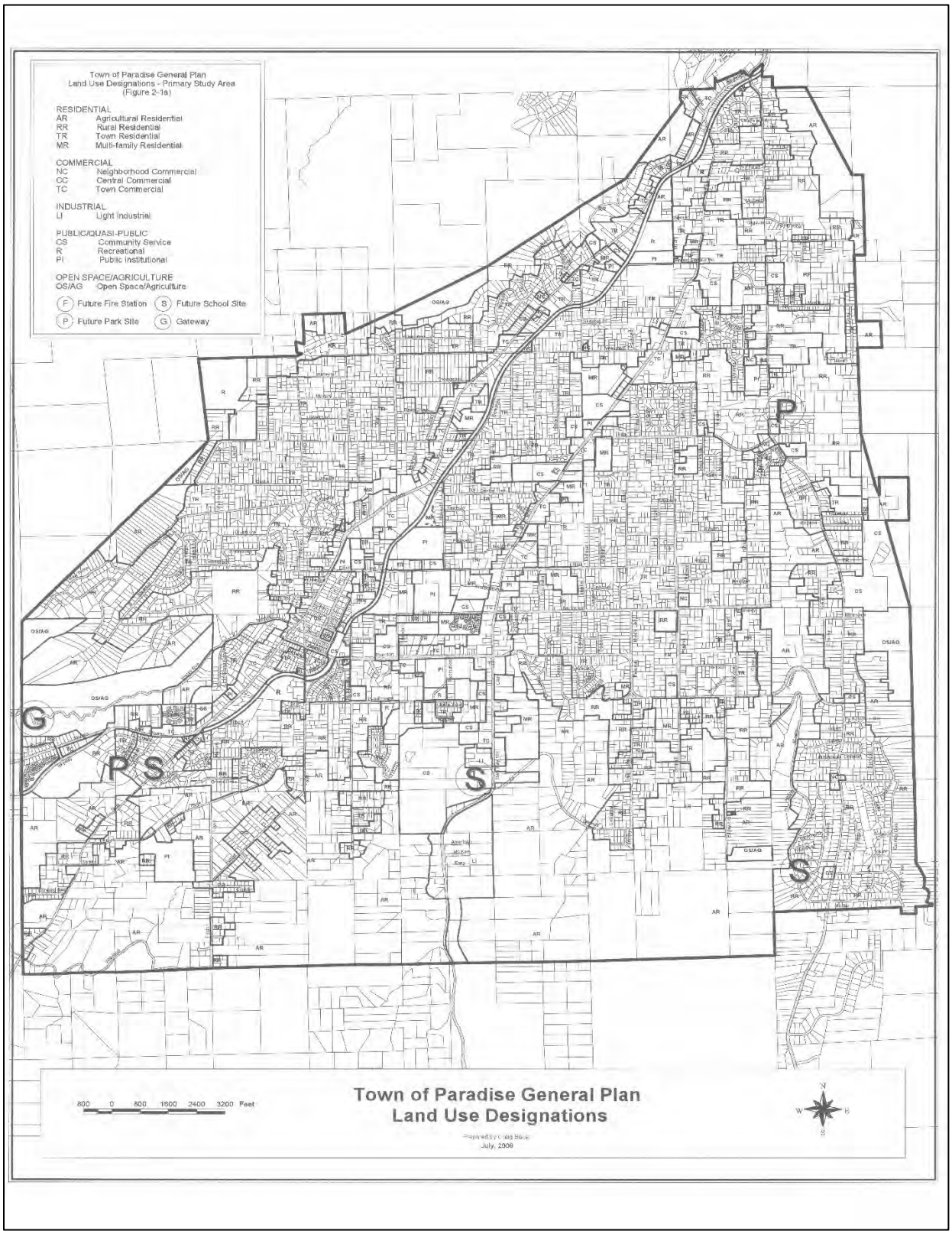
Planned Land Uses

Town of Paradise General Plan 1994

The Paradise Irrigation District is not a land use authority. Rather, the Town of Paradise and the County of Butte are the local decision-making authorities for local land use. To provide context related to land-use and population growth, a brief description of the General Plans for the Town of Paradise and the County of Butte are briefly summarized in the following paragraphs.

The Paradise 1994 General Plan was adopted by the Town Council in 1994. Other than an update to the Housing Element in 2022, the General Plan has not been updated or amended since 1994. According to Town Planning staff, the Town plans to update the General Plan within the next few years (Town of Paradise, 2023). The Town's General Plan serves as a comprehensive guide for making decisions about land use, community character, circulation, open space, the environment, and public health and safety. The Town General Plan contains guiding policies related to growth management, citizenry values, and innovative land use planning (Paradise, 1994). The General Plan provides the legal foundation for the zoning ordinance and other ordinances. The General Plan recognizes the municipal services provided to Town residents and contains numerous goals regarding the provision of these services. For example, the General Plan indicates that one of its central goals is to "Assure that fire and police protection are enhanced sufficiently to meet the demands of new and existing land use development" (Paradise 1994). The General Plan contains a land use map and associated policies that identify the types and intensities of permissible uses in relation to different land use designations. Figure 5.8 below shows the Town's General Plan Land Use Designations.

Figure 5.8: Paradise General Plan Land Use Map (1994)



Source: Town of Paradise, 1994

The Town's General Plan Housing Element was recently updated on June 14, 2022, through Town Resolution No. 2022-39 (Paradise, 2022). The Town has opted to update its housing element every eight years. The Town General Plan and associated housing element influence both the type and the rate of growth within the boundary area.

Since 2008 several new state laws have been passed regarding General Plans. For example, SB 244 (Wolk, 2011) addresses local government: land use: general plan: disadvantaged unincorporated communities. This law requires that the land use element include an analysis of the presence of island, fringe, or legacy unincorporated communities. SB 44 was subsequently amended by SB 1090 (2012), which amends Sections 56375, 56425, and 56430, and adds Sections 53082.5, 56033.5, and 65302.10 to the Government Code, and Section 13481.7 to the Water Code.

New state laws also pertain to a General Plan Safety Element. For example, Gov. Code 65302(g)(5) – (g)(8) suggests that jurisdictions review the safety element for climate change at each update to the Local Hazard Mitigation Plan. Jurisdictions may also choose to do a comprehensive review of the Safety Element upon each housing element update to streamline review. The CA Office of Planning Research provides guidelines for General Plan processes and documents. The most recent guidelines were approved in 2017 and are available on the OPR website at: <*https://www.opr.ca.gov/planning/general-plan/guidelines.html#:~:text=OPR%20is%20required%20by%20Government%20Code%20Section%2065040.2,%E2%80%9Chow%20to%E2%80%9D%20resource%20for%20drafting%20a%20general%20plan*>.

Butte County General Plan

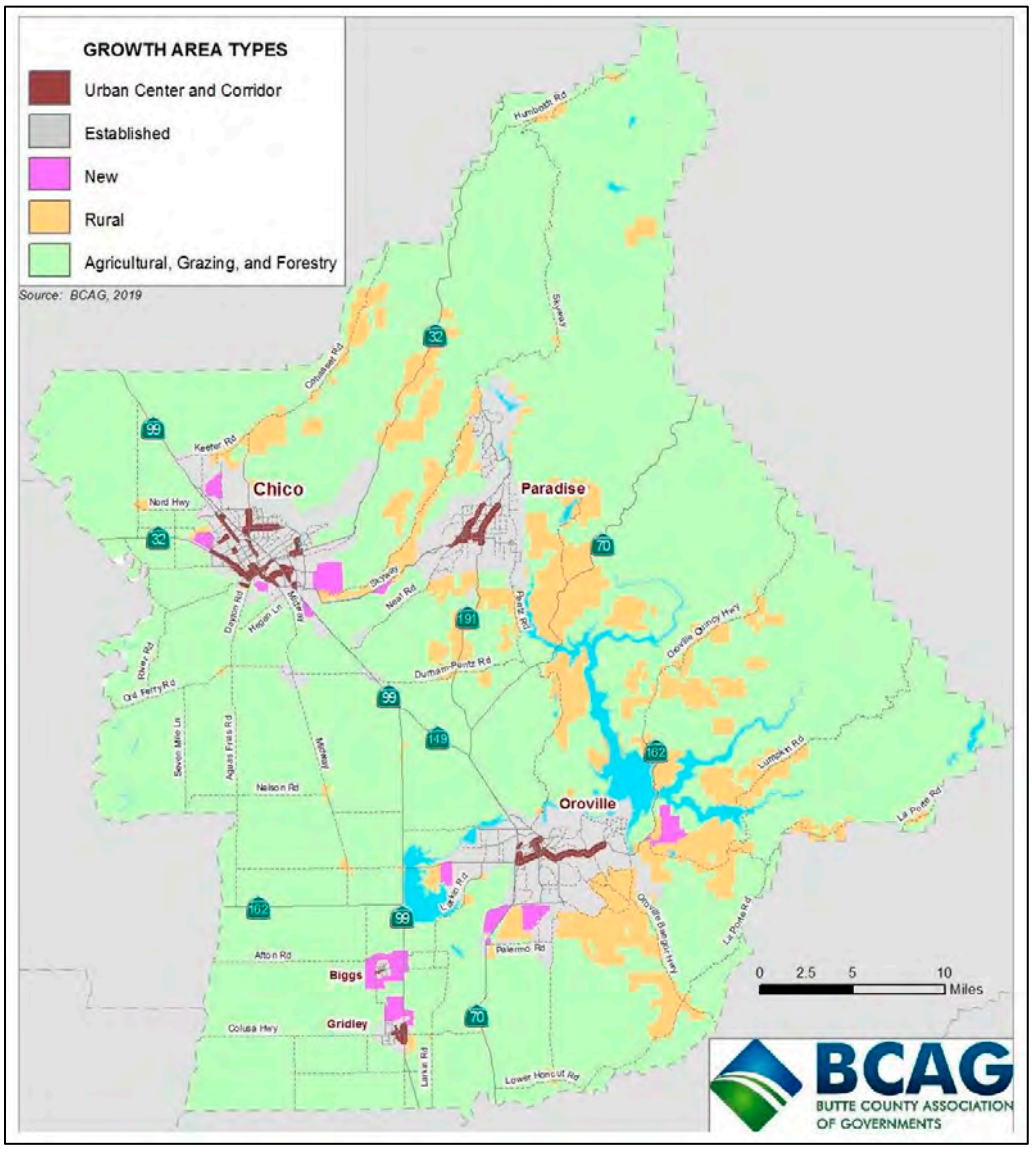
PID's Sphere of Influence area is entirely unincorporated and subject to the land use policies and regulations of Butte County. Most land use decisions in the SOI, initiated by private property owners over the last decade, are secured via entitlements and land use permits from Butte County and other agencies. Butte County is a moderately sized county, covering 1,677 sq. miles, and it contains a diverse array of land uses. The County plans for its future growth through its General Plan, which is a long-term comprehensive framework to guide physical, social, and economic development within the community's planning area. Butte County General Plan 2040 was adopted on March 28, 2023 (County Resolution 23-033). Existing land-uses are summarized in the Draft Environmental Impact Report (EIR) for the General Plan. The County General Plan can be viewed at: <*https://www.buttecounty.net/367/Butte-County-General-Plan-2040*>. The Housing Element was adopted on January 24, 2023, and covers an eight-year period from 2022 to 2030 (County of Butte, 2023b). The Housing Element is the guiding document for the development of housing including a plan for accommodating the County's fair share of the regional housing needs.

Regional Transportation Plans & Sustainable Community Strategies

All regions in California must complete a Sustainable Communities Strategy (SCS) as part of a Regional Transportation Plan (RTP), consistent with the requirements of state law, Senate Bill (SB) 375. Senate Bill 375 requires California's 18 metropolitan areas to integrate transportation,

land-use, and housing as part of an SCS to reduce greenhouse gas emissions from cars and light-duty trucks. Senate Bill 215 (Wiggins) was approved by the California legislature in 2009 and chaptered in 2010 as part of Government Code Section 56668, relating to local government. This law requires LAFCOs to consider regional transportation plans and sustainable community strategies developed pursuant to SB 375 before making boundary decisions. Regional transportation plans are adopted pursuant to Section 65080 of the Cal Gov. Code. Metropolitan planning organizations (MPOs) must adopt "sustainable communities' strategies" or "alternative planning strategies" as part of their regional transportation plans. These strategies align regional planning for transportation and housing. In preparing a sustainable community's strategy, MPOs must consider city and special district spheres of influence as adopted by the local LAFCO.

Figure 5.9: Regional Transportation Plan Growth Areas



Source: BCAG, 2020

The Butte County Association of Governments (BCAG) Board of Directors approved the 2020 Regional Transportation Plan (RTP) & Sustainable Community Strategy (SCS), and Supplemental Environmental Impact Report (EIR) on December 10, 2020 as shown in Figure 5.9. All relevant RTP/SCS or SEIR material is posted online on BCAG's website at: <*http://www.bcag.org/Planning/RTP--SCS/>.* Since BCAG is designated as the Metropolitan Planning Organization for Butte County, in 2021 it adopted the "Sustainable Communities Strategy" (SCS) as the additional element of the Regional Transportation Plan (RTP). Additional details can be found at BCAG website at: <*http://www.bcag.org/#*>. The Sustainable Communities Strategy forecasts the development pattern of the County of Butte that will eventually integrate with transportation pathways to meet the passenger vehicle greenhouse gas reduction target (BCAG, n.d.b). Paradise Irrigation District participates in the Butte County GIS Working Group that meets quarterly to discuss the development of GIS data layers that may be used by all public agencies within the area. Additionally, the meetings serve as a forum to collaborate on GIS projects to reduce redundancy and costs of the projects (BCAG, n.d.a).

Figure 5.10: View of Paradise's Skyway

Housing

The provision of low-income and moderate-income housing in California has been challenging in recent years, and one result is that housing costs are relatively high for many people. This is further complicated in the Town as many residents lost their homes and either had insufficient or no insurance making rebuilding their homes very difficult or not possible. Additionally, the Town of Paradise, through adoption of its Long-Term Recovery Plan, has implemented land use regulations that could be prohibitive to the rebuilding effort. For example, the Town has

established a minimum home size of 700 square feet. This matters to PID as it lost the majority of its customers and would benefit from increased water connections in the form of new housing development. This is one area where PID and the Town must cooperate to facilitate the rebuilding of affordable homes. Appendix A (Demographic report at the end of this MSR) provides background information on housing in the Paradise area, including:

- Several housing-related agencies aim to support the development of new housing, including the Housing Authority of the County of Butte and the Butte County Association of Governments
- Town of Paradise's 2022-30 Housing Element was adopted by the Town Council on June 14, 2022.
- Butte County's Upper Ridge Community Plan for the Magalia area was adopted on March 8, 2022.
- Butte County released the Public Review Draft of the 2022-2030 Housing Element in June 2022.
- Building Homes and Jobs Act (SB 2, 2017), administered by the California Department of Housing and Community Development.
- California Housing Act (SB 9), effective January 1, 2022, is designed to provide new ways to increase housing supply options in urban areas.

Other Natural Resource Planning Documents

The County of Butte and the Town of Paradise have each conducted recent planning efforts that aim to improve the quality of life in the Butte Creek watershed, including the following:

- Paradise Recreation and Park District Master Plan Update (2010)
- Butte County Climate Action Plan (2021)
- Northern Sacramento Valley Integrated Regional Water Management Plan (IRWMP) (2020)[1]

5.4: DETERMINATIONS: POPULATION AND GROWTH

Based on the information included in Sections 5.1 through 5.3 above, the following written determinations make statements involving each service factor that the Commission must consider as part of a Municipal Service Review. The determinations listed below in Table 5.4 are based upon the data presented and are recommended to the Commission for consideration. The Commission's final MSR determinations will be part of a Resolution that the Commission formally adopts during a public meeting.

[1] The Northern Sacramento Valley Integrated Regional Water Management Plan (IRWMP) covers the six counties of the northern Sacramento Valley, including Butte, Colusa, Glenn, Shasta, Sutter, and Tehama Counties. The IRWMP was adopted on March 3, 2014 and updated and re-adopted in 2020 with the goal to enhance coordination of the region's water resources. The plan considers several water resource issues including water supply reliability; flood, stormwater, and flood management; economic health and vitality; water quality improvements; and ecosystem protection and enhancement.

Table 5.4: MSR Determination: Growth and Population Projections for the Affected Area		
Number	**Indicator**	**Determination**
PID-Pop-1	Existing Population	The District's Existing Population (2023) is 9,142.
PID-Pop-2	Projected population in years 2020 to 2045.	In the growth estimate, the DOF's population projection for the County of Butte is utilized to extrapolate population growth rates for the District of Paradise Irrigation District. By the year 2045, it is estimated that PID's existing boundary could encompass a population of 10,236 persons. This represents an average annual growth rate (i.e., compound rate) of 0.51 percent between the years 2023 and 2045.
PID-Pop-3	General Plan Buildout Population	The Town of Paradise has a General Plan, adopted in 1994. The Town's General Plan anticipates a population of 29,752 at buildout.
PID-Pop-4	District boundaries contain sufficient land area to accommodate projected growth.	Currently, the District's boundary area supports an average of 0.80 persons per acre, which is considered low population density. The Town's General Plan suggests that future growth may occur within the PID's boundary. Given that the 2018 Camp Fire destroyed much of the community, there is vacant land available to accommodate rebuilding and projected future growth.
PID-Pop-5	The District adopts and maintains planning documents and practices that are sufficient to inform LAFCO actions.	PID adopted its 2020 Urban Water Management Plan on June 21, 2021 through Resolution #2021-08.
PID-Housing-6	The rebuilding of housing is critical to PID's full recovery.	The District should encourage the Town to consider removing minimum home sizes to encourage rebuilding by Camp Fire affected residents and new homeowners.

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Figure 5.11: View of Fire Damaged Trees in Paradise

CHAPTER 6: DISADVANTAGED UNINCORPORATED COMMUNITIES

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The CKH Act requires LAFCO to make a determination regarding the location and characteristics of any disadvantaged unincorporated communities within or contiguous to the sphere of influence. Unincorporated disadvantaged communities[1] may sometimes be overlooked during the comprehensive land use planning process due to their socio-economic status. This Chapter considers the basic infrastructure, such as water, sewer, or fire protection, for disadvantaged communities in and near the boundary and sphere of influence for the PID.

6.1: CONTEXT OF DISADVANTAGED UNINCORPORATED COMMUNITIES

Senate Bill (SB) 244 (Wolk), which became effective in January 2012, requires LAFCO to consider the presence of any Disadvantaged Unincorporated Communities (DUCs) when preparing a MSR that addresses agencies that provide water, wastewater, or structural fire protection services. The Wolk Bill created several definitions related to DUCs in both LAFCO and planning law, including[2]:

1. "Community" is an inhabited area within a city or county that is comprised of no less than 10 dwellings adjacent to or in close proximity to one another;
2. "Unincorporated fringe community" is any inhabited and unincorporated territory that is within a city's SOI;

[1] Communities that meet the criteria for a "disadvantaged" community, may be eligible for grants to assist with infrastructure improvements.
[2] State of California, Senate Bill 244 (Wolk Bill) (October 7, 2011).

3. “Unincorporated island community” is any inhabited and unincorporated territory that is surrounded or substantially surrounded by one or more cities or by one or more cities and a county boundary or the Pacific Ocean;
4. “Unincorporated legacy community” as a geographically isolated community that is inhabited and has existed for at least 50 years; and
5. “Disadvantaged unincorporated community” is an inhabited territory of 12 or more registered voters that constitutes all or a portion of a community with an annual MHI that is less than 80 percent of the statewide annual MHI.

This state legislation is intended to ensure that the needs of these unincorporated communities are met when considering service extensions and/or annexations, particularly water, wastewater, drainage, and structural fire protection services. The statewide annual MHI in California for 2022 was $88,930 (ESRI, 2022). The DUC threshold is 80 percent of the MHI, which calculates to less than $71,144. Relevant data were reviewed for Paradise and adjacent areas. To understand the geographic distribution of disadvantaged communities within the PID’s boundaries and SOI, this analysis relied primarily on data from the U.S. Census and mapped using ESRI’s ArcGIS software.

6.2: ANALYSIS OF DISADVANTAGED COMMUNITIES IN OR NEAR PID BOUNDARY & SPHERE

Given the above context, various data sources were utilized to identify and describe disadvantaged communities in and near the PID Boundary and Sphere of Influence. Other details related to population and socioeconomics for Butte County are presented in LAFCO’s 2023 MSR for Water and Wastewater Services, Appendix B: Demographic Report for County of Butte.

Census blocks are statistical areas bounded by visible features such as roads, streams, and railroad tracks and by nonvisible boundaries such as property lines, city, township, school district, county limits, and short line-of-sight extensions of roads. The Census Block is the smallest geographic area for which Census Bureau releases data. Figure 6.1 shows the spatial distribution of census blocks within the Paradise area. In Figure 6.1, each census block has been assigned an Object Identification Number (Object_ID), which corresponds to the first column in Table 6.1, shown on the next page.

Figure 6.1: Census Blocks in the Paradise Area with MHI

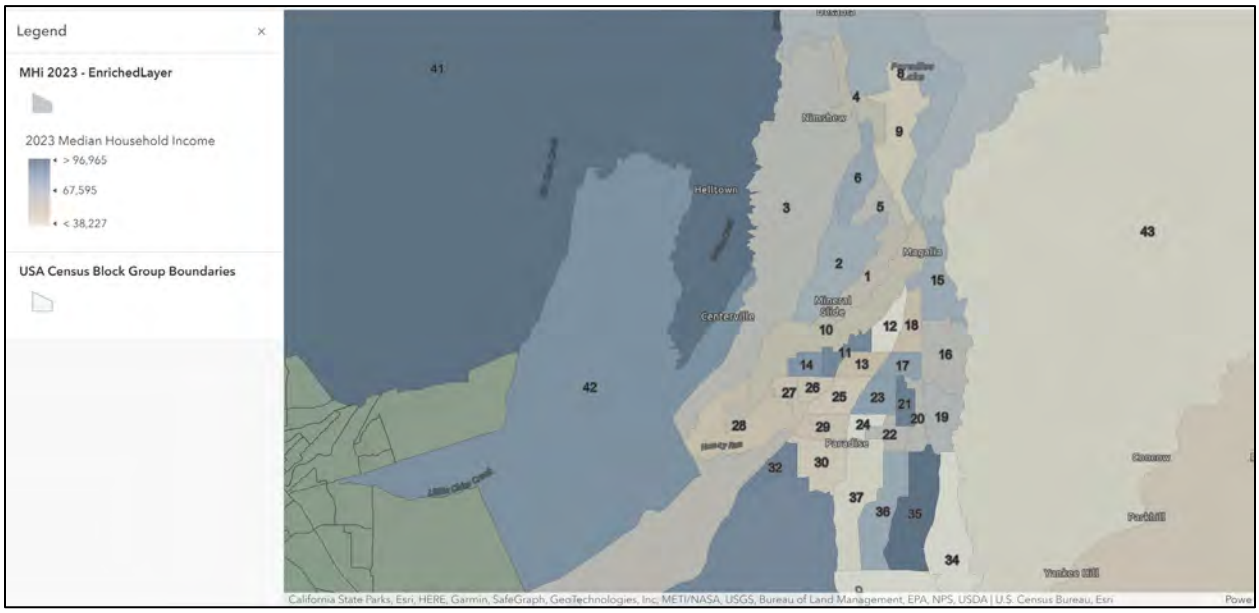


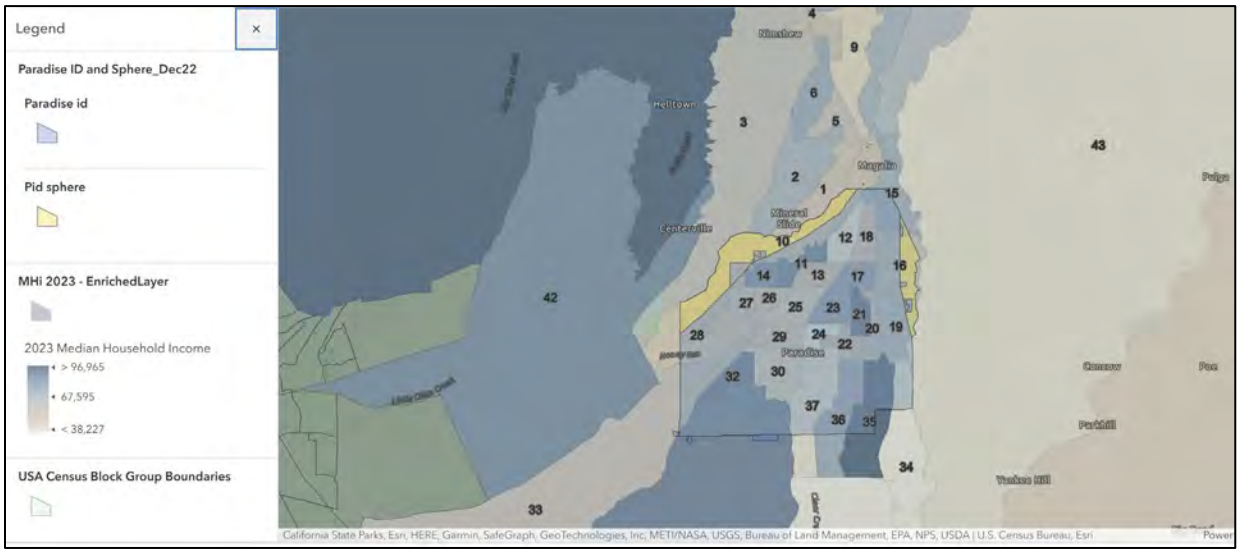
Figure 6.1 above shows 44 census blocks in the Paradise area. Figure 6.1 above uses a color ramp that shows the lower-income areas in beige and tan colors. Higher-income census blocks are color-coded in blue. 27 of these census blocks have a MHI that meets the disadvantaged threshold, as listed in Table 6.1 below. However, many of these 27 census blocks are located within the Town of Paradise boundaries and therefore do not meet LAFCO's definition of a DUC. Figure 6.2 shows the spatial relationship of these census blocks to the PID boundary and SOI.

Table 6.1: Census Blocks in the Paradise Area and their DUC Status

OBJECTID	TRACT_FIPS	BLOCKGROUP_FIPS	FIPS	POPULATION_2020	POP20_SQMI	SQMI	2023 Median Household Income	Disadvantaged? (Less than $71,144)	In or near PID's SOI?
1	001702	1	060070017021	137	133	1.03	$58,139	Yes	yes
2	001702	2	060070017022	264	136.1	1.94	$71,613	no	
3	001702	3	060070017023	2042	215.2	9.49	$61,735	yes	
4	001702	4	060070017024	1131	1330.6	0.85	$58,454	yes	
5	001703	1	060070017031	433	746.6	0.58	$60,990	yes	
6	001703	2	060070017032	1308	1453.3	0.9	$75,190	no	
7	001704	1	060070017041	651	5.4	120.99	$66,873	yes	
8	001704	2	060070017042	897	207.2	4.33	$71,570	no	
9	001704	3	060070017043	1713	967.8	1.77	$47,174	yes	
10	001800	1	060070018001	303	99.7	3.04	$57,040	yes	yes
11	001800	2	060070018002	108	270	0.4	$89,026	no	
12	001800	3	060070018003	138	276	0.5	$31,065	yes	
13	001800	4	060070018004	167	397.6	0.42	$52,883	yes	
14	001800	5	060070018005	124	387.5	0.32	$84,033	no	yes
15	001900	1	060070019001	90	73.8	1.22	$72,990	no	yes
16	001900	2	060070019002	203	158.6	1.28	$61,577	yes	yes
17	001900	3	060070019003	215	537.5	0.4	$78,586	no	
18	001900	4	060070019004	167	355.3	0.47	$51,442	yes	
19	002000	1	060070020001	138	168.3	0.82	$65,539	yes	yes
20	002000	2	060070020002	101	246.3	0.41	$61,596	yes	
21	002000	3	060070020003	159	481.8	0.33	$92,032	no	
22	002000	4	060070020004	130	333.3	0.39	$60,833	yes	
23	002000	5	060070020005	248	459.3	0.54	$79,242	no	
24	002000	6	060070020006	110	407.4	0.27	$26,342	Yes	
25	002100	1	060070021001	124	200	0.62	$48,113	yes	
26	002100	2	060070021002	48	160	0.3	$50,000	yes	
27	002100	3	060070021003	137	472.4	0.29	$50,000	yes	yes
28	002100	4	060070021004	315	168.4	1.87	$50,298	yes	yes
29	002100	5	060070021005	302	604	0.5	$50,182	yes	
30	002200	1	060070022001	228	232.7	0.98	$46,551	yes	
31	002200	2	060070022002	1060	27.9	37.95	$89,086	no	
32	002200	3	060070022003	104	212.2	0.49	$90,545	no	
33	002200	4	060070022004	407	30.3	13.43	$59,533	yes	
34	002300	1	060070023001	234	91.4	2.56	$36,952	yes	
35	002300	2	060070023002	215	121.5	1.77	$99,225	no	
36	002300	3	060070023003	206	154.9	1.33	$75,152	no	
37	002300	4	060070023004	143	84.1	1.7	$42,091	yes	
38	002300	5	060070023005	1053	46.6	22.59	$35,754	yes	
39	001601	1	060070016011	1224	14	87.65	$114,783	no	
40	001601	2	060070016012	488	34.9	13.99	$200,001	no	
41	001602	1	060070016021	1326	15.9	83.35	$123,204	no	
42	001602	2	060070016022	736	27.1	27.18	$86,210	no	
43	002401	1	060070024011	545	6.8	80.4	$41,996	yes	yes
44	002401	2	060070024012	873	7	125.03	$48,574	yes	

Data Source: ESRI. 2023. Attribute Table from ArcGIS Living Atlas of the World. ArcGIS® software by Esri. <*https://www.esri.com/en-us/arcgis/products/living-atlas* >.

Figure 6.2: Census Blocks in Relation to PID SOI



Nine census blocks intersecting with PID's SOI and having a DUC MHI are shown in yellow on the above map. These nine census blocks are noted with a "yes" in the last column of Table 6.1. Although a few parcels within PID's SOI are within the Town's boundary, most of the PID's SOI is unincorporated and under the jurisdiction of Butte County. The average parcel size within PID's SOI is 10 acres. Some parcels within PID's SOI may remain undeveloped; however, data about development status was not readily available. Those parcels in the SOI that do have a home likely rely on wells to access groundwater and utilize septic tanks for wastewater disposal. The use of septic tanks in the Paradise Area has created water quality concerns.

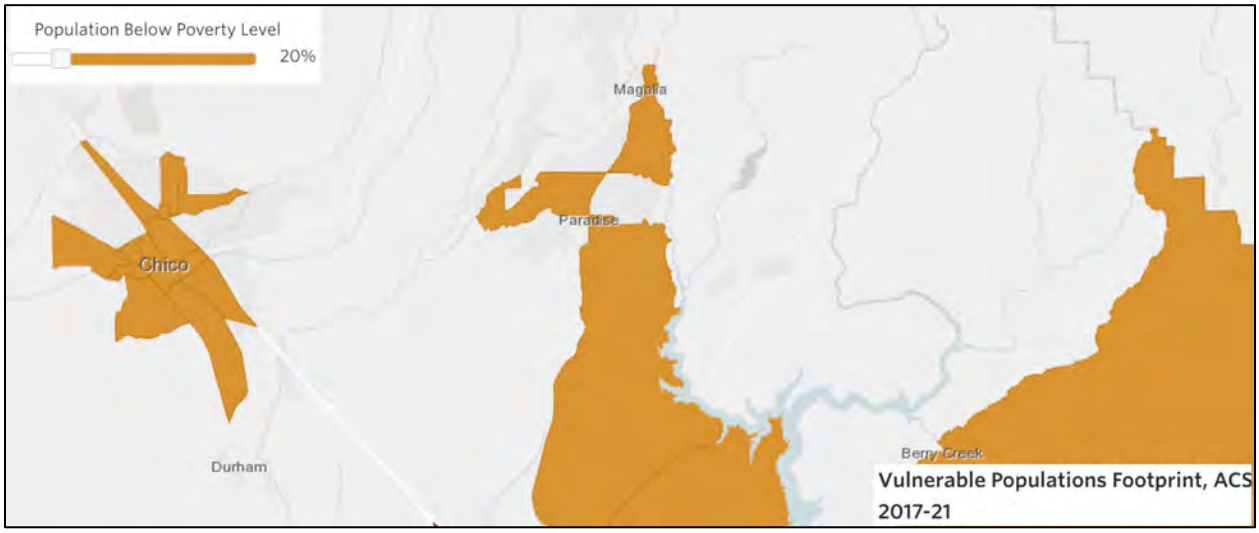
Fire Protection Services within the SOI are provided CAL FIRE. Please note that the Town of Paradise has two fire stations (Station #81 and #82). These two fire stations are staffed by CAL FIRE, which has a contract with the Town of Paradise to provide service. CAL FIRE maintains its state-owned stations in Paradise and the neighboring community of Magalia. This allows for a rapid response to all coverage areas.

Disadvantaged Areas within Municipalities

LAFCO is required to consider the provision of public services to disadvantaged unincorporated communities (DUCs). However, incorporated areas (within the town/city limits) can sometimes meet the disadvantaged income threshold. LAFCO is not required to study the status of disadvantaged neighborhoods that are located within incorporated towns/cities that provide water, wastewater, drainage, and structural fire protection services; however, SB 244 required towns/cities to update their land use and housing elements to include an analysis of the water, wastewater, stormwater, and structural fire protection services in the area along with financing options to help encourage investment in disadvantaged areas, should it be needed. Although the Town of Paradise's adopted Housing Element 2022 - 2030 (adopted on June 14, 2022) does

not directly address disadvantaged communities in terms of specific geographic areas, it does consider the special housing needs of individuals requiring assistance, such as elderly residents, single mothers with children, low income and large families, military personnel, people experiencing homelessness, and mobility-impaired residents. For example, data from the U.S. Census, American Community Survey, 2017 to 2021 indicates that census tract number 21 (Tract ID 06007002100) has a poverty rate of 20.68 percent, as shown in Figure 6.3 below. Public services are provided to lower-income areas within the Town boundaries. Water service is provided by PID. Although water quality concerns associated with the previous use of septic tanks in the Town were reported, this problem is being addressed with a regional sewer pipeline to the Town's core areas. The Town of Paradise and the City of Chico have recently agreed that wastewater within defined areas of the Town will be transported via pipeline to the Chico Wastewater Treatment Plant. Fire protection services are provided by the Town of Paradise through a contract with CALFIRE. Since the 2018 Camp Fire, the Town of Paradise has invested in fire prevention and mitigation. No other public health or safety issues have been identified.

Figure 6.3: Poverty Rate in Paradise Area



Data Source: US Census, American Community Survey

The U.S. Department of Health and Human Services (HHS) manages a database of socio-economic and health indicators in disadvantaged communities called the Environmental Justice Explorer Database. This database was queried for the Paradise area of Butte County. Query results indicate that disadvantaged communities in the Paradise area may experience hardships including:

- Ozone exposure
- Air toxics cancer risk
- Housing-burdened, lower-income households
- Vulnerable senior citizens within population
- Civilians with a disability
- Higher percentage of population with health concerns such as cancer, high blood pressure, and diabetes
- Data Source: US HHS, 2023

6.3: ASSISTANCE AND RE-BUILD OPTIONS

The California Department of Community Services and Development has a program to help low-income residents pay their current or past-due water and sewer bills. The Low-Income Household Water Assistance Program is federally funded and will remain open through March 2024 — or until funds last. If a customer's total household gross income is at or below 60% of the state median income of $109,200, they are eligible for the program. Additional details are available at: <*https://www.csd.ca.gov/waterbill* >.

Property owners in Paradise should be aware that they may be able to construct accessory dwelling units (ADUs) on their parcel and thereby contribute towards affordable housing. The Town Planning Department is the best source of information on this topic. Financing an ADU has gotten easier because the Federal Housing Administration (FHA) has a new policy that eases the purchase or refinance of a house with an accessory dwelling unit, including the construction of a new ADU. These new rules for FHA-backed loans would allow lenders to consider rental income from small housing units built inside, attached to, or on the same property as a primary residence when underwriting a mortgage. The new rules will specifically allow for 75% of the estimated ADU rental income for some borrowers to qualify for an FHA-insured mortgage on a property with an existing ADU. It will also allow the use of 50% of the estimated rental income from a new ADU the borrower plans to attach to an existing structure such as in a garage or basement conversion to qualify for a mortgage under FHA's renovation loans, also known as 203(k) Rehabilitation Mortgage Insurance program. Additional details are available from the U.S. Department of Housing and Urban Development through the Federal Housing Administration at: <*https://www.hud.gov/press/press_releases_media_advisories/HUD_No_23_237* >.

6.4 DISASTER RECOVERY – DISADVANTAGED COMMUNITIES

Prior to 2018, the Town of Paradise was known as a community that offered affordable housing for retirees and working families on a fixed income. Today, home re-building continues within the Town of Paradise. However, according to the Town's November 2022 Long-Term Recovery Plan update, the construction of affordable or attainable housing has been impeded by several factors including:

- relatively high stick-built home prices,
- hurdles to redeveloping manufactured home parks,
- Inflation in material/ labor costs,
- skyrocketing insurance and mortgage rates,
- delayed PG&E settlements,
- the lack of a sewer system, and
- several other factors (Town of Paradise, 2022).

In addition to the above factors, concern has been expressed that the relatively slow re-building process and that the Town's rules about re-building are particularly difficult for economically disadvantaged[3] residents (including displaced residents). For example, although public services are being restored to the community, private services such as homeowner's insurance policies (Auer and Hexamer, 2022) and a local hospital (see Appendix H) have not yet been restored.

As part of the recovery and re-building process, the Town has embraced a progressive approach to building construction by endorsing and welcoming the use of traditional and alternative building materials and methods. This forward-thinking stance reflects the community's commitment to innovation and sustainability in the construction industry. Residents and developers are encouraged to explore diverse options, fostering a dynamic environment where creativity and efficiency can coalesce. This open-minded approach promotes architectural diversity and aligns with the Town's dedication to fostering a resilient and environmentally conscious built environment for the future. Additionally, the Town's Community Development Director reports that the Town has entitled and/or permitted 378 affordable housing units and issued 27 First Time Home Buyer loans for affordable housing. Paradise was allocated $55M of CDBG-DR funds (State Dept of Housing & Community Development, Community Development Block Grant - Disaster Recovery) for disaster recovery multi-family housing which the Town fully subscribed to affordable housing projects. In addition to Town-funded projects, CHIP (Community Housing Improvement Program), Habitat for Humanity, and the State's ReCoverCA housing program are actively assisting income eligible households in re-building in Paradise (personal communication, Susan Hartman, 12/18/2023).

The minimum size for new homes has been noted as a concern in this MSR. The Town's Community Development Director offered clarification of the single-family residential unit square foot requirements by providing the following information:

- Pre-fire, 68% of the Town's housing was between 1,001-2,000 sq ft in size per the Butte County Assessor records and Town issued-building permits. Post-fire, the Town has only received 327 applications, out of 3,051 applications, for single-family residences less than 1,000 sq ft, which equates to only 10.7% of the housing construction. Post-fire, the Town Council issued a three-year grace period during which residents could re-build their residence with less than 750 sq ft if that was the size they had pre-fire. The minimum single-family residential unit square footage size has not shown to be a hindrance to continued development, considering the May 1, 2023 press release for the 2023 DOF population estimates shows Paradise as the top city in the State where housing production drove population growth at 24.1% (personal communication, Susan Hartman, 12/18/2023).

[3] (see also Richards, 2019)

Prior to the 2018 Camp Fire, the Town had more than 13,000 housing units of about 70 percent single-family detached homes, 15 percent multi-family homes, and 15 percent manufactured homes (GEI, 2022). As of January 2023, the Town contained 4,365 housing units (DOF, E5, 2023). This calculates to 8,635 housing units (i.e. 66 percent) that have not yet been re-built as of January 2023. The Town has made significant progress towards its recovery effort. However, re-building affordable homes in a disadvantaged community after a natural disaster is a major challenge, and this warrants further study.

To support the recovery of PID's customer base and equitable housing options, the MSR Authors suggest the following recommendations:

- LAFCO and the Town of Paradise should work together to update the MSR and SOI for the Town of Paradise within the next two years, with particular attention paid to the following issues:
    - Briefly document the many successful recovery projects the Town has built, such as the building resiliency center and approval of the November 2022 Long-Term Recovery Plan update.
    - Post-fire recovery by low-income families and disadvantaged communities both within the Town boundaries and within the SOI (i.e., address questions about equity in recovery).
    - Review of the Town's current re-building restrictions, such as minimum home size, to promote a more rapid and economically just re-build for all landowners.
    - Evaluate the pace of the re-building process on PID's customer base, fee-based revenue, and service provision.
    - Assess progress in meeting the Regional Housing Needs Plan (2020), including the Allocation of Income Tiers (BCAG, 2020).
    - Develop methods to promote a more economically diverse pallet of residential re-build options.
    - Coordination with Butte County Association of Governments and PID.
    - Include a SOI analysis that further evaluates a recommendation from the Options Study Report (GEI, 2022) Agency Reorganization sub-options to merge/consolidate the Town of Paradise with PID as described in Appendix I of this MSR. The Options Study Report[4] reached preliminary findings that reorganizing PID into the Town would allow the two entities to leverage existing managerial and technical capabilities and existing funding, and optimize operating expenses. However, this option needs additional analysis to address the progress towards recovery that both the Town and PID have made and to address current barriers to reaching a full equitable recovery.

- PID should closely coordinate with the Town of Paradise and LAFCO on: 1) the re-building process and policies and 2) updating the Town's MSR/SOI Update. Examples of this inter-

[4] The Options Study Report evaluated several options. The "financial claims" option was rated 2.9 (the highest) and suggests that PID is solid as a stand-alone District (GEI, 2022).

agency coordination could include the following:

- A PID staff presentation provided to the Town Council highlighting:
  - How the re-building process is affecting PID's customer base and provision of water service.
  - How to streamline regulations associated with construction projects, including public works/capital improvement projects.
- Offer suggestions to reduce or eliminate barriers to re-building the Town's housing (and therefore the District's customer base).
- Joint participation in the recommended MSR/SOI Update for the Town of Paradise.

6.5: DETERMINATIONS: DISADVANTAGED COMMUNITIES

Based on the information included in this Chapter, the following written determinations make statements involving this service factor (Disadvantaged Unincorporated Communities), which the Commission must consider as part of a municipal service review. The determinations listed below are based upon the data presented in this Chapter and are recommended to the Commission for consideration. The Commission's final MSR determinations will be part of a Resolution that the Commission formally adopts during a public meeting.

Table 6.2: Summary of Disadvantage Communities Determinations

#	Indicator	Determination
DUC#1	The median household income is identified. The DUC threshold MHI (80 percent of the statewide MHI) is clearly stated. The MHI in the Agency's boundary is described.	The statewide annual MHI in California for 2022 was $88,930 (ESRI, 2022). The DUC threshold is 80 percent of the MHI, which calculates to less than $71,144. Relevant data were reviewed for Paradise and adjacent areas.
DUC#2	Potential DUCs and DACs are considered. The provision of adequate water, wastewater, and fire protection services to DUCs and DACs is considered.	There are Disadvantaged Unincorporated Communities within or contiguous to the PID boundary and sphere of influence. Nine census blocks intersect with PID's SOI and have a MHI below the threshold, indicating status as a disadvantaged community. DUCs within PID's SOI can access water (private wells), wastewater (small septic systems), and fire protection services (CALFIRE). Public health and safety issues are being addressed, and improvements are being made.
DUC#3	Disaster Recovery for Disadvantaged Communities.	Concern has been expressed that the relatively slow re-building process and the Town's rules about re-building are particularly difficult for economically

		disadvantaged residents. To support the recovery of PID's customer base and equitable housing options, the MSR Authors suggest the following recommendations: • LAFCO and the Town of Paradise should work together to update the MSR and SOI for the Town of Paradise within the next two years, with particular attention paid to the following issues: o Briefly document the many successful recovery projects the Town has built, such as the building resiliency center and approval of the November 2022, Long-Term Recovery Plan update. o Post-fire recovery by low-income families and disadvantaged communities both within the Town boundaries and within the SOI (i.e., address questions about equity in recovery), o Review the Town's current re-building restrictions, such as minimum home size, to promote a more rapid and economically just re-build for all landowners. o Evaluate the pace of the re-building process on PID's customer base, fee-based revenue, and service provision. o Assess progress in meeting the Regional Housing Needs Plan (2020), including the Allocation of Income Tiers (BCAG, 2020). o Develop methods to promote a more economically diverse pallet of residential re-build options. o Coordination with Butte County Association of Governments and PID. o Include a SOI analysis that further evaluates a recommendation from the Options Study Report (GEI, 2022) Agency Reorganization sub-options to merge/consolidate the Town of Paradise with PID as described in Appendix I of this MSR. The Options Study Report reached preliminary findings that reorganizing PID into the Town would allow the two entities to leverage existing managerial and technical capabilities and existing funding, and optimize operating expenses. However, this option needs additional analysis to address the progress towards recovery that both the Town and PID have made and to address current barriers to reaching a full equitable recovery. PID should closely coordinate with the Town of Paradise and LAFCO on: 1) the re-building process and policies and 2) updating the Town's MSR/SOI.

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CHAPTER 7: SERVICES, INFRASTRUCTURE AND PUBLIC FACILITIES

TABLE OF CONTENTS

This chapter evaluates the efficiencies of services the Paradise Irrigation District provides and the associated infrastructure needs, especially as they relate to current and future users. Infrastructure needs and deficiencies are evaluated in terms of supply, capacity, condition of facilities, and service quality with correlations to operational, capital improvement, and finance plans. In addition, this chapter addresses the provision of the public services authorized by LAFCo and provided directly by the PID to residents within its boundaries, which include water supply, conservation, treatment, and distribution. Wastewater services are not currently authorized by LAFCo.

In addition to the above water services, PID generates hydroelectric power on a micro scale via a small turbine (6 amps), which is used to power a SCADA component and a valve at the lake. Additionally, as of June 1, 2020, Paradise Recreation and Park District have taken over the provision of recreation services at Paradise Lake, which was previously under the auspices of PID.

The information utilized in this chapter was derived from the PID's Urban Water Management Plan (UWMP) 2020, which was written to satisfy the requirements of the California Urban Water Management Planning Act and to inform the public and local and state agencies of the District's water supply availability, exposure to drought, conservation efforts, and plans for future water

supply (PID, UWMP, 2021a). Information sources, such as GIS data, the State Water Board, and Butte County, were also utilized.

7.1: PUBLIC SERVICES

Water Customers

Paradise Irrigation District provides the Town of Paradise with quality treated drinking water, serving a total of 4,881 active customers (PID, 2023). Additionally, PID has 5,758 "Sealed" Standby Customers as shown in Table 7.1, below. PID does not currently have any raw (untreated) water customers, but does have irrigation customers to whom PID supplies treated water at a raw water rate. PID provides water to 15 agricultural customers, 507 commercial customers, and 8,094 residential customers (CA Water Board, n.d.). However, the 2018 Camp Fire resulted in the displacement of many of PID's customers.

Table 7.1: Number of Customers for Key Municipal Services

Service	Number of Customer Accounts in June 2023
Domestic Water (prior to 2018 Camp Fire)	10,649 legal parcels in the Town of Paradise
Domestic Water (June 2023)	4,881 Active Customers 5,758 "Sealed" Standby Customers pay $21.49 per month 1,555 Disconnected Customers

PID, personal communication, Tom Lando, June 14, 2023

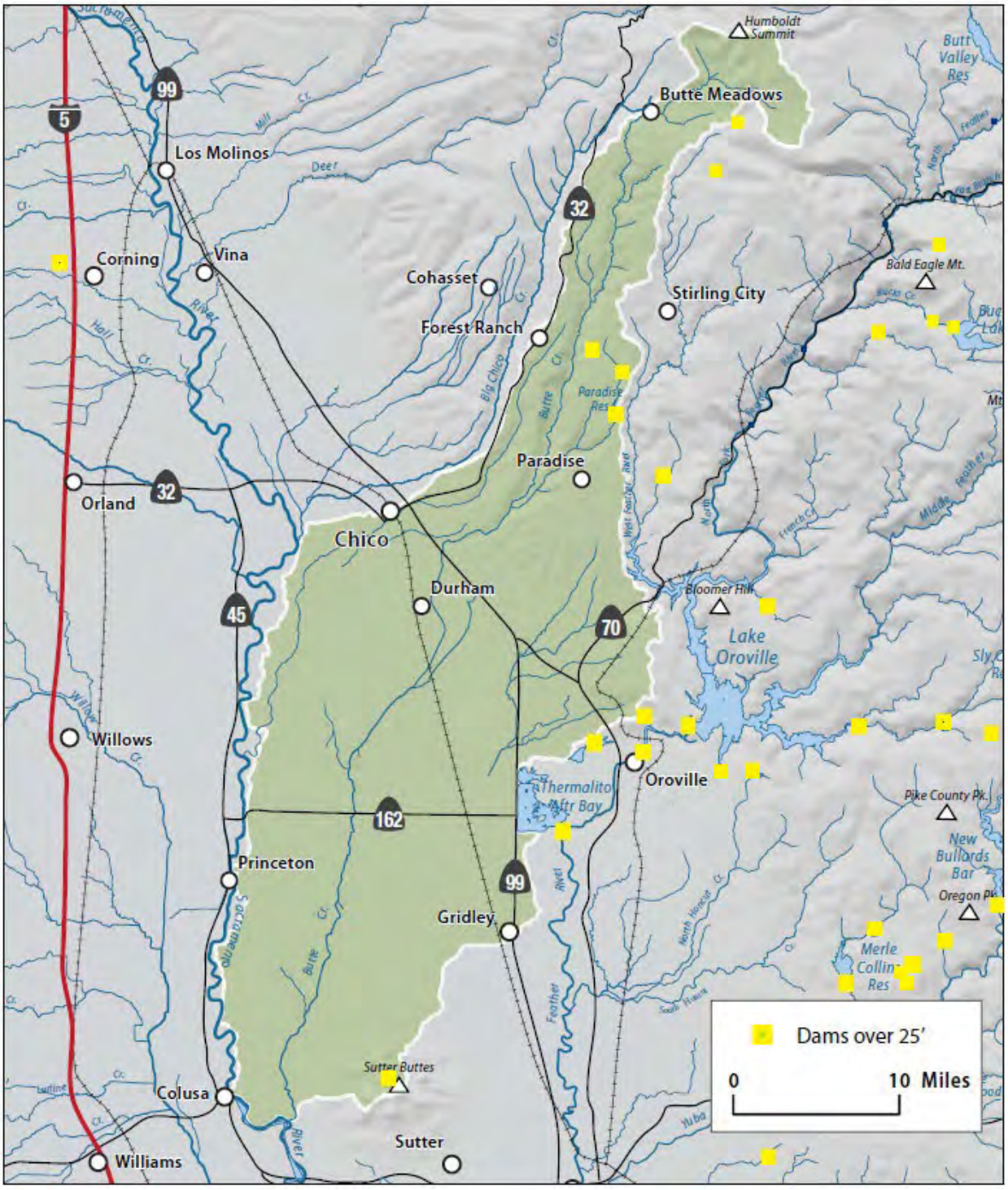
The 5,758 "sealed" stand-by customers pay $21.49 per month to cover costs associated with the overall maintenance of the water treatment plant and the entire water system. These are fixed costs. There is no reconnection fee for these sealed customers. Customers paying the monthly sealed rates might also be able to access PID water for irrigation, landscape, or fire prevention purposes, if approved by PID.

The 1,555 disconnected customers do not currently pay a monthly fee. As of July 1, 2023, the reconnection fee will increase.

Water Supply Source

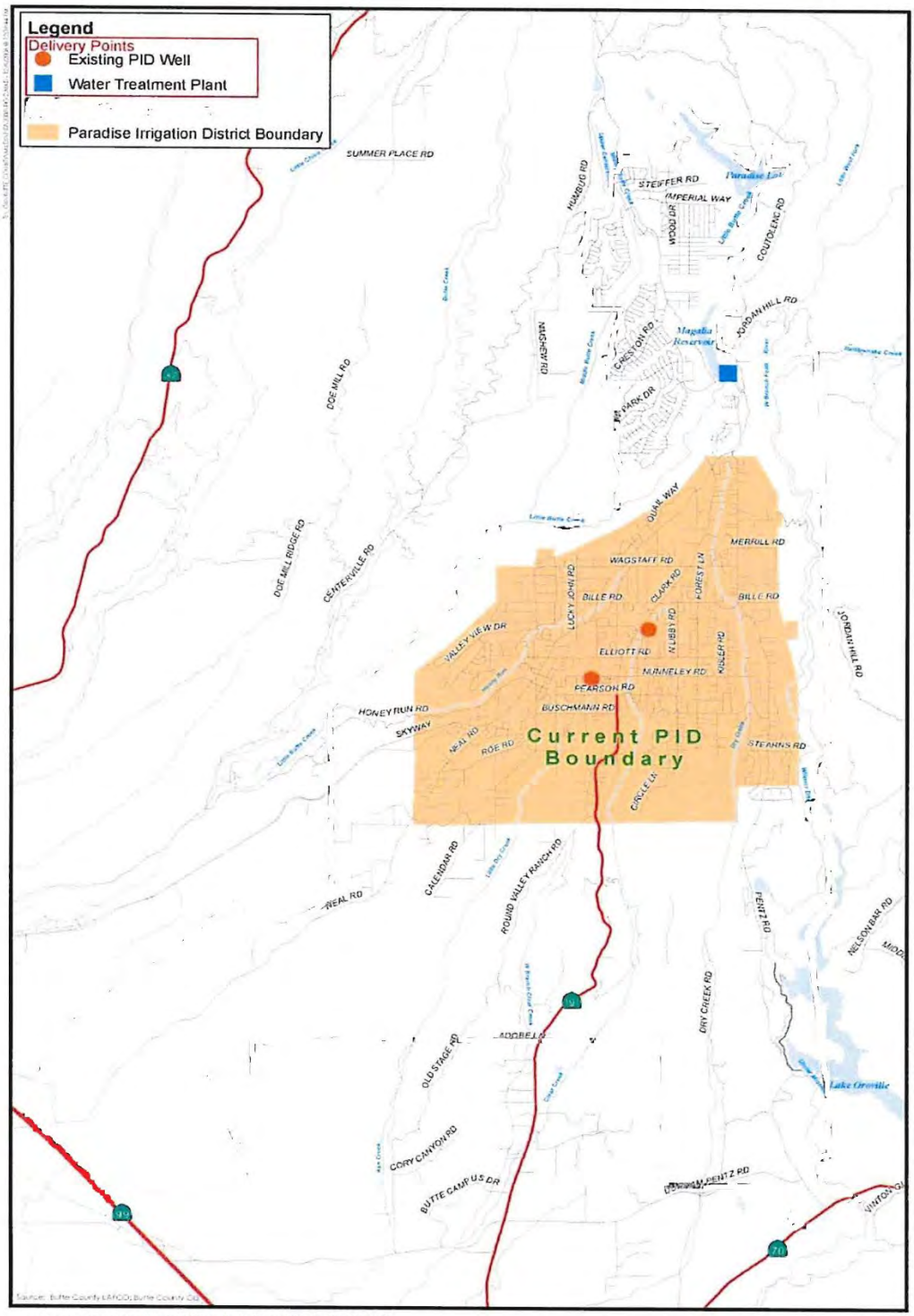
The PID provides treated domestic water. The existing water supply is derived from surface water diverted from Little Butte Creek to Paradise Lake and then to Magalia Reservoir. See Figure 7.1 below. This water is transported through a dam, canal/tunnels to reach the drinking water treatment plant. Additionally, PID has two groundwater wells, and the location of these wells is depicted in Figure 7.2 below.

Figure 7.1: Little Butte Creek Surface Diversions



Source: Sacramento River Watershed Program, 2023

Figure 7.2: Location of PID's Two Groundwater Wells



Source: PID, 2023

Little Butte Creek Watershed

PID's water supplies depend on precipitation that falls into the Butte Creek watershed, which is forested, and flows into streams, specifically Little Butte Creek, a tributary to Butte Creek. This process is intimately connected to the water cycle described in Chapter 3, Introduction. The watershed is described in detail in Appendix F. The watershed encompasses approximately 800 square miles and lies predominantly in Butte County with small portions in Tehama, Glenn, Colusa, and Sutter Counties.

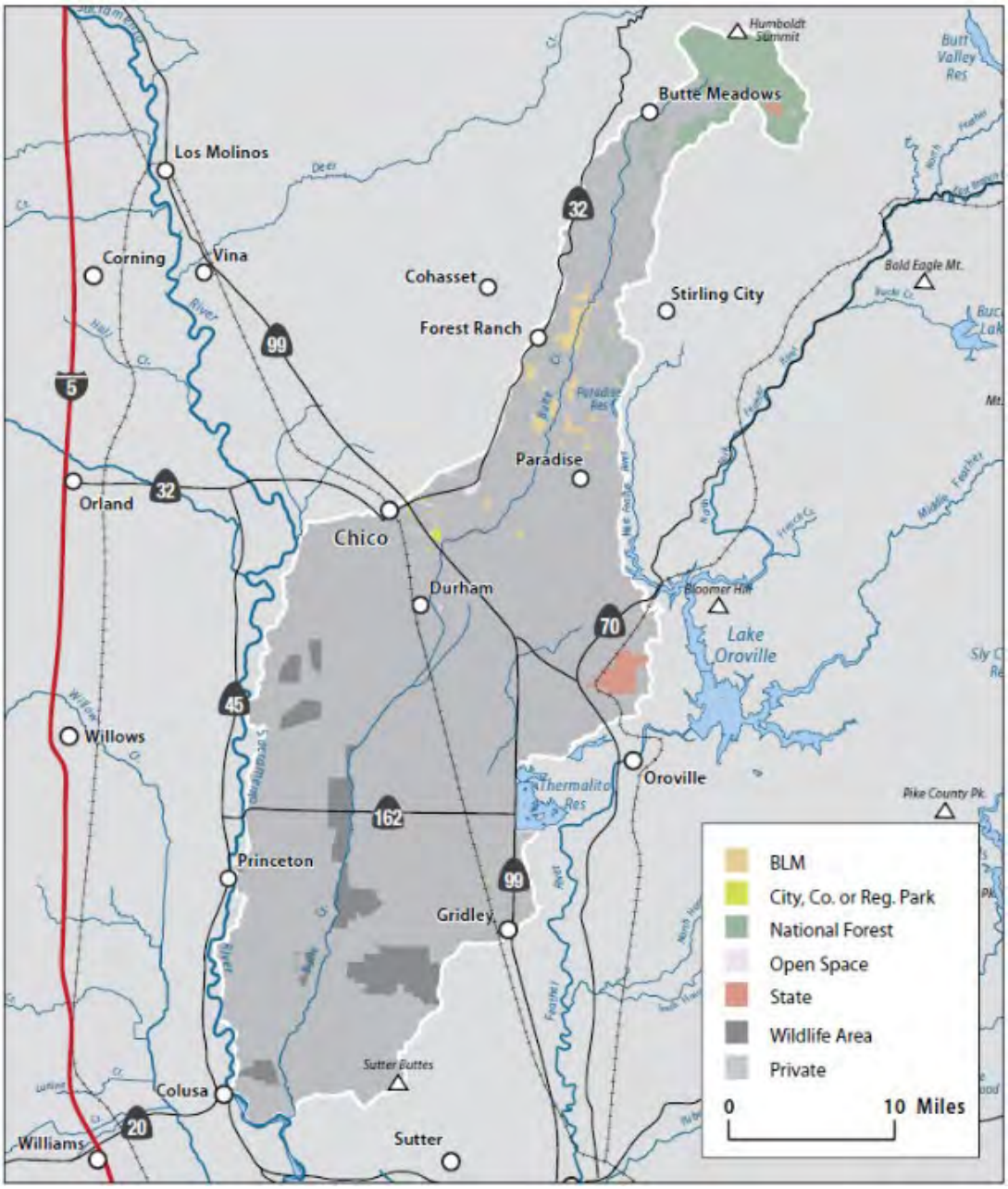
The upper watershed is ruggedly mountainous and bisected by deep canyons in the eastern watershed. The watershed from which PID's supply originates is owned or managed by several governmental and private entities. As shown in Figure 7.3 below, most of the watershed is within private ownership. The United States Forest Service (USFS) manages the Lassen National Forest and is the single largest public landowner within the watershed.

Raw Water Supply

Surface water from Little Butte Creek is diverted to Paradise Lake and then to Magalia Reservoir. PID operates a raw water intake at Magalia Reservoir, which is pumped to PID's Water Treatment Plant. After that, treated water is conveyed to PID's distribution system through a 42" transmission main. Although PID has two wells, only the single groundwater well at the D Tank site facility contributes to the water supply. This well produces an estimated annual output of 200 AF The primary purpose of the well is to augment PID's water supply during times of drought or emergency (PID, 2023d).

The District has three water rights, including two storage rights and a direct diversion right allowing for the diversion of a total of 18,300 AF of water per year as detailed in Table 7.2. The average runoff from the watershed is approximately 13,500 AF per year. Under normal conditions, this is a sufficient supply to meet the current demand. However, as documented in the UWMP, the firm yield of the District's water sources is approximately 7,650 AF annually (7,300 AF plus 350 AF from a well), which is currently less than the annual demand (Butte LAFCO, 2006).

Figure 7.3: Land Ownership in Butte Creek Watershed



Source: Sacramento River Watershed Program, 2023

Water Supply Planning

Protecting water quality and maintaining an adequate water supply are critical for the future customers of the PID. Given this importance, the PID and other regional and statewide agencies prepare a range of water resource management plans as described in the following paragraphs.

Urban Water Management Plan

California's urban water suppliers prepare an Urban Water Management Plan (UWMPs) to support their long-term resource planning and ensure adequate water supplies are available to meet existing and future water demands. The Urban Water Management Planning Act (CWC §10610 – 10656 supplemented by CWC §10608 et seq) specifies the requirements for UWMPs. The PID submitted its 2020 UWMP to the California Department of Water Resources (CA DWR) on July 21, 2021. This UWMP describes PID's existing water facilities, system water use, baselines, supplies, contingency plan, and water demand management measures (PID, 2021a).

Source Water Assessment

PID's 2016 Source Water Assessment is a report of the area of influence around listed "raw" water sources through which contaminants, if present, could reach the source water. It includes an inventory of potential sources of contamination within the area and a determination of the water supply's susceptibility to contamination by the identified potential sources, including:

- Ground Water Supply (Well at D Tank): Septic systems within high-density residential areas and automobile repair shops.
- Surface Water Supply (Little Butte Creek Watershed): High-density septic systems and historic mining operations.

Although the MSR authors did not review the Source Water Assessment, it is available from PID's office or the State Water Resources Control Board Division of Drinking Water (Redding office) at 364 Knollcrest Dr., Suite 101; Redding, CA 96002; (530) 224-4800.

2020 Water Shortage Contingency Plan

PID adopted its 2020 Water Shortage Contingency Plan (WSCP) through Resolution No. 2021-07 to comply with California Water Code Section 10632, which requires that every urban water supplier prepare and adopt a WSCP as part of its UWMP (PID, WSCP, 2021c). The Section below on Water Supply Storage & Treatment describes the WSCP in more detail.

Northern Sacramento Valley Integrated Regional Water Management Plan

PID actively participates with the Northern Sacramento Valley Integrated Regional Water Management Plan (NSV-IRWMP) (PID, 2023d). Six counties (Butte, Colusa, Glenn, Shasta, Sutter, and Tehama) along with associated water districts worked together for many years to lay the foundation for an integrated regional water management 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

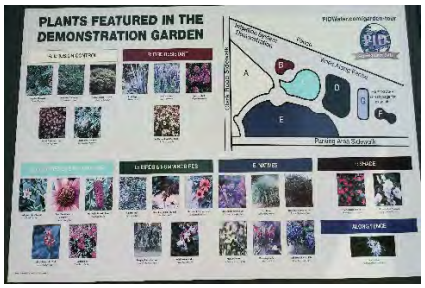
NSV-IRWMP aims to address water-related issues and offer solutions that can provide multiple benefits to the region. The Northern Sacramento Valley IRMWP was originally approved by the California Department of Water Resources on July 24, 2014. The Plan was subsequently updated on March 2, 2020, to comply with new DWR requirements as detailed on their website at *https://nsvwaterplan.org/.* It is recommended that PID continue to monitor and participate in future efforts to update the Integrated Regional Water Management Plan and, when appropriate, seek funding opportunities for conjunctive use and water management improvements. The intent of this recommendation is to improve regional water management through enhanced coordination and cooperation among agencies, local entities, and other stakeholders. This coordination and communication will foster the development of consistent local policies and objectives while protecting local uses and the regional environment.

Options Study Report (2022)

The Town of Paradise Options Study Report (June 2022) is a comprehensive report prepared by GEI Consultants, Inc. for the Sacramento State University Office of Water Programs to evaluate options for improvements to PID's water system infrastructure and finances to ensure the long-term sustainability of the community's water system(s) and to support recovery from the 2018 Camp Fire and redevelopment of the community. The Study identified eight options: Baseline, No Project, Financial Claims, Agency Reorganization, Water Transfers, Infrastructure, Others, and Funding Augmentation.

The report was commissioned by the State Water Resources Control Board (SWRCB) to ensure that the Paradise Irrigation District (PID) can obtain state funding for its drinking water system improvements. The goal of the study was to formulate and evaluate options to provide short- and long-term sustainability of water supply for the Paradise community. The Options Study considered water supply reliability, safe and affordable drinking water, short- and long-term financial sustainability, and supporting community redevelopment. The report provides valuable insights and recommendations for the study area. It includes a detailed analysis of the current water supply situation in Paradise, the impacts of the Camp Fire in November 2018, and the challenges faced by the Paradise Irrigation District. The report also presents portfolios of options such that each portfolio has its own advantages and disadvantages. The report concludes with recommendations based on the findings of the study, which can be used by the SWRCB, the Paradise Irrigation District; and LAFCo to improve the water supply situation in Paradise and ensure its long-term sustainability. The Town of Paradise Options Study Report (June 2022) is briefly summarized in this MSR's Appendix I, SOI Options.

Figure 7.4: Water Wise Landscaping Demonstration Garden Photos



Water Treatment Plant, Skyway, Paradise, CA – Photo Credit Shannon Costa

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) is a state law that authorizes local Groundwater Sustainability Agencies to manage groundwater at the local level through the development and implementation of Groundwater Sustainability Plans. Decisions about groundwater sustainability are made locally through public involvement. However, PID is not within a designated basin and therefore has no compliance issues with SGMA at this time (Wagner & Bonsignore, 2022).

Water Rights

In California, there are several different types of water rights, consistent with the basic principles of California Water Law. Appendix C summarizes key aspects of California Water Law. A water district, such as PID, must have a valid water right in order to divert, use, and/or transfer water.

Most of the PID's water, which is from Little Butte Creek, is stored in Paradise Lake and Magalia Reservoir. The district holds water rights permits to store about 18,300 acre-feet from Little Butte Creek administered by the State Water Resource Control Board (SWRCB). Permits from SWRCB tell water rights holders when they can divert water and how much they can divert. PID holds two permits from SWRCB that authorize diversion to storage in the district's two reservoirs at various times of the year. PID also holds a pre-1914 adjudicated right for a year-round direct diversion from Little Butte Creek. The water rights that PID holds today are summarized in Table 7.2 below, along with the associated storage available. Water rights allocate approximately 20,800 acre-feet on paper (PID, 2021a). Since these water rights are a social construct, they generally do not change unless prompted by a regulation or law. However, due to natural variation, the actual yield from the watershed may vary in dry or wet years.

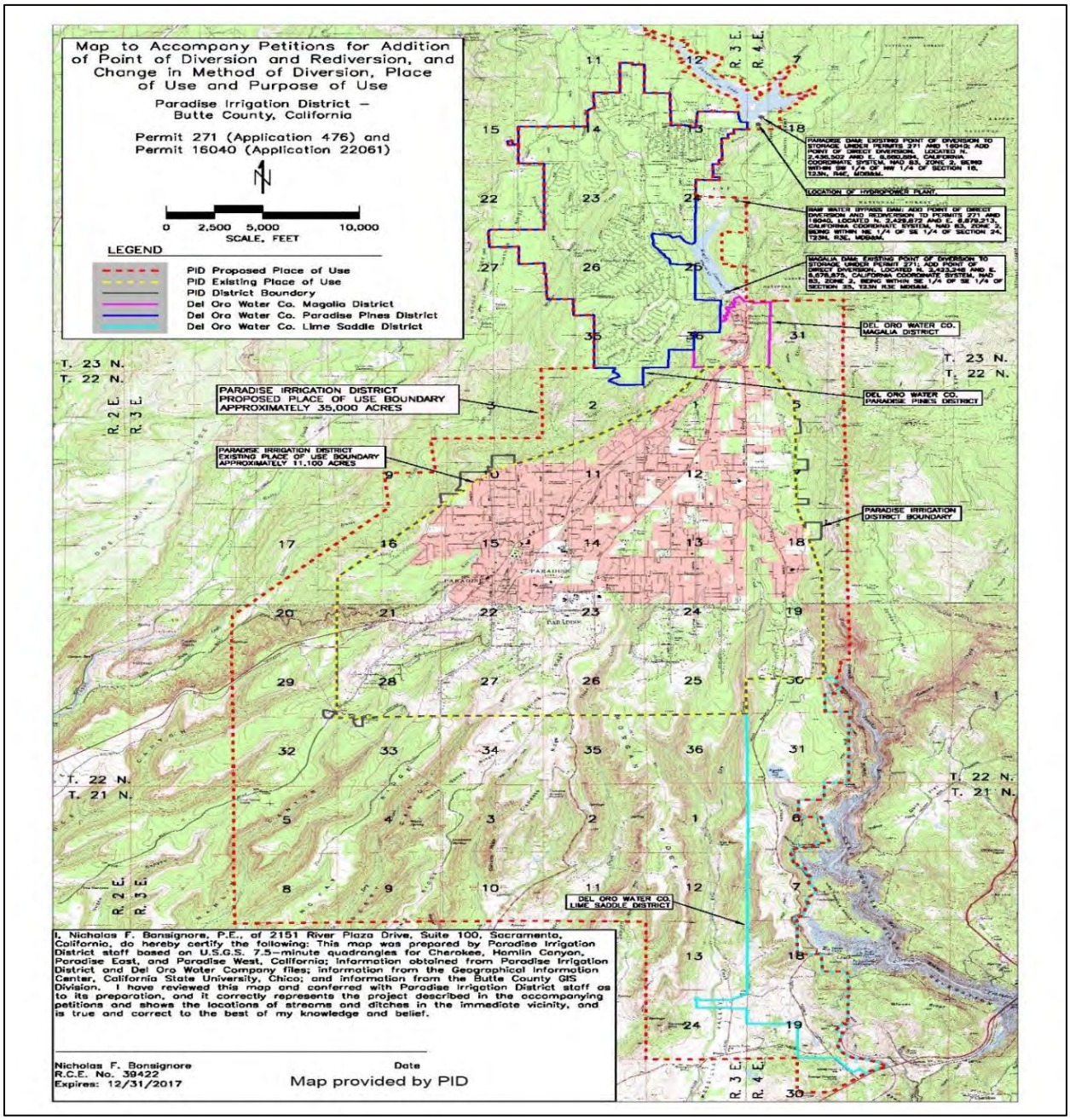
The District must also demonstrate the need for the amount of water in order to "perfect" the rights. Part of that process involves showing SWRCB that the District has or will have the facilities needed to store the full amount of water granted in the water rights permits, and that the District has made beneficial use of the water in the past. PID is currently conducting an extensive investigation of the environmental impacts of constructing additional storage and of diverting water from Little Butte Creek to storage, and is analyzing past diversions of water to identify the amount of water perfected under the permit. District staff and its water rights and environmental consultants are working, in consultation with Water Board staff, to secure the rights to a water supply that is reliable and adequate to meet the needs of the community (PID, 2023e).

PID submitted Application #476 under Permit 271 and Application #22061 under Permit 16040 in 2017 to petition for an addition of a point of diversion and rediversion, a change in the method of diversion, and changes to the place of use and purpose of use. A map depicting the PID's proposed place of use is shown in Figure 7.5 below. Please note that the place of use is defined by the water right granted by the California Water Board and is not directly related to LAFCO. However, if the water will actually be utilized in a location that is outside of the LAFCO-approved boundary, then PID must seek approval from the Commission thorough an application for annexation and/or amending its Sphere of Influence. PID is encouraged to keep LAFCO apprised of the status of this place of use designation.

Table 7.2: Water Rights Summary

Permit or Agreement Number	Source or Point of Diversion	Permitted Quantity	Availability Timeframe
Statement of Water Diversion and Use No. S008459 (Pre-1914 Appropriative Right)	Little Butte Creek at Magalia Dam	8 cubic feet per seconds (cfs) (Estimated at 2,500 AF/yr)	Year-round direct diversion, not storage. Must be used first in priority for PID supply.
Appropriative Water Right Permit 271 (Application A000476) (Priority of Right: 1916 as filed Sept 21, 1916)	Paradise Lake and Magalia Reservoir.	9,500 AF total (6,700 AF - Paradise Res.) (2,800 AF - Magalia Res)	Year-round diversion to storage in Paradise Lake and Magalia Reservoir
Appropriative Water Right Permit 16040 (Application 22061) (Priority of Right: 1965 as filed Feb 25, 1965)	Paradise Lake	8,800 AF	Wet season diversion to storage in Paradise Lake (October 1 – May 31), Subject to Term 91
Source: PID, 2021a			

Figure 7.5: PID Application for Place of Use Update



Source: PID, 2023

Refinements to water rights, water use, and diversion, have the potential to influence watershed and environmental health, especially in relation to local fisheries and carbon flow within the stream channel. A summary of the watershed is provided in Appendix F. An environmental impact report is being prepared to address potential environmental impacts.

Water Supply, Storage & Treatment

The water source for the PID is surface water, specifically Little Butte in the Butte Creek Watershed, as listed in Table 7.2 above. In the upper part of the watershed, runoff from rain and snow fills the PID's reservoirs. Water supply data is gathered from the gaging stations throughout the watershed, audited by the United States Geological Survey (USGS) annually.

Water supply reliability calculations for the District's surface water sources are shown in Table 7.3 below. Based on the District's average annual watershed production of 64,879 acre-feet (21,141 Million Gallons (MG)) and its ability to store 11,500 acre-feet (3.75 MG), PID believes that its sources of developed water supply will continue to more than adequately meet the current and the foreseeable demand through 2045 (PID, 2021a).

Table 7.3: Basis of Water Year Data (Reliability Assessment)

Year Type	Base Year	Volume Available (MG)	Percent of Average Supply
Average Year	1936	21,141	100%
Single Dry Year	1933	6,071	29%
Consecutive Dry Years 1st Year	1929	15,223	72%
Consecutive Dry Years 2nd Year	1930	16,465	78%
Consecutive Dry Years 3rd Year	1931	12,182	58%
Consecutive Dry Years 4th Year	1932	9,239	44%
Consecutive Dry Years 5th Year	1933	6,071	29%

Data Source: PID, UWMP, 2021a

During a Single Dry Year type of water year, PID estimates that it will have 6,071 MG of water supply available that year. However, total water demand is projected to be much less at 3,957 MG for a Single Dry Year (PID, 2021a). This indicates that PID will have sufficient water supplies during a Single Dry Year, as shown in Table 7.4 below.

Table 7.4: Single Dry Year Supply and Demand Comparison from PID 2020 UWMP

	2025	2030	2035	2040	2045
Supply totals	6,071	6,421	6,421	6,421	6,421
Demand totals	3,957	4,356	4,914	5,109	5,084
Difference	2,114	2,065	1,507	1,312	1,337
NOTES: All volumes are in AF. All supply volumes include storage remaining in the reservoirs on January 1 of each year. D Tank Well assumed to be repaired and operational to the full historical capacity of 350 AF in drought conditions as of the year 2030 when it is expected to be in operation again.					

Source: PID, 2021a

Treated water is supplied to Paradise Irrigation District customers in Butte County. The District does not typically purchase water from other agencies. However, PID maintains an agreement with neighboring water purveyor Del Oro Water Company, that allows for up to 300 AF of water to be transferred to PID in an emergency. Factors that influence the District's ability to supply and deliver water to its customers include severe drought conditions over many years and surface water contamination.

Failure at the plant or failure of the transmission main to the Town would render PID incapable of delivering water to their customers. Although failure at the plant is considered a low-level threat, failure of the 42-inch main to the Town is higher due to its age and location in a canyon. With the addition of the Zone A pipeline and pump station, this threat will be lowered (PID, 2023).

Surplus Water

The potential for PID to have surplus water available for sale is described in detail in the “Options Study Report” (GEI, 2022) as summarized in the following bullet points:

- PID estimates in their 2020 UWMP that supply in 2040 could outweigh demand by up to 16,100 ac-ft.
- This water surplus would be reduced during multiple dry year scenarios.
- With the use of PID’s water rights constrained by the amount of storage presently available and supplies in excess of demand, PID has the opportunity to generate revenue from the sale of treated drinking water and temporary or long-term transfers of a portion of their established rights, including:
    - Transfer to local districts within Butte County
    - Transfer to Sacramento Valley entities (north of Delta) outside of Butte County
    - Transfer to south of Delta entities
- Any potential water transfer opportunities will need to consider water availability, PID customer demands, and treated water capacity. (GEI, 2022)

When considering water transfer to local districts within Butte County, please note that PID maintains an agreement with Del Oro Water Company, that allows for the sale of up to approximately 300 AF annually, depending on how much PG&E delivers to Del Oro Water Company, for delivery to Paradise Pines District in Magalia, north of Paradise. According to the 2020 UWMP, each year there is an approximately equivalent value of water supply diverted to Paradise Lake by Del Oro and then received downstream of the PID WTP. These supply values are not exact and can result in a slight surplus or slight deficit factored into PID's annual supply volumes. PID has an intertie with Del Oro in the southern portion of the service area, near the Limesaddle area of the Del Oro service area. This intertie is capable of supplying treated water to Del Oro, although it is currently not in use. There is one additional intertie with Del Oro Water Company located in the area of the A Tank Reservoir, which is also not currently in use. These inter-ties have historically been operated only when necessary for emergency supply (PID, 2021a).

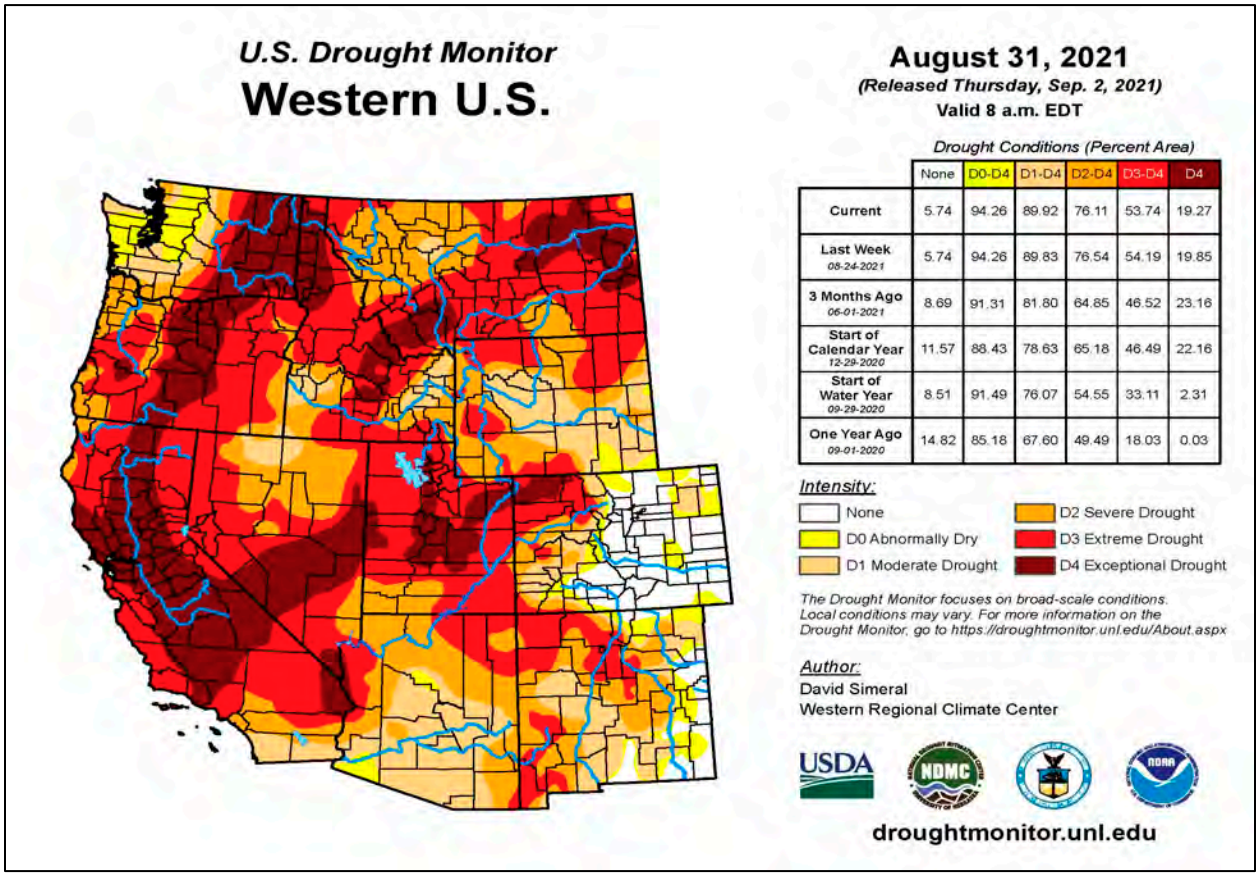
Drought Management and Water Conservation

Water is generally considered a renewable resource, replenished by annual winter precipitation. However, during times of drought and extreme drought, water can also be an exhaustible resource. Those times of water scarcity compel us to value water as a precious commodity to be conserved and carefully managed. According to the U.S. Drought Monitor, during the week of August 16, 2021, Butte County (along with roughly 47% of California) fell into the Exceptional Drought category, which is the worst in that ranking system. In addition, the Butte County Drought Task Force reported that July 2021 was the driest month, and the year 2021 is the 8th driest year over the past 127 years of record-keeping for Butte County.

The dry weather conditions associated with the drought were a contributing factor to the 2018 Camp Fire. Prior to the 2018 Camp Fire, PID and their customers would typically significantly reduce water use during drought years through pipeline replacements, leak detection and repair, efficiency improvements in treated water production, customer leak notification, water conservation, and other public response to the statewide drought. To continue its resource management during drought, the District submitted its Water Shortage Contingency Plan (WSCP) to CA DWR on July 1, 2021, as required by state law (PID, WSCP, 2021).

PID's WSCP describes six stages of water shortage ranging from Level 1, where water supplies are reduced up to ten percent, to Level 6, where water supplies are reduced by 50 percent or more. At each level of water shortage, the WSCP outlines strategies and actions the PID will take to reduce water demand. For example, a Level 1 action is: Expand Public Information Campaign. A Level 6 action is: Prohibit vehicle washing except at facilities using recycled or recirculating water (PID, 2021c).

Figure 7.6: US Drought Monitor Western U.S. – August 31, 2021



Source: National Drought Mitigation Center, 2021

Regardless of the severity of the water shortage, communication is a key aspect to encouraging water conservation, and PID utilizes a number of strategies to communicate with customers and land use planning entities for the Town of Paradise and County of Butte, as well as community partners, including:

- Letters and emails to customers
- Social media postings such as Facebook and Nextdoor
- Postings on the app DropCountr
- Communications with local agencies
- Collaboration with County, Town, and special district offices on community outreach
- (PID, 2023e)

A drought does have financial implications for PID. Compliance and enforcement with water conservation measures are mandated by the California Water Code Sections 376 and 10632, such that a water supplier is required to penalize or charge end users for excessive water use. PID has existing fees for water waste. However, due to lack of metering since the Camp Fire, PID has not by resolution implemented additional fines as there is no practical way to measure water used.

In 2023, Butte County and PID experienced a very wet water year, and reservoirs were filled. Mediterranean climates typically experience a range of wet and dry years over long time scales. Prior to Camp Fire in 2018, PID customers were progressively reducing their per capita water use, from 265 gallons per capita per day (GPCD) in 2010 to 143 GPCD in 2015 and 157 GPCD in 2017. However, the Camp Fire impacted PID's ability to meet its 2020 reduction target of 212 GPCD. In 2020, following the Camp Fire in 2018, actual water output went up to 349 GPCD, in large part due to system losses from Camp Fire damage (PID, 2021a). However, PID continues to prioritize the repair of its distribution system to reduce water losses through system leaks, and implementing the District's new Water Contingency Plan, as well as its other proactive measures such as Water Conservation Programs, Water Wise Guidelines, and public education and outreach measures will hopefully improve water conservation on a district-wide level.

In summary, based on the supply and demand assessments conducted by the District (see UWMP Chapter 6), PID believes that its "reasonably available volume" of 15,466 AF will exceed the foreseeable demand of 5,084 AF through 2045 (PID, 2021a). Additionally, PID's UWMP 2020 states that the surface water supply available to PID is projected to be capable of serving all demands under all hydrologic conditions.

Given that PID's water rights exceed the UWMP's projected demand for the 20-year planning period, LAFCO will invite the Town of Paradise to review its current rebuilding restrictions, such as minimum home size. One approach is to promote a rapid and economical rebuilding process which will also facilitate the local utilization of existing water supply. However, the Town may also wish to consider future fire hazards and risks during its planning and rebuilding process. Additionally, PID may need to coordinate with state agencies to balance watershed needs as described in Appendix F, Butte Creek Watershed Description, along with other water rights and permit requirements.

Water Conservation and Treatment Service Extension to the SOI

PID's existing SOI is comparatively small and comprises approximately 1,325 acres. There are several possible scenarios under which a parcel within the SOI might request annexation into the PID boundary to receive water service. Two hypothetical examples are listed below:

- Many parcels with the SOI rely on privately owned wells to provide groundwater. It is possible that during a prolonged drought, a privately owned well could run dry. In this hypothetical situation, the property owner might consider requesting annexation into the PID boundary to receive water service.
- New development could also spark requests for annexation into the PID boundary to receive water service. For example, as parcels within the SOI are developed and potentially annexed into the Town of Paradise in the future, PID may have the capacity to provide water service to these areas.

Although additional annexations of land to the PID have the potential to increase water demand, the PID does not anticipate any additional annexations of parcels that are not included within the Town of Paradise's General Plan over the next several years. Any new annexations would be

determined on a case-by-case basis with a full review of anticipated water demand, conservation measures, and updated inventories of supplies. All new development in the PID must provide for its fair share of pipes, pipelines, and reservoirs. Additionally, environmental review, approval from LAFCO, and other planning permits may be needed before considering any other future annexation proposals.

Water Recycling

Under ideal circumstances, using recycled water could potentially reduce future demand for drinking and irrigation water that would otherwise be used for water landscaping. However, the Town of Paradise has no centralized sewer system or wastewater treatment plant. Therefore, PID does not currently make use of recycled water, nor is there any wastewater recycled for direct reuse within the District's boundary area, as described on page 4-1 of the UWMP (PID, 2021a). Implementing a recycled water program within the PID boundary area would need to involve the construction of a centralized sewage system to provide effluent for treatment and reuse.

Water Demand and Service

Treated Domestic Water Services

PID serves treated domestic water to 4,881 active customers located in the Town of Paradise (PID, 2023). Surface water from the Little Butte Creek watershed is transported to Paradise Lake and Magalia Reservoir (PID, 2021a). PID maintains one water treatment plant that uses a combination of filtration and chlorination to remove/mitigate contaminants (PID, 2021a). After the treatment process, water is distributed through pipelines to storage tanks A, C, D, E, and, soon, Reservoir B tanks. A total of 178 miles of pipelines transports the water along the process from water collection, treatment to consumption (PID, 2021b). Paradise Irrigation District Water Treatment Plant is water system No. CA0410007, located at 13888 Pine Needle Drive, Magalia, CA 95954, and serves 3,600 connections (PID, UWMP, 2021a). This treatment plant started activities on March 22, 1979. It currently serves 4,881 accounts and has 5,758 “Sealed Standby” accounts.

Irrigation Customers

PID does not deliver raw water to agricultural customers but does deliver treated water to irrigation customers at an untreated rate.

Water Demand

Demand for municipal water service is comprised of sales, losses, and flows needed for fire prevention and other emergency services. In Butte County, the average per capita water demand is 252 gallons per capita per day (NSV-IRWMP, 2020). However, in PID, per capita daily demand is currently estimated at 349 GPCD due to water loss from Camp Fire damage to the conveyance system (PID, 2021a). The existing water demand to serve all PID customers in 2020 is measured as 2,851 AF, as shown in Table 7.5.

Table 7.5: Retail Demands for Potable Water		
Use Type	2020 Actual	
Drop Down List	Level of Treatment When Delivered	Volume
Single-Family	Drinking Water	1,130
Multi-Family	Drinking Water	205
Commercial	Drinking Water	222
Agricultural irrigation	Drinking Water	0
Institutional/Governmental	Drinking Water	407
Landscape	Drinking Water	30
Losses	Drinking Water	1,935
TOTAL		3,838
Note: All numbers shown are in AF. *Source: PID, 2021a.*		

Table 7.5 above lists water loss at 1,935 acre-feet per year. Although water loss can occur due to natural processes in the watershed, such as evapotranspiration from the reservoirs and pipe leakage, the loss volume in the PID system is over 50% of total water use and is due to impacts to the water conveyance system from the Camp Fire.

To provide a slightly different perspective on existing water demand, PID provided updated demand details in January 2023 for this MSR, as shown in Table 7.6 (next page). This table shows that the peak monthly water demand in the summer of 2020 was 566 AF. The lowest monthly water demand was in February 2021 at 176 AF. PID's data shows that water production remained steady at an approximate average of 4,000 AF, indicating that supply greatly exceeds demand. This allows PID to experience a water surplus. Regarding domestic water service, the District does not anticipate any major operational changes in the near-term future. However, water demand is projected to increase incrementally above current levels as homes are rebuilt as part of the post-fire recovery process.

Water Flows for Fire Safety and Other Emergencies

Fire safety experts often describe two types of fires:

1. structural fires in urban and suburban locations, and
2. wildfires in rural and natural areas.

For the first type of fire in urban and suburban locations, the local Town fire stations are utilized to provide fire protection services to homes and businesses in the community. Additionally, the Town's General Plan Safety Element contains policies related to fire protection services. Water is the primary tool that fire fighters use to protect structures within and near the Town. Fire hydrants are one way (along with numerous lakes and ponds) that fire fighters access water and a generally accepted fire flow standard is 1,500 gallons per minute (gpm). The State Fire Code contains the requirements regarding placement and functionality of fire hydrants.

Table 7.6: Water Demand Details Provided by PID

	Winter 2021-2022(acre-ft)
December(2021)	223
January (2022)	253
February	239
Average	238.33
Peak	253

	Summer 2022(acre-ft)
June	391
July	498
August	535
Average	474.67
Peak	535

	Winter 2020-2021(acre-ft)
December(2020)	236
January (2021)	210
February	176
Average	207.33
Peak	236

	Summer 2021(acre-ft)
June	506
July	595
August	536
Average	545.67
Peak	595

	Winter 2019-2020(acre-ft)
December(2019)	203
January (2020)	202
February	217
Average	207.33
Peak	217

	Summer 2020(acre-ft)
June	380
July	494
August	566
Average	480.00
Peak	566

Annual Production 2022(acre-ft)	
Total	4,067

Annual Production 2021(acre-ft)	
Total	4,106

Annual Production 2020(acre-ft)	
Total	3,800

Source: PID, n.d.

Future Water Demand

LAFCO is interested in studying projected future water demand to understand whether there is sufficient supply to serve future needs. Several factors contribute to future water demand, including population growth and associated demand, evapotranspiration rates, and several other factors. Population growth in Paradise is directly related to the rate of rebuilding that occurs on previously developed but currently vacant lots. As stated above, the rebuild rate is affected by building restrictions imposed by the Town of Paradise. Redevelopment, growth of housing, and

other types of development will influence future water demand, and therefore the District keeps track of "Will Serve Letters" or promises made to supply water. PID does issue will-serve letters to development projects after careful review. PID has one outstanding will-serve letter, and it is for the Lupine Subdivision. This subdivision's preliminary plans have undergone design review and have been accepted by PID's Board. However, final construction plans and construction deposits have not been paid to the District (PID, 2023d).

After considering all these factors, the PID's UWMP developed a model and predicted that in the year 2045, total water demand could reach 5,084 AF per year. Table 7.7 below shows demand for potable and raw water in five-year increments out to 2045 by customer type.

Table 7.7: Demands for Potable and Raw Water

Use Type	Projected Water use Report To the Extent that Records are Available				
	2025	2030	2035	2040	2045
Single-Family	1,686	2,290	2,894	3,168	3,168
Multi-Family	261	355	448	491	491
Commercial	184	250	315	345	345
Losses (Drinking Water)	935	701	526	394	394
Institutional/Governmental	112	152	192	210	210
Landscape	31	42	53	58	58
Agricultural irrigation	50	67	85	93	93
Sales/Transfers/Exchanges	300	300	300	300	300
Losses (Other Non-Potable Water)	399	199	100	50	25
Total	3,958	4,356	4,914	5,109	5,084

Note: Recycled water demands are NOT reported in this table. Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP. All volumes are in AF.
Source: PID UWMP, 2021a.

The PID's most recent Urban Water Management Plan, 2020, analyzed the reliability of water sources during "average year," "single year," and "multiple-dry years" to plan for "worst-case" water supply situations. Multiple Dry Years are occurring on a more frequent basis. Table 7.8 below calculates projected future demand in the event a drought covering multiple years were to occur.

Table 7.8: Multiple Dry Year – Supply and Demand

DWR Table 7-4

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025	2030	2035	2040	2045
First year	Supply totals	15,223	15,573	15,573	15,573	15,573
	Demand totals	3,957	4,356	4,914	5,109	5,084
	Difference	11,266	11,217	10,659	10,464	10,489
Second year	Supply totals	16,465	16,815	16,815	16,815	16,815
	Demand totals	3,957	4,356	4,914	5,109	5,084
	Difference	12,508	12,459	11,901	11,706	11,731
Third year	Supply totals	12,182	12,532	12,532	12,532	12,532
	Demand totals	3,957	4,356	4,914	5,109	5,084
	Difference	8,225	8,176	7,618	7,423	7,448
Fourth year	Supply totals	9,239	9,589	9,589	9,589	9,589
	Demand totals	3,957	4,356	4,914	5,109	5,084
	Difference	5,282	5,233	4,675	4,480	4,505
Fifth year	Supply totals	6,071	6,421	6,421	6,421	6,421
	Demand totals	3,957	4,356	4,914	5,109	5,084
	Difference	2,114	2,065	1,507	1,312	1,337
NOTES: All volumes are in AF. All supply volumes include storage remaining in the reservoirs on January 1 of each year. D Tank Well assumed to be repaired and operational to the full historical capacity of 350 AF in drought conditions as of the year 2030 when it is expected to be in operation again.						

Source: PID, UWMP, 2021a. All volumes are in AF.

Water Quality

This Section focuses on one aspect of water quality, namely drinking water quality. The quality of water discharged into natural streams, rivers, and lakes as a result of sewage disposal is not within the purview of this MSR. For example, historic septic tank usage may have allowed bacterial and other contamination into the local watershed; however, this is not a topic of analysis in this MSR.

When drinking a glass of water, it is important for customers to understand whether this water is safe for consumption and free from pollution to protect their health and safety and promote overall wellness. PID's water quality monitoring program includes taking samples of raw and treated water throughout the year from many locations in the Agency's service area. PID's annual Consumer Confidence Report (CCR) demonstrates a consistent delivery of high-quality drinking water. According to PID's *Annual Consumer Confidence Report*, contaminants that may be present in source water include microbial contaminants, such as viruses and bacteria; inorganic

contaminants, such as salts and metals; and organic chemical contaminants, including synthetic and volatile organic chemicals (PID 2019a).

To further consider PID water quality in additional detail, two online databases were queried, including the California Drinking Water Watch and the US EPA Tool.

California Drinking Water Watch

Three (3) violations were found in the PID's water systems (Water System No. CA0410007) listed on the Safe Drinking Water Information website, as shown in Table 7.9 below. Two violations were associated with coliform and one with Methyl Tert-Butyl Ether. The violations occurred over ten years ago, on the following dates: 1992, 2003, and 2009 (California Drinking Water Watch, 2021).

Table 7.9: Individual Violations Listed in California Drinking Water Watch

Violation No.	Status	Violation Type	Violation Name	Analyte Code	Analyte Name
2009-921003	V	22	MCL (TRC), Monthly	3100	Coliform (TCR)
2003-221002	V	S1	State Violation M&R (Major)	2251	Methyl Tert-Butyl Ether
1992-9221001	V	22	MCL (TCR), Monthly	3100	Coliform (TCR)
Total Number of Records Fetched: 3					
Data Source: Calif Drinking Water Watch https://sdwis.waterboards.ca.gov/PDWW/JSP/Violations.jsp?tinwsys_is_number=99&tinwsys_st_code=CA					
Source: State Water Board, 2023b					

US EPA

The US EPA tracks water quality reports for the WTP, and the Three-Year Compliance History is shown in Table 7.10 below. In the 2nd Quarter of 2020 (starting April 1st and ending June 30th), the WTP experienced a temporary episode with high concentrations of pollutants, including Aluminum and Dichlorobromomethane. PID resolved the pollution episode, and no violations were identified, over the past five years, PID's WTP only experienced two Formal Enforcement Actions, as shown in Table 7.11 below. Both episodes were relatively minor, and no fines were charged (US EPA, 2022).

PID regularly monitors water quality, and the monitoring schedule is posted on a state website at: <*https://sdwis.waterboards.ca.gov/PDWW/JSP/NMonitoringSchedules.jsp?tinwsys_is_number=99&tinwsys_st_code=CA&ReportFormat=SR*>.

Table 7.10: Three-Year Compliance History, PID WTP

Three-Year Compliance History by Quarter

Statute	Program/Pollutant/Violation Type				QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12	QTR 13+
	CWA (Source ID: CA0083488)				01/01-03 /31/20	04/01-06 /30/20	07/01-09 /30/20	10/01-12 /31/20	01/01-03/31/21	04/01-06 /30/21	07/01-09 /30/21	10/01-12 /31/21	01/01-03 /31/22	04/01-06 /30/22	07/01-09 /30/22	10/01-12 /31/22	01/01-05 /12/23
	Facility-Level Status				No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	Undetermined
	Quarterly Noncompliance Report History				Resolved - Pending	Resolved - Pending	Resolved - Pending	Resolved - Pending	Reportable Noncompliance	Resolved - Pending	Resolved - Pending	Resolved - Pending	Resolved - Pending	Resolved - Pending	Resolved - Pending	Resolved - Pending	
	Pollutant	Disch Point	Mon Loc	Freq													
CWA	Aluminum, total recoverable E	001 - A	Effluent Gross	Mthly		399%											
CWA	Aluminum, total recoverable E	001 - A	Effluent Gross	NMth		213%											
CWA	Dichlorobromomethane E	001 - A	Effluent Gross	Mthly		139%									11%	9%	
CWA	Dichlorobromomethane E	001 - A	Effluent Gross	NMth		20%											
	Late or Missing Discharge Monitoring Report (DMR) Measurements																
	Counts of Missing DMR Measurements							6									

Source: US EPA, 2023

Table 7.11 Informal and Formal Enforcement Actions (US EPA)
Informal Enforcement Actions for the Last 10 Years

Statute	System	Source ID	Type of Action	Lead Agency	Date
CWA	ICIS-NPDES	CA0083488	Base Program Notice of Violation	State	12/16/2022
CWA	ICIS-NPDES	CA0083488	Base Program Notice of Violation	State	10/20/2022
CWA	ICIS-NPDES	CA0083488	Base Program Notice of Violation	State	09/10/2019
CWA	ICIS-NPDES	CA0083488	Base Program Notice of Violation	State	12/09/2016
CWA	ICIS-NPDES	CA0083488	Base Program Notice of Violation	State	08/19/2013

Formal Enforcement Actions in Last 10 Years

Statute	System	Law/Section	Source ID	Type of Action	Case No.	Lead Agency	Case Name	Issued/Filed Date	Settlements/ Actions	Settlement/ Action Date	Federal Penalty Assessed	State/ Local Penalty Assessed	Penalty Amount Collected	SEP Value	Comp Action Cost
CWA	ICIS-NPDES	OTHER	NPDES/CA0083488	Administrative - Formal	CA-2016-1019	State	Paradise ID WTP ACL	11/20/2015	--						
CWA	ICIS-NPDES	OTHER	NPDES/CA0083488	Administrative Formal	CA-CFEA437164	State	ACL R5-2020-0511 for Paradise ID	04/22/2020	1	04/22/2020	$0	$0	--	$0	$0
CWA	ICIS-NPDES	OTHER	NPDES/CA0083488	Administrative Formal	CA-CFEA418669	State	ACL R5-2017-0560 for Paradise ID	04/23/2019	1	04/23/2019	$0	$0	-	$0	$0

Data Source: US EPA, 2023

Lead Service Pipe Study

Section 116885 of the California Health and Safety Code (H&S Code, Lead Service Lines in Public Water Systems – Senate Bill 1398) requires all public water systems to compile an inventory of known partial or total lead user service lines in their distribution system. The deadline to compile the inventory was July 1, 2018. PID completed the required inventory each year for the years 2017, 2018, and 2019. Each year the finding was "No lead/no unknown materials user service lines" (SWRCB, 2023c).

Regulatory Compliance

The State Water Resources Control Board – Division of Drinking Water (SWRCB-DODW) has several regulations (detailed in Appendix C) which the PID routinely complies with as follows:

- PID submits annual reports to the SWRCB-DODW.
- The SWRCB-DODW conducts inspections every 3 to 4 years. (State Water Board, 2023b)

PID does not have a certified lab.

The State Water Board has issued some violations related to the Paradise Irrigation District Water Treatment Plant, as listed below:

- Violation 1992-9221001: October 16, 1992 exceedance of MCL for coliform. Compliance achieved August 21, 1995 and violation voided.
- Violation 2003-221002: October 7, 2002 for monitoring of methyl ter-butyl ether. Compliance achieved February 27, 2018 and violation voided.
- Violation 2009-921003: January 1, 2009 exceedance of MCL for coliform. Compliance achieved February 24, 2009 and violation voided.

Source: State Water Board, 2023b

The State Water Board has also issued several orders to the PID Water Treatment Plant, as follows:

- Order No. R5-2020-0511, Settlement Agreement and Stipulation for Entry of Administrative Civil Liability Order, Issued by the Executive Officer on 22 April 2020
- Order No. R5-2020-0016, Waste Discharge Requirements, Adopted on 16 April 2020
- Order No. R5-2019-0500, Administrative Civil Liability Order, Adopted on 23 April 2019
- Order No. R5-2010-0058-02, Time Schedule Order as amended by R5-2017-0121, Adopted on 27 May 2010, amended on 17 April 2015, and amended on 8 December 2017
- Order No. R5-2017-0121, Amending Time Schedule Order R5-2010-0058, Adopted on 8 December 2017
- Order No. R5-2016-0503, Administrative Civil Liability Order/Mandatory Minimum Penalty, Issued by the Executive Officer on 31 May 2016
- Order No. R5-2010-0058-01, Amended Time Schedule Order as amended by Order R5-2015-0050, Amended on 17 April 2015
- Order No. R5-2015-0050, Amending Time Schedule Order R5-2010-0058, Adopted on 17 April 2015

- Order No. R5-2010-0058, Time Schedule Order/NPDES Permit No. CA0083488, Adopted on 27 May 2010
- Order No. R5-2010-0057, Waste Discharge Requirements/Reporting and Monitoring Program/NPDES Permit No. CA0083488, Adopted on 27 May 2010
- Order No. R5-2004-0144, Waste Discharge Requirements/Reporting and Monitoring Program/NPDES Permit No. CA0083488, Adopted on 15 October 2004
- *Source: State Water Board, 2023a*

7.2: INFRASTRUCTURE AND FACILITIES

PID owns all major facilities associated with its provision of water service (PID, 2023d). Infrastructure development and maintenance is an important part of the service, and these measures are described in PID's UWMP and Capital Improvement Plan and summarized in the following pages. The District's facilities include a PID Water Treatment Plant, PID pumping station, 42-inch transmission pipeline, storage tanks, and dams (County of Butte, 2019). A summary of the critical infrastructure and public facilities managed by the PID is provided in Table 7.12 below.

Table 7.12: Critical Facilities, Infrastructure, and Other District Assets - PID

Name of Asset	Facility Type	Replacement Value	Hazard Information
PID Treatment Plant	Water Treatment Plant	$14,000,000	Earthquake and dam failure
PID Pumping Station	Treated Water Delivery Pumps	$400,000	Earthquake, dam failure, wildfire
42-inch Transmission Pipeline	Above-Ground Pipeline and Creek Crossing	$90,000	Earthquake and dam failure
Paradise Dam	Dam	$100,000,000	Earthquake and dam failure
Magalia Dam	Dam	$30,000,000	Earthquake and dam failure
Diversion Dam	Raw Water Supply	$3,000,000	Earthquake and dam failure
Water District Storage Tanks	Treated Water Delivery	$24,000,000	Earthquake and Wildfire
Total		$171,490,000	
Source: Paradise Irrigation District, Butte County Local Hazard Mitigation Plan Update, 2019			

Table 7.13: Land Owned by PID

Properties that PID Should Retain

APN	Location	Type	Lot size (sq ft)	Lot size (acre)	Description
050-070-075-000	Skyway and Yellowstone	Tank	45302	1.0	Reservoir B location
050-070-075-000	Kelly Heritage Trail	Tank	80586	1.9	Tank Site
050-070-083-001	Skyway and Yellowstone	Tank	93654	2.2	
050-190-040-000	Kelly Heritage Trail	Tank	24829	0.6	
054-040-135-000	Skyway and Yellowstone	Tank	53143	1.2	
066-440-014-000	Kelly Heritage Trail Tank	Tank	18295	0.4	
053-040-034-000	Site by Pine Grove Tank site off Nunneley off Skyway		32234	0.7	
050-081-032-000	Moore Rd.	Pump Station	8276	0.2	Pump station
053-012-022-000	6332 Clark Rd.	Lot	28749	0.7	Main Office
053-150-197-000	6332 Clark Rd.	Lot	148104	3.4	Maintenance Shop
058-100-097-000	near Paradise Lake		50093	1.1	Paradise Lake Area
058-100-098-000	6910 Lucretia		105415	2.4	Paradise Lake Area
058-100-115-000	Paradise lake area		3148516	72.3	Paradise Lake Area
065-010-022-000	Paradise lake area		214315	4.9	Paradise Lake Area
065-010-026-000	Paradise lake area		1132124	26.0	Paradise Lake Area
065-010-051-000	Paradise lake area		21780	0.5	Paradise Lake Area
065-010-052-000	Paradise lake area		459558	10.6	Paradise Lake Area
065-010-064-000	Paradise lake area		602434	13.8	Paradise Lake Area
065-050-032-000	Paradise lake area		503118	11.6	Paradise Lake Area
065-050-038-000	Paradise lake area		3863336	88.7	Paradise Lake Area
065-110-020-000	Paradise lake area		1089000	25.0	Paradise Lake Area
065-110-024-000	Paradise lake area		6969600	160.0	Paradise Lake Area
065-150-001-000	Paradise lake area		227818	5.2	Paradise Lake Area
065-150-002-000	Paradise lake area		439956	10.1	Paradise Lake Area
065-150-003-000	Paradise lake area		326700	7.5	Paradise Lake Area
065-160-002-000	Paradise lake area		540144	12.4	Paradise Lake Area
065-160-003-000	Paradise lake area		397267	9.1	Paradise Lake Area
065-180-012-000	Paradise lake area		714383	16.4	Paradise Lake Area
065-180-019-000	Paradise lake area		217800	5.0	Paradise Lake Area
065-180-020-000	Paradise lake area		719175	16.5	Paradise Lake Area
065-180-031-000	Paradise lake area		356756	8.2	Paradise Lake Area
065-530-038-000	Paradise lake area		6551424	150.4	Paradise Lake Area
065-530-047-000	Paradise lake area		130680	3.0	Paradise Lake Area
065-240-002-000	Magalia Reservoir		1254528	28.8	Magalia Reservoir Area
065-260-011-000	Magalia Reservoir		10169953	233.5	Magalia Reservoir Area
066-010-024-000	Magalia Reservoir		710899	16.3	Magalia Reservoir Area

Properties that PID owns not related to water service

APN	Location	Type	Lot size (sq ft)	Lot size (sq	Description
050-011-007-000	Indian Rd. and Skyway	Open lot	1306	0.0	small lot
050-070-024-000	Between Qual Way and Skyway	Open lot	11325	0.3	long slender lot between 2 properties (8797 Skyway, 8777
053-150-198-000	6350 Clark Rd.	Lot	16522	0.4	Lot near office with house
053-150-199-001	6352, 6358, 6360 Clark Rd	Lot	20908	0.5	Lot near office
055-170-017-000	near Eden Rd.	Open Lot	10018	0.2	

Properties ("Streets")

APN	Road Name	From	To	Approximate Length
Unassigned	Academy Drive (west	Nunneley	Church driveway	675'
Unassigned	Academy Drive (north	Nunneley/Academ	West end	668'
Unassigned	Belleview Drive	Merrill Road	South 270'	270'
050-180-	Belleview Drive (South	Wagstaff Road	Ponderosa School	1210'
051-164-	Berkshire Avenue	Bille Road	North end	1440'
Unassigned	Brill Road	N. Libby Road	West & North to end	1555'
Unassigned	Chaney Lane	Fickett Lane	Pentz road	1915'
054-192-	Dottie Lane	Sawmill Road	637' west	637'
Unassigned	E. Oak Street	Scottwood Road	Shady Lane	660'
Unassigned	Edwards Lane	Marlow Lane	East end	672'
Unassigned	Feather River Place	Pentz Road	North end	1834'
050-150-	Forest Service Road	Moore Road	West to RR R/W	1300'
053-131-050 & 053-131-060	Golden Oaks Road	Nunneley Road	North end	547'
Unassigned	Henson Road	Sawmill Road	Butte View Terrace	1574'
050-150-	Herman Lane	Rocky Lane	Hummingbird Lane	30' x 1320'
Unassigned	Heynen Road	Pentz Road	West to end	925'
050-290-	Merrill Road	Belleview Drive	West to end	345'
Unassigned	Meyers Lane	Graham Road	Oliver Road	1327'
Unassigned	Quail Way	Skyway	East line of Sec 2	1380'
Unassigned	Roe Road	East End	442' west	442'
Unassigned	Ronsue Road	Valley View Drive	South end	535'
Unassigned	Ryan Road	Kibler Road	East 270'	270'
Unassigned	Scottwood Road	E. Oak Street	North to end	540'
Unassigned	Shady Lane	E. Oak Street	North 740'	740'
Unassigned	Sunset Drive	Oliver Road	East end	1042'
Unassigned	Toyon Road	Roe Road	Foster Rd	2358'
Unassigned	Travis Road	Pearson Road	Henson Rd	897'
052-032-	Wagon Wheel Way	Valley View Drive	Primrose Lane	580'
Unassigned	Woodglen Drive	Nunneley	1318' south	1318'
Unassigned	No Name Available	E. of Redhill Way	North of Wall Lane	735'

Source: PID, 2023d

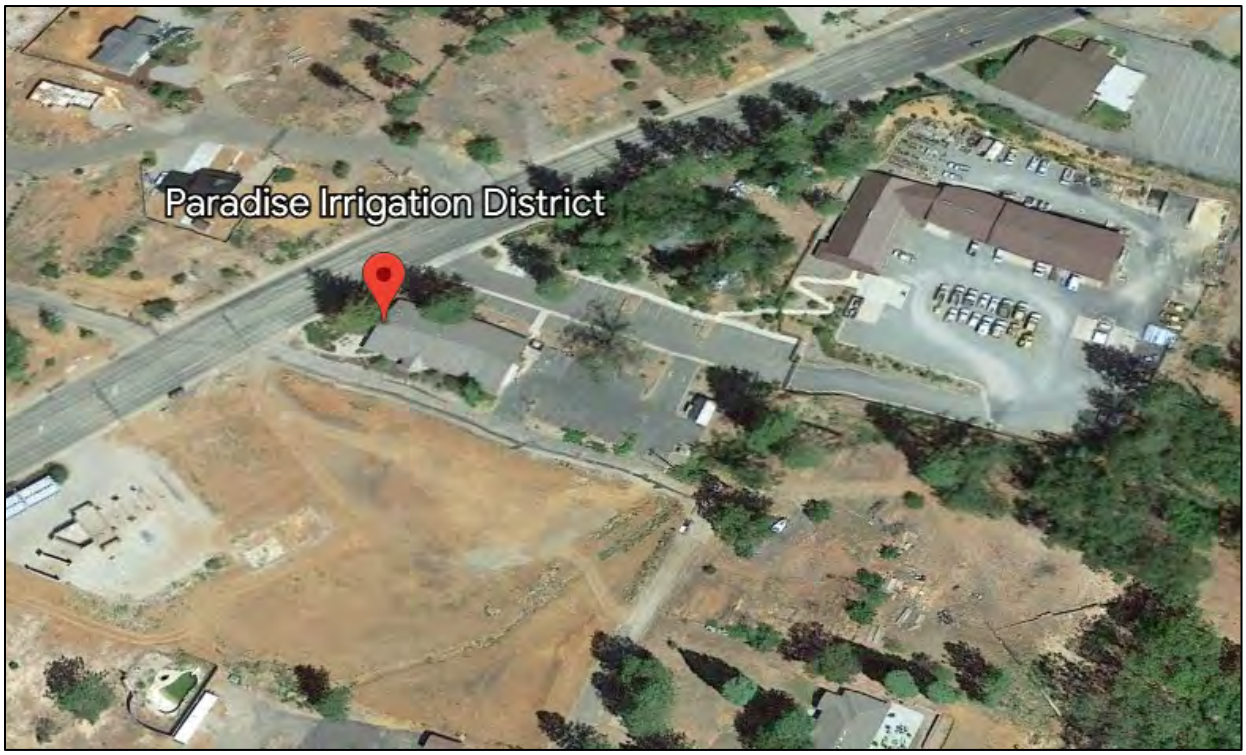
Land

PID owns 36 parcels with facilities, 5 properties not related to water service, and 31 easement pipes, as listed in Table 7.13 (PID, 2023b). The District covers approximately 11,438.5 acres. PID has a water rights permit that allows it to perform year-round diversion to store water in Paradise Lake and Magalia Reservoir. The District also has a water right permit allowing it to divert water to store it in Paradise Lake during the wet season, as shown in Table 7.2 (PID, 2021a).

Administrative Facilities

The District's office is located at 6332 Clark Rd, Paradise, CA 95969. These offices provide room for staff and administrative functions. PID also maintains several general maintenance facilities.

Figure 7.7: PID Facilities



Source: Google Earth, 2022

Water Facilities

Water Conveyance Facilities

The PID's 2020 report entitled "Urban Water Management Plan" provides details and analysis of the District's water conveyance system and facilities. Water is transmitted to the treatment plant by a 25 MGD raw water pump station. From the Water Treatment Plant, the water travels through pipes to individual homes and businesses. PID operates a distribution of 170 miles of pressure

pipe ranging from 1 inch to 36 inches from the Water Treatment Plant to customers (PID, 2021a). Unfortunately, much of PID's infrastructure was destroyed during the 2018 Camp Fire. For example, PID lost approximately 90% of its connections, making continued water service operations unsustainable until recovery and rebuilding are completed. Since then, the District has been in the process of rebuilding.

Water Source and Storage Facilities

PID obtains its surface water from the Little Butte Creek watershed. Surface water from Little Butte Creek is diverted to Paradise Lake and then to Magalia Reservoir, permissible through PID's three water rights, including two storage rights and a direct diversion right. PID's reservoir system stores both raw untreated water upstream and treated water. Magalia Reservoir stores 796 acre-feet (AF) of water, as listed in Table 7.14 below (PID, 2021a). Issues related to the reservoir storage capability are discussed further below. PID operates a raw water intake at Magalia Reservoir. Water is then pumped to PID's Water Treatment Plant, and the treated water is conveyed to PID's distribution system through a 42" transmission main. PID has a single groundwater well located at the D Tank site facility. The primary purpose of the well is to augment PID's water supply during times of drought or emergency (PID, 2023d).

Table 7.14: Storage Reservoirs

Reservoir and Year Constructed	Maximum Acre Feet Storage Capacity	Height (in feet)	Type of Dam	Current Storage (Acre Feet)
Magalia Reservoir	796	103	Earthen	1,367
Paradise Lake	11,497	175	Earthen	11,669

Source: PID, 2021a; PID 2023c.

Treated water is stored at five treated water storage tanks. These tanks are welded steel tanks that store a total of 6.5 MG (million gallons) (LAFCO, 2006).

Hydroelectric Facilities

The District operates a 6kW hydro generator at Paradise Lake to produce power for the SCADA system, associated release valve and telemetry at the dam. PID does not currently sell or otherwise share hydroelectric energy. Although the District continues to keep its eye out for beneficial micro-hydro projects, no feasible projects have been identified to date (PID, 2023d).

Figure 7.8: Historic Image of Magalia Dam

Title: Paradise Irrigation District earth fill dam, Magalia. Date: 1929-11-29. Collected by Department of Irrigation Photographs. Owned by UC Davis, University Library, Special Collections. Source: Calisphere. Retrieved on June 17 2023 from: <https://calisphere.org/item/ark:/87293/d3z79z/>.

Figure 7.9: Aerial Image of Paradise Reservoir

Source: Google Earth, 2022

Water Treatment Facilities

The water treatment plant (WTP) is part of PID's physical water system, and it is located at 13888 Pine Needle Dr, Magalia, CA 95954, as shown in Figure 7.10. PID's WTP is located outside the District's boundary and SOI and within the Little Butte Creek watershed. The WTP has NPDES ID # CA0083488, and it is designated as Public Water System No. CA0410007 (PID, UWMP, 2021a). The water filtration plant was first added to the District's water system in 1986. In January 1995, the new treatment plant was completed and placed in service (PID, UWMP, 2021a). The Treatment Plant provides an average of 3.6 million gallons per day with a maximum production of 9.7 million gallons per day. Runoff is collected over 11.2 square miles of watershed located north and east of Magalia Reservoir.

Figure 7.10: PID Water Treatment Plant Location

Source: US EPA, 2015

The Water Treatment Plant had a design capacity of 19.0 MGD with the ability to be expanded to 25.0 MGD. After construction, the plant was flow tested and approved to run at a rate of 22.8 MGD (PID, 2023d). Recent upgrades that are being planned include the replacement of an old steel main with a 12-inch C900 PVC water main. The replacement of the pipelines will help strengthen the treatment plant's supply in the case of an emergency or when the 42-inch transmission line is undergoing an outage (PID, 2017).

The water treatment process utilizes a combination of filtration and chlorination to remove/mitigate contaminants. The treatment process consists of coagulation, clarification, filtration, and

disinfection. The coagulation process involves adding alum and polymer to the water to chemically bond very small particles into larger particles. Coagulated water is passed through a bed of coarse granulated media in the absorption clarifiers. Coarse media in the clarifier removes most of the coagulated particles. The clarified water flows downward through tri-media filters consisting of anthracite, sand, and fine garnet to remove the remaining particulates and "polish" the finished water. To meet California state requirements, a minimum amount of chlorine is also added to the raw water before filtration. Filtered water is then routed through a treated water storage tank to provide sufficient time for the chlorine to kill any bacteria remaining in the water (PID, 2021d). Following the treatment process, water is distributed to one of its four storage facilities. From storage, water travels through a gravity fed system of pipes which transport the water to the community.

The 2018 Camp Fire affected the water treatment plant by significantly depressurizing water mains (PID, UWMP, 2020). Volatile organic compounds (VOCs) entered the system's damaged equipment via smoke, debris, and other contaminants (PID, 2021a). Approximately 650 service laterals were replaced by Spring 2020 to address this issue, and PID continues to prioritize the repair of its distribution system.

The State Water Resources Control Board conducts regular inspections of the Drinking Water Treatment Plant. In recent years inspections have occurred every 3 to 4 years. Prior to 2016, inspections occurred annually. As described above in the Regulatory Compliance section, the PID Water Treatment Plant has had some violations but has rectified them (State Water Board, 2023b).

The District has compiled an Emergency Response Plan (ERP) for the Paradise Irrigation District Water Treatment Plant in conformance with America's Water Infrastructure Act of 2018, Section 2013(b). PID's Emergency Response Plan obtained approval by the Environmental Protection Agency on December 29, 2021.

Table 7.15: Paradise Irrigation District Water Treatment Plant Details	
Name:	Paradise Irrigation District Water Treatment Plant
Address:	13888 Pine Needle Dr, Magalia, CA 95954
RMP_SYS_ID:	100000100696
FRS ID	110000520026
Public Water System No.	CA0410007
NPDES and Registry_ID:	CA0083488
Source: US EPA, 2022	

Facility Maintenance

The District employs a full-time maintenance mechanic at the treatment plant. The maintenance mechanic is responsible for performing preventive maintenance on all the equipment and repairing or replacing equipment when necessary.

The District regularly undertakes dredging projects to remove sediment and debris from specific locations throughout the entire water conveyance infrastructure. For example, if sediment were allowed to fill up the Magalia Reservoir, it would reduce water storage capacity, and this capacity is necessary to ensure the treatment plant receives an adequate supply.

Another example of infrastructure improvement is the Service Lateral Replacement Project on rebuilds. Since potable water is a requirement for a certificate of occupancy, PID decided to replace fire-damaged service laterals prior to final inspections. Contractors are available to accelerate the lateral replacements, supporting rebuilding and temporary housing. It was anticipated that the contractor would replace approximately 650 service laterals by Spring 2020 (PID, 2020).

Water Facility Extension to the SOI

The SOI is currently unincorporated and located within the jurisdiction of Butte County. Parcels located in the SOI do not receive municipal (treated) water, and therefore municipal water facilities are not located in the SOI. However, should a parcel (or parcels) be annexed to the PID's service area, the extension of PID water service to these parcels could be under consideration to provide drinking water (or other raw water supply) and associated facilities.

Infrastructure Needs and Deficiencies

The American Society of Civil Engineers, Region 9 has several recommended remedies for California's aging drinking water infrastructure as outlined in Appendix G and as summarized below:

- Address Aging Infrastructure Needs.
- Continue To Make Conservation A California Way Of Life.
- Increase Regional Self Reliance And Integrated Water Management Across All Levels Of Government.
- Achieve The Co-Equal Goals For The Delta.
- Manage And Prepare For Dry Periods.

PID's specific infrastructure needs were described in LAFCO's 2006 MSR as "Seismic stability issues have caused the District to decrease the water stored in Magalia Reservoir from 2,574 AF to 796 AF. This decreases the District's raw water storage capacity to 12,293 AF. There is also a 500,000-gallon storage tank at the treatment plant which acts as a surge tank to maintain constant head in the facility." Options to increase its raw water storage capacity could potentially include raising Paradise Dam and either rehabilitating or raising Magalia Dam (LAFCO, 2006).

Infrastructure needs and deficiencies are common features of large facilities, such as a water district. Ideally, a water district would prepare a capital improvement plan to address its specific needs. PID has a Capital Improvement Plan Development Memorandum (CIP) prepared by Waterworks Engineers and dated January 6, 2022. This CIP describes PID's major assets,

including pipes, valves, pump stations, reservoirs, tanks, land, and the water treatment plant. The CIP contains a table listing 24 planned improvement projects with a total cost of approximately $33.7 million. A few of the more expensive planned projects are listed below. These projects are anticipated to be funded by grant programs.

- Zone A Pump Station and Pipeline Project, $229,000
- 36" Raw Water Line Project, $600,000
- Reservoir A Tank 2 Project, $200,000
- Replace Reservoir B

(Data Source: WaterWorks, 2022)

PID has also proposed new projects, including water system recovery elements. The proposed water system recovery infrastructure would include meter replacement, Almond Street main replacement, service lateral replacement, and repair. (PID, 2021b).

Zone A Pump Station and Pipeline Project

The Zone A pipeline project installs a 16-inch pipe from the Water Treatment Plant to the Zone A tank where water will be pumped through to a new pump station. This new pipeline creates a redundant water supply to the PID system to ensure water can still be supplied in the event the current transmission line becomes inoperable. Funding for this project was provided the Federal Emergency Management Agency (FEMA) (75 percent) and from a Water Supply Hazard Mitigation Grant.

Replace Reservoir B

Reservoir B would be reconstructed with two 1.5-MG bolted steel water storage tanks (PID, 2021b). The previous Reservoir B was a lined tank with a cover and linking. However, the cover and lining were destroyed in the Camp Fire and this resulted in reduced water storage in the amount of 2 million gallons. The new replacement for Reservoir B is two steel tanks, each with a 1.5-million-gallon capacity. Funding for this project was provided by a grant from the Drinking water State Revolving fund to help PID recover from the Camp Fire.

Regular maintenance is conducted on the Paradise Irrigation District Water Treatment Plant, including the Decanter, Sludge Collection, Pumps. The District employs a full-time maintenance mechanic at the treatment plant who is responsible for performing preventive maintenance on all the equipment and repairing or replacing equipment when necessary.

Dam Safety

U.S. Army Corps of Engineers maintains the National Inventory of Dams and this database was queried for the Paradise and Magalia Dams. The database query results are shown in Table 7-16.

Table 7-16: Information About Magalia and Paradise Dams

Name of Dam	Magalia	Paradise
ID Number	CA00296	CA00297
Purpose of Dam	Water Supply, Irrigation	Water Supply, Irrigation
Height (feet)	103	175
Type	Earth	Earth
Year Completed	1918	1957
Storage (Acre feet)	2,900	11,500
Last Inspection Date	3/30/2022	3/30/2022
Inspection Condition Assessment	Poor	Satisfactory
Inspection Hazard Potential Classification	High	High
Emergency Action Plan (EAP) ?	Yes	Yes
Date EAP Updated	6/12/2019	2/1/2018

Data Source: U.S. Army Corps of Engineers, National Inventory of Dams
https://www.fema.gov/emergency-managers/risk-management/dam-safety/national-inventory-dams

The California Division of Dam Safety performs annual inspections of PID's dams as detailed on their website at: <*https://water.ca.gov/damsafety/* >. Inspection results are summarized in Table 7- 16 above. The state inspection report for Magalia Dam noted that the spillway may not perform well during future (water) discharges and a significant spillway rehabilitation project is needed. Paradise Irrigation District is actively planning the Magalia Dam retrofit to address the seismic risk and storage issues. The Magalia Dam has not been operated at full capacity since 1997, because of dam safety issues. PID has looked for funding to refurbish and strengthen the dam to restore surface storage capacity, eliminate water quality and pumping issues caused by lower water levels. For example, in May 2023 PID and its consultants began geotechnical exploration for characterizing the subsurface materials. The CA Division of Dam Safety has prepared maps that model the potential future inundation area, in the event of unexpected dam failure as shown in Figures 7-11 and 7-12 below.

Figure 7-11: CA DWR Dam Breach Model Inundation Map – Paradise

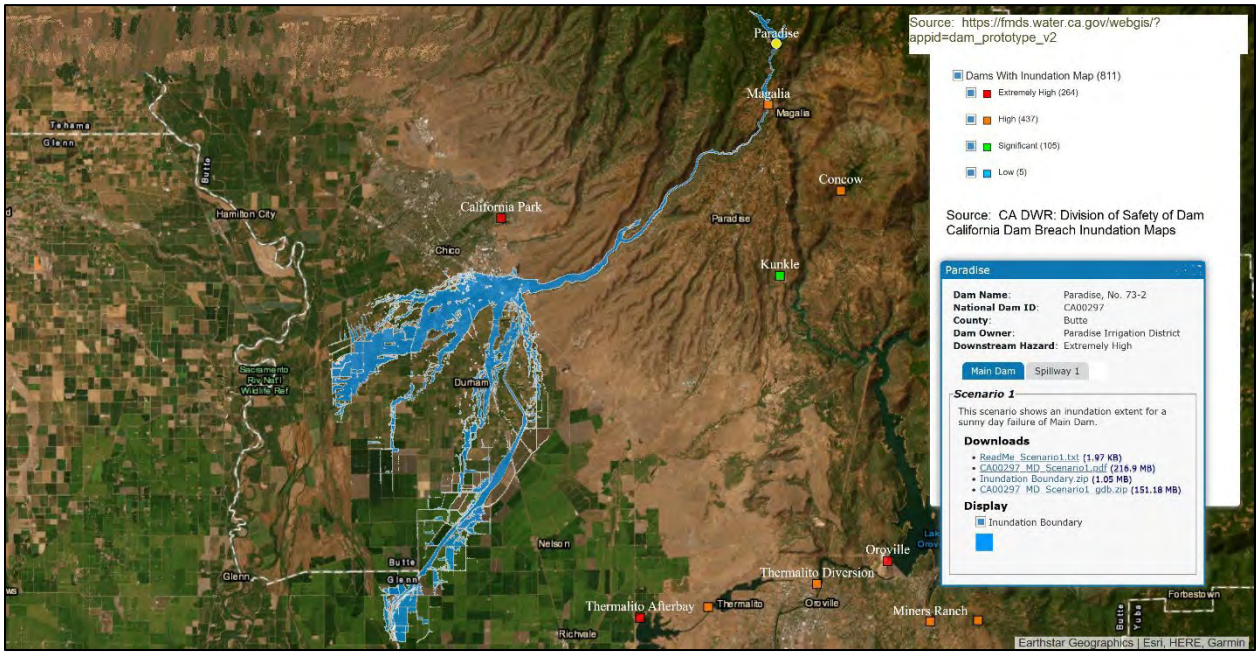


Figure 7-12: CA DWR Dam Breach Model Inundation Map - Magalia

7.3: DETERMINATIONS FOR INFRASTRUCTURE AND PUBLIC FACILITIES

Based on the information included in Sections 7.1 and 7.2 above, the following written determinations make statements involving each service factor that the Commission must consider as part of a municipal service review. The determinations listed below in Table 7.17 are based upon the data presented and are recommended to the Commission for consideration. The Commission's final MSR determinations will be part of a Resolution that the Commission formally adopts during a public meeting.

Table 7.17: MSR Determination:
Present and Planned Capacity of Public Facilities and Adequacy of Public Services Including Infrastructure Needs or Deficiencies

Number	Indicator	Determination
PID-PUB-1	Has the District has been diligent in developing plans to accommodate the infrastructure and service needs of current and future constituents? Regularly reviews and updates its service plans to help ensure that infrastructure needs and deficiencies are addressed in a timely manner?	PID has a Capital Improvement Plan Development Memorandum (CIP) prepared by Waterworks Engineers and dated January 6, 2022. This CIP describes PID's major assets, including pipes, valves, pump stations, reservoirs, tanks, land, and the water treatment plant. The CIP contains a table listing 24 planned improvement projects with a total cost of approximately $33.7 million. Implementation of the CIP in the future will help PID continue on its post-fire recovery and will ensure that infrastructure needs are addressed in a timely manner.
PID-PUB-2	Does the District provide sufficient services to meet current and future demands with water supply in relation to water demand?	PID provides sufficient services to meet current and future demand as follows: Based on the water supply and water demand assessments conducted by the District, PID believes that its sources of developed water supply will be sufficient to meet current and future demands in the foreseeable future.
PID-PUB-3	Does the District have a reliable, sustainable source of water? Can the District and its partners develop additional local and regional water sources through wastewater reclamation, stormwater capture, and/or environmentally sustainable desalination projects?	PID's water supply is derived from surface water diverted from the Little Butte Creek watershed and stored in Paradise Lake and Magalia Reservoir, permissible through PID's three water rights. PID prepared an Urban Water Management Plan in 2021 and a 2021 Water Shortage Contingency Plan. Based on the data described in these plans and based on historic weather patterns, PID believes the local watershed is a reliable, sustainable source of water. In 2023, water supply exceeds demand.

PID-PUB-4	Is there duplicate infrastructure by other agencies nearby?	The PID is the only water service provider within its specific boundary area. The nearest public water providers are the Del Oro Water Company and Cal Water Chico, both of which are private water companies. Additionally, there are several mutual water companies located in close geographic proximity to PID, as described in Chapter 2, Introduction.
PID-PUB-5	The District has preventative maintenance measures and has planned for the replacement of aging infrastructure.	The District's water quality can be characterized as good; it meets all state and federal regulations for water quality. The District conducts preventative maintenance on its infrastructure. Additionally, sufficient funds have been allocated towards Capital Improvement Projects (CIP) as detailed in Chapter 8.
PID-PUB-6	Evaluation of District's capacity to assist with or assume services provided by other agencies.	The PID has demonstrated capacity to assist other nearby agencies. For example, PID successfully communicates with nearby local agencies such as the Town of Paradise, Butte County, and TWSD. PID's leadership capacity is demonstrated through its negotiations with PG&E to settle claims which arose from the 2018 Camp Fire.
PID-PUB-7	Evaluation of the types of public services offered.	As of June 1, 2020, Paradise Recreation and Park District has taken over provision of recreation services at the Paradise Lake, which was previously under the auspices of PID. This is accomplished via a 25-year lease. The boundaries of the two districts have some geographic overlap. **Recommendation**: When LAFCO next evaluates PID's future SOI, consider determining that PID's recreation service become latent and allow the Paradise Recreation and Park District to assume direct responsibility.

Figure 7.13: PID's Service Vehicles

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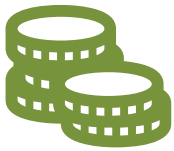
Figure 7.14: View of Magalia Reservoir

(Photo by Shannon Costa)

CHAPTER 8: FINANCIAL ABILITY TO PROVIDE SERVICES



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8.1 INTRODUCTION TO FINANCIAL METRICS

LAFCO is required by the CKH Act to make a determination regarding the financial ability of the Paradise Irrigation District to provide public services. This Chapter provides an overview of financial health and context for LAFCO's financial determinations. The audited Comprehensive Annual Financial Reports (AFS) from the District for the fiscal years 2019, 2020, 2021, and 2022 are the primary source of information for this Chapter. Based on recent recommendations from the Little Hoover Commission, this determination on the financial ability to provide services is based upon several key financial performance indicators that LAFCOs throughout the State consider in MSRs.

In California, special districts are classified as enterprise or non-enterprise districts based on their source of revenue:

- Enterprise districts: Finance of district operations is via fees for public service. Under this model, the customers that consume goods or services such as drinking water or raw water, sewage disposal, or electricity, pay a fee. Rates are set by a governing board, and there is a nexus between the costs of providing services and the rates customers pay. Sometimes, enterprise districts may also receive property taxes, which comprise a portion of their budget.
- Non-enterprise districts: Districts that receive property taxes are typically classified as non-enterprise districts. Services that indirectly benefit the entire community, such as flood or fire protection, community centers, and cemetery districts, are often funded through property taxes.

PID is classified as an enterprise district, charging fees for water supply, treatment, and distribution services. However, PID does collect property tax revenue, which comprised five percent of its total revenues in FY21/22. Any revenues collected in excess of operational needs are utilized to invest in capital projects within the District.

PID's funds relate only to its water service operations. Although PID does have a small hydroelectric generator, this energy is used to supply internal operating equipment and does not generate revenue. The District's annual financial statements also include supplementary tables at the end of the financial statements.

In addition to the annual financial statement, PID also prepares an annual budget that coincides with the fiscal year starting July 1st each year. PID's budgets are designed to reflect past performance, requirements, opportunities, and risks. The District's 2023/24 Budget is a comprehensive plan that outlines the District's financial goals and objectives for the upcoming fiscal year. The budget is divided into several sections, including an overview of the District's revenue and expenses, operating budget information, and current rates. The revenue and expense overview provides a detailed breakdown of the District's projected income and expenses

for FY2023/24, including total operating income, total investing income, and total revenue. The operating budget information section describes the individual department operating expenses from the context of each delivery's programs and services. The budget also includes information on current rates, which outlines the rates for water and sewer services for the upcoming fiscal year. The budget is an essential tool for the District's management team to plan and allocate resources effectively. The budget is based on the District's strategic plan, which outlines the District's long-term goals and objectives. The budget is also used to identify short-term initiatives included in the operating program budgets. The budget is reviewed and approved by the District's Board of Directors, who are responsible for overseeing the District's operations. Overall, the FY2023/24 Budget provides a comprehensive plan for the District's financial goals and objectives for the upcoming fiscal year, and it is an essential tool for the District's management team to plan and allocate resources effectively.

The District has a "blended component unit[1]" consisting of an organization whose respective governing board is comprised entirely of the members of the District's Board of Directors (PID, 2023). This organization is reported as if they are a part of the District's operations. The entities are legally separate; however, in the case of the {Paradise Irrigation District} Financing Corporation, financial support has been pledged, and financial and operational policies may be significantly influenced by the District. The following is a description of the District's blended component unit:

- Paradise Irrigation District Public Facilities Financing Corporation (the Corporation) was incorporated in January 1993. The Corporation is a nonpublic benefit corporation whose primary purpose is to provide assistance to the District by financing the acquisition, construction, and installation of public facilities for the use of the District. Separate financial statements for the Corporation are not issued. The Corporation had no activity for the year ended June 30, 2022.

8.2: FINANCIAL POLICIES & TRANSPARENCY

The District prepares and approves a budget with an annual timeframe. The fiscal year begins on July 1 and ends on June 30 each year. The current budget and the budget for the past two years are available to the public via the District's website at <*https://pidwater.com/open*>. The Board of Directors adopts the budget as the basis for operating and capital expenditures during the upcoming fiscal year. The District's Strategic Business Plan is utilized as the basis for the budget, ensuring that goals and objectives can be funded within the budget.

Every year, the District publishes an audited Annual Financial Statement (AFS). The CA Government Code requires an annual independent audit of the District's financial records by a certified public accountant who serves as an independent auditor. There are four types of audit

[1] A blended component unit is defined as a unit which has the "substantively the same governing body" as the primary government agency and the funds of a blended component unit have the same financial reporting requirements as a fund of the primary government.

opinions: unqualified, qualified, adverse, and disclaimer. An unqualified opinion is a clean opinion, meaning the entity passed its audit. A qualified opinion means the entity passed the audit with notable exceptions. A disclaimer or adverse opinion essentially means the entity flunked its audit. Fechter & Company, Certified Public Accountants, Sacramento, CA, performed the independent audit on FY 2021/22. The auditors expressed their opinion that the financial statements present fairly, in all material respects, the respective financial position of the District as of June 30, 2022, and the respective changes in financial position and cash flows thereof for the fiscal year then ended in accordance with accounting principles generally accepted in the United States of America" (PID, 2023). The AFS is available to the public via the District's website at <*https://pidwater.com/docs/district-operations/budgets-audits/audits*>.

A District's financial policies function as business rules that ensure an agency's transactions are recorded consistently and correctly. It is important for a District's financial policies to be made available to the public. PID has a District Code that outlines policies and procedures, and financial policies are described in Chapters 11 through 14 of PID's Policy And Procedures Manual. PID has several goals regarding finances, as listed below:

The following three PID financial policies are available at <*https://pidwater.com/docs/district-operations/budgets-audits?sort=touched_on&direction=desc*>.

- Debt Management Policy (May 2017) is a 6-page document that provides guidelines for the use of debt for financing District water, sewer, and recycled water infrastructure and project needs. The District's overriding goal in issuing debt is to respond to and provide for its infrastructure, capital project, and other financing needs while ensuring that debt is issued and managed prudently.
- Reserve Fund Policy (October 2016) is a 13-page document that facilitates the attainment of program and financial goals relative to the prudent accumulation and management of designated reserves and reserve funds. This Reserve Fund Policy was developed to clearly identify specific designated reserve funds. Reserve funds are prudent fiscal management tools, a cornerstone of long-term financial planning.
- Appropriation Limit (July 2019) is a 2-page document that includes Resolution No. 2019-04. The appropriation limit of the District was set at $1,649,619.00 for Fiscal Year 2019/20.

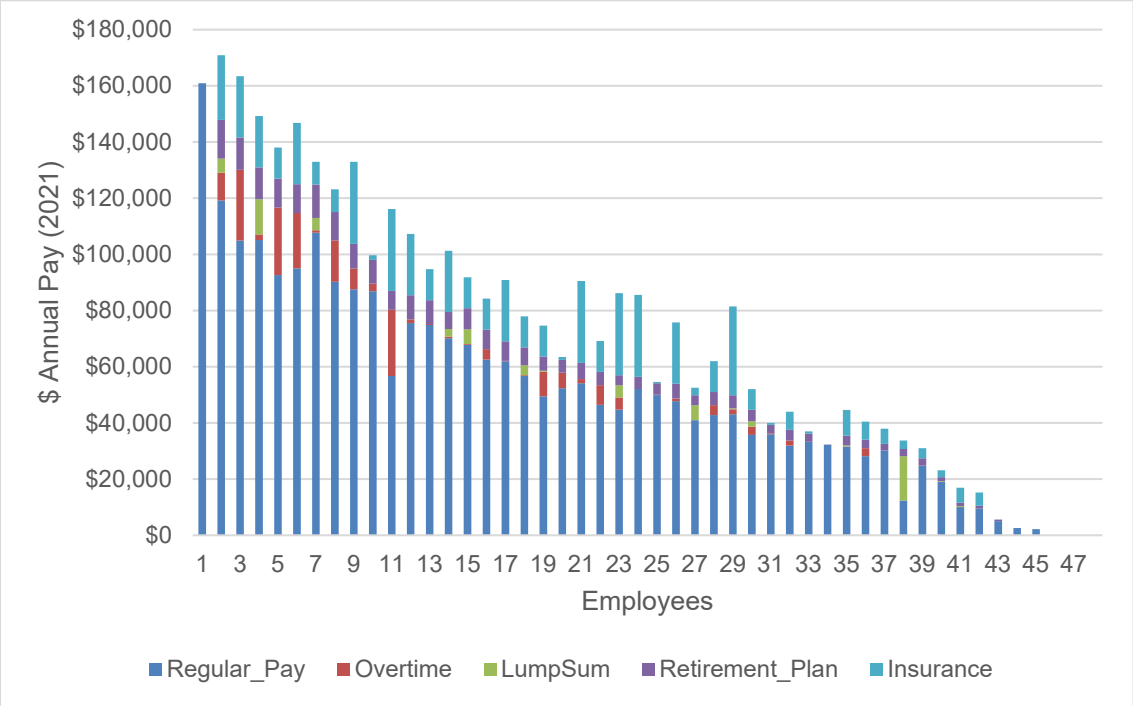
The audited Annual Financial Statement reviewed the accounting policies of the Paradise Irrigation District and found them to conform to generally accepted accounting principles as they apply to governments (PID, 2023). The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting financial reporting principles. Readers can view the PID's significant accounting policies listed in the Annual Financial Statements.

Data Transparency

Financial data transparency promotes accountability and provides information to citizens about what their local government is doing. Transparency allows residents to stay informed and learn about local government revenue, spending, and debt. The District Treasurer makes regular reports to the Board of Directors regarding Fund Balance, and this information is available to the public via the meeting agenda packet.

Transparency with salary data is also an important attribute for special districts in California. The Paradise Irrigation District provides competitive compensation and a benefits package to full-time, regular employees, as shown in Figure 8.1 below. Employee wage scale by bargaining unit and the unrepresented employee wage scale are available on the PID website. The Paradise Irrigation District also forwards a report to the California State Controller for Government Compensation in California per Government Code Section 53891. As shown in Figure 8.1 below, PID had eleven employees in 2021 whose total compensation package, including Regular pay, overtime, lumpsum, retirement plan, and insurance, exceeded $100,000.

Figure 8.1: PID Compensation 2021



Source: California Auditor, Gov Compensation Website, 2023, <https://publicpay.ca.gov>.

8.3: Revenues, Expenditures, and Net Position

Revenues

During a typical year, PID has two basic types of revenue:

- Operating revenues consist primarily of charges for services.
- Non-operating revenues and expenses are related to financing and investing type activities.

However, in recent years, PID has received a third type of revenue, disaster recovery funds, to allow it to rebuild and replace assets lost in the 2018 Camp Fire.

The District has multiple sources of revenue, including service fees, fees and adjustments, outside water sales, recreation fees, backflow charges, meter charges, and non-operating revenues. In FY21/22, PID's total revenue was $6,973,013, as shown in Table 8.1. In fiscal year 2021/2022, the District's operating revenues increased 19.60% or $682,078 from $3,480,168 to $4,162,246 (PID, 2023). For this new fiscal year (FY2023/24), the Budget projects the total revenue to be $6,256,720.

Table 8.1: PID Total Revenues

	2022	2021	Change
Operating Revenues:			
Service fee	$3,657,496	$ 3,014,546	$ 642,950
Fees and adjustments	130,860	17,856	113,004
Outside water sales	214,169	126,556	87,613
Recreation fees	63,378	79,073	(15,695)
Backflow charges	140	0	140
Meter charges	96,203	242,181	(145,978)
Non - operating	2,810,767	797,001	2,013,766
Total Revenues	6,973,013	4,277,169	2,695,844

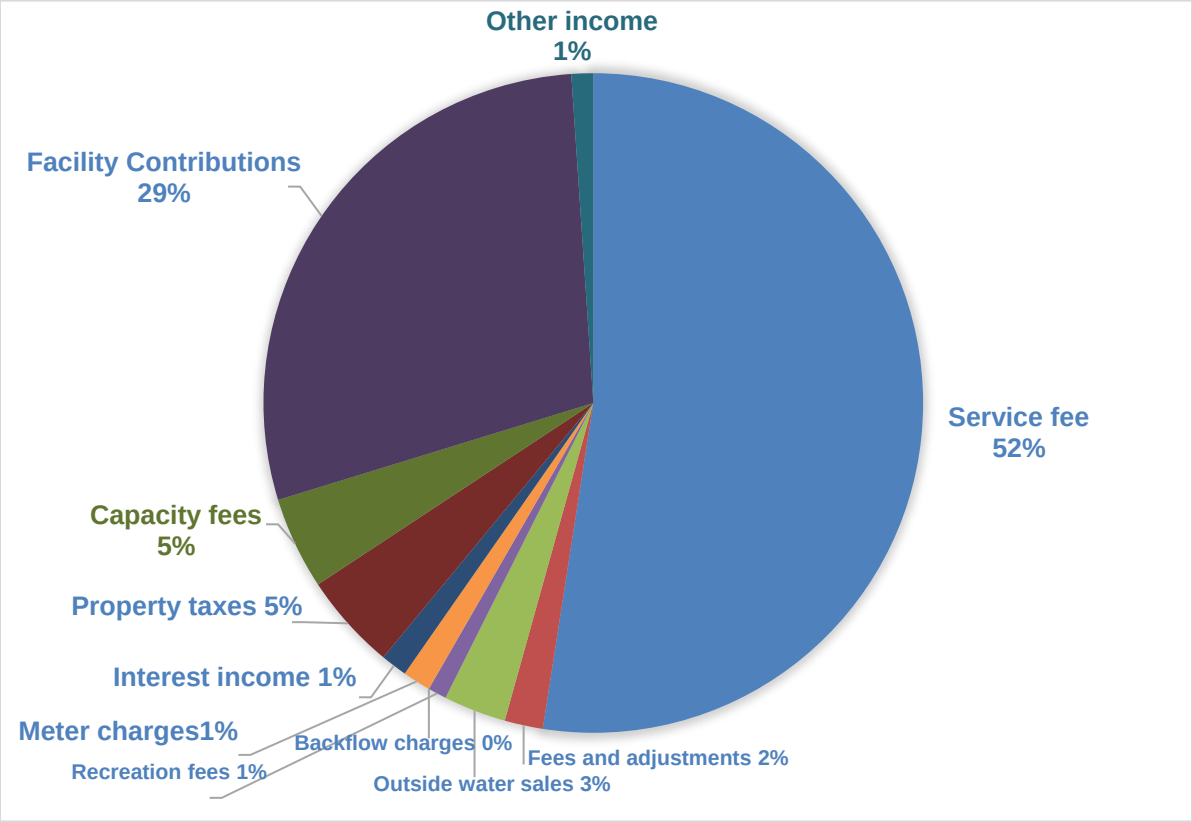
Source: PID Annual Financial Statement, 2023

The largest source of revenue in FY21/22 was "service fees," representing water sales to customers and other fees related to water service, as shown in Figure 8.2 below. The 2022 Service Fee of $3,657,496 included the following:

- $2,160,430 Active customer payments from Account #400001,
- $1,234,541 Sealed customer payments from Account #400001, and
- $123,565 misc fees from Account #400004.

Overall, water revenues increased 63 percent in FY21/22.

Figure 8.2: FY 2021/22 Total Revenue Sources



Source: PID, 2023

Property taxes comprise five percent ($330,320) of total revenue for FY 21/22, as shown in Figure 8.2 above.

Other income sources not included in PID's revenue classification for accounting purposes are disaster recovery funds (extraordinary items) such as insurance reimbursements, government grants, and the Pacific Gas and Electric (PG&E) Fire Victims Trust settlement. Table 8.2 below lists the amount received for each type of extraordinary item.

Table 8.2: FY21/22 PID Extraordinary items

Insurance reimbursements	28,607
Government grants	13,876,334
PG & E settlement	113,691,000
Total extraordinary items	127,595,941

Source: PID, 2023

As listed in Table 8.2 above, PID received a large settlement from PG&E Fire Victim Trust of $85,268,250 plus an additional $28,422,750 that was received a few months later. The District has received 60% of its settlement for property damages, and long-term lost revenues with Pacific

Gas and Electric Company. PID feels the remaining 40% is unlikely to be received (PID, 2023). Federal and State grants administered by the California Office of Emergency Services were received in the amount of $5,973,698, which pertained to prior year and was recorded as a prior period adjustment. Additionally, these state and federal agencies provided reimbursements for costs incurred during the emergency response for an additional $12,851,634. A grant from the State of California for $1,024,700 was part of the 2021 Budget Act related to COVID-19 fiscal relief for independent special districts (PID, 2023).

Effects of Camp Fire

Since PID is an enterprise district, its regular total revenues highly depend on the number of paying customers it serves. However, PID's infrastructure was damaged during the 2018 Camp Fire, so PID lost a substantial portion of its customer base. Prior to 2018, PID had grown to serve approximately 10,500 municipal and residential/commercial customers. As of June 14, 2023, PID had over 10,000 customers, with approximately 4,881 Active Customers and 5,758 "Sealed" Stand-by Customers. Stand-by Customers pay $21.49 per month.

Although PID customers continue to request permanent disconnection from service, the disconnection rate has slowed substantially over the prior fiscal year. PID has made significant progress through the Water System Recovery Plan and has tested and/or replaced all the service and main lines serving customers whose structure remained standing. For example, many property owners coordinated with PID to recover, clear, and test the water service lateral. This task has been completed for approximately 6,000 residential lots. Getting lateral replaced does not correlate with building permits. The District continues to test, repair, and replace main lines and service lines to the remainder of the District's customer base to support the recovery of Paradise. The District has focused recovery efforts on supporting the rebuild by testing and/or replacing all service lines to new construction (PID, 2021a). Ideally, this infrastructure work will allow PID's customer connections to reach pre-Camp Fire levels of approximately 10,500 in future years. However, future customer connections are not guaranteed. This work will hopefully allow PID to recover customer connections of approximately 10,500 in future years.

Home rebuilding[2] continues within the Town of Paradise. Portions of the PID water system are brand new (i.e., replaced after the Camp Fire). However, the water treatment plant will need upgrading, and the District is saving money for this future capital expenditure. In the meantime, PID staff indicates that the PG&E Fire Settlement provides a financial cushion that allows the District to be fiscally sustainable. Ideally, PID will continue to remain viable even if it does not receive additional new customers. One concern that could arise in the future relates to rates. PID's current rate structure does not provide for adjustments in relation to the consumer price index (CPI). If a rate adjustment were needed in the future, it would need to comply with

[2] Concern has been expressed that the relatively slow rebuilding process and the Town's rules about rebuilding are particularly difficult for economically disadvantaged residents.

Proposition 218 procedures. Any discussion to raise rates is controversial, especially given the trauma and financial difficulties that local residents have experienced due to the Camp Fire.

Tax Revenues/Service Ratio

LAFCOs commonly utilize the Tax Revenues/Service Ratio metric to understand the amount of property tax revenue a district receives in relation to the number of service connections it serves. This metric allows LAFCO to cross-compare between water districts, wastewater districts, and other service providers. For PID, this metric is complicated because PID currently has two types of customers: 1) active service customers who currently receive water from PID and 2) ready-to-serve customers who would like to remain part of the PID water system even though their home is not quite ready for water service. Table 8.3 below includes both types of customers to calculate this metric.

Table 8.3: Tax Revenues/Service Ratio

Tax Revenue (FY21/22)	Active Service Customers	Tax Revenues/Active Service Ratio	Total # of Customers	Tax Revenues/ Total Service Ratio
$330,320	4,881	$78.65	10,000+	$37.54

Source: PID, 2023 and PID, 2021a

Expenses

In FY 21/22, the District's operating expenses (excluding depreciation) increased 7.74% or $563,431 from $7,278,396 to $7,841,827. In fiscal year 2021/2022, the largest expense was salaries and benefits at $3.9 million. The second largest expense was professional fees at $1.8 million, as shown in Table 8.4 below.

Table 8.4: PID Operating Expenses

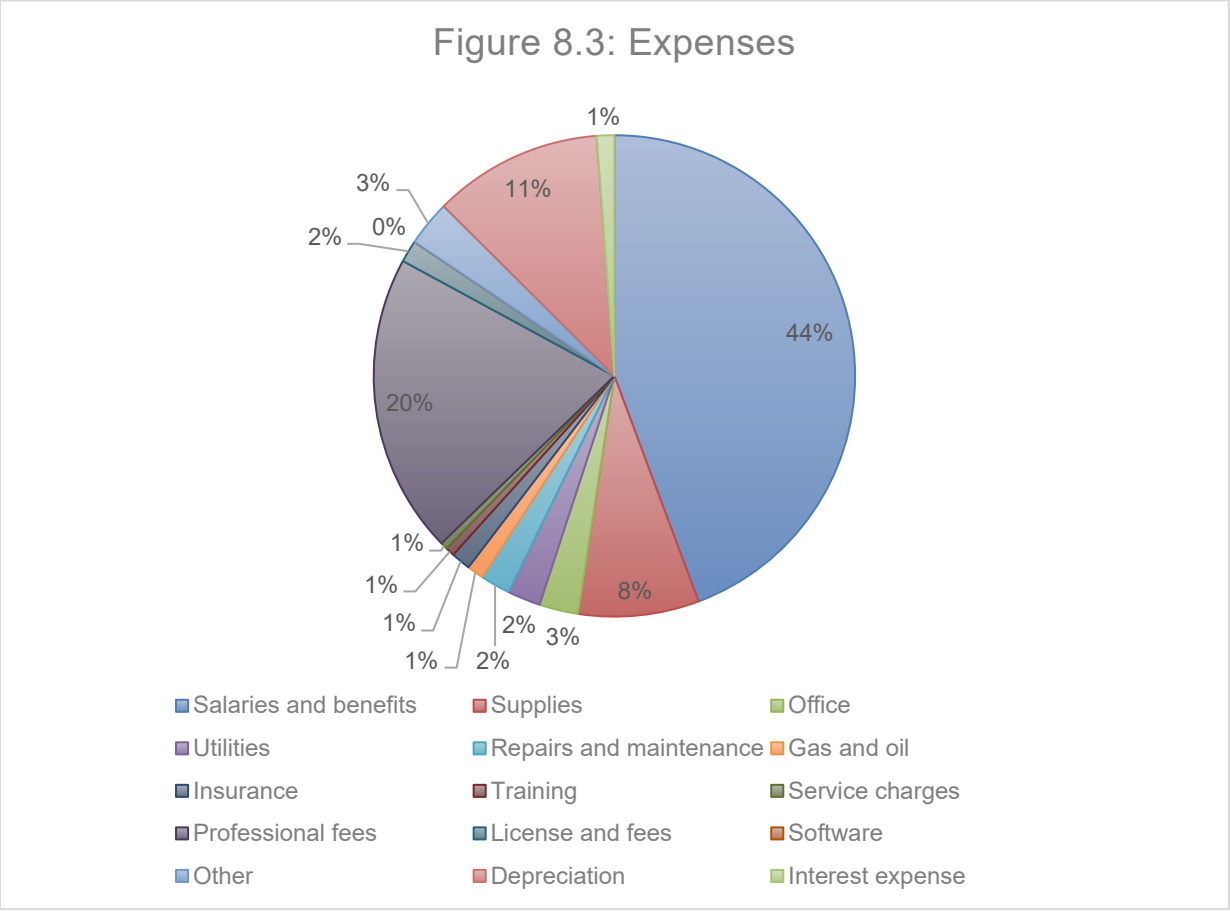
Operating Expenses

	2022	2021	Change
Operating Expenses:			
Salaries and benefits	$ 3,963,520	$ 3,594,432	$ 369,088
Professional fees	1,803,757	1,731,724	72,033
Depreciation	1,017,080	1,054,790	(37,710)
Other	2,074,550	1,952,240	122,310
Total Operating Expenses	$ 8,858,907	$ 8,333,186	$ 525,721

Source: PID, 2023

In addition to the above expenses, PID had a non-operating expense of interest payments of $105,331. Adding to operating expenses ($8,858,907) and non-operating expenses ($105,331) brings PID's total expenses for FY 21/22 to $8,964,238 (PID, 2023).

Figure 8-3: Total Expenses FY21/22

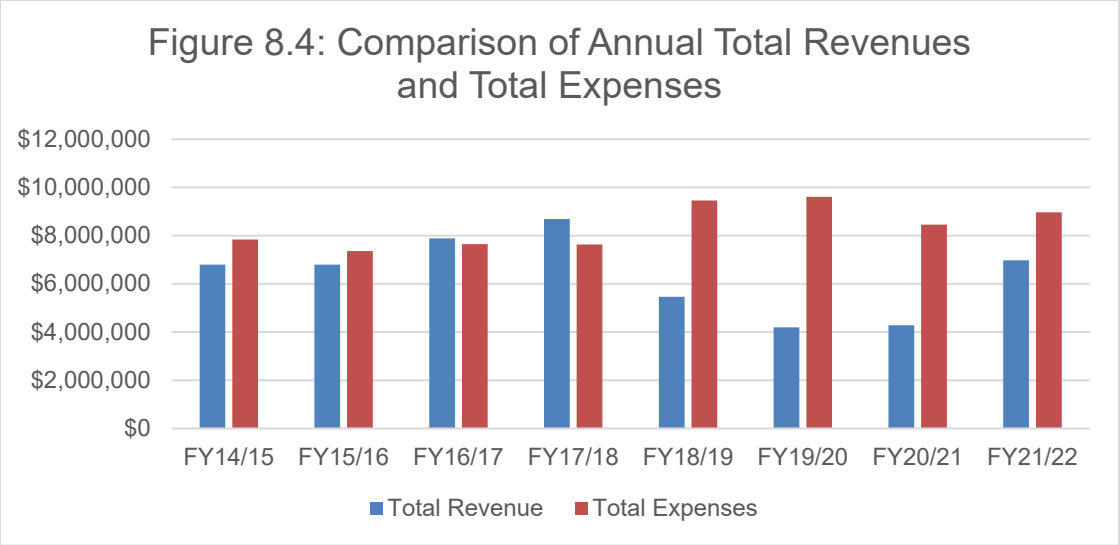


Source: PID, 2023

The total operating expenses for the District are projected to be $7,499,030 for FY2023, according to the new Budget for FY23/24.

Comparison of Total Revenue and Total Expenditures

A comparison of PID's annual total revenue to total expenses (excluding depreciation), provided in Figure 8-4, shows that annual expenses exceeded total revenue in seven of the eight study years (i.e., FY14/15 to FY21/22). However, the data after 2018 is skewed due to the 2018 Camp Fire. For the three study years before the fire, total expenses exceeded total revenue for two years. A comparison of PID's annual total revenue to total expenses should be recalculated in LAFCO's next MSR.



Data Source for Figure 8.4: PID's Financial Statements for FY14/15 to FY21/22.

Net Position

The Statement of Net Position provided in Table 8.5 includes all of the District's assets, deferred outflows of resources, liabilities, and deferred inflows of resources, which provide information about the nature and amounts of investments in assets and obligations to District creditors. They also provide the basis for computing rates of return, evaluating the capital structure of the District, and assessing the District's financial flexibility. One can think of the District's net position – the difference between assets and liabilities – as a way to measure the District's financial health or financial position. Over time, increases or decreases in the District's net position are one indicator of whether its financial health is improving or deteriorating.

Table 8.5: Net Position

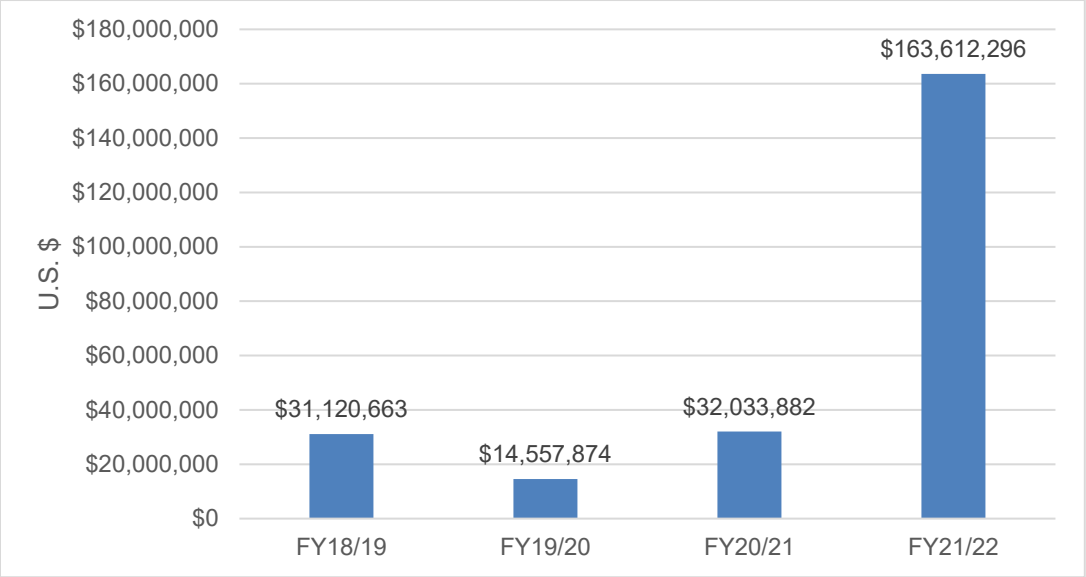
Source: PID, 2023

Statement of Net Position

	2022	2021	Change
Assets:			
Current assets	$133,478,990	$ 15,023,382	$118,455,608
Capital assets - net of depreciation	41,190,514	26,430,199	14,760,315
Total Assets	174,669,504	41,453,581	133,215,923
Deferred Outflows of Resources:	564,296	627,763	(63,467)
Liabilities:			
Current liabilities	6,720,153	4,485,742	2,234,411
Non-current liabilities	4,088,096	5,398,010	(1,309,914)
Total Liabilities	10,808,249	9,883,752	924,497
Deferred Inflows of Resources:	813,255	163,710	649,545
Net Position:			
Net investment in capital assets	37,568,841	21,835,065	15,733,776
Unrestricted	126,043,455	10,198,817	115,844,638
Total Net Position	$163,612,296	$ 32,033,882	$131,578,414

In the fiscal year 2021/2022, the District's total net position increased 410.75% or $131,578,414 from $32,033,882 to $163,612,296, as shown in Figure 8.5 below (PID, 2023). The unrestricted portion of the net position was $126,043,455 (PID, 2023).

Figure 8.5: Total Net Position

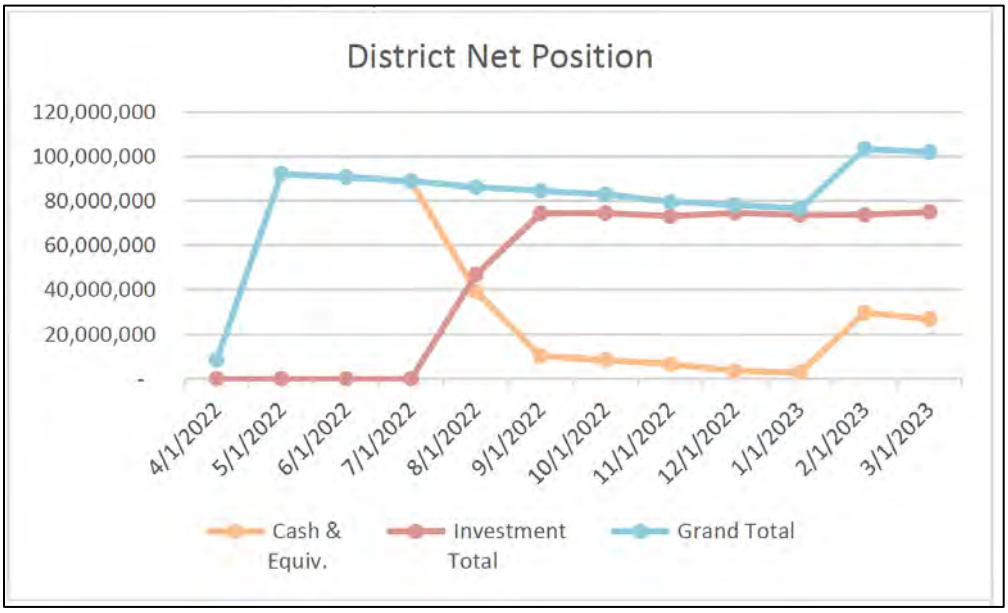


Source: PID, 2022a

As shown in Figure 8.5 above, PID's total net position has been highly variable in recent years. The decline in Total Net Position to $14.5 million in FY19/20 is related to the loss of revenue due to the 2018 Camp Fire. The large increase in Total Net Position to $163.6 million in FY21/22 was due to grant funds and other funds related to disaster recovery. One of the largest portions of the District's net position (22.96% as of June 30, 2022) reflects the District's investment in capital assets (net of accumulated depreciation) less any related debt used to acquire those still outstanding assets. The District uses these capital assets to provide services to customers within the District's service area; consequently, these assets are not available for future spending (PID, AFS, 2023).

As part of its annual financial statement for FY21/22, PID prepared a detailed chart for April 1, 2022, through March 2023, which provides a detailed analysis of the Net Position (blue line) as shown in Figure 8.6 below. As of 03/31/2023, the District's net position was $101,913,601, and the cash and equivalents balance was $26,904,259. PID's Investment balance was $75,757,391 (As of 03/31/2023) (PID, 2023).

Figure 8.6: Net Position One-Year Detail



Source: PID, 2023

8.4: CAPITAL IMPROVEMENT PLAN

A Capital Improvement Plan is a fiscal and planning tool that helps organizations make thoughtful budgeting decisions based on goals and objectives for large projects and purchases. Most capital improvement plans cover multiple-year time periods. PID's Capital Improvement Program (CIP) is included in its FY22/23 Budget. The majority of proposed capital improvement projects are related to the recovery and repair of the damages to infrastructure caused by the 2018 Camp Fire. The primary funding source for CIP projects currently includes FEMA/CalOES grants, insurance proceeds, and a local cost share incurred by the District. The District's local share may include work performed by District crews and/or capital outlays. The capital outlays are primarily financed through water rates and capacity fees (PID, 2021a). Major Capital Projects are listed in Table 8.6 below.

Table 8.6: PID Major Capital Improvement Project List

Name of Major Project	Estimated Cost
Service Lateral Replacement Project	$45,854,811
Service Lateral Replacement Project (Completed prior to FEMA 428 Fixed Cost Program)	$3,306,882
Backflow Preventers	$3,924,269 (Estimated Cost Long-Term)
Water Meters, Housing Boxes, and AMI System	Estimated Replacement Cost: $5,792,542

	Estimated Hazard Mitigation Cost: $658,257
Main Line Replacement	$29,543,360
B Reservoir Replacement **(**Replacement with Dual 1.5M Steel Tanks)	$9,330,000
Water Works Recovery Project Support	$850,000
Public Assistance and Disaster Recovery Management Consulting Support	$502,180
PG&E Locating Services	$200,000
Water Treatment Plant Repairs and Improvements	$9,500,000
Source: PID, 2021a	

In addition to the CIP projects listed above, there are several Recovery Projects, including hazardous tree removal, emergency protection services, smoke damage repair, culvert repair, dam/reservoir repair, pipeline repair, fencing, repair of water treatment plant exterior, and inspections with monitoring. PID includes several pieces of equipment that need to be replaced, including a gabion wall, dump trainer, masticator, tank recoating, vehicle, generator, pump station, tanks, cathodic protection, and asphalt repair (PID, 2021a).

Paradise Irrigation District Project Water Intertie

The PID Project Water Intertie is not listed in Table 8-6 above. However, if implemented in the future, it would be considered a capital improvement project. Assemblyman James Gallagher and Jim Nielsen introduced Assembly Bill 36 to fast-track the Paradise Sewer Project and the Paradise Irrigation District Project Water Intertie. The water intertie would allow the sale of unused surface water in PID reservoirs to help compensate for losing most of its customers after the 2018 Camp Fire. It would involve transporting treated water to Chico. In 2020, Gallagher made this proposal linked with PID and the California Water Service Chico Division. The Town, PID, and the State Building and Construction Trades Council of California sponsor the bill. The State Legislature and the Governor approved AB 36 in October 2021. It was subsequently Chaptered by the Secretary of State in Chapter 689, Statutes of 2021.

8.5: RESERVES

In California, many independent special districts have accumulated reserves. Although there are no rules guiding the size and use of reserve funds, general best management practices suggest that an agency should have a reserve fund that allows for operations of between six months to a year. Reserve funds provide the following benefits:

- allow for the continued operation of the agency even in downturns and unfavorable conditions,
- can contribute towards capital improvement projects, which would reduce the potential need to accumulate a high debt load and

- helps to ensure the continued solvency of the District.

The District's investment policy and the California Government Code allow the District to invest, provided the issuers' credit ratings are acceptable to the District and approved percentages and maturities are not exceeded. For FY21/22, PID's total cash and investments were over $90 million, as listed in Table 8.7 below.

Table 8.7: PID Cash and Investments

Cash and investments at June 30, 2022, consist of the following:	
Petty cash	$ 1,000
Demand deposits	17,096,310
Local Agency Investment Fund	73,509,674
Total Cash and Investments	$ 90,606,984

Source: PID, 2023

The District's 2023/24 Budget indicates that the total cash reserves for the District are $6,600,271, with a target formula for non-restricted and restricted funds. As shown in Table 8.7, PID has more than $73 million invested in the Local Agency Investment Fund (LAIF). The LAIF is managed by the State Treasurer's Office investment staff at no additional cost to the taxpayer. The LAIF provides local agencies the opportunity to participate in a major financial portfolio, which is professionally managed as described on the LAIF website at: <*https://www.treasurer.ca.gov/pmia-laif/laif/index.asp*>.

8.6: OUTSTANDING DEBTS AND LIABILITIES

For local government agencies, liabilities typically include current liabilities such as accounts payable, salaries payable, bond interest payable, and long-term liabilities such as serial bonds payable, installments payable, and contracts payable. PID currently has three sources of debt, as shown in Table 8.8 and Table 8.9.

Table 8.8: Current Outstanding Debt

Loan	Initial Year	Capital Project	Date Ending	$ Amount
2017 Private Placement (Refi)	2017	Meter Replacement Project	2024	$594,670 at 2.28%
IBANK	2007	Magalia Bypass	2034	$1,053,095 at 1.00%
2016 Private Placement (Refi)	2016	Billie Road Pipeline, SCADA, & Corp Yard	2028	$1,338,334 at 2.42%

Source: PID, 2021a

PID's Long-term debt on June 30, 2022, totaled approximately $2.9 million, as listed in Table 8.9.

Table 8.9: PID's Long-Term Debt

2016 Private Placement Loan Payable to Capital One Public Funding, LLC with principal and interest payments at 2.42% due semi-annually in November and May. The loan is due in November 2028.	$ 1,460,000
Loan payable to the California Infrastructure and Economic Development Bank, with principal payments due annually in September and interest payable semi-annually at 2.77%. The note is due in September 2027.	1,053,095
2017 Private Placement Loan Payable to Tuist Governmental Finance (formerly Branch Banking and Trust Company) with principal and interest payments at 2.28% due semi-annually in October and April. The loan is due in October 2024.	1,169,300
Subtotal	3,682,395
Less: Current Portion	(771,300)
Long-Term Debt, Net of Current Portion	$ 2,911,095

Source: PID, 2023

8.7: PENSION PAYMENTS

On behalf of its full-time employees, PID contributes to 401k and 457 based on an employee match. PID does not participate in the California Public Employees Retirement System (CalPERS). The pension contribution requirements of plan members and PID are established and may be amended by the PID Board of Directors. Table 8.10 depicts the relationship between pension contributions as a percentage of covered-employee payroll. Due to updates to pension reporting requirements enacted in 2014, the Pension Payments indicator shows data for 2015 and beyond. GASB 68 revised and established new financial reporting for pensions effective for 2015. This percentage is calculated using the following formula: contributions in relation to the actuarially determined contribution divided by covered payroll.

Table 8.10: Pension Contributions

	2022	2021	2020	2019	2018
Net OPEB liability					
Service cost	$ 150,274	$ 145,138	$ 113,016	$ 104,029	$ 101,245
Interest	38,525	36,700	43,032	39,610	39,837
Change in assumptions	(139,301)	5,880	593,909	22,404	-
Experience (Gains)/Losses	(556,289)	-	(187,266)	-	-
Benefit payments	(49,273)	(100,494)	(127,473)	(70,227)	(50,765)
Net change in Net OPEB liability	(556,064)	87,224	435,218	95,816	90,317
Net OPEB liability - beginning	1,733,065	1,645,841	1,210,623	1,114,807	1,024,490
Net OPEB liability - ending	$ 1,177,001	$ 1,733,065	$ 1,645,841	$ 1,210,623	$ 1,114,807
Covered payroll	$ 2,750,129	$ 2,354,609	$ 2,470,125	$ 2,632,738	$ 2,470,326
Net OPEB liability (asset) as a percentage of covered payroll	42.80%	73.60%	66.63%	45.98%	45.13%
Plan fiduciary net position as a percentage of the total OPEB liability	0.00%	0.00%	0.00%	0.00%	0.00%

Source: PID, 2023

At 73.6 percent in FY 2021, the high percentage of net OPEB liability as a percentage of covered payroll reflected that a greater percentage of funds was dedicated to pension contributions compared to covered-employee payroll. During the fiscal years 2022, 2019, and 2018, the average percentage stabilized around 44%. Ideally, LAFCO will continue to monitor this metric to consider long-term fiscal trends as a longer time series of data becomes available.

8.8: RATES

The average monthly bill for a single-family home in PID's boundary is approximately $63.90. Since PID is an enterprise district, rates cover the costs of service provision, with very few exceptions. The rates and other charged fees cover the costs of water supply, water treatment, distribution service, and capital improvement costs. Information regarding water rates is provided on the PID's website at <*https://pidwater.com/rates*>. Please note that, in general, a water district may expand its water system in response to growth in the community, and this is typically paid by developer fees. However, PID is focused on recovery after the 2018 Camp Fire, and there are no plans to expand the water system beyond its pre-fire (2017/2018) footprint at this time.

To comply with State legal requirements in rate setting, in 2015, PID prepared a 53-page study entitled Final Cost of Service And Water Rate Plan. This Water Rate Plan guided PID to set rates that provide adequate revenue to meet PID's costs of continuing to serve its customers in a manner consistent with Proposition 218 (PID, 2015)..

Other fees (not related to property) have been updated as follows:

- 09/15/2021 (Effective 10/15/2021): Increased Construction Hydrant Use-Fee deposit to $2,000. Increase the cost of water to 3 x. Addition of $70 backflow fee for 'Private Installation and Inspection Administration.'
- 01/18/2023 Update to Capacity fee charges following Board action.

It should be noted that PID's Board also adopted Ordinance No. 2015-01, An Ordinance Adopting Enforcement Procedures and Fines and Penalties for Water Conservation Measures.

Capacity Fees

District rules allow a capacity fee to provide funds to build certain facilities needed for growth within the District. The capacity fee calculation considers both the value of the existing system and anticipated alternative water supplies needed to supply new connections. A capacity fee schedule for new meters and changes in meter size shall be fixed from time to time by the Board and be available upon request at the District business office. The capacity fee may be financed by the owner of the property through the District at a fixed rate set to the prime rate of the District's Bank plus 2 percent for a maximum term of seven years, with an option by the District to call upon any sale, transfer, or assignment (Bartle Wells Associates, 2022). The Capacity Fees were studied in a 2022 report by Bartle Wells Associates and discussed in detail during a meeting of the Ad Hoc Customer Recovery Support Committee on January 17, 2023. The full Board considered this issue during a January 18, 2023 public meeting. Current capacity fees are listed in Table 8-11 below.

Table 8-11: Capacity Fee (2023)

Current

Size	Safe Max Operating Capacity	Recommended Max Rate	New Development Capacity Fee	Reconnect Capacity Fee
3/4"	30	15-25	$ 5,826.00	$ 1,450.00
1"	50	25-40	$ 9,710.00	$ 2,417.00
1-1/2"	100	50-70	$ 19,420.00	$ 4,833.00
2"	160	80-120	$ 31,072.00	$ 7,733.00
3"	300		$ 58,260.00	$ 14,500.00
4"	500		$ 97,100.00	$ 24,167.00

Monthly Charges

As shown in Table 8.12 (next page), "Active" customers pay $42.97 per month plus a water quantity charge. The 5,758 "Sealed" stand-by customers pay $21.49 per month to cover costs associated with the overall maintenance of the water treatment plant and the entire water system. These are fixed costs. There is no reconnection fee for these sealed customers. Customers paying the monthly sealed rates might be able to access a limited amount of PID water for irrigation, landscape, or fire prevention purposes, provided the following conditions are met:

- parcel is located in proximity to the appropriate valves/infrastructure,
- obtain permission from PID, and

- pay an additional water usage fee.

These customers have a meter that is "sealed". However, PID can convert the parcel to active status (with the associated fee) upon request from the property owner.

The 1,555 disconnected customers do not currently pay a monthly fee. If the disconnected parcel owners decide to switch to "active" status, they will be asked to pay a $2000.00 meter reinstall fee to cover a portion of the cost of a meter, service lateral, backflow device, and labor costs associated with re-establishing service. PID has a water treatment plant capacity fee, which was last updated in July 2023 (previously increased in 2004). The Board has discussed offering a "credit" for some portion of fees or reducing the cost of fees. After July 1, 2023, the meter reinstall fee will be $2,000, and the water treatment plant capacity fee will be an additional $1,400 for the first year, increasing by the same amount for the next four years. Plus, the reconnection fee will be an additional charge.

Disconnected Parcel Fee

During their January 18, 2023, public meeting, the Board allocated $70,000 to hire a consulting firm (SCI Consulting Group) to prepare a process to initiate an assessment district for those parcels that have been disconnected from the District.

Rate Summary

There are 10,649 existing legal parcels in the Town of Paradise. Approximately 800 of these parcels have never been developed, possibly due to a lack of septic capacity. If any of these lots would like PID water, they would be required to pay the full charge, including the installation of a lateral backflow meter, plus a full capacity fee. The total PID fees/costs for a normal lot would be approximately $13,000.

Residential customers include single-family homes, individual condominium units, and townhouse units. The water rates apply to dwellings of both permanent residents and vacation homeowners. The domestic water rates for metered residences consist of three components: a water service charge, a debt surcharge, and a reserve surcharge, as shown in Table 8.12 (next page).

Table 8.12: PID Water Rates –

Paradise Irrigation District
FY 2020/21 Budget
Current Rates

Residential				
Each HCF (748 Gallons) 4/8/16 = $1.53; 1/1/2017 = $1.62; 1/1/18 = $1.61				
	4/8/2016	1/1/2017	1/1/2018	1/1/2019
Service Charge	$17.06	$19.00	$20.00	$20.00
Debt Surcharge	8.88	9.16	14.00	$17.79
Reserve Surcharge	4.77	5.18	5.18	$5.18
Total Service Charge	**$30.71**	**$33.34**	**$39.18**	**$42.97**

Business									
Each HCF (748 Gallons) 4/8/16 = $1.53; 1/1/2017 = $1.62; 1/1/18 = $1.61									
5/8" & 3/4 Inch Meter	4/8/2016	1/1/2017	1/1/2018	1/1/2019	2 Inch Meter	4/8/2016	1/1/2017	1/1/2018	1/1/2019
Service Charge	$17.06	$19.00	$20.00	$20.00	Service Charge	$90.93	$101.27	$106.60	$106.60
Debt Surcharge	8.88	$9.16	$14.00	$17.79	Debt Surcharge	47.33	$48.82	$74.62	$94.82
Reserve Surcharge	4.77	$5.18	$5.18	$5.18	Reserve Surcharge	25.42	$27.61	$27.61	$27.61
Total Service Charge	**$30.71**	**$33.34**	**$39.18**	**$42.97**	**Total Service Charge**	**$163.68**	**$177.70**	**$208.83**	**$229.03**
1 Inch Meter	4/8/2016	1/1/2017	1/1/2018	1/1/2019	3 Inch Meter	4/8/2016	1/1/2017	1/1/2018	1/1/2019
Service Charge	$28.49	$31.73	$33.40	$33.40	Service Charge	$170.60	$190.00	$200.00	$200.00
Debt Surcharge	14.83	$15.30	$23.38	$29.71	Debt Surcharge	88.80	$91.60	$140.00	$177.90
Reserve Surcharge	7.97	$8.65	$8.65	$8.65	Reserve Surcharge	47.70	$51.80	$51.80	$51.80
Total Service Charge	**$51.29**	**$55.68**	**$65.43**	**$71.76**	**Total Service Charge**	**$307.10**	**$333.40**	**$391.80**	**$429.70**
1-1/2 Inch Meter	4/8/2016	1/1/2017	1/1/2018	1/1/2019	4 Inch Meter	4/8/2016	1/1/2017	1/1/2018	1/1/2019
Service Charge	$56.81	$63.27	$66.60	$66.60	Service Charge	$284.39	$316.73	$333.40	$333.40
Debt Surcharge	29.57	$30.50	$46.62	$59.24	Debt Surcharge	148.03	$152.70	$233.38	$296.56
Reserve Surcharge	15.88	$17.25	$17.25	$17.25	Reserve Surcharge	79.52	$86.35	$86.35	$86.35
Total Service Charge	**$102.26**	**$111.02**	**$130.47**	**$143.09**	**Total Service Charge**	**$511.94**	**$555.78**	**$653.13**	**$716.31**

Irrigation, Recreation District and School District Rates									
Each HCF (748 Gallons) $0.35									
5/8" & 3/4 Inch Meter	4/8/2016	1/1/2017	1/1/2018	1/1/2019	2 Inch Meter	4/8/2016	1/1/2017	1/1/2018	1/1/2019
Service Charge	$17.06	$19.00	$20.00	$20.00	Service Charge	$90.93	$101.27	$106.60	$106.60
Debt Surcharge	8.88	$9.16	$14.00	$17.79	Debt Surcharge	47.33	$48.82	$74.62	$94.82
Reserve Surcharge	4.77	$5.18	$5.18	$5.18	Reserve Surcharge	25.42	$27.61	$27.61	$27.61
Total Service Charge	**$30.71**	**$33.34**	**$39.18**	**$42.97**	**Total Service Charge**	**$163.68**	**$177.70**	**$208.83**	**$229.03**
1 Inch Meter	4/8/2016	1/1/2017	1/1/2018	1/1/2019	3 Inch Meter	4/8/2016	1/1/2017	1/1/2018	1/1/2019
Service Charge	$28.49	$31.73	$33.40	$33.40	Service Charge	$170.60	$190.00	$200.00	$200.00
Debt Surcharge	14.83	$15.30	$23.38	$29.71	Debt Surcharge	88.80	$91.60	$140.00	$177.90
Reserve Surcharge	7.97	$8.65	$8.65	$8.65	Reserve Surcharge	47.70	$51.80	$51.80	$51.80
Total Service Charge	**$51.29**	**$55.68**	**$65.43**	**$71.76**	**Total Service Charge**	**$307.10**	**$333.40**	**$391.80**	**$429.70**
1-1/2 Inch Meter	4/8/2016	1/1/2017	1/1/2018	1/1/2019	4 Inch Meter	4/8/2016	1/1/2017	1/1/2018	1/1/2019
Service Charge	$56.81	$63.27	$66.60	$66.60	Service Charge	$284.39	$316.73	$333.40	$333.40
Debt Surcharge	29.57	$30.50	$46.62	$59.24	Debt Surcharge	148.03	$152.70	$233.38	$296.56
Reserve Surcharge	15.88	$17.25	$17.25	$17.25	Reserve Surcharge	79.52	$86.35	$86.35	$86.35
Total Service Charge	**$102.26**	**$111.02**	**$130.47**	**$143.09**	**Total Service Charge**	**$511.94**	**$555.78**	**$653.13**	**$716.31**

Fire Service Connection Charges									
Each HCF (748 Gallons) 4/8/16 = $1.53; 1/1/2017 = $1.62; 1/1/18 = $1.61									
	4/8/2016	1/1/2017	1/1/2018	1/1/2019		4/8/2016	1/1/2017	1/1/2018	1/1/2019
Residential	$6.75	$6.75	$6.75	$6.75	6"	$40.48	$40.48	$40.48	$40.48
2"	$13.49	$13.49	$13.49	$13.49	8"	$53.99	$53.99	$53.99	$53.99
4"	$26.99	$26.99	$26.99	$26.99					

Source: PID, 2021a

Stand-by Charge Recommendation

LAFCO staff has received indications of concern about PID's Stand-by Charges from members of the public[3]. LAFCO recommends that PID study and carefully consider reducing or removing the stand-by charges for the following reasons:

- Stand-by Customers pay $21.49 per month, generating $1.4 million/year, which is allocated towards fixed costs and estimated annual expenses of $7.8 million and contributing to the Net Position of $163,612,296 (Net Position is all of the District's assets, deferred outflows of resources, liabilities, and deferred inflows of resources.)
- The PG&E Fire Settlement provides a financial cushion that allows the District to be fiscally sustainable. Ideally, PID will continue to remain viable even if it does not receive additional new customers. Given the large PG&E financial settlement and the District's fiscal stability, it is possible that the District can function with a reduced level of stand-by fees.
- The Stand-by charge may have an unanticipated financial impact on those property owners who may be low income or who had too little or no insurance and face challenges rebuilding. The status of disadvantaged areas is described in Chapter 6.
- To address the community concerns listed in the footnote #3.
- PID should submit a report to LAFCO about the Stand-by Rates within one year (i.e., prior to December 2024).

8.9: GRANTS

Due to the 2018 Camp Fire, PID has applied for and received several grants from federal and state agencies, as listed in Table 8-13 below. PID's staff and Board successfully completed grant applications and won the awards. Implementation of the grant projects has diligently proceeded.

[3] Concerns heard from the public include indications that the Stand-by fees were understandable immediately after the Camp Fire given the District's finances were decimated and any and all revenue was essential. However, the District's current financial situation is well funded with the receipt of $127,000,000 in insurance claims, PG&E Settlement money and other governmental interventions, not to mention potential untapped water sales. It may be difficult for the public to understand why the District would charge previously developed parcels who ostensibly already "bought into" the system years ago, additional stand-by fees that are not necessary for the continued operation of the District. Members of the public have also expressed that many who lost their homes cannot afford to pay, sell, or lose any pre-existing rights.

Table 8-13: Grants Received by PID to Aid in Camp Fire Recovery

Program	Grant Title	Amount Awarded	Amount Received	Amount Remaining	PID Share	Notes
FEMA - Public Assistance (PA)	Emergency Response/Protective Measures	$ 1,613,440.70	$ 1,637,185.00	$ (23,744.30)	$ -	PID Share offset by Donated Resources.
	PID Management Costs	$ 68,779.00	$ -	$ 68,779.00	$ -	100% Federal Share. Anticipating $4.1M increase.
	Arborist	$ 9,954.75	$ 9,955.00	$ (0.25)	$ -	PID Share offset by Donated Resources.
	District-wide Fencing	$ 93,750.00	$ 93,750.00	$ -	$ 6,250.00	FEMA is covering what insurance does not.
	Road Damage Caused by Fire (Henson Rd Culvert)	$ 125,787.19	$ 2,516.00	$ 123,271.19	$ 8,385.81	
	Contaminant Testing by PID	$ 1,737,287.86	$ 1,576,922.00	$ 160,365.86	$ -	PID Share offset by Donated Resources. Have submitted an additional $531K in reimbursable expenses.
	Vehicles, Equipment and Buildings	$ 33,695.93	$ 33,695.00	$ 0.93	$ 2,246.39	FEMA is covering what insurance does not.
	Donated Resources	$ 373,409.26	$ 376,281.00	$ (2,871.74)	$ -	The value of donated resources is applied against the local cost share of Emergency Work Projects (3, 33, and 257)
	Magalia Dam Burn Damage	$ 33,404.27	$ 33,404.00	$ 0.27	$ 2,227.05	
	Meters, Meter Boxes and AMI System	$ 1,956,875.50	$ 39,138.00	$ 1,917,737.50	$ -	PID Share offset by DWSRF grant.
	Service Laterals	$ 40,118,608.12	$ 802,372.00	$ 39,316,236.12	$ -	PID Share offset by DWSRF grant.
	Water Mains	$ 28,006,040.62	$ 560,120.00	$ 27,445,920.62	$ -	PID Share offset by DWSRF grant.
	Initial Service Laterals (pre-428)	$ 4,300,718.00	$ 4,386,732.00	$ (86,014.00)	$ -	PID Share offset by DWSRF grant.
		$ 78,471,751.20	$ 9,552,070.00	$ 68,919,681.20	$ 19,109.25	
FEMA - Hazard Mitigation Grant Program (HMGP)	Paradise Water Supply Hazard Mitigation Project	$ 4,694,486.25	$ -	$ 4,694,486.25	$ 1,564,828.75	
	Advance Assistance - Magalia Dam Study and Design	$ 1,207,931.25	$ 186,839.72	$ 1,021,091.53	$ 402,643.75	
	(pending budget increase)	*$ 687,451.94*	$ -	*$ 687,451.94*	*$ 229,150.65*	*Pending approval from FEMA.*
		$ 5,902,417.50	$ 186,839.72	$ 5,715,577.78	$ 1,967,472.50	
CalOES - Community Power Resiliency Grant	Solar Panels on Water Tanks + Update of Emergency Response Plan	$ 269,200.00	$ 269,200.00	$ -	$ -	
California WaterBoards - Drinking Water State Revolving Fund	Almond Street Project, Reservoir B, and Local Cost Share on FEMA PWs for Water Distribution System (332, 333, 349 and 355)	$ 23,367,540.00	$ -	$ 23,367,540.00	$ -	
	TOTALS	**$ 108,010,908.70**	**$ 10,008,109.72**	**$ 98,002,798.98**	**$ 1,986,581.75**	
	Percentage of Funds Received To-Date		9.3%		1.8%	Overall Local Cost Share

Data Source: PID Staff, June 2023

8.10: DETERMINATIONS FOR FINANCIAL ABILITY TO PROVIDE SERVICES

Based on the information included in Sections 8.1 to 8.9 above, the following written determinations make statements on the financial ability of PID to provide public services, which the Commission must consider as part of a municipal service review. The determinations listed below in Table 8.14 are based upon the data presented and are recommended to the Commission for consideration. The Commission's final MSR determinations will be part of a Resolution that the Commission formally adopts during a public meeting.

Table 8.14: MSR Determination: Financial Ability to Provide Service

Number	Indicator	Determination
Financial Policies		
FIN-1	Summary financial information presented in a standard format and simple language.	The Consolidated Financial Statement and budgets are prepared for a one-year timeframe, and they clearly and transparently present financial information.
FIN-2	District has a published policy for reserve funds, including the size and purpose of reserves and how they are invested.	PID's Reserve Fund Policy was adopted in October 2016, and it facilitates the attainment of program and financial goals relative to the prudent accumulation and management of designated reserves and reserve funds. This Reserve Fund Policy was developed to clearly identify specific designated reserve funds. The Reserve Fund Policy is posted on the District website.
FIN-3	Other financing policies are clearly articulated.	PID's Annual Financial Statements contain a list of its numerous accounting policies, including Financial Reporting Entity, Basic Financial Statements, Basis of Presentation, Measurement Focus and Basis of Accounting, Cash and Cash Equivalents, Restricted Assets, Receivables, Capital Assets, Long-Term Debt, Investments, and several other policies. Additionally, the District Code describes its purchasing Policy, with specific procedures for purchases and procurement practices. Chapters 11 through 14 of PID's Policy And Procedures Manual also provides guidance on fiscal matters.
FIN-4	Compensation reports and financial transaction reports that are required to be submitted to the State Controller's Office are posted on the district website.	Employee wage scale by bargaining unit and the unrepresented employee wage scale are available on the PID website. Required reports are sent to the California State Controller for Government Compensation.
Revenues, Expenditures		

FIN-5	Revenues, Description of	The District has multiple sources of revenue, including service fees, fees and adjustments, outside water sales, recreation fees, backflow charges, meter charges, and non-operating revenues. In FY21/22, PID's total revenue was $6,973,013. Additionally, PID received revenue from extraordinary items relating to disaster recovery, totaling approximately $127 million.
FIN-6	Expenses, Description of	In FY21/22, PID had both operational and non-operational expenses. Adding to operating expenses (8,858,907) and non-operating expense ($105,331) brings PID's total expenses for FY 21/22 to $8,964,238. A comparison of PID's annual total revenue to total expenses shows that annual expenses exceeded total revenue in seven of the eight study years (i.e., FY14/15 to FY21/22). A comparison of PID's annual total revenue to total expenses should be recalculated in LAFCO's next MSR.
FIN-7	Increases or decreases in net position.	Changes to PID's Total Net Position have been shown to be highly variable in recent years. This variability is due to the loss of revenue experienced immediately following the 2018 Camp Fire and due to an influx in disaster recovery funds from federal, State, and other sources.
FIN-8	Tax Revenues/Connection Ratio	PID received property tax revenue for $330,320 in FY21/22. With 10,639 total customers (including active and non-active customers), the ratio of tax revenues per service connection calculates to $31.00.
Rates		
FIN-9	Rates were adopted by the Board of Directors.	PID Board of Directors adopted current rates during a public meeting. PID is an enterprise district, and rates cover the costs of service provision with very few exceptions. The rates and other charged fees cover the costs of water supply, water treatment, distribution service, and capital improvement costs. Information regarding water rates is provided on the PID's website at <*https://pidwater.com/rates*>.

FIN-10	The process for adopting rates are consistent with Proposition 218.	To comply with State legal requirements in rate setting, in 2015, PID prepared a 53-page study entitled Final Cost of Service And Water Rate Plan. This Water Rate Plan guided PID to set rates that provide adequate revenue to meet PID's costs of continuing to serve its customers in a manner consistent with Proposition 218 (PID, 2015). Other fees (not related to property) have been updated as follows: • 09/15/2021 (Effective 10/15/2021): Increased Construction Hydrant Use-Fee deposit to $2,000. Increase the cost of water to 3 x. Addition of $70 backflow fee for 'Private Installation and Inspection Administration.' • 01/18/2023 Update to Capacity fee charges following Board action.
FIN-11	Current information about rates is readily available to constituents.	PID's current rates are posted to the District website at: <*https://pidwater.com/rates*>. Rates are also provided in its annual budget document, available on the District's website at <*https://pidwater.com/open*>.
FIN-12	Recommendation Regarding Rate Structure	The District reports Stand-by Customers pay $21.49 per month, generating $1.4 million/year, which is allocated towards fixed costs and estimated annual expenses of $7.8 million and contributing to the Net Position of $163,612,296 (Net Position is all of the District's assets, deferred outflows of resources, liabilities, and deferred inflows of resources.) LAFCO staff has received indications of concern about PID's Stand-by Charges from members of the public. LAFCO recommends that PID study and carefully consider reducing or removing the stand-by charges for the following reasons:

		(continued) • The PG&E Fire Settlement provides a financial cushion that allows the District to now be fiscally sustainability. Ideally, PID will continue to remain viable even if it does not receive additional new customers. Given the large PG&E financial settlement and the District's fiscal stability, it is possible that the District can function with a reduced level of stand-by fees. • The District currently maintains a very high Net Position and reserve funds. • To address the community concerns described in this MSR. PID should submit a report to LAFCO about the Stand-by Rates within one year (i.e., prior to December 2024).

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CHAPTER 9: STATUS OF FACILITIES SHARING

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9.1 PURPOSE OF FACILITIES SHARING

This chapter aims to evaluate the opportunities for a jurisdiction to share facilities and resources to develop more efficient service delivery systems. LAFCO's Service Review Guidelines suggest that an MSR will ideally help local districts:

- Develop strategies to avoid unnecessary costs, eliminate waste, and improve public service provision.
- Provide ideas about opportunities to streamline service provision through the use of shared facilities, approval of different or modified government structures, joint service agreements, or integrated land use planning and service delivery programs.
- Promote shared resource acquisition, insurance policies, joint funding requests, or strategies.

This Chapter of the MSR considers the use of shared facilities and their potential to offset costs or promote greater efficiency in the provision of services within the region. For example, PID has successfully shared land for recreational use with the Paradise Recreation and Park District (PRPD) (PID, 2023). On June 1, 2020, PRPD took over the recreation amenities and operations at Paradise Lake from the Paradise Irrigation District. Paradise Lake provides paddling, fishing, hiking, mountain biking, and other activities (PRPD, n.d.). Paradise Irrigation District and the Paradise Recreation and Park District have worked together for many years. This facility sharing results in cost savings for both agencies and provides a needed public service for local families and tourists. Additionally, PID has a joint agreement with the Town of Paradise for fire hydrant maintenance (PID, 2023).

9.2 TYPES OF RESOURCE SHARING

PID utilizes several types of resource and facilities sharing to reduce its service cost, including mutual aid and cost avoidance.

Mutual Aid

Mutual aid agreements are agreements between agencies, organizations, and jurisdictions that provide a mechanism to quickly obtain emergency assistance in the form of personnel, equipment, materials, and other associated services. In California, LAFCOs support mutual aid agreements because, along with contingency water supply resources, they can help an agency address potential future emergency conditions that could result in the loss of water supply or other disruptions in service.

PID is part of a California Water and Wastewater Agency Response Network (WARN) mutual aid agreement (PID, 2023). The Water and Wastewater Agency Response Network is a mutual aid and assistance network comprising drinking water and wastewater utilities to provide help in the

form of personnel, equipment, materials, and services to restore operations during emergencies (U.S. EPA, 2022). These mutual aid agreements allow PID to perform emergency work (labor, equipment, parts) at "cost" to the receiving entity in time of emergency need. The agreements are periodically reviewed.

During and immediately after the 2018 Camp Fire, PID received direct and indirect support and assistance from several nearby agencies, including the following:

- South Feather Water and Power Agency provided staff resources to PID and other support.
- CALFIRE provided fire protection services
- Fire Districts throughout the State sent fire crews to the wildfire
- Butte County Sheriff and other police departments aided evacuations and security and assisted with missing persons.

Additionally, as part of the recovery effort, numerous state and federal agencies have provided grant and emergency recovery funding directly to PID.

Cost Avoidance

This section highlights cost avoidance practices given necessary service requirements and expectations. Ideally, the proposed methods to reduce costs would not adversely affect service levels. In general, water systems have a fixed cost associated with infrastructure, operations, and maintenance and have a variable cost related to demand. Given these constraints, PID pursues an array of cost avoidance techniques that each contributes incrementally towards keeping costs at a reasonable level, as listed below.

- PID has a joint agreement with the Town of Paradise for fire hydrant maintenance;
- PID manages overhead expenses by using a functional organization of its staff, as shown on the organization chart provided in Chapter 4, Accountability.
- PID carefully utilizes its budgeting processes to serve as one means to avoid unnecessary costs;
- PID communicates directly with the Butte County Office of Emergency Management (OEM) during disasters or large-scale incidents and during non-emergency (regular) time periods to work on disaster planning, community preparedness, mitigation, and training.
- PID participated in the 2019 Butte County Local Hazard Mitigation Plan update.
- PID participates in a pooled insurance program through the Association of California Water Agencies Joint Powers Insurance Authority (ACWA-JPIA);
- PID has a 25-year lease with the Paradise Park and Recreation District. The two Districts have areas of geographic overlap. They work together to implement the lease agreement. *(PID, 2023)*

Inter-ties with Del Oro Water Company

LAFCO's 2006 MSR found that "Though it can survive at least a three-year drought, the biggest issue facing the District is the need for a larger water supply. A number of options are being considered to increase the amount of water available to the District. The District has inter-ties with Del Oro Water Company, and an agreement with the company allows for water to be added to the system from Del Oro in case of an emergency.

Coordination with the Town of Paradise

PID works closely and coordinates with the Town of Paradise. For example, staff from both agencies have closely coordinated water line installation within the street right-of-way to avoid damaging planned new pavement. Staff from both agencies have worked out a schedule to install new laterals prior to the street repaving. In another example, PID's engineers coordinate closely with the Town's engineers, and they commonly share maps. However, if the two entities become short on resources in the future, other ways to coordinate and save money may become necessary. The Town of Paradise does not interfere in the water service process. At the management/elected level, PID and the Town of Paradise have a regularly scheduled coordination meeting every three months. These meetings have helped to address mutual challenges, although not all the issues are easily resolved. PID also coordinates with the County of Butte. For example, PID staff coordinated with Butte County to install a water line in Skyway in a manner compatible with street repaving/repair. In summary, although there is not a formal adopted memorandum of understanding, the informal method of coordination appears to be workable for both agencies.

The Town of Paradise, through the adoption of its Long-Term Recovery Plan, has implemented land use regulations that could be cost-prohibitive to the rebuilding effort. For example, the Town has established a minimum home size of 700 square feet. This matters to PID as it lost the majority of its customers and would benefit from increased water connections in the form of new housing development. This is one area where PID and the Town should cooperate to facilitate the rebuilding of affordable homes.

Risk Management

LAFCO's 2006 MSR noted, "The District is exposed to various risks of losses related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. The District transfers risks that may arise from these and other events through participation in the ACWA Joint Powers Insurance Agency pooled insurance program." (LAFCO, 2006). Insurance policies help agencies manage risks. PID currently participates in a pooled insurance program (liability, property, worker's compensation, and Employee Benefits Program) designed specifically for water agencies. This program is through the Association of California

Water Agencies Joint Powers Insurance Authority (ACWA-JPIA). Members review it on an annual basis (PID, 2023).

It is recognized that the Paradise community and PID are at risk of potential future catastrophic fires and other natural hazards. To describe these risks, PID participated in the LHMP with the Butte County Office of Emergency Services, as described in Chapter 7.

9.3 LAFCO REORGANIZATION

It is sometimes beneficial for an agency to pursue structural or jurisdictional reorganizations to save money and avoid future overhead costs. PID staff has indicated that there are no functional or structural reorganizations that the District is evaluating to benefit recipients of services or improve the provision of municipal treated water services at this time.

Please note that Chapter 7 describes PID's applications to update its "place of use" for its water rights. It is recommended that PID keep LAFCO informed about the current status of its "place of use."

Several conceptual options for future reorganization of PID and SOI adjustments are provided in Appendix I. Appendix I describes Sphere of Influence options, which include several reorganization options from the Options Study Report by GEI, 2022. The Options Study noted that "with the current challenges encountered by PID, there are some potential financial benefits if PID is reorganized with other agencies that have strong managerial, technical, and financial capabilities. PID can potentially be reorganized by restructuring PID into other agencies or other agencies into PID." Three alternative reorganizations were listed, which included a reorganization with the Town of Paradise. The Study noted that most of the population served by PID resides within the Town, which provides municipal services other than potable water. Reorganizing PID into the Town would allow the two entities to leverage existing managerial and technical capabilities and existing funding and optimize operating expenses, which would assist PID to overcome the operational deficit until their customer base returns. It is recommended that when LAFCO considers updates to MSR/SOIs, service expansion, or other applications from PID, the Town of Paradise, or other nearby service providers, LAFCO and the subject provider should review the reorganization options and the SOI update options listed in Appendix I.

9.4 GOALS AND CHALLENGES

PID's primary goal is to continue to recover from the 2018 Camp Fire. PID will accomplish this goal by fulfilling its Mission Statement and implementing its new Urban Water Management Plan, new Strategic Plan, and similar plans, which include securing water rights and fortifying Magalia Dam. PID's primary challenge is securing and exercising existing water rights while ensuring

water supplies for drought protection and future demand, in addition to seeking additional water entitlements. PID's aim to secure water rights must be balanced with protection of the watershed and aquatic natural resources such riparian habitat and fish. Fish play a unique role in watershed health, as detailed in Appendix F.

Similar to most water districts in California, PID will likely face several additional challenges in future years. Solving challenges is difficult because the needs of each water district are unique, and solutions are not one-size-fits-all. However, considering trends and issues yields some potential future challenges that water districts may face, as listed below:

- Responding to future events or opportunities;
- Implementing innovative technology to improve the performance of water systems. For example, PID may find practices to optimize its existing renewable energy program. New technologies like pumped hydro may become cheaper and more versatile in the future. As another example, in California, recycled wastewater and captured stormwater are gaining in popularity;
- Regulatory constraints and associated cost concerns are a potential future challenge.;
- Infrastructure resiliency and emergency preparedness are important. For example, communities in California are considering the need to make their water utility systems more resilient, especially during natural disasters and changes in weather patterns; and
- Using alternative financing techniques such as grant applications or revenue bond issuance to finance construction and infrastructure replacement.

9.5 DETERMINATIONS FOR SHARED FACILITIES

Based on the information in Chapter 9, the following written determinations make statements involving each service factor that the Commission must consider as part of a municipal service review. The determinations listed below in Table 9.1 are based upon the data presented and are recommended to the Commission for consideration. The Commission's final MSR determinations will be part of a Resolution that the Commission formally adopts during a public meeting.

Table 9.1: MSR Determination: Status of, and Opportunities for, Shared Facilities

Number	Indicator	Determination
PID-SHA-1	The Agency collaborates with multiple other agencies for the delivery of services within its boundary.	PID collaborates with multiple other agencies for the delivery of services within its boundary. For example, PID coordinates with the Paradise Recreation and Park District to provide land for recreational use. In addition, the District has a joint agreement with the Town of Paradise for fire hydrant maintenance.

PID-SHA-2	Agreements for mutual aid or any other appropriate agreement (i.e., Tax Sharing Agreement) are periodically reviewed to ensure fiscal neutrality.	PID is a part of a California Water and Wastewater Agency Response Network mutual aid agreement. This mutual assistance agreement provides personnel, equipment, materials, and services during emergencies. PID Staff should periodically review these mutual aid agreements to ensure continued fiscal neutrality.
PID-SHA-3	Other practices and opportunities that may help to reduce or eliminate unnecessary costs are examined by the District periodically. Ideally, there is a balance between cost efficiency and risk reduction strategies.	Recently, PID has implemented an array of cost avoidance techniques that each contributes incrementally towards keeping costs at a reasonable level, including cooperation with the Town of Paradise for fire hydrant maintenance. Other significant cost avoidance work includes staff training to ensure efficiency and participation in the Butte County Local Hazard Management Plan. Aside from the efficiency measures described in this chapter, no other opportunities have been identified for shared facilities or cost avoidance that would benefit the PID or improve service provisions within the region.
PID-SHA-4	Reorganization	It is recommended that PID keep LAFCO informed about the current status of its water rights applications and its permitted "place of use." It is recommended that when LAFCO considers updates to MSR/SOIs, service expansion, or other applications from PID, the Town of Paradise, Paradise Park & Recreation District, or other nearby service providers, LAFCO and the subject provider should review the reorganization options and the SOI update options listed in Appendix I. In addition, PID should periodically review its relationship with the Town of Paradise and consider if a reorganization is appropriate.

REFERENCES

Butte Local Agency Formation Commission (LAFCO). 2006. Final Municipal Service Review: Butte LAFCO Domestic Water and Wastewater Service Providers. 492-pages.

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Paradise Recreation & Park District (n.d.). *Paradise Lake*. Retrieved on March 27th, 2023, from <*https://www.scribbr.com/citation/generator/folders/6NW0ZWSzjiyyw5QiViHQo/lists/2vI7J2Zhb7AYOub7wEULQ4/*>.

U.S. EPA. 2022. *WARN Questions and Answers*. Retrieved on March 27th, 2022, from <*https://www.epa.gov/waterutilityresponse/warn-questions-and-answers*>.

CHAPTER 10: COMMENTS RECEIVED

Butte LAFCO welcomed public comments on this Municipal Service Review for the Paradise Irrigation District. During the public review period from December 23, 2023 through February 1, 2024, the Draft Public Review MSR was available for public consideration from LAFCO's website at <*https://www.buttelafco.org/*>. Written comments were invited to be submitted directly to LAFCO. During the Commission's February 1, 2024 public hearing, no verbal comments were received. One written public comment (from Mr. John Stonebraker) was received during the formal public comment period, as shown on the following page.

Received from John Stonebraker via email on February 1, 2024, and entered into the record at the hearing.

This public review draft is unfit for public review. It contains too many basic factual errors for unpaid members of the public to correct under deadline. I am disappointed that staff recommends adopting this mess and more so that Upper Ridge leadership was never consulted despite my plea at your April 2023 meeting. We would have been glad to clear up the embedded misapprehensions earlier in the process so "Butte LAFCo can make informed decisions based on the best available data" as the item summary would suggest.

The document calls out that SB 244 (2011) requires LAFCo to consider nearby Disadvantaged Unincorporated Communities but apparently without asking anyone who lives there.

PID owns nearly 1000 acres north of town limits and periodically serves Magalia customers through the Del Oro intertie. PID recognizes that we have a stake in their continued operations. LAFCo too should recognize this and include us in the earliest conversations about expanding PID's SOI northward or reorganizing the District into an organ of the Town with its own expansive Sphere -- inherited from the Paradise and Upper Ridge Master Plan prior to incorporation.

I support continued cooperation between PID and Del Oro. I support the inclusion of the Paradise Pines and Magalia districts in the Place of Use for the water PID diverts from Little Butte Creek. I do not support expanding PID's SOI or boundary to encompass such Place of Use nor restricting such use to the existing SOI or boundary. PID's year-round customers would not benefit if thousands of Del Oro customers were given votes in their district.

I agree that both the Town and the Recreation District need updated Municipal Service Reviews many of whose considerations are intertwined with this one's. They must reflect the significantly changed landscape after the Camp Fire, realistic existing conditions, asymptotic rather than geometric population projections, and the plausible scope for delivering services. This requires a greater attention to detail than exhibited in the draft before you today.

When those reviews take place, in consultation with both Town and Upper Ridge stakeholders, the ill-considered options in Appendix I should be disregarded. I address that in more detail elsewhere.

The Commission should not deem PID's recreation services latent or reassign them to PRPD without reconsidering PRPD's expenditures outside its jurisdictional boundary. When the service extension was first granted, we were told "At such time PRPD wishes is [sic] to expand the level of services from what PID provided or alter the lease agreement between the agencies, LAFCO would have to evaluate this modification. Such a modification may cause LAFCo to require the PRPD to annex the territory."

PRPD has since significantly expanded services, especially kayaking, on the portions of the lake outside its jurisdictional boundary while neglecting the portions within it. This transfer of taxpayer resources is overlooked in today's draft.

Yet the draft does mention the Backbone Trail which remains theoretical. The Project Plan from the recent IS/MND does not propose to connect Paradise Lake to De Sabla or to any populated area west of the creek.

The 2006 Final MSR includes page after page of factual corrections from the review draft. Here it would be dozens. Page 1-4 should say meetings are at 5:30, not 6:30. Page 1-8 should say Chapter 3, Introduction, not Chapter 2.

More serious are the nonsense population projections and estimates. The Town has already surpassed the "low growth" 2040 figure. The per-parcel population estimate for the unincorporated SOI fails to consider that most of the parcels in questions are undeveloped and undevelopable.

Even the Town proper does not have anywhere near 2.11 persons per parcel at this point after the fire.

The document is riddled with these flawed assumptions from which flawed conclusions are being drawn. Given that PID has demonstrated the ability to serve the growing population of Paradise, the central question is whether PID can lower bills for standby customers without raising bills for active customers or weakening their own net position. Which analysis requires more rigorous data gathering than this draft MSR contains.

If the Commission elects to approve the draft today, I hope the financial analysis requested to come back next winter receives closer scrutiny at an earlier point in the process. The District's sustainability and ongoing capital improvements are crucial to the economic recovery of the Ridge.

John Stonebraker
Magalia, CA

LAFCO's response to public comments by Mr. John Stonebraker as submitted to the Commission on February 1, 2024 is shown in Table 10-1 below.

Table 10-1: LAFCO's Response to Comments

Public Comment by Mr. John Stonebraker	**LAFCO's Response**
This public review draft is unfit for public review.	Thank you for participating in the public review process for the PID Municipal Service Review. During the Commission's February 1, 2024 public hearing, the Commissioners received and read your email text. The comments you provided were considered during the process. Two typographical errors were corrected in the MSR based on the submitted public comment.
Disadvantaged Unincorporated Communities	State law (the Cortese Knox Hertzberg [CKH] Act) requires that LAFCO consider Disadvantaged Unincorporated Communities (DUC) in MSRs. Median Household Income as reported to the U.S. Census is the metric used to establish DUC status. The analysis of DUCs in this MSR is consistent with LAFCO's standard practice.
Del Oro intertie	The Del Oro Water Company is described in Chapters 1 and 3 of the MSR. Chapter 7 describes the Del Oro Intertie as follows "PID has an intertie with Del Oro in the southern portion of the service area, near the Limesaddle area of the Del Oro service area. This intertie is capable of supplying treated water to Del Oro, although it is currently not in use. There is one additional intertie with Del Oro Water Company located in the area of the A Tank Reservoir, which is also not currently in use. These inter-ties have historically been operated only when necessary for emergency supply (PID, 2021a)."
PID's SOI	This municipal service review presents an analysis of PID's public services consistent with the CKH Act. This MSR did not recommend any changes to PID's SOI. During the February 1, 2024 public hearing, the Commission did not consider any changes to PID's SOI.
Place of Use	"Place of Use" is a term associated with water rights as administered by state and federal water agencies such as the State Water Resources Control Board

	and others. LAFCo has invited PID to keep LAFCO generally apprised of the status of these permit proceedings.
The Town and the Recreation District need updated Municipal Service Reviews	Comment noted.
Appendix I should be disregarded	Appendix I presents several potential options for updating the sphere of influence (SOI) in the future for the PID. Both generalized and customized options are described. The presented options are informational only, and may assist the Commission in considering future informational needs and next steps. When LAFCo moves to update an individual SOI at some future date, the Commission may also consider additional information beyond that presented the MSR, including Appendix I.
recreation services	The MSR's Chapters 1, 3, and 5 describes PID's relationship to recreation services. If, in the future, LAFCO considers an update to PID's SOI, it may study the provision of recreation services in more detail.
Page 1-4 should say meetings are at 5:30, not 6:30. Page 1-8 should say Chapter 3, Introduction, not Chapter 2.	These two typographical errors have been corrected in the MSR. Thank you for bringing them to our attention.
Town of Paradise population	The Town of Paradise has an estimated population of 9,142 persons as described in Chapter 5. This estimate is based on data from the U.S. Census, the CA Dept of Finance, and the Town of Paradise. If LAFCO and the Town of Paradise choose to update the Town's MSR in the future, the population data (existing and projected) can be re-evaluated at that time.
Bills for water	Chapter 8 describes the overall financial picture of the PID. PID is aware of the concerns raised regarding standby fees. However, PID duly completed a water rate study and complies with all local and state laws regarding the establishment of water rates.
The District's sustainability and ongoing capital improvements are crucial to the economic recovery of the Ridge.	Comment noted.

CHAPTER 11: GLOSSARY

Acre-foot: The volume of water required to cover one acre of land to a depth of one foot. This is equal to 325.851 gallons or 1,233 cubic meters. An “acre-foot” of water usually supplies enough water to support two urban households for one year.

Appropriation Doctrine: In the western US, the doctrine of Prior Appropriation was in common use as early settlers and miners began to develop the land. The prior appropriation doctrine is based on the concept of "first in time, first in right”; meaning that the first person to use a quantity of water and put it to Beneficial Use has a higher priority of water right than a subsequent user. In drought conditions, high priority users are allocated water before junior users receive water. Appropriative rights can be lost through nonuse or transferred apart from the land.

Appropriative rights: Water rights based on the “Appropriation Doctrine.” Not related to riparian land ownership. In California and since 1914, a state-issued permit or license is required to establish appropriative rights.

Aqueduct: A conduit, pipe, or channel designed to transport water from a remote source, usually by gravity.

Aquifer: A below-ground geologic formation that bears water, stores water, and/or transmits water, such as to wells and springs.

Annexation: The annexation, inclusion, attachment, or addition of territory to a city or district.

Area of origin statutes: Statutes designed to protect counties and watersheds where the water originates, in the form of rain or snow, from the export of water outside the regions.

Beneficial use: Includes irrigation, municipal, domestic, industrial, recreational use, and protection of fish wildlife and their habitat, and aesthetic enjoyment. The California Constitution (Article X, Section 2) requires that all water resources must be put to beneficial use, without waste or unreasonable use.

Best Management Practices: Best management practices are defined as methods or techniques found to be the most effective and practical means in achieving an objective (such as minimizing pollution) while making the optimum use of the District’s resources.

Board of Directors: The legislative body or governing board of a district.

Board of Supervisors: The elected board of supervisors of a county.

Bond: An interest-bearing promise to pay a stipulated sum of money, with the principal amount due on a specific date. Funds raised through the sale of bonds can be used for various public purposes.

Buildout: The maximum development potential when all lands within an area have been converted to the maximum density allowed under the General Plan.

CFS: Abbreviation for cubic feet per second. Used to describe a rate of the flow in streams and rivers. One "cfs" is equivalent to 7.48 gallons of water flowing each second. Also, equal to a volume of water one foot high and one foot wide flowing a distance of one foot in one second.

City: Any charter or general law city.

Consumptive use: Any use of water that permanently removes water from the natural stream system. 2. Water that has been evaporated, transpired, incorporated into products, plant tissue, or animal tissue and is not available for immediate reuse.

Conveyance loss: Loss of water from a channel or pipe during conveyance, including losses due to seepage, leakage, evaporation and transpiration by plants growing nearby.

Consolidation: The uniting or joining of two or more districts into a single new successor district. In the case of consolidation of special districts, all of those districts shall have been formed pursuant to the same principal act.

Contiguous: In the case of annexation, territory adjacent to an agency to which annexation is proposed. Territory is not contiguous if the only contiguity is based upon a strip of land more than 300 feet long and less than 200 feet wide.

Cost avoidance: Actions to eliminate unnecessary costs derived from, but not limited to, duplication of service efforts, higher than necessary administration/operation cost ratios, use of outdated or deteriorating infrastructure and equipment, underutilized equipment or buildings or facilities, overlapping/inefficient service boundaries, inefficient purchasing or budgeting practices, and lack of economies of scale.

Detachment: The detachment, deannexation, exclusion, deletion, or removal from a city or district of any portion of the territory of that city or district.

Development Fee: A fee charged to the developer of a project by a county, or other public agency as compensation for otherwise-unmitigated impacts the project will produce. California Government Code Section 66000, et seq., specifies that development fees shall not exceed the estimated reasonable cost of providing the service for which the fee is charged. To lawfully impose a development fee, the public agency must verify its method of calculation and document proper restrictions on use of the fund.

Discharge: The volume of water that passes a given location within a given period of time. Usually measured in cfs.

Drainage basin: A watershed (land area) where precipitation runs off into streams, rivers, lakes, and reservoirs. A drainage basin may be identified by tracing a line along the highest elevations between two areas on a map, often along a ridgeline.

Dissolution: The dissolution, disincorporation, extinguishment, and termination of the existence of a district and the cessation of all its corporate powers, except for the purpose of winding up the affairs of the district.

District or special District: An agency of the state, formed pursuant to general law or special act, for the local performance of governmental or proprietary functions within limited boundaries. "District" or "special district" includes a county service area.

District of limited Powers: An airport district, community services district, municipal utility district, public utilities district, fire protection district, harbor district, port district, recreational harbor district, small craft harbor district, resort improvement district, library district, local hospital district, local health district, municipal improvement district formed pursuant to any special act, municipal water district, police protection district, recreation and park district, garbage disposal district, garbage and refuse disposal district, sanitary district, or county sanitation district.

Evaporation: A physical process such that liquid water transforms to water vapor, including vaporization from water surfaces, land surfaces, and fields.

Evapotranspiration: Combination of evaporation from free water surfaces and transpiration of water from plant surfaces to the atmosphere.

Formation: The formation, incorporation, organization, or creation of a district.

Function: Any power granted by law to a local agency or a county to provide designated governmental or proprietary services or facilities for the use, benefit, or protection of all persons or property.

Functional revenues: Revenues generated from direct services or associated with specific services, such as a grant or statute, and expenditures.

FY: Fiscal year.

General Plan: A document containing a statement of development policies including a diagram and text setting forth the objectives of the plan. In California, the general plan for a city or a county must include certain state mandated elements related to land use, circulation, housing, conservation, open-space, noise, and safety.

General revenues: Revenues not associated with specific services or retained in an enterprise fund.

Groundwater: Water under the earth's surface, often confined to aquifers capable of supplying wells and springs.

Incorporation: The incorporation, formation, creation, and establishment of a city with corporate powers. Any area proposed for incorporation as a new city must have at least 500 registered voters residing within the affected area at the time commission proceedings are initiated.

Independent Special District: Any special district having a legislative body all of whose members are elected by registered voters or landowners within the district, or whose members are appointed to fixed terms, and excludes any special district having a legislative body consisting, in whole or in part, of ex officio members who are officers of a county or another local agency or who are appointees of those officers other than those who are appointed to fixed terms. "Independent special district" does not include any district excluded from the definition of district contained in §56036.

Infrastructure: Public services and facilities, such as pipes, canals, levees, water-supply systems, other utility, systems, and roads.

LAFCO: Local Agency Formation Commission.

Local Accountability and Governance: A style of public agency decision making, operation and management that includes an accessible staff, elected or appointed decision-making body and decision making process, advertisement of, and public participation in, elections, publicly disclosed budgets, programs, and plans, solicited public participation in the consideration of work and infrastructure plans; and regularly evaluated or measured outcomes of plans, programs or operations and disclosure of results to the public.

Local Agency: A city, county, or special district or other public entity, which provides public services.

Management Efficiency: The organized provision of the highest quality public services with the lowest necessary expenditure of public funds. An efficiently managed entity (1) promotes and demonstrates implementation of continuous improvement plans and strategies for budgeting, managing costs, training and utilizing personnel, and customer service and involvement, (2) has the ability to provide service over the short and long term, (3) has the resources (fiscal, manpower, equipment, adopted service or work plans) to provide adequate service, (4) meets or exceeds environmental and industry service standards, as feasible considering local conditions or circumstances, (5) and maintains adequate contingency reserves.

Municipal Services: The full range of services that a public agency provides, or is authorized to provide, except general county government functions such as courts, special services and tax collection. As understood under the CKH Act, this includes all services provided by Special Districts under California law.

Municipal Service Review (MSR): A study designed to determine the adequacy of governmental services being provided in the region or sub-region. Performing service reviews for each city and special district within the county may be used by LAFCO, other governmental agencies, and the public to better understand and improve service conditions.

Ordinance: A law or regulation set forth and adopted by a governmental authority.

Peak flow: Maximum measured daily flow. Commonly measured in cubic feet per second (cfs). Typically occurs during wet-weather events and can also be referred to as peak wet-weather flow.

Per Capita Water Use: The water produced by or introduced into the system of a water supplier divided by the total residential population; normally expressed in gallons per capita per day (gpcd).

pH: A measure of the relative acidity or alkalinity of water. Water with a pH of 7 is neutral; lower pH levels indicate increasing acidity, while pH levels higher than 7 indicate increasingly basic solutions.

Plan of reorganization: A plan or program for effecting reorganization and which contains a description of all changes of organization included in the reorganization and setting forth all terms, conditions, and matters necessary or incidental to the effectuation of that reorganization.

Potable Water: Water of a quality suitable for drinking.

Prior appropriation doctrine: In dealing with water rights, the *prior appropriation doctrine* states that water rights are determined by priority of beneficial use. This means that the first person to

use water or divert water for a beneficial use or purpose can acquire individual rights to the water. The rights can be lost through nonuse; they can also be sold or transferred apart from the land.

Principal act: In the case of a district, the law under which the district was formed and, in the case of a city, the general laws or a charter, as the case may be.

Principal LAFCO for municipal service review: The LAFCO with the lead responsibility for a municipal service review. Lead responsibility can be determined pursuant to the CKH Act definition of a Principal LAFCO as it applies to government organization or reorganization actions, by negotiation, or by agreement among two or more LAFCOs.

Proceeding: A course of action. Procedures.

Public agency: The state or any state agency, board, or commission, any city, county, city and county, special district, or other political subdivision, or any agency, board, or commission of the city, county, city and county, special district, or other political subdivision.

Public trust: The public's rights to many natural resources, including running water, the sea, and the shore. The Public Trust Doctrine traditionally applied to commerce and fishing in navigable waters and has been expanded to include fish, wildlife, habitat, and recreation, and the preservation of natural resources and ecosystems.

Rate restructuring: Rate restructuring does not refer to the setting or development of specific rates or rate structures. During a municipal service review, LAFCO may compile and review certain rate related data, and other information that may affect rates, as that data applies to the intent of the CKH Act (§56000, §56001, §56301), factors to be considered (§56668), SOI determinations (§56425) and all required municipal service review determinations (§56430). The objective is to identify opportunities to positively impact rates without adversely affecting service quality or other factors to be considered.

Reorganization: Two or more changes of organization initiated in a single proposal.

Reserve: (1) For governmental type funds, an account used to earmark a portion of fund balance, which is legally or contractually restricted for a specific use or not appropriable for expenditure. (2) For proprietary type/enterprise funds, the portion of retained earnings set aside for specific purposes. Unnecessary reserves are those set aside for purposes that are not well defined or adopted or retained earnings that are not reasonably proportional to annual gross revenues.

Responsible LAFCO: The LAFCO of a county other than the Principal County that may be impacted by recommendations, determinations or subsequent proposals elicited during a municipal service review being initiated or considered by the Lead LAFCO.

Retained earnings: The accumulated earnings of an enterprise or intragovernmental service fund which have been retained in the fund and are not reserved for any specific purpose (debts, planned improvements, and contingency/emergency).

Riparian water right: The legal right held by an owner of land contiguous to or bordering on a natural stream or lake, to take water from the source for use on the contiguous land. The doctrine of riparian rights is an old one, having its origins in English common law. Riparian rights cannot be sold or transferred for use on non-riparian land.

RWQCB: Regional Water Quality Control Board.

SCADA: Acronym for Supervisory Control and Data Acquisition; a software application program used for process control and to gather real time data from remote locations. The SCADA System consists of hardware and software components. The hardware collects and feeds data into a computer with SCADA software installed. The function of SCADA is recording and logging all events in a file that is stored in a hard disk or sending them to a printer. If conditions become hazardous, SCADA sounds warning alarm.

Service review: A study and evaluation of municipal service(s) by specific area, subregion or region culminating in written determinations regarding seven specific evaluation categories.

Special Reorganization: A reorganization that includes the detachment of territory from a city or city and county and the incorporation of that entire detached territory as a city.

Specific plan: A policy statement and implementation tool that is used to address a single project or planning problem. Specific plans contain concrete standards and development criteria that supplement those of the general plan.

Sphere of influence (SOI): A plan for the probable physical boundaries and service area of a local agency, as determined by the LAFCO.

Sphere of influence determinations: In establishing a sphere of influence, the Commission must consider and prepare written determinations related to present and planned land uses, need and capacity of public facilities, and existence of social and economic communities of interest.

Stream: A body of flowing water or natural watercourse containing water at least part of the year. In hydrology, it is generally applied to the water flowing in a natural channel as distinct from a canal.

Streamflow: The water discharge that occurs in a natural channel. A more general term than runoff, streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Stormwater runoff: Rainwater which does not infiltrate into the soil and runs off the land.

SWRCB: State Water Resources Control Board.

Total Dissolved Solids (TDS): A quantitative measure of the residual minerals dissolved in water that remains after evaporation of a solution. Usually expressed in milligrams per liter.

Treated water: Raw water which has been treated for human consumption through secondary or tertiary processes at a water treatment plan (WTP).

Watershed: An area of land that drains water, sediment and dissolved materials to a common receiving body or outlet. The term is not restricted to surface water runoff and includes interactions with subsurface water. Watersheds vary from the largest river basins to just acres or less in size. In urban watershed management, a watershed is seen as all the land which contributes runoff to a particular water body.

Zoning: The primary instrument for implementing the general plan. Zoning divides a community into districts or "zones" that specify the permitted/prohibited land uses.

CHAPTER 12: ACKNOWLEDGEMENTS

Several people contributed information that was utilized in this Municipal Service Review.

Butte LAFCo Staff	Stephen Lucas, Executive Officer Shannon Costa, LAFCO Analyst
Paradise Irrigation District	Tom Lando, General Manager Mickey Rich, Assistant GM

REPORT PREPARERS

A team of consultants authored this MSR and provided an independent analysis.

SWALE Inc.	Kateri Harrison, Project Manager, Author Laylonni Laster, Planning Technician & GIS
Yuba Planning Group, LLC	Jessica Hankins, Technical Writer & Editor

LAND ACKNOWLEDGMENT

The Butte County area is the ancestral lands of the Maidu tribes. The authors of this report recognize and respect Indigenous Peoples as traditional stewards of this land and the enduring relationship that exists between Indigenous Peoples and their traditional territories.

CLOSING QUOTE

“When in the course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another, and to assume among the powers of the earth, the separate and equal station to which the laws of nature and of nature's god entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation. We hold these truths to be self-evident, that all men are created equal, that they are endowed by their creator with certain unalienable rights, that among these are life, liberty and the pursuit of happiness. That to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed, --That whenever any form of government becomes destructive of these ends, it is the right of the people to alter or to abolish it, and to institute new government, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect their safety and happiness. Prudence, indeed, will dictate that governments long established should not be changed for light and transient causes….. To prove this, let Facts be submitted to a candid world.”

Signed by Francis Hopkinson of New Jersey (and many others) and ratified on July 4, 1776

APPENDICES

A. Demographic Report –Town of Paradise
B. Demographic Report –County of Butte
C. Drinking Water Regulations
D. EPA Drinking Water Standards
E. Public Water Systems in Butte County
F. Butte Creek Watershed Description
G. Recommendations from Civil Engineers
H. Hospital Article
I. SOI Options
J. Example – Fire Water Standards, SLO

Appendix A

Demographic Report –Town of Paradise

People

The total population of Paradise is 6,056. The median age is 52.96

TOWN OF PARADISE

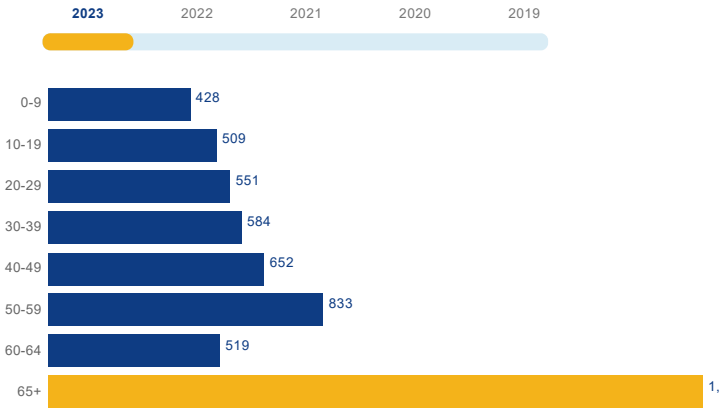
6,056

Total Population

47.66% Male

52.34% Female

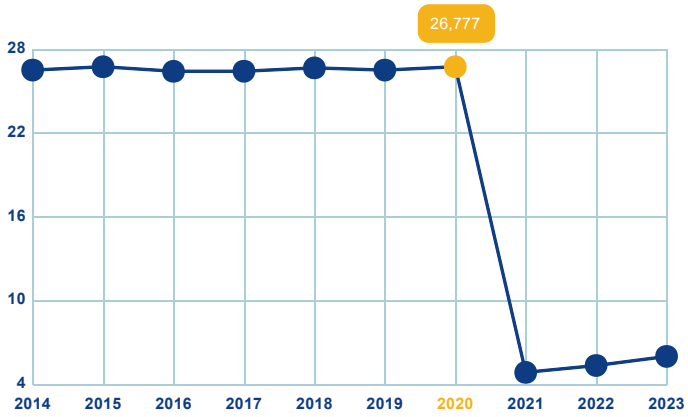
Age Distribution



Median Age

53

Population Growth (in thousands)



Educational Attainment

40.26% of the population in Paradise have an associate's degree or higher. 67.07% have completed some college or higher.

< Grade 9	Grade 9-12	High School	Some College	Assoc Degree	Bach Degree	Grad Degree
2.15%	4.84%	25.94%	26.81%	11.59%	19.62%	9.05%

0 in the community

5 within 50 miles

Colleges

offer associate's Degree or Certificate

0 in the community

5 within 50 miles

Universities

offer Bachelor's Degree or Higher

Labor Force

Paradise has a labor force of 2,117 people, with an unemployment rate of 6.3%.

2,117	6.3%	-1.5%
Labor Force	Unemployment Rate	Unemployment Rate Change (1 year)

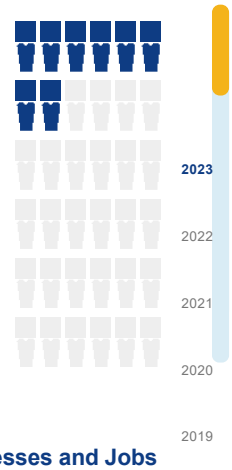
Talent

What are the largest job counts by occupation?

Office and Administrative support	Sales	Executive, Managers, and Administrators	Education, Training/Library	Health Diagnosing and Treating Practitioners
13.09%	10.74%	9.96%	8.36%	7.89%
385	316	293	246	232

Total Employees

2,941



The work distribution of total employees in Paradise is:

26%	73%
Blue Collar	White Collar

Total Establishments

419

Businesses and Jobs

Paradise has a total of 419 businesses. In 2023, the leading industries in Paradise were .

What are the top industries by jobs?

How many employees do businesses in Paradise have?

1-4 Employees	70.41%
5-9 Employees	15.51%
10-19 Employees	8.83%
20-49 Employees	2.86%
50-99 Employees	2.15%
100+ Employees	0.48%

Income and Spending

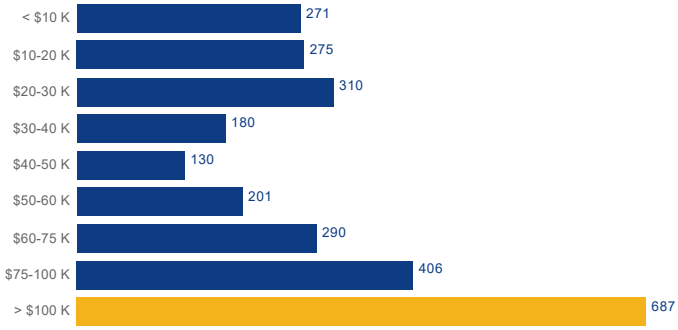
Households in Paradise earn a median yearly income of $60,388. 24.98% of the households earn more than the national average each year. Household expenditures average $81,341 per year. The majority of earnings get spent on Shelter, Transportation, Food and Beverages, Health Care, and Utilities.

$60,388

Median Household Income

10%	less than the county
37%	less than the state
20%	less than the nation

Income Distribution



How do people spend most of their money?

PER HOUSEHOLD

Shelter	Transportation	Food and Beverages	Health Care	Utilities
$17,088	$14,681	$11,932	$7,025	$6,037

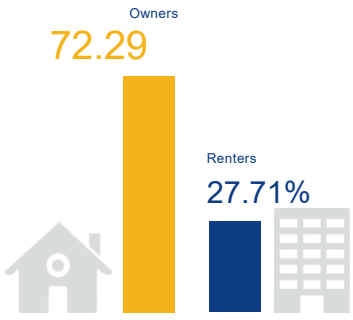
$81,341

Median Household Expenditure

Housing

There are 45% more households who own their homes than there are renters.

Owners vs. Renters



Transportation

Residents spend an average of 21 minutes commuting to work. Paradise is served by 12 airports within 50 miles. Rail can be accessed within 4 miles. Interstates can be accessed 28 miles away.

21 min

Commute Travel Time

0 + 12 (+50 miles)

Airports in Community

28 miles

Distance to Interstate

4

Distance to Freight Rail

Taxes

Top State Corporate Income Tax	Top State Corporate Capital Gains Tax	Top State Personal Income Tax
8.84%	8.84%	13.3%

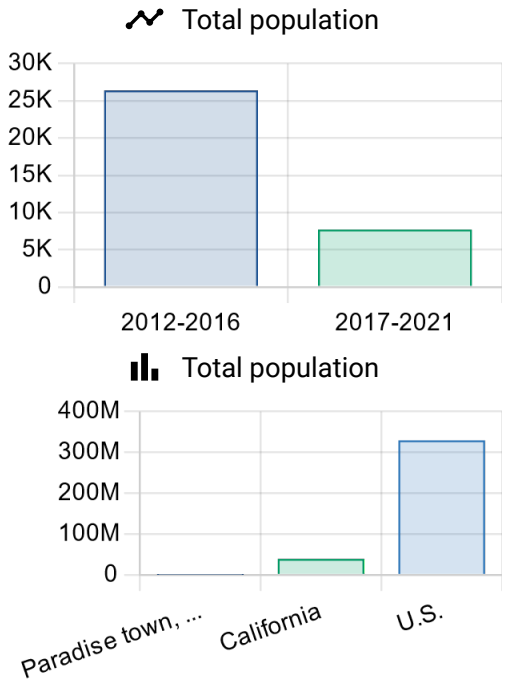
Top State Personal Capital Gains Tax	State Sales Tax
13.3%	7.25%

Data Source: California Governor's Office of Business and Economic Development. (n.d.) The Community & Place Based Data Tool is an interactive web-mapping data tool containing up-to-date demographic, industry + business, education, consumer expenditure and occupation data for the cities, counties across California. Retrieved on July 10, 2023 from: < https://business.ca.gov/apps/ >

Demographic Characteristics **Town of Paradise**

Includes information on total population and population by age, race, and ethnicity from the 2011-2015 and the 2016-2020 American Community Survey 5-Year Estimates

Variable	Estimate
Total population	7,730
Percent male	49.9%
Percent female	50.1%
Percent under 5 years	3.8%
Percent under 18 years	15.8%
Percent 18 years and over	84.2%
Percent 21 years and over	81.1%
Percent working age (25 to 64 years)	44.0%
Percent 65 years and over	34.7%
Median age	56.2
Percent White	89.03%
Percent Black or African American	0.50%
Percent American Indian and Alaska Native	0.66%
Percent Asian	1.10%
Percent Native Hawaiian and Other Pacific Islander	0.16%
Percent some other race	2.96%
Percent two or more races	5.59%
Percent Hispanic (of any race)	7.01%



These data are subject to sampling and non-sampling errors. See Methodology on the ACS Home Page for more information.

The Census Business Builder (CBB) is a suite of services that provide selected demographic and economic data from the Census Bureau.

Data Source: U.S. Census Bureau @ https://www.census.gov/data/data-tools/cbb.html.html

Socioeconomic Characteristics

Town of Paradise

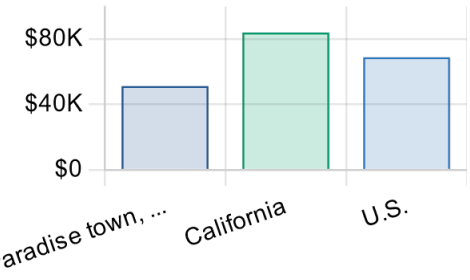
Includes information on social and economic characteristics from the 2011-2015 and the 2016-2020 American Community Survey 5-Year Estimates

Variable	Estimate
Median household income	$51,396
Average income	$68,286
Percent high school degree or higher	92.7%
Percent Bachelor's degree or higher	25.1%
Average household size	2.11
Percent in poverty	15.9%
Percent population 16 years and over in labor force	39.4%
Percent employed	36.1%
Percent disabled	20.4%
Percent with health coverage	93.9%
Percent of all workers 16 and over who commute to work	89.9%
Percent who drive alone to work	75.5%
Percent who carpool to work	7.9%
Percent who use public transportation to commute to work	3.2%
Percent who walk to work	1.5%
Percent who use other means to commute to work	1.8%
Percent who work from home	10.1%
Average travel time to work (mins)	24.7
Percent with no vehicles available	7.5%
Percent with 1 vehicle available	36.4%
Percent with 2 or more vehicles available	56.1%
Percent veterans	14.0%
Percent foreign born	4.0%
Percent speaking Spanish at home	4.5%
Percent speaking other Indo-European languages at home	0.9%
Percent speaking other Asian and Pacific Island languages at home	1.3%

Median household income

Time Series data not available

Median household income

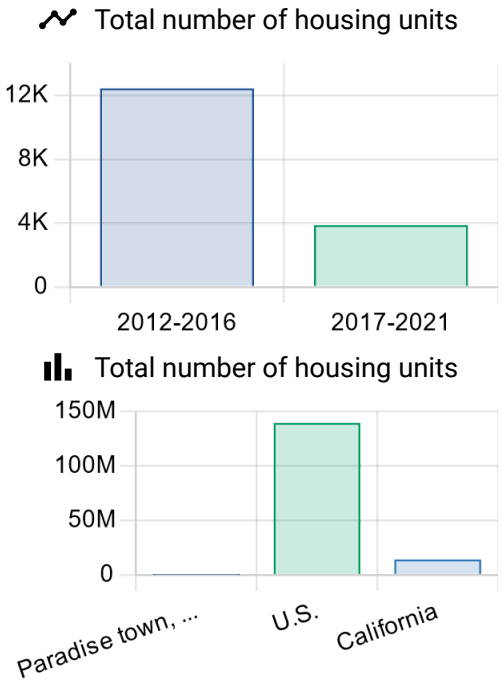


These data are subject to sampling and non-sampling errors. See Methodology on the ACS Home Page for more information.

Housing Characteristics

Includes information on housing characteristics from the 2011-2015 and the 2016-2020 American Community Survey 5-Year Estimates

Variable	Estimate
Total number of housing units	3,881
Owner-occupied housing units	2,511
Renter-occupied housing units	968
Single-family detached units	2,532
Home ownership rate	72.2%
Vacancy rate	10.4%
Percent with a broadband internet subscription	91.9%
Median owner-occupied housing unit value	$287,400
Average housing value	$321,632
Median selected monthly owner cost	$871
Average monthly owner cost (with a mortgage)	$919
Median rent (housing)	$1,071
Average rent (housing)	$1,023
Median year structure built	1975



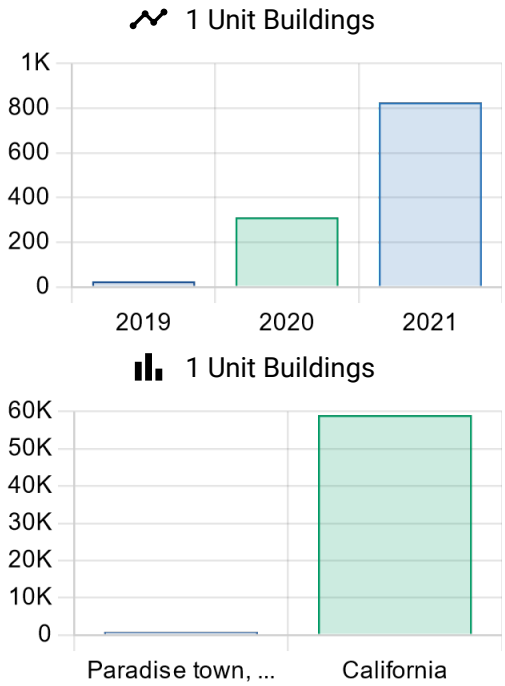
These data are subject to sampling and non-sampling errors. See Methodology on the ACS Home Page for more information.

Source: 2016-2020 American Community Survey 5-year Estimates

Building Permits

Includes information on new residential building permits issued during 2020 from the Building Permits Survey. (These variables are NOT related to the Industry selected.)

Variable	Estimate
1 Unit Buildings	826
1 Unit Building Units	826
1 Unit Building Value ($1,000)	$168,048,505
2 Unit Buildings	40
2 Unit Building Units	80
2 Unit Building Value ($1,000)	$10,394,911
3-4 Unit Buildings	23
3-4 Unit Building Units	91
3-4 Unit Building Value ($1,000)	$12,660,790
5+ Unit Buildings	6
5+ Unit Building Units	38
5+ Unit Building Value ($1,000)	$4,378,224



Source: Building Permits Survey

Businesses Totals

Includes key statistics for businesses with 1 or more paid employees (Employers) from the 2019 County Business Patterns, 2018 Nonemployer Statistics program, and the 2017 Economic Census. (These variables are related to the Industry selected.)

Industry	All Employer establishments (Total)	Total employment of employers	Total annual payroll of employers ($1,000)	Total revenue of employers ($1,000)
All Sectors	n/a	n/a	n/a	n/a
Accommodation and Food Services	n/a	n/a	n/a	n/a
Administrative and Support and Waste Management and Remediation Services	23	104	$4,348	$12,734
Agriculture, Forestry, Fishing, and Hunting	n/a	n/a	n/a	n/a
Arts, Entertainment, and Recreation	13	124	$1,837	$4,841
Construction	n/a	n/a	n/a	n/a
Educational Services	4	14	$222	$1,039
Finance & Insurance	32	139	$8,621	n/a
Health Care and Social Assistance	114	2,715	$131,475	$339,630
Information	11	49	$2,495	n/a
Management of Companies and Enterprises	n/a	n/a	n/a	n/a
Manufacturing	n/a	n/a	n/a	n/a
Mining and Oil and Gas Extraction	n/a	n/a	n/a	n/a
Other Services	46	185	$4,061	$14,748
Professional, Scientific, and Technical Services	36	158	$5,340	$18,649
Real Estate and Rental and Leasing	30	215	$6,777	$44,547
Retail Trade	67	872	$22,069	$185,996
Transportation and Warehousing	7	29	$1,049	$7,886
Utilities	n/a	n/a	n/a	n/a
Wholesale Trade	n/a	n/a	n/a	n/a

Key Ratios

Includes key statistics for businesses with 1 or more paid employees (Employers) from the 2019 County Business Patterns and the 2017 Economic Census. (These variables are related to the Industry selected.)

Industry	Average employment per employer	Average revenue per employer ($1,000)	Average payroll per employee	Population per employer
All Sectors	n/a	n/a	n/a	n/a
Accommodation and Food Services	n/a	n/a	n/a	n/a
Administrative and Support and Waste Management and Remediation Services	5	$554	$41,808	1,149
Agriculture, Forestry, Fishing, and Hunting	n/a	n/a	n/a	n/a
Arts, Entertainment, and Recreation	10	$372	$14,815	2,034
Construction	n/a	n/a	n/a	n/a
Educational Services	4	$260	$15,857	6,609
Finance & Insurance	4	n/a	$62,022	826
Health Care and Social Assistance	24	$2,979	$48,425	232
Information	4	n/a	$50,918	2,403
Management of Companies and Enterprises	n/a	n/a	n/a	n/a
Manufacturing	n/a	n/a	n/a	n/a
Mining and Oil and Gas Extraction	n/a	n/a	n/a	n/a
Other Services	4	$321	$21,951	575
Professional, Scientific, and Technical Services	4	$518	$33,797	734
Real Estate and Rental and Leasing	7	$1,485	$31,521	881
Retail Trade	13	$2,776	$25,308	395
Transportation and Warehousing	4	$1,127	$36,172	3,777
Utilities	n/a	n/a	n/a	n/a
Wholesale Trade	n/a	n/a	n/a	n/a

Appendix B

Demographic Report –County of Butte

People

COUNTY OF BUTTE

The total population of Butte County is 206,622. The median age is 35.71

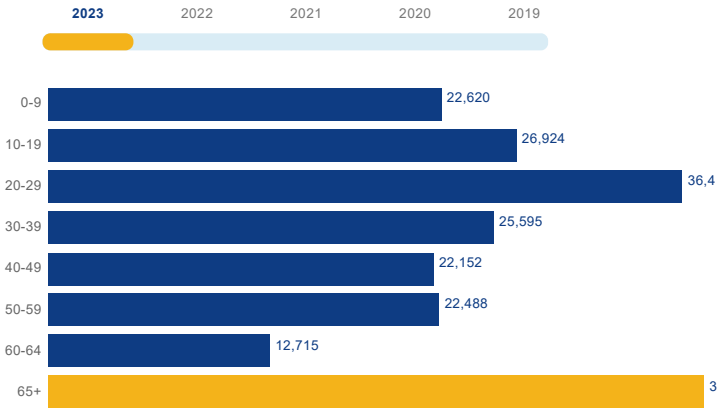
206,622

Total Population

49.73% Male

50.27% Female

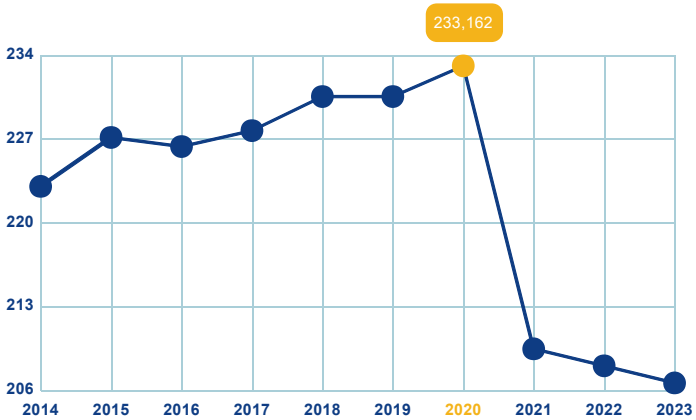
Age Distribution



Median Age

36

Population Growth (in thousands)



Educational Attainment

41.67% of the population in Butte County have an associate's degree or higher. 67.58% have completed some college or higher.

< Grade 9	Grade 9-12	High School	Some College	Assoc Degree	Bach Degree	Grad Degree
3.79%	5.99%	22.64%	25.91%	10.05%	20.73%	10.89%

1 in the community

20 within 50 miles

Colleges

offer associate's Degree or Certificate

2 in the community

22 within 50 miles

Universities

offer Bachelor's Degree or Higher

Labor Force

Butte County has a labor force of 99,150 people, with an unemployment rate of 4.1%.

99,150	4.1%	-2.7%
Labor Force	Unemployment Rate	Unemployment Rate Change (1 year)

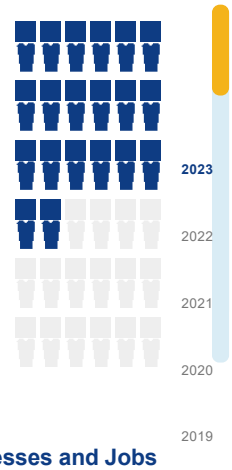
Talent

What are the largest job counts by occupation?

Office and Administrative support	Sales	Executive, Managers, and Administrators	Food Preparation, Serving	Healthcare support
12.83%	**10.77%**	**10.69%**	**6.38%**	**5.9%**
8,568	7,189	7,140	4,259	3,938

Total Employees

66,764



The work distribution of total employees in Butte County is:

31% Blue Collar

68% White Collar

Total Establishments

7,559

Businesses and Jobs

Butte County has a total of 7,559 businesses. In 2023, the leading industries in Butte County were .

What are the top industries by jobs?

How many employees do businesses in Butte County have?

1-4 Employees	66.7%
5-9 Employees	17.45%
10-19 Employees	8.74%
20-49 Employees	4.14%
50-99 Employees	1.97%
100+ Employees	0.99%

Income and Spending

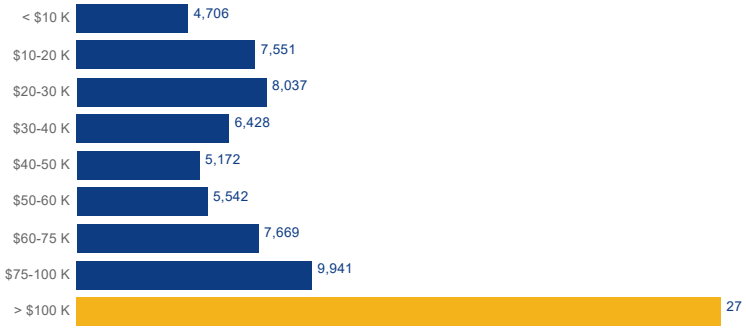
Households in Butte County earn a median yearly income of $67,234. 33.09% of the households earn more than the national average each year. Household expenditures average $74,081 per year. The majority of earnings get spent on Shelter, Transportation, Food and Beverages, Health Care, and Utilities.

$67,234

Median Household Income

0%	more than the county
30%	less than the state
11%	less than the nation

Income Distribution



How do people spend most of their money?

PER HOUSEHOLD

Shelter	Transportation	Food and Beverages	Health Care	Utilities
$15,692	$13,379	$10,841	$6,189	$5,363

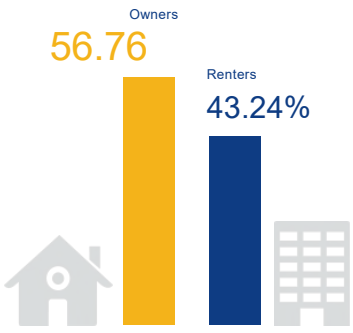
$74,081

Median Household Expenditure

Housing

There are 14% more households who own their homes than there are renters.

Owners vs. Renters



Transportation

Residents spend an average of 21 minutes commuting to work. Butte County is served by 28 airports within 50 miles. Rail can be accessed within the community. Interstates can be accessed 6 miles away.

21 min

Commute Travel Time

2 + 28 (+50 miles)

Airports in Community

6 miles

Distance to Interstate

Freight Rail

In Community

Taxes

Top State Corporate Income Tax	Top State Corporate Capital Gains Tax	Top State Personal Income Tax
8.84%	8.84%	13.3%

Top State Personal Capital Gains Tax	State Sales Tax
13.3%	7.25%

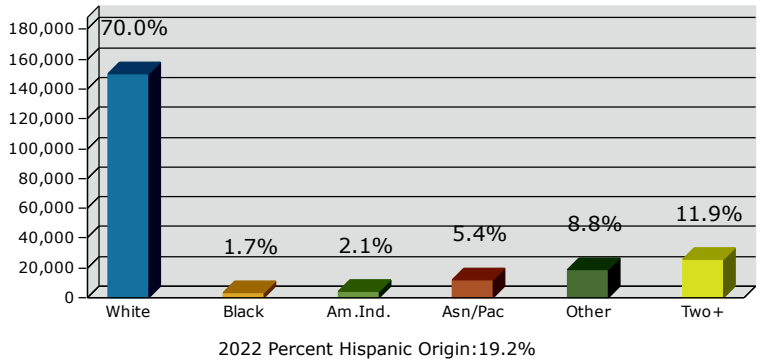
Data Source: California Governor's Office of Business and Economic Development. (n.d.) The Community & Place Based Data Tool is an interactive web-mapping data tool containing up-to-date demographic, industry + business, education, consumer expenditure and occupation data for the cities, counties across California. Retrieved on July 10, 2023 from: < https://business.ca.gov/apps/ >

Graphic Profile

Butte County, CA

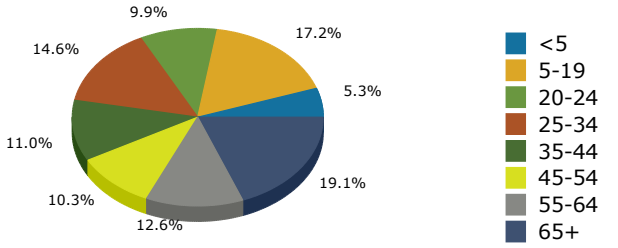
Geography: County

2022 Population by Race

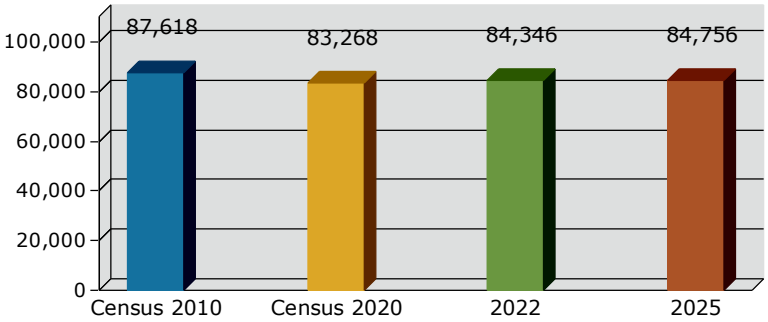


2022 Percent Hispanic Origin:19.2%

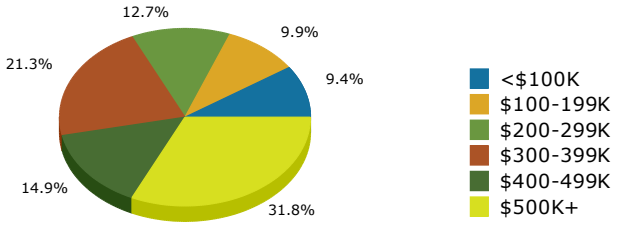
2022 Population by Age



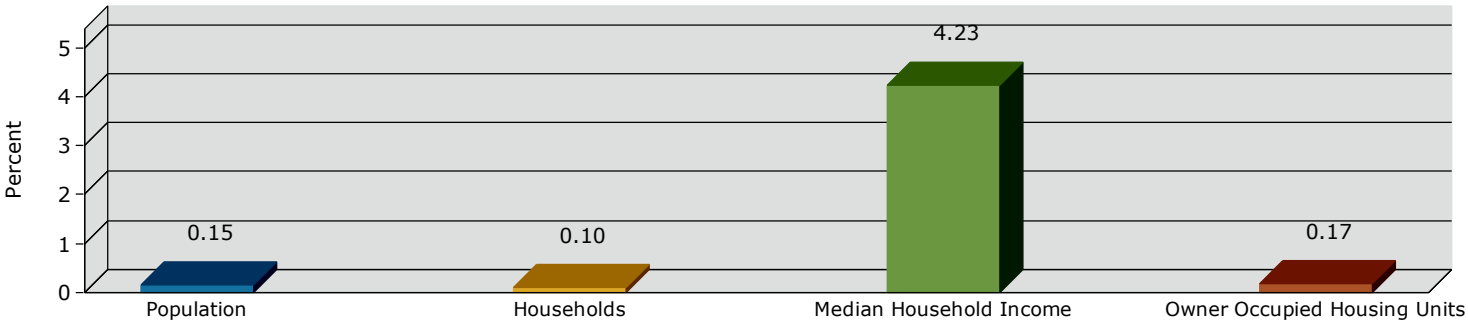
Households



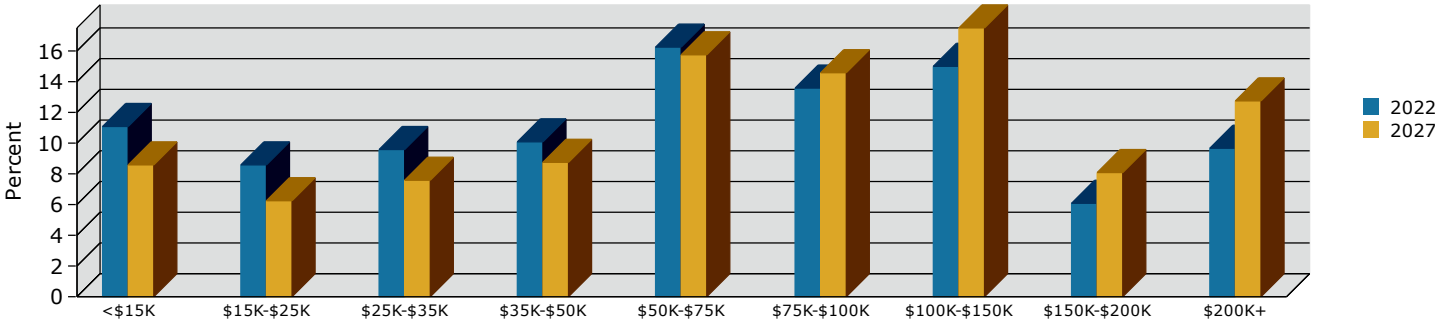
2022 Home Value



2022-2027 Annual Growth Rate



Household Income



Source: Esri forecasts for 2022 and 2027. U.S. Census Bureau 2010 decennial Census data converted by Esri into 2020 geography.

Appendix C:

Regulatory Requirements - Municipal Water

APPENDIX C: REGULATORY REQUIREMENTS MUNICIPAL WATER

Table of Contents

Surface Water Rules

Federal Regulations

U.S. Clean Water Act (1972)

The Clean Water Act (CWA) is the primary federal statute governing the protection of water quality. The EPA's implementation of this law provides a comprehensive program to protect the nation's surface waters. Under CWA Section 304, states must ensure that potable water retailed to the public meets specific standards.

Section 303(d) of the CWA requires states to identify water bodies that do not meet water quality objectives and that do not support beneficial uses. The 303(d) list includes the Feather River, Lower (Lake Oroville Dam to Confluence with Sacramento River). This section of the Feather River, Lower, identified as State Waterbody ID: CAR5192200019980817161057, is impaired for several specific uses, including cold freshwater habitat, commercial and sport fishing, municipal and domestic supply, spawning, reproduction, and/or early development, warm freshwater habitat, and wildlife habitat as shown in Table C-1, below.

Table C-1: 303(d) List Feather River, Lower	
State or Tribal Nation specific designated uses	**303(d) List Status**
Agricultural Supply	Good
Non-Contact Water Recreation	Good
Water Contact Recreation	Good

Cold Freshwater Habitat	Impaired
Commercial and Sport Fishing	Impaired
Municipal and Domestic Supply	Impaired
Spawning, Reproduction, And/or Early Development	Impaired
Warm Freshwater Habitat	Impaired
Wildlife Habitat	Impaired
Migration of Aquatic Organisms	Insufficient Information
Data Source: U.S. EPA. Waterbody Report. Downloaded August 27, 2022 from <*https://mywaterway.epa.gov/waterbody-report/CA_SWRCB/CAR5192200019980817161057/2022* >.	

U.S. Safe Drinking Water Act (1974)

Under the Safe Drinking Water Act (SDWA, 42 USC Sections 300f et seq.), the U.S. EPA regulates contaminants of concern to domestic water supply. The law requires action to protect drinking water and its sources, including lakes, reservoirs, rivers, springs, and groundwater wells. Contaminants of concern relevant to domestic water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. EPA drinking water standards are developed as a maximum contaminant level (MCL) for each chemical or microbe. The California Department of Public Health (CDPH) has been granted primary enforcement responsibility for the SDWA. Title 22 of the California Administrative Code establishes CDPH authority and stipulates drinking water quality and monitoring standards. Additionally, the California State Water Resources Control Board (State Water Board) Division of Drinking Water (DDW) is the primary agency responsible for the administration and enforcement of the SDWA requirements in California. In addition to the federal standards, California also imposes an MCL standard for the fuel additive MTBE and for a rice herbicide breakdown product used in the Sacramento Valley. Health violations occur when the contaminant amount exceeds the safety standard (MCL) or when water is not treated properly. Monitoring violations typically involve failure to report the results of required monitoring in a timely fashion.

State Regulations

California Water Code

The California Water Code outlines the general state authority and responsibilities over water in California. Most of the state regulations described below are codified into the California Water Code. The entire Water Code is available online at: <*http://leginfo.legislature.ca.gov/faces/codes.xhtml*>. Other state codes applicable to drinking water include the Corporations Code, Education Code, Food and Agricultural Code, Government Code, Health and Safety Code, and the Public Resources Code.

California Porter-Cologne Water Quality Control Act (1969)

The Porter-Cologne Act provides the statutory authority for the protection of water quality in California. Consistent with the Porter-Cologne Act, the State adopts water quality policies, plans, and objectives to protect the State's waters. The Act outlines the obligations of the SWRCB and nine RWQCBs to adopt and periodically update basin plans.

Water Quality Control Plan

The State Water Resources Control Board and nine RWQCBs are responsible for ensuring implementation and compliance with the provisions of the CWA and the Porter-Cologne Act. In the Paradise Area water service providers service area, the Central Valley Region has a Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan), which is a 461-page planning document., The Basin Plan sets forth water quality standards for the surface and ground waters. Additionally, groundwater recharge is identified as a beneficial use in the Basin Plan.

Urban Water Management Planning Act (1983)

The Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, Section 10610 et seq.) requires water suppliers to document water supplies available during normal, single dry, and multiple dry water years during a 20-year projection period and to document the existing and projected future water demand during a 20-year projection period. The Act applies to municipal water suppliers that serve more than 3,000 customers or provides more than 3,000 afy of water. All urban water suppliers should prepare urban water management plans (UWMPs) and update them every 5 years. The Act requires that UWMPs include a description of water management tools and options used by that entity to maximize resources and minimize the need to import water.

Senate Bill 610 and Senate Bill 221

SB 610 (now CEQA Guidelines Section 15155) amended the Water Code requirements within the CEQA process and broadened the types of information required in a UWMP. SB 221 applies within the Subdivision Map Act and allows jurisdictions to condition a tentative map such that documentation from a public water supplier regarding the availability of sufficient water supply is needed.

Water Management & Efficiency Legislation

California's Water Code contains two new laws which aims to make California more resilient to the impacts of future droughts. The legislation was approved as SB 606 (Hertzberg) and AB 1668 (Friedman), and it emphasizes efficiency and stretching existing water supplies in cities and farms. Efficient water use is the most cost-effective way to achieve long-term conservation goals and provide the water supply reliability needed to adapt to the longer and more intense droughts climate change is causing in California. Specifically, the laws call for the creation of new urban efficiency standards for indoor use, outdoor use, and water lost to leaks, as well as any appropriate variances for unique local conditions. The State Water Board will adopt these standards by regulation no later than June 30, 2022, after full and robust public and stakeholder processes. In addition, each urban retail water agency will annually, beginning November 2023, calculate its own objective based on the water needed in its service area for efficient indoor residential water use, outdoor residential water use, commercial, industrial, and institutional (CII) irrigation with dedicated meters, and reasonable amounts of system water loss, along with consideration of other unique local uses (i.e.,

variances) and "bonus incentive," or credit, for potable water reuse, using the standards adopted by the Board. (DWR, 2018). Specifically, SB606 is codified as Water Code Section 10632, which requires each urban water supplier to conduct an annual water supply and demand assessment and submit an annual water shortage assessment report to DWR on or before July 1 of each year. The annual report should include information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan.

California Water Conservation Act

The California Water Conservation Act (SB X7-7), enacted in November 2009, requires each urban water supplier to select one of four water conservation targets contained in California Water Code Section 10608.20 with the statewide goal of achieving a 20 percent reduction in urban per capita water use by 2020. Urban retail water suppliers are required to develop water use targets and submit a water management plan to the Department of Water Resources (DWR) by July 2011, under SBX7-7. The plan must include the baseline daily per capita water use, compliance daily per capita water use, water use target, and interim water use target.

Integrated Regional Water Management – Planning Act of 2002

Integrated regional water management (IRWM) was officially established by the State of California in 2002 through the passage of the Integrated Regional Water Management Planning Act (SB 1672). Special districts, such as water agencies, are typically separate entities with clearly defined service areas within which they have exclusive authority to provide services. However, many water agencies receive water supplies from a source that is shared with other water agencies. Projects and plans developed by one water agency may conflict with projects or plans of another agency that shares the same source of water. IRWM provides a mechanism for regional planning to reduce potential conflicts. Additionally, IRWM supports collaborative prioritization of water-related efforts in the region in a systematic way to ensure sustainable water uses, reliable water supplies, better water quality, environmental stewardship, efficient urban development, and the protection of agriculture. Various bond acts approved by California voters have provided over $1.5 billion in State funding to support and advance integrated, multi-benefit regional projects. Cities, counties, water districts, community/environmental groups, Tribes, and others across the State have worked collaboratively to organize and establish 48 regional water management groups, covering over 87 percent of the State's area and 99 percent of its population. Over the years, numerous IRWM planning grants have helped RWMGs develop, adopt and update IRWM plans to identify strategies and projects to address the unique needs and conditions of their regions. Detailed information about IRWM is available from DWR at: <*https://water.ca.gov/Programs/Integrated-Regional-Water-Management*>.

California Health and Safety Code

Water supply requirements for service connections to public water systems are established in Section 64562 of the California Health and Safety Code. Sufficient water must be available to the public water system from its water sources and distribution reservoirs to adequately, dependably, and safely meet the total requirements of all water users under maximum-demand conditions before additional service connections can be permitted.

Recycled Water Regulations

Recycled water is regulated by the U.S. Environmental Protection Agency (EPA), the State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (RWQCB), and the CA Department of Health Services (DHS). Resolution No. 77-1 from the SWRCB allows the SWRCB and RWQCB to encourage and consider funding water reclamation projects that do not impair water rights or beneficial instream uses. Recycled water is safely used to irrigate home landscapes, vegetable gardens, parks, schoolyards, golf courses, and agriculture throughout California. However, recycled water is not for human consumption. PID does not provide recycled water.

Title 22

Title 22 of California's Water Recycling Criteria was authored in 1975 as California's guidelines on the discharged and use of treated and recycled water. The standards require the California Department of Health Services to develop and enforce water and bacteriological treatment standards for water recycling and reuse. State discharge standards for reclaimed water and its reuse are regulated under the Water Recycling Criteria and the 1969 Porter-Cologne Water Quality Control Act.

California Water Code (Division 3, Dams and Reservoirs)

The State of California inspects dams to prevent failure in order to safeguard life and protect property. DWR Division of Safety of Dams implements this legislation.

Assembly Bill 1668

Assembly Bill 1668, Friedman, addressed water management planning and was passed in 2018. This new law requires agricultural water management plans to include "an annual water budget based on the quantification of all inflow and outflow components for the service area of the agricultural water supplier." DWR provides a handbook outlining the development of a water budget, and it is available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Water-Budget-Handbook.pdf?la=en&hash=30AD0DFD02468603F21C1038E6CC6BFE32381233

Drought Resilient Communities Act

The Drought Resilient Communities Act (SB 971 [Hertzberg]) was introduced in February 2020 to strengthen drought planning for small and rural communities.

SWRCB Handbook - Microplastic Testing Policy

The State Water Resources Control Board recently published the Policy Handbook establishing a Standard Method of Testing and Reporting of Microplastics in Drinking Water to reinforce the Health and Safety Code section 116376. The Health and Safety Code section 116376 was added as part of the Senate Bill No. 1422 (SB 1422), which was approved by the Governor and filed with the Secretary of State on September 28, 2018 (SWRCB, 2022). The State Water Board developed a two-phase approach to monitor the microplastic material in drinking water and develop an understanding of the risk via exposure. During Fall of 2022, the State Water Board planned to issue monitoring guidelines for Phase One of microplastic testing to selected public water systems.

Local Regulations

Butte County has several policies related to water quality, including its General Plan. The County Environmental Health Department also aims to ensure drinking water is safe. The Town of Paradise General Plan also contains several policies related to public services and health of the natural environment.

Rules Governing Groundwater

The California Water Code indicates groundwater law applies to underground water not flowing in known and definite channels. Whereas "surface waters and subterranean streams flowing through known and definite channels" (Water Code § 1200.) are legally classified as surface water. Groundwater is subject to California's constitutional requirement that all water used be put to reasonable and beneficial use. There are two types of groundwater rights in California: overlying rights and appropriative rights. Overlying rights are similar to riparian rights with surface water. Appropriative groundwater rights are similar to surface water appropriative right (Burch, 2005).

Overlying Rights for Groundwater

In California, property overlying a groundwater basin has entitlements to the percolating groundwater of the basin beneath the lands for reasonable beneficial uses on the overlying land. This entitlement is equal and correlative with respect to other property owners within the same groundwater basin exercising their respective rights; that is, each property owner is entitled to a reasonable share of the available groundwater. (Katz v. Walkinshaw (1903) 141 Cal. 116.) As a result, one property owners' rights do not have priority over any other property owner, regardless of when the rights are exercised. The quantity attributed to the water entitlement is a function of the number of parties rightfully producing the available water (Burch, 2005).

Although overlying property owners can extract as much groundwater as is reasonably needed for use on overlying land; during times of reduced groundwater supply, each overlying property owner must reduce extractions proportionately (Wright v. Goleta Water District (1985) 174 Cal. App.3d 74,84.). Overlying groundwater rights are generally superior to appropriative rights. (City of Pasadena v. City of Alhambra (1949) 33 Cal.2d 908, 926. See Hutchins, The California Law of Water Rights (1956) p. 441 et seq.)

Appropriative Right to Groundwater

If there is surplus groundwater, it may be appropriated for use on non-overlying land. An appropriative right to groundwater is a right to use groundwater outside of the groundwater basin or for public service in communities overlying the basin, as long as enough water is left to meet

all overlying landowner needs. *(Tehachapi-Cummings County Water Dist.* v. *Armstrong* (1975) 49 Cal.App.3d 992, 1000 n.6, 1001.) There are three basic types of groundwater appropriators:

1. strangers to the groundwater basin (who do not own or use groundwater on overlying lands) who act to appropriate available groundwater;
2. overlyers who use all or a portion of their groundwater on lands that do not overlie the groundwater basin; or
3. an overlying municipality that extracts available groundwater for municipal purposes (Burch, 2005).

The South Feather Water and Power Agency studied within this MSR is an overlying municipal service provider that does not extract available groundwater for municipal purposes. However, the Thermalito Water and Sewer District does rely on groundwater.

Overlyers have priority above appropriators, and priority follows the rule of "first in time, first in right." *(City of Pasadena* v. *City of Alhambra, supra,* 33 Cal.2d at p. 926.) Earlier appropriative users have priority over later appropriative users. If a groundwater basin is overdraft, such that **groundwater** use exceeds the amount of recharge into an aquifer, no appropriative rights can be acquired except by prescription. (*City of Pasadena* v. *City of Alhambra, supra*, 33 Cal.2d at pp. 926-27; *City of Los Angeles* v. *City of San Fernando, supra*, 14 Cal.3d at p. 278.)

Sustainable Groundwater Management Act (SGMA)

Effective in 2015, the Sustainable Groundwater Management Act (SGMA) codified Assembly Bill No. 1739 and Senate Bill Nos. 1168 and 1319, which require local regions to create a groundwater sustainability agency (GSA) and adopt groundwater management plans. Under the SGMA, DWR designated groundwater basins in the State as high, medium, low, or very low priority for purposes of groundwater management. This Act requires local regions to create a GSA and to adopt groundwater management plans for groundwater basins or subbasins that are designated as medium or high priority.

There is a GSA within or near Paradise area called the Vina Subbasin. Additional information is available at the County's website at: <*https://www.buttecounty.net/waterresourceconservation/Sustainable-Groundwater-Management-Act* >.

Local Groundwater Rules

Permits for Wells: The Butte County Environmental Health Department requires a permit prior to the installation of a well. This permit process is intended to ensure the protection of natural resources from a health and safety perspective.

Other Groundwater Rules

Adjudicated Basins: In some areas of California, groundwater basins are managed pursuant to rules established in an adjudication of groundwater rights. An adjudication is a court proceeding that establishes the relative rights of all parties claiming an interest in the water source. In these equitable proceedings, the court usually maintains continuing jurisdiction, supervising, through a special master or watermaster, the use of water from the adjudication basins (Burch, 2005). CA DWR keeps track of adjudicated basins in California as described on their website at: <https://water.ca.gov/Programs/Groundwater-Management/SGMA-

Groundwater-Management/Adjudicated-Areas >. The groundwater basin areas within or near Butte County are not currently adjudicated.

Water Quality Regulation: As is the case with surface water, various federal statutes control the use of water from groundwater basins. These statutes deal primarily with the discharge of pollutants but may also regulate the pumping of groundwater (Burch, 2005).

Springs: When the flow of a spring naturally becomes part of the flow of a stream system which extends beyond the property on which the spring arises, rights to use are obtained as either riparian or appropriative surface water rights. When the flow does not naturally leave the land upon which it arises, the flow is exclusively owned by the owner of the land and can be used on that land for reasonable, beneficial purposes (Burch, 2005).

Butte County Regulations Regarding Groundwater

In 1996 the voters of Butte County passed measure G, "An ordinance to protect the groundwater resources in Butte County." The measure was codified in Chapter 33 of the Butte County Code. In 1997, upon the recommendation of the Butte County Water Commission, the Board of Supervisors (Board) established the Water Division of the Department of Agriculture. In 1999 the Water and Resource Conservation Department (DWRC) was formed and moved, along with staff, out of the Agriculture Department. The DWRC's mission is "To manage and conserve water and other resources for the citizens of Butte County." A primary function of this Department is Groundwater Elevation Monitoring (Butte Superior Court, 2015).

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Appendix D

U.S. EPA Drinking Water Regulations

National Primary Drinking Water Regulations

Contaminant	MCL or TT[1] (mg/L)[2]	Potential health effects from long-term[3] exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L)[2]
Acrylamide	TT[4]	Nervous system or blood problems; increased risk of cancer	Added to water during sewage/ wastewater treatment	zero
Alachlor	0.002	Eye, liver, kidney, or spleen problems; anemia; increased risk of cancer	Runoff from herbicide used on row crops	zero
Alpha/photon emitters	15 picocuries per Liter (pCi/L)	Increased risk of cancer	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation	zero
Antimony	0.006	Increase in blood cholesterol; decrease in blood sugar	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder	0.006
Arsenic	0.010	Skin damage or problems with circulatory systems, and may have increased risk of getting cancer	Erosion of natural deposits; runoff from orchards; runoff from glass & electronics production wastes	0
Asbestos (fibers >10 micrometers)	7 million fibers per Liter (MFL)	Increased risk of developing benign intestinal polyps	Decay of asbestos cement in water mains; erosion of natural deposits	7 MFL
Atrazine	0.003	Cardiovascular system or reproductive problems	Runoff from herbicide used on row crops	0.003
Barium	2	Increase in blood pressure	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	2
Benzene	0.005	Anemia; decrease in blood platelets; increased risk of cancer	Discharge from factories; leaching from gas storage tanks and landfills	zero
Benzo(a)pyrene (PAHs)	0.0002	Reproductive difficulties; increased risk of cancer	Leaching from linings of water storage tanks and distribution lines	zero
Beryllium	0.004	Intestinal lesions	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries	0.004
Beta photon emitters	4 millirems per year	Increased risk of cancer	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation	zero
Bromate	0.010	Increased risk of cancer	Byproduct of drinking water disinfection	zero
Cadmium	0.005	Kidney damage	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints	0.005
Carbofuran	0.04	Problems with blood, nervous system, or reproductive system	Leaching of soil fumigant used on rice and alfalfa	0.04

LEGEND

DISINFECTANT

DISINFECTION BYPRODUCT

INORGANIC CHEMICAL

MICROORGANISM

ORGANIC CHEMICAL

RADIONUCLIDES

Contaminant	MCL or TT[1] (mg/L)[2]	Potential health effects from long-term[3] exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L)[2]
Carbon tetrachloride	0.005	Liver problems; increased risk of cancer	Discharge from chemical plants and other industrial activities	**zero**
Chloramines (as Cl_2)	MRDL=4.0[1]	Eye/nose irritation; stomach discomfort; anemia	Water additive used to control microbes	**MRDLG=4[1]**
Chlordane	0.002	Liver or nervous system problems; increased risk of cancer	Residue of banned termiticide	**zero**
Chlorine (as Cl_2)	MRDL=4.0[1]	Eye/nose irritation; stomach discomfort	Water additive used to control microbes	**MRDLG=4[1]**
Chlorine dioxide (as ClO_2)	MRDL=0.8[1]	Anemia; infants, young children, and fetuses of pregnant women: nervous system effects	Water additive used to control microbes	**MRDLG=0.8[1]**
Chlorite	1.0	Anemia; infants, young children, and fetuses of pregnant women: nervous system effects	Byproduct of drinking water disinfection	**0.8**
Chlorobenzene	0.1	Liver or kidney problems	Discharge from chemical and agricultural chemical factories	**0.1**
Chromium (total)	0.1	Allergic dermatitis	Discharge from steel and pulp mills; erosion of natural deposits	**0.1**
Copper	TT[5]; Action Level=1.3	Short-term exposure: Gastrointestinal distress. Long-term exposure: Liver or kidney damage. People with Wilson's Disease should consult their personal doctor if the amount of copper in their water exceeds the action level	Corrosion of household plumbing systems; erosion of natural deposits	**1.3**
Cryptosporidium	TT[7]	Short-term exposure: Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	**zero**
Cyanide (as free cyanide)	0.2	Nerve damage or thyroid problems	Discharge from steel/metal factories; discharge from plastic and fertilizer factories	**0.2**
2,4-D	0.07	Kidney, liver, or adrenal gland problems	Runoff from herbicide used on row crops	**0.07**
Dalapon	0.2	Minor kidney changes	Runoff from herbicide used on rights of way	**0.2**
1,2-Dibromo-3-chloropropane (DBCP)	0.0002	Reproductive difficulties; increased risk of cancer	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards	**zero**
o-Dichlorobenzene	0.6	Liver, kidney, or circulatory system problems	Discharge from industrial chemical factories	**0.6**
p-Dichlorobenzene	0.075	Anemia; liver, kidney, or spleen damage; changes in blood	Discharge from industrial chemical factories	**0.075**
1,2-Dichloroethane	0.005	Increased risk of cancer	Discharge from industrial chemical factories	**zero**

LEGEND DISINFECTANT | DISINFECTION BYPRODUCTS | INORGANIC CHEMICAL | MICROORGANISM | ORGANIC CHEMICAL | RADIONUCLIDES

Contaminant	MCL or TT[1] (mg/L)[2]	Potential health effects from long-term[3] exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L)[2]
1,1-Dichloroethylene	0.007	Liver problems	Discharge from industrial chemical factories	**0.007**
cis-1,2-Dichloroethylene	0.07	Liver problems	Discharge from industrial chemical factories	**0.07**
trans-1,2, Dichloroethylene	0.1	Liver problems	Discharge from industrial chemical factories	**0.1**
Dichloromethane	0.005	Liver problems; increased risk of cancer	Discharge from industrial chemical factories	**zero**
1,2-Dichloropropane	0.005	Increased risk of cancer	Discharge from industrial chemical factories	**zero**
Di(2-ethylhexyl) adipate	0.4	Weight loss, liver problems, or possible reproductive difficulties	Discharge from chemical factories	**0.4**
Di(2-ethylhexyl) phthalate	0.006	Reproductive difficulties; liver problems; increased risk of cancer	Discharge from rubber and chemical factories	**zero**
Dinoseb	0.007	Reproductive difficulties	Runoff from herbicide used on soybeans and vegetables	**0.007**
Dioxin (2,3,7,8-TCDD)	0.00000003	Reproductive difficulties; increased risk of cancer	Emissions from waste incineration and other combustion; discharge from chemical factories	**zero**
Diquat	0.02	Cataracts	Runoff from herbicide use	**0.02**
Endothall	0.1	Stomach and intestinal problems	Runoff from herbicide use	**0.1**
Endrin	0.002	Liver problems	Residue of banned insecticide	**0.002**
Epichlorohydrin	TT[4]	Increased cancer risk; stomach problems	Discharge from industrial chemical factories; an impurity of some water treatment chemicals	**zero**
Ethylbenzene	0.7	Liver or kidney problems	Discharge from petroleum refineries	**0.7**
Ethylene dibromide	0.00005	Problems with liver, stomach, reproductive system, or kidneys; increased risk of cancer	Discharge from petroleum refineries	**zero**
Fecal coliform and *E. coli*	MCL[6]	Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes may cause short term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.	Human and animal fecal waste	**zero[6]**

LEGEND DISINFECTANT | DISINFECTION BYPRODUCTS | INORGANIC CHEMICAL | MICROORGANISM | ORGANIC CHEMICAL | RADIONUCLIDES

Contaminant	MCL or TT[1] (mg/L)[2]	Potential health effects from long-term[3] exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L)[2]
Fluoride	4.0	Bone disease (pain and tenderness of the bones); children may get mottled teeth	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories	**4.0**
Giardia lamblia	TT[7]	Short-term exposure: Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	**zero**
Glyphosate	0.7	Kidney problems; reproductive difficulties	Runoff from herbicide use	**0.7**
Haloacetic acids (HAA5)	0.060	Increased risk of cancer	Byproduct of drinking water disinfection	**n/a[9]**
Heptachlor	0.0004	Liver damage; increased risk of cancer	Residue of banned termiticide	**zero**
Heptachlor epoxide	0.0002	Liver damage; increased risk of cancer	Breakdown of heptachlor	**zero**
Heterotrophic plate count (HPC)	TT[7]	HPC has no health effects; it is an analytic method used to measure the variety of bacteria that are common in water. The lower the concentration of bacteria in drinking water, the better maintained the water system is.	HPC measures a range of bacteria that are naturally present in the environment	**n/a**
Hexachlorobenzene	0.001	Liver or kidney problems; reproductive difficulties; increased risk of cancer	Discharge from metal refineries and agricultural chemical factories	**zero**
Hexachloro-cyclopentadiene	0.05	Kidney or stomach problems	Discharge from chemical factories	**0.05**
Lead	TT[5]; Action Level=0.015	Infants and children: Delays in physical or mental development; children could show slight deficits in attention span and learning abilities; Adults: Kidney problems; high blood pressure	Corrosion of household plumbing systems; erosion of natural deposits	**zero**
Legionella	TT[7]	Legionnaire's Disease, a type of pneumonia	Found naturally in water; multiplies in heating systems	**zero**
Lindane	0.0002	Liver or kidney problems	Runoff/leaching from insecticide used on cattle, lumber, and gardens	**0.0002**
Mercury (inorganic)	0.002	Kidney damage	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and croplands	**0.002**
Methoxychlor	0.04	Reproductive difficulties	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, and livestock	**0.04**
Nitrate (measured as Nitrogen)	10	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	**10**

LEGEND DISINFECTANT | DISINFECTION BYPRODUCTS | INORGANIC CHEMICAL | MICROORGANISM | ORGANIC CHEMICAL | RADIONUCLIDES

Contaminant	MCL or TT[1] (mg/L)[2]	Potential health effects from long-term[3] exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L)[2]
Nitrite (measured as Nitrogen)	1	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	1
Oxamyl (Vydate)	0.2	Slight nervous system effects	Runoff/leaching from insecticide used on apples, potatoes, and tomatoes	0.2
Pentachlorophenol	0.001	Liver or kidney problems; increased cancer risk	Discharge from wood-preserving factories	zero
Picloram	0.5	Liver problems	Herbicide runoff	0.5
Polychlorinated biphenyls (PCBs)	0.0005	Skin changes; thymus gland problems; immune deficiencies; reproductive or nervous system difficulties; increased risk of cancer	Runoff from landfills; discharge of waste chemicals	zero
Radium 226 and Radium 228 (combined)	5 pCi/L	Increased risk of cancer	Erosion of natural deposits	zero
Selenium	0.05	Hair or fingernail loss; numbness in fingers or toes; circulatory problems	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines	0.05
Simazine	0.004	Problems with blood	Herbicide runoff	0.004
Styrene	0.1	Liver, kidney, or circulatory system problems	Discharge from rubber and plastic factories; leaching from landfills	0.1
Tetrachloroethylene	0.005	Liver problems; increased risk of cancer	Discharge from factories and dry cleaners	zero
Thallium	0.002	Hair loss; changes in blood; kidney, intestine, or liver problems	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories	0.0005
Toluene	1	Nervous system, kidney, or liver problems	Discharge from petroleum factories	1
Total Coliforms	5.0 percent[8]	Coliforms are bacteria that indicate that other, potentially harmful bacteria may be present. See fecal coliforms and *E. coli*	Naturally present in the environment	zero
Total Trihalomethanes (TTHMs)	0.080	Liver, kidney, or central nervous system problems; increased risk of cancer	Byproduct of drinking water disinfection	n/a[9]
Toxaphene	0.003	Kidney, liver, or thyroid problems; increased risk of cancer	Runoff/leaching from insecticide used on cotton and cattle	zero
2,4,5-TP (Silvex)	0.05	Liver problems	Residue of banned herbicide	0.05
1,2,4-Trichlorobenzene	0.07	Changes in adrenal glands	Discharge from textile finishing factories	0.07

LEGEND DISINFECTANT | DISINFECTION BYPRODUCTS | INORGANIC CHEMICAL | MICROORGANISM | ORGANIC CHEMICAL | RADIONUCLIDES

Contaminant	MCL or TT[1] (mg/L)[2]	Potential health effects from long-term[3] exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L)[2]
1,1,1-Trichloroethane	0.2	Liver, nervous system, or circulatory problems	Discharge from metal degreasing sites and other factories	**0.2**
1,1,2-Trichloroethane	0.005	Liver, kidney, or immune system problems	Discharge from industrial chemical factories	**0.003**
Trichloroethylene	0.005	Liver problems; increased risk of cancer	Discharge from metal degreasing sites and other factories	**zero**
Turbidity	TT[7]	Turbidity is a measure of the cloudiness of water. It is used to indicate water quality and filtration effectiveness (e.g., whether disease-causing organisms are present). Higher turbidity levels are often associated with higher levels of disease-causing microorganisms such as viruses, parasites, and some bacteria. These organisms can cause short term symptoms such as nausea, cramps, diarrhea, and associated headaches.	Soil runoff	**n/a**
Uranium	30µg/L	Increased risk of cancer, kidney toxicity	Erosion of natural deposits	**zero**
Vinyl chloride	0.002	Increased risk of cancer	Leaching from PVC pipes; discharge from plastic factories	**zero**
Viruses (enteric)	TT[7]	Short-term exposure: Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	**zero**
Xylenes (total)	10	Nervous system damage	Discharge from petroleum factories; discharge from chemical factories	**10**

LEGEND DISINFECTANT | DISINFECTION BYPRODUCT | INORGANIC CHEMICAL | MICROORGANISM | ORGANIC CHEMICAL | RADIONUCLIDES

NOTES

1 Definitions

- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals.
- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology and taking cost into consideration. MCLs are enforceable standards.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

2 Units are in milligrams per liter (mg/L) unless otherwise noted. Milligrams per liter are equivalent to parts per million (ppm).

3 Health effects are from long-term exposure unless specified as short-term exposure.

4 Each water system must certify annually, in writing, to the state (using third-party or manufacturers certification) that when it uses acrylamide and/or epichlorohydrin to treat water, the combination (or product) of dose and monomer level does not exceed the levels specified, as follows: Acrylamide = 0.05 percent dosed at 1 mg/L (or equivalent); Epichlorohydrin = 0.01 percent dosed at 20 mg/L (or equivalent).

5 Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of their water. If more than 10 percent of tap water samples exceed the action level, water systems must take additional steps. For copper, the action level is 1.3 mg/L, and for lead is 0.015 mg/L.

6 A routine sample that is fecal coliform-positive or E. coli-positive triggers repeat samples--if any repeat sample is total coliform-positive, the system has an acute MCL violation. A routine sample that is total coliform-positive and fecal coliform-negative or E. coli-negative triggers repeat samples--if any repeat sample is fecal coliform-positive or E. coli-positive, the system has an acute MCL violation. See also Total Coliforms.

7 EPA's surface water treatment rules require systems using surface water or ground water under the direct influence of surface water to (1) disinfect their water, and (2) filter their water or meet criteria for avoiding filtration so that the following contaminants are controlled at the following levels:

- ***Cryptosporidium*:** 99 percent removal for systems that filter. Unfiltered systems are required to include Cryptosporidium in their existing watershed control provisions.
- **Giardia lamblia:** 99.9 percent removal/inactivation
- **Viruses:** 99.9 percent removal/inactivation
- ***Legionella*:** No limit, but EPA believes that if *Giardia* and viruses are removed/inactivated, according to the treatment techniques in the surface water treatment rule, *Legionella* will also be controlled.
- **Turbidity:** For systems that use conventional or direct filtration, at no time can turbidity (cloudiness of water) go higher than 1 nephelometric turbidity unit (NTU), and samples for turbidity must be less than or equal to 0.3 NTU in at least 95 percent of the samples in any month. Systems that use filtration other than the conventional or direct filtration must follow state limits, which must include turbidity at no time exceeding 5 NTU.
- **HPC:** No more than 500 bacterial colonies per milliliter
- **Long Term 1 Enhanced Surface Water Treatment:** Surface water systems or ground water systems under the direct influence of surface water serving fewer than 10,000 people must comply with the applicable Long Term 1 Enhanced Surface Water Treatment Rule provisions (e.g. turbidity standards, individual filter monitoring, *Cryptosporidium* removal requirements, updated watershed control requirements for unfiltered systems).
- **Long Term 2 Enhanced Surface Water Treatment:** This rule applies to all surface water systems or ground water systems under the direct influence of surface water. The rule targets additional *Cryptosporidium* treatment requirements for higher risk systems and includes provisions to reduce risks from uncovered finished water storages facilities and to ensure that the systems maintain microbial protection as they take steps to reduce the formation of disinfection byproducts. (Monitoring start dates are staggered by system size. The largest systems (serving at least 100,000 people) will begin monitoring in October 2006 and the smallest systems (serving fewer than 10,000 people) will not begin monitoring until October 2008. After completing monitoring and determining their treatment bin, systems generally have three years to comply with any additional treatment requirements.)
- **Filter Backwash Recycling:** The Filter Backwash Recycling Rule requires systems that recycle to return specific recycle flows through all processes of the system's existing conventional or direct filtration system or at an alternate location approved by the state.

8 No more than 5.0 percent samples total coliform-positive in a month. (For water systems that collect fewer than 40 routine samples per month, no more than one sample can be total coliform-positive per month.) Every sample that has total coliform must be analyzed for either fecal coliforms or E. coli. If two consecutive TC-positive samples, and one is also positive for E. coli or fecal coliforms, system has an acute MCL violation.

9 Although there is no collective MCLG for this contaminant group, there are individual MCLGs for some of the individual contaminants:

- **Haloacetic acids:** dichloroacetic acid (zero); trichloroacetic acid (0.3 mg/L)
- **Trihalomethanes:** bromodichloromethane (zero); bromoform (zero); dibromochloromethane (0.06 mg/L)

NATIONAL SECONDARY DRINKING WATER REGULATION

National Secondary Drinking Water Regulations are non-enforceable guidelines regarding contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, some states may choose to adopt them as enforceable standards.

Contaminant	Secondary Maximum Contaminant Level
Aluminum	0.05 to 0.2 mg/L
Chloride	250 mg/L
Color	15 (color units)
Copper	1.0 mg/L
Corrosivity	Noncorrosive
Fluoride	2.0 mg/L
Foaming Agents	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Odor	3 threshold odor number
pH	6.5-8.5
Silver	0.10 mg/L
Sulfate	250 mg/L
Total Dissolved Solids	500 mg/L
Zinc	5 mg/L

FOR MORE INFORMATION ON EPA'S SAFE DRINKING WATER:

visit: **epa.gov/safewater**

call: **(800) 426-4791**

ADDITIONAL INFORMATION:

To order additional posters or other ground water and drinking water publications, please contact the National Service Center for Environmental Publications at: **(800) 490-9198**, or email: **nscep@bps-lmit.com**.

Appendix E:

Public Water Systems in Butte County

Appendix E: Public Water Systems in Butte County

There are **95** public water systems providing drinking water and/or irrigation water in *Butte County*. Drinking water comes from aquifers, streams, rivers, and lakes. Under the federal Safe Drinking Water Act, EPA sets standards for drinking water quality and with its partners implements various technical and financial programs to ensure drinking water safety. Details about public water systems in Butte County can be found on the U.S. Environmental Protection Agency website at: https://mywaterway.epa.gov/community/Thermalito,%20CA,%20USA/drinking-water. Below is a list of the **95** public water systems serving *Butte County*.

CAL-WATER SERVICE CO.-CHICO
Public Water System Population Served: 104,908
Drinking Water System Source: Ground Water

SFWP-MINERS RANCH
Public Water System Population Served: 22,780
Drinking Water System Source: Surface Water

BUTTE-GLENN COMMUNITY COLLEGE DIST
Public Water System Population Served: 18,000
Drinking Water System Source: Ground Water

CAL-WATER SERVICE CO.-OROVILLE
Public Water System Population Served: 10,698
Drinking Water System Source: Surface Water

DEL ORO WATER CO.-PARADISE PINES
Public Water System Population Served: 10,513
Drinking Water System Source: Ground Water

THERMALITO WATER & SEWER DIST
Public Water System Population Served: 10,154
Drinking Water System Source: Surface Water

GRAY LODGE CHECK STATION
Public Water System Population Served: 8,000
Drinking Water System Source: Ground Water

CITY OF GRIDLEY
Public Water System Population Served: 7,246
Drinking Water System Source: Ground Water

PARADISE IRRIGATION DISTRICT
Public Water System Population Served: 4,600
Drinking Water System Source: Surface Water

CITY OF BIGGS
Public Water System Population Served: 1,805
Drinking Water System Source: Ground Water

DURHAM IRRIGATION DISTRICT
Public Water System Population Served: 1,561
Drinking Water System Source: Ground Water

PALERMO BIBLE FAMILY CHURCH
Public Water System Population Served: 1,000
Drinking Water System Source: Ground Water

CHICO COMMUNITY GUILD
Public Water System Population Served: 800
Drinking Water System Source: Ground Water

DEL ORO WATER CO.-LIME SADDLE MARINA
Public Water System Population Served: 792
Drinking Water System Source: Surface Water

GRIDLEY GRILL & CRAB SHACK
Public Water System Population Served: 750
Drinking Water System Source: Ground Water

PLEASANT VALLEY BAPTIST CHURCH
Public Water System Population Served: 600
Drinking Water System Source: Ground Water

DWR-MONUMENT HILL RESTROOMS
Public Water System Population Served: 593
Drinking Water System Source: Ground Water

DEL ORO WATER CO.-STIRLING BLUFFS
Public Water System Population Served: 514
Drinking Water System Source: Surface Water

CHICO EASTSIDE LITTLE LEAGUE
Public Water System Population Served: 500
Drinking Water System Source: Ground Water

FARM LABOR HOUSING
Public Water System Population Served: 460
Drinking Water System Source: Ground Water

DINGERVILLE USA PARK
Public Water System Population Served: 447
Drinking Water System Source: Ground Water

BUTTE CREEK ESTATES MUTUAL WATER CO
Public Water System Population Served: 399
Drinking Water System Source: Ground Water

PLEASANT GROVE MHP
Public Water System Population Served: 327
Drinking Water System Source: Ground Water

BIDWELL PARK GOLF COURSE
Public Water System Population Served: 325
Drinking Water System Source: Ground Water

DEL ORO WATER CO.-MAGALIA
Public Water System Population Served: 297
Drinking Water System Source: Ground Water

LAKE MADRONE WATER DISTRICT
Public Water System Population Served: 297
Drinking Water System Source: Ground Water

MANZANITA ELEMENTARY SCHOOL
Public Water System Population Served: 295
Drinking Water System Source: Ground Water

GOLDEN FEATHER MHP
Public Water System Population Served: 275
Drinking Water System Source: Ground Water

ALMOND GROVE MOBILE PARK
Public Water System Population Served: 250
Drinking Water System Source: Ground Water

LUNDBERG RICE PRODUCTS
Public Water System Population Served: 240
Drinking Water System Source: Ground Water

MOUNTAIN VIEW MHC LLC
Public Water System Population Served: 230
Drinking Water System Source: Ground Water

GRAN MUTUAL WATER CO
Public Water System Population Served: 200
Drinking Water System Source: Ground Water

SILVER DOLLAR FAIRGROUNDS
Public Water System Population Served: 195
Drinking Water System Source: Ground Water

FOOTHILL SOLAR COMPANY
Public Water System Population Served: 180
Drinking Water System Source: Ground Water

KEEFER CREEK ESTATES
Public Water System Population Served: 160
Drinking Water System Source: Ground Water

LIBERTY 1ST WARD MEETING HOUSE
Public Water System Population Served: 151
Drinking Water System Source: Ground Water

YOUTH WITH A MISSION-SPRINGS OF LIVING W
Public Water System Population Served: 150
Drinking Water System Source: Ground Water

BOY SCOUTS OF AMERICA-CAMP LASSEN
Public Water System Population Served: 150
Drinking Water System Source: Ground Water

PARADISE ADVENTIST CHURCH
Public Water System Population Served: 150
Drinking Water System Source: Ground Water

FOREST RANCH CHARTER SCHOOL
Public Water System Population Served: 146
Drinking Water System Source: Ground Water

RIVER REFLECTIONS RV & CAMPGROUND
Public Water System Population Served: 125
Drinking Water System Source: Ground Water

SIERRA MOON WATER COMPANY
Public Water System Population Served: 120
Drinking Water System Source: Ground Water

FEDEX GROUND
Public Water System Population Served: 120
Drinking Water System Source: Ground Water

CONCOW ELEMENTARY SCHOOL
Public Water System Population Served: 115
Drinking Water System Source: Ground Water

PSEA CAMP - DESABLA
Public Water System Population Served: 108
Drinking Water System Source: Ground Water

DURHAM DAYTON INDUSTRIAL PARTNERS-PRO PA
Public Water System Population Served: 102
Drinking Water System Source: Ground Water

MERRY MOUNTAIN MUTUAL
Public Water System Population Served: 100
Drinking Water System Source: Ground Water

DOWN RANGE INDOOR TRAINING CENTER
Public Water System Population Served: 100
Drinking Water System Source: Ground Water

DAUTERMAN WELL
Public Water System Population Served: 100
Drinking Water System Source: Ground Water

DEL ORO WATER COMPANY - BUZZTAIL DIST.
Public Water System Population Served: 99
Drinking Water System Source: Ground Water

BERRY CREEK SCHOOL
Public Water System Population Served: 95
Drinking Water System Source: Ground Water

FOREST RANCH MUTUAL WATER SYSTEM
Public Water System Population Served: 92
Drinking Water System Source: Ground Water

SFWP - SLY CREEK CAMPGROUND
Public Water System Population Served: 85
Drinking Water System Source: Ground Water

SMUCKER NATURAL FOODS
Public Water System Population Served: 85
Drinking Water System Source: Ground Water

BAMBI INN
Public Water System Population Served: 80
Drinking Water System Source: Ground Water

BERRY CREEK COMMUNITY SERVICE DIST
Public Water System Population Served: 77
Drinking Water System Source: Ground Water

HUMBOLDT WOODLANDS MUTUAL
Public Water System Population Served: 75
Drinking Water System Source: Ground Water

SFWP - STRAWBERRY CAMPROUND
Public Water System Population Served: 75
Drinking Water System Source: Ground Water

OROVILLE MOBILE HOME PARK
Public Water System Population Served: 74
Drinking Water System Source: Ground Water

SFWP-BANGOR
Public Water System Population Served: 73
Drinking Water System Source: Surface Water

SPRING VALLEY SCHOOL
Public Water System Population Served: 70
Drinking Water System Source: Ground Water

NORD COUNTRY SCHOOL
Public Water System Population Served: 66
Drinking Water System Source: Ground Water

RICHVALE ELEMENTARY SCHOOL
Public Water System Population Served: 63
Drinking Water System Source: Ground Water

FALLING ROCK RV PARK
Public Water System Population Served: 52
Drinking Water System Source: Ground Water

FRANCIS PROPERTY MANAGEMENT
Public Water System Population Served: 51
Drinking Water System Source: Ground Water

BLUE OAK TERRACE MUTUAL
Public Water System Population Served: 50
Drinking Water System Source: Ground Water

HUMBOLDT HIGHLANDS MUTUAL
Public Water System Population Served: 50
Drinking Water System Source: Ground Water

MEADOWBROOK OAKS
Public Water System Population Served: 50
Drinking Water System Source: Ground Water

DURHAM PARK
Public Water System Population Served: 50
Drinking Water System Source: Ground Water

WILD GOOSE DUCK CLUB
Public Water System Population Served: 50
Drinking Water System Source: Ground Water

G & J PROPERTIES
Public Water System Population Served: 50
Drinking Water System Source: Ground Water

COHASSET INDUSTRIAL PARK
Public Water System Population Served: 47
Drinking Water System Source: Ground Water

FOREST KNOLLS MUTUAL WATER CO
Public Water System Population Served: 46
Drinking Water System Source: Ground Water

SUNSET MOULDING CHICO
Public Water System Population Served: 45
Drinking Water System Source: Ground Water

MOUNTAIN VILLAGE HOMEOWNER'S ASSOC
Public Water System Population Served: 40
Drinking Water System Source: Ground Water

CRAIN PARK WATER SYSTEM
Public Water System Population Served: 40
Drinking Water System Source: Ground Water

PG&E: PHILBROOK DAM
Public Water System Population Served: 40
Drinking Water System Source: Ground Water

LLANO SECO RANCHO
Public Water System Population Served: 40
Drinking Water System Source: Ground Water

FEATHER RIDGE ESTATES WATER CO
Public Water System Population Served: 37
Drinking Water System Source: Ground Water

FEDEX FREIGHT, INC. CHI
Public Water System Population Served: 37
Drinking Water System Source: Ground Water

FOREST VILLAGE LLC
Public Water System Population Served: 34
Drinking Water System Source: Ground Water

GOLDEN OAKS MOBILE ESTATES
Public Water System Population Served: 34
Drinking Water System Source: Ground Water

HARTLEY MUTUAL WATER SYSTEM
Public Water System Population Served: 31
Drinking Water System Source: Ground Water

BUTTE MEADOWS CAMP
Public Water System Population Served: 30
Drinking Water System Source: Ground Water

CHERRY HILL CAMPGROUND
Public Water System Population Served: 30
Drinking Water System Source: Ground Water

SIERRA NEVADA BREWING CO.
Public Water System Population Served: 30
Drinking Water System Source: Ground Water

RIVER ONE RV PARK
Public Water System Population Served: 26
Drinking Water System Source: Ground Water

BIGGERS GLEN MUTUAL WATER CO
Public Water System Population Served: 25
Drinking Water System Source: Ground Water

FOREST RANCH MOBILE PARK
Public Water System Population Served: 25
Drinking Water System Source: Ground Water

CHICO ROD & GUN CLUB
Public Water System Population Served: 25
Drinking Water System Source: Ground Water

EATHER RIVER SCHOOL
Public Water System Population Served: 25
Drinking Water System Source: Ground Water

HONCUT ELEMENTARY SCHOOL
Public Water System Population Served: 25
Drinking Water System Source: Ground Water

PG&E - TABLE MOUNTAIN
Public Water System Population Served: 25
Drinking Water System Source: Ground Water

ROBINSON'S CORNER MHP
Public Water System Population Served: 20
Drinking Water System Source: Ground Water

L. C. HUNTING CLUB
Public Water System Population Served: 10
Drinking Water System Source: Ground Water

APPENDIX F

BUTTE CREEK WATERSHED

Appendix F – Butte Creek Watershed

Paradise Irrigation District MSR Update

Watershed Basics

A watershed is the area of land that drains into a body of water such as a river, lake, stream, or bay. In the Butte Creek watershed, all water eventually drains into the Sacramento River. The watershed includes surface water in streams, rivers, lakes, ponds, and the groundwater in local aquifers. The drinking water that comes out of our taps comes from all these sources. Watersheds are shaped by the natural contours of the land: hills and valleys. Think of a watershed as a basin, formed by the highest ridges surrounding a network of streams. Every raindrop falling inside these high points drains into the watershed.

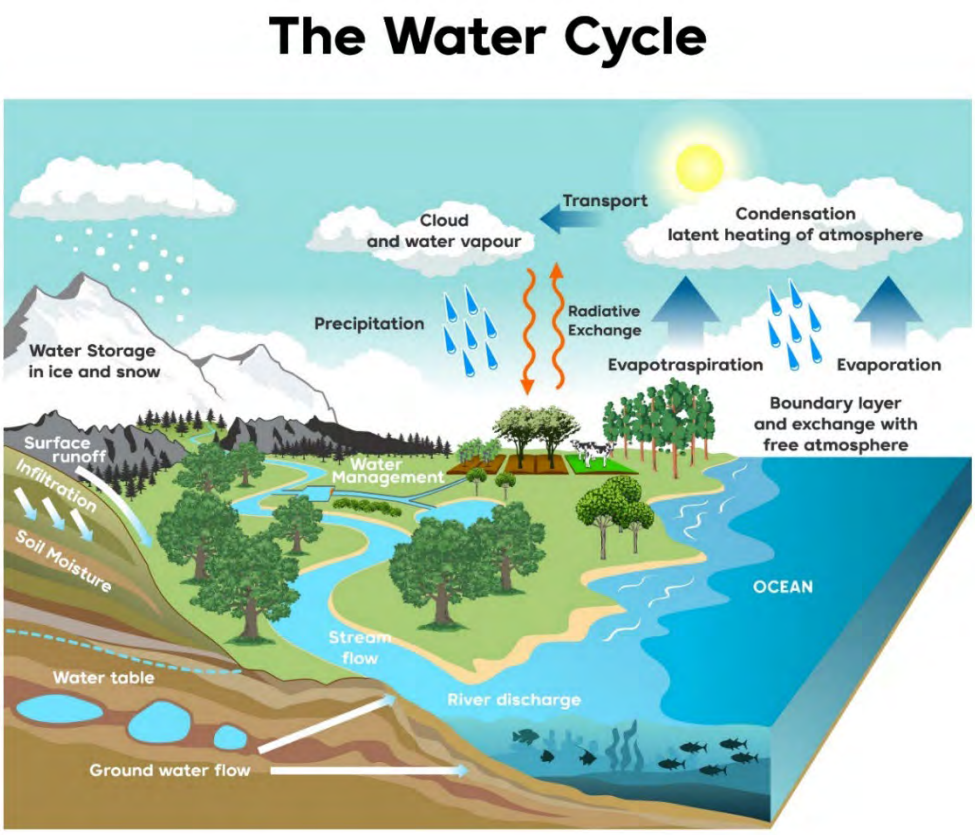
Natural ecological processes support the production of clean water within local watersheds. For example, intact forests create airborne particles which support raindrop formation. Forests also retain soil moisture, which reduces fire intensity and extent. Oak woodlands, riparian forests, and other vegetated habitats maintain hydrological processes that recharge subsurface aquifers and surface water flows. Protection of the natural habitat within watersheds will sustain yields of clean water, agricultural and forestry products, and provide more opportunities for nature-based recreation, reduced pollution treatment costs, and other economic returns. Agriculture also plays an important role within local watersheds. Timber landowners, farmers, ranchers, and other private landowners have deep knowledge about the land and rivers. Farmers are some of the best protectors of biodiversity in California.

Forest, meadows, and wetland ecosystems in a watershed naturally filter and replenish water. What we do on the land and in our homes, yards, businesses, schools, parks, and communities has the potential to affect the health of our watershed and the quality of our drinking water. Watersheds are a key component of the natural hydrologic cycle. Each watershed has specific and unique geomorphic, hydrologic, and ecological characteristics. Watershed systems are best viewed as holistic natural systems. Watersheds are important not merely for the creeks and rivers that flow within them, but also for the ecosystem services provided by the flora (including forests), fauna and soils. To have a dependable and quality water supply, it is critical that local communities be good stewards of local watersheds.

Water Cycle

Water is part of the natural hydrologic cycle, which is part of Earth's ancient operating system as shown in Figure F-1.

Figure F-1:



The hydrologic cycle involves Earth's land, oceans, and atmosphere. The cycling of water involves processes known as precipitation, evaporation, evapotranspiration, and condensation. Ultimately, the ocean is a vital part of the water cycle, considering that it holds approximately 97% of the total water on Earth (NASA, n.d.). Evaporation occurs when a heat source causes water, found on a body of water, to alter from a liquid to a gas state and results in water vapor that undergoes condensation. Evaporation occurs on various water sources on Earth, but mainly on the ocean. Condensation is the process by which molecules of water vapor in the air become liquid (NASA, n.d.). Then, precipitation, which is the product of condensation, falls out of an atmospheric cloud. Precipitation takes the form as rain, snow, sleet, and other forms. On land, the precipitation of water allows for the development of runoff or the infiltration of water into the soil to form groundwater. Additionally, the water that reaches land undergoes evapotranspiration which is the process that involves water transfer from land to the atmosphere. The water cycle is a system that is energized by the sun and involves the continuous exchange of moisture between the ocean, the atmosphere, and the land (NASA, n.d.).

Connected to Sacramento/San Joaquin Watershed

The Butte Creek eventually drains into the Sacramento River and therefore is an important part of the greater Sacramento/San Joaquin watershed. The greater Sacramento/San Joaquin watershed is comprised of water that drains from the entire western slope of the Sierra, the eastern slope of the Coast Ranges and the south- and west-facing drainages of Mount Shasta and Lassen Peak. Water in the Sacramento/San Joaquin rivers flows through the Delta, into San Francisco Bay, and out through the Golden Gate. This natural system is massive and geographically diverse, including some of the highest mountains and the largest agricultural valleys on the continent.

Watershed Management

Water districts, sewer districts, private property owners, public land management agencies, stormwater management experts, environmental specialists, land-use planning regulators, and communities all play an integral part in watershed management. Land managers and property owners within the watershed often collaborate to protect watershed health and water quality. The Plumas National Forest manages much of the upper Butte Creek watershed. The U.S. Forest Service is an example of an agency that recognizes that watershed conditions and health is crucial to their mission. PG&E is another key water and land management organization in the watershed. In nearby watersheds, a portion of the water routing, accessibility, and infrastructure is controlled by PG&E.

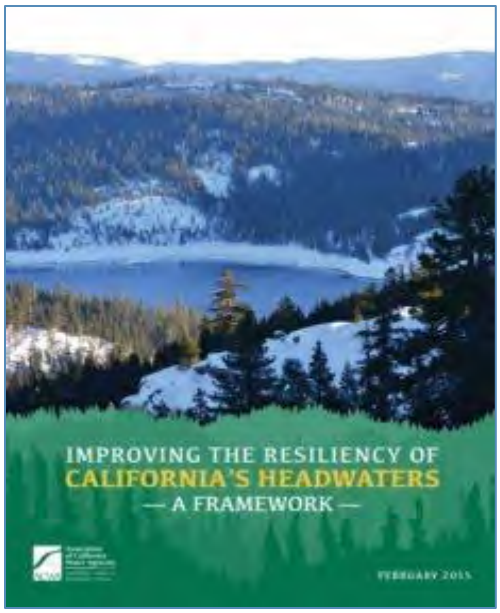
Ideally watershed management would be aimed at creating and implementing plans, programs and projects to sustain and enhance watershed functions that affect the plants, animals, and human communities within the watershed boundary. Features of a watershed that agencies seek to manage to include water supply, water quality, drainage, stormwater runoff, water rights and the overall planning and utilization of watersheds.

The Northern California Water Association (NCWA) is a group comprised of water districts, water companies, small towns, rural communities, and landowners that utilize both surface and groundwater resources in the Sacramento Valley. NCWA's Board of Director's and staff aim to safeguard water supplies in the Sacramento Valley. They provide constructive advocacy in the pursuit of solutions to resolve California's most perplexing water problems. NCWA represents the entire Sacramento Valley, which extends from Sacramento to north of Redding, and between the crests of the Sierra Nevada and the Coast Range. NCWA regularly publishes an updated and informative blog here: https://norcalwater.org/blog/

In February 2015, the Association of California Water Agencies (ACWA) developed Improving the Resiliency of California's Headwaters – A Framework, which makes specific recommendations designed to create more resilient water resources through effective headwaters management.

Developed by ACWA's Headwaters Framework Working Group, the policy document details the role that headwaters play in California's water management system, outlines the benefits of healthy headwaters, identifies current challenges, and provides a brief history of the headwaters management.

The Water Education Foundation has developed a booklet to show the value of water, and the importance of the Sierra Nevada region in providing water for California. The information is based on the report *Looking to the Source: Watersheds of the Sierra Nevada by the Water Education Foundation*.



Integrated water management plans and activities are often sponsored by local non-profit organizations. A collaborative effort across agency, government, and NGOs is essential for proper stewardship on a watershed-wide basis. In 2006 the Integrated Regional Watershed Management Plan for the Northern Sacramento Valley was published here: *https://norcalwater.org/efficient-water-management/efficient-water-management-regional-sustainability/regional-planning/irwmp/*

Butte County has a range of hydrologic and geographic features. Human water systems are linked to natural watersheds. Residents of Butte County have developed a range of water infrastructure designed to optimize modern human use of water as listed in Table F-1 below.

Table F-1: Butte County Water Infrastructure

Number of Domestic Wells	12,853
Number of People on Domestic Wells	65,018
Number of Community Water Systems	48
Number of Groundwater Sustainability Agencies	18
Number of Sub-Basins	8
Number of Disadvantaged Communities	11
Number of Severely Disadvantaged Communities	4
Median Household Income	$46,516 (+/- 1,130)

Percentage of Renters	40.99 %
Linguistic Isolation	2.33 %
Number of Households	28,359
Number of Drought Impacted Domestic Wells, 100% Drought Scenario	20
Total Cost to Retrofit Drought Impacted Wells, 100% Drought Scenario	$253,740

Data Source: Community Water Center Drinking Water Tool, 2021 <*https://drinkingwatertool.communitywatercenter.org/ca-water/?z=9&y=39.72508&x=-121.57293&l=&r=afamer%2Cafamer%2Cafamer&v=county&q=50&a=* >

Approximately 65,018 people in Butte County depend on domestic water wells which rely on groundwater. In Butte County, between the years 2014 to 2022, there were a total of 98 wells that were reported "dry" to the DWR database. In the year 2022, a total of 34 dry wells were reported. As seen in Figure F-2, the year 2021 had the greatest number of reported dry wells. The years 2017, 2019, and 2020 did not have reported dry wells. The wells are primarily used for households, but some are used for schools and agricultural purposes. From the database query, it is evident that many of the wells are no longer producing water, or their pumps are not functioning properly (DWR, 2022).

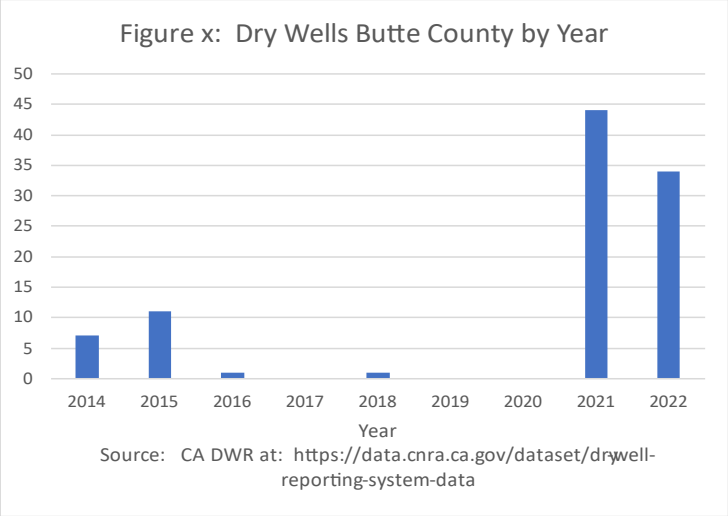


Figure F.2: Dry Wells in Butte County

Water is often viewed as only a commodity which is bought, sold, and transferred. As a commodity, water is utilized for drinking water, agricultural irrigation, and hydropower production. However, considering watershed systems from a holistic viewpoint is useful to highlight the linkage between water production and the water cycle, climate, and all the other aspects of natural systems.

About Butte Creek Watershed

Paradise Irrigation District's boundaries and two reservoirs are located in the Butte Creek watershed #18020158 (HUC 8). [Data Source: Based on https://enviroatlas.epa.gov/enviroatlas/interactivemap/#:]

The Butte Creek is a tributary to the Sacramento River. Therefore, the Butte Creek watershed is a smaller area embedded within the larger Sacramento River watershed. The Sacramento River

Watershed Program provides an excellent description of the Butte Creek watershed on its website at: <*https://sacriver.org/explore-watersheds/eastside-subregion/butte-creek-watershed/*>.

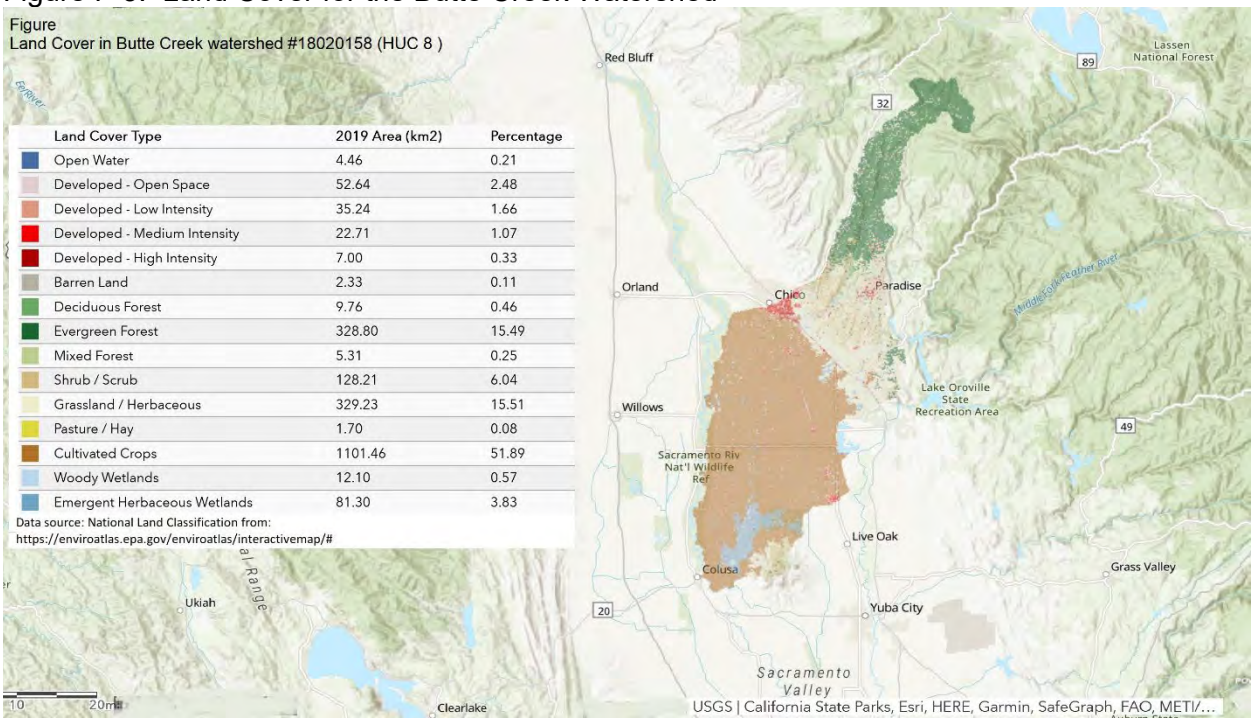
Butte Creek watershed covers a geographic area of 800 square miles, and it is 90 miles long. The average annual precipitation ranges from a low of approximately 20 inches per year to a high of 50 inches per year. The highest elevation within the watershed is Humboldt Peak at 7,086 ft., msl. The lowest elevation is at Verona at 29 ft. msl.

The population residing within the watershed is approximately 70,000, primarily within the City of Chico, the Town of Paradise, and the surrounding rural areas. Although the Butte Creek watershed is primarily located in Butte County, the watershed does extend into portions of nearby Tehama, Sutter, Glenn, and Colusa counties.

Land Cover

According to the National Land Cover Database, this watershed comprised mostly of cultivated crops (51.9 percent) and grassland (15.51 percent), as shown in Figure F-3 below.
Data Source: Based on https://enviroatlas.epa.gov/enviroatlas/interactivemap/#:

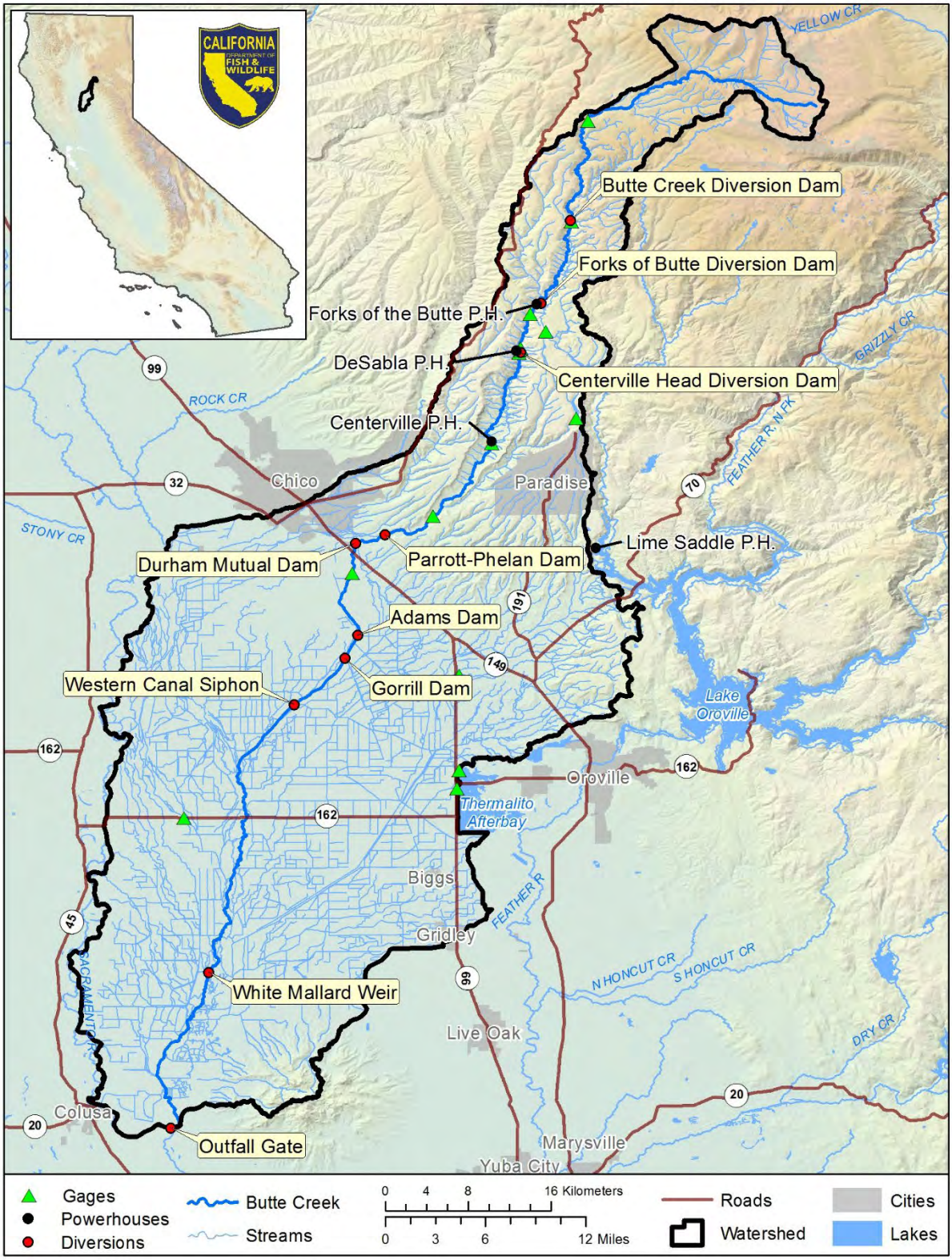
Figure F-3: Land Cover for the Butte Creek Watershed



Data Source for Figure F-3, above: *https://enviroatlas.epa.gov/enviroatlas/interactivemap/#:*

A hydrologic map of the Butte Creek Watershed has been prepared by the California Department of Fish and Wildlife, as shown in Figure F-4 below.

Figure F-4: Hydrologic Map of Butte Creek Watershed



Butte Creek has the largest self-sustaining, naturally spawning, wild population of spring-run Chinook salmon (SRCS) in the Central Valley. Every year, hundreds to thousands of fish migrate up the creek to summer-holding pools in the upper watershed, where they spawn starting in September. However, migrating adults are known to be delayed and ultimately become stranded in a shallow pool downstream of a complex area of streambed composed of exposed bedrock. The exact causes that impede upstream passage are unknown, although decreasing flows, elevated water temperature, and difficulty passing exposed bedrock are factors that may hinder migration. Butte Creek is home to spring-run salmon, as shown in Figure F-5 below.

Photo credit for Figure F-5 above: California Dept of Fish and Wildlife.

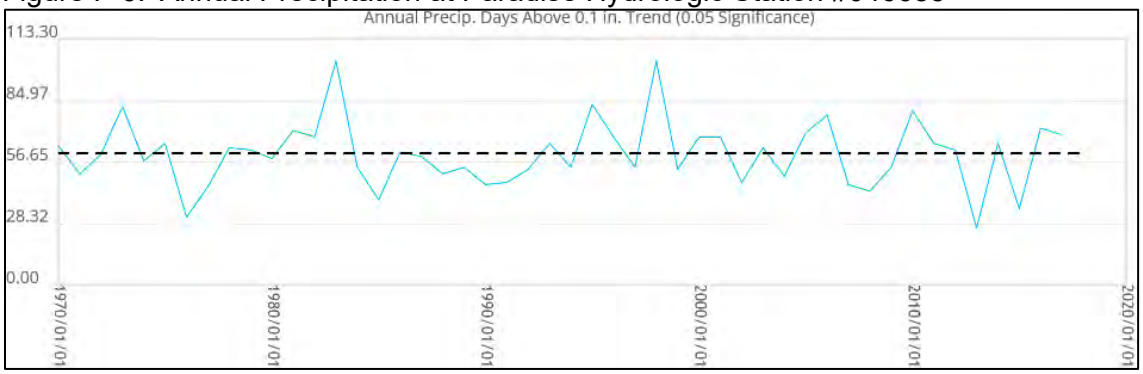
Given that salmon are a listed species, Butte Creek has been extensively studied as described on the Cal Fish and Wildlife website at: https://wildlife.ca.gov/Conservation/Watersheds/Instream-Flow/Studies/Butte-Creek-Study. Identified management issues include salmon/steelhead, forest health/fuels management, aquatic/riparian habitat, water quality, water supply, and flood management.

Precipitation in Butte Creek

Trends analysis shown in Figure F-6 below shows that the amount of precipitation falling on Paradises' Hydrologic Station[1] #046685 is highly variable. This Hydrologic Station collects data on behalf of the National Drought Mitigation Center, University of Nebraska-Lincoln, and their Drought Atlas website at: https://droughtatlas.unl.edu/Data/Climate.aspx. The timeline shown below begins in 1970 and ends in 2020.

[1] Drought Atlas: Hydrologic Station 046685: Paradise. Located at: Latitude 39.754 and Longitude -121.624. Station Elevation (ft) 1750. Located in California, County of Butte. 64 Years of data on record from 5/1/1957 - 12/31/2021.

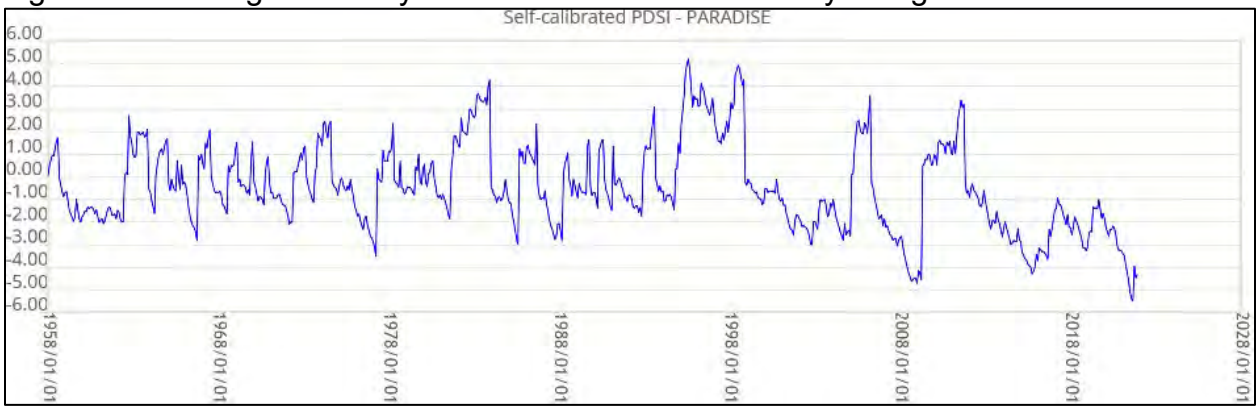
Figure F-6: Annual Precipitation at Paradise Hydrologic Station #046685



Drought Severity Index

The Palmer Drought Severity Index (PDSI) is a meteorological drought index that responds to weather conditions that have been abnormally dry or abnormally wet. When conditions change from dry to normal or wet, for example, the drought measured by the PDSI ends without considering streamflow, lake and reservoir levels, and other longer-term hydrologic impacts (Karl and Knight, 1985). PDSI calculations are based on precipitation and temperature data as well as the soil's local available water content (AWC). Figure F-7, shown below, uses a version of this index called the Self-calibrated Palmer Drought Severity Index (SC-PDSI). The Self-Calibrated Palmer Drought Severity Index is based upon the original PSDI work but takes all the constants and replaces them with values that are calibrated based upon the data for each individual location (Wells et al., 2004). To make the process "self-calibrating", several calculations from within the PDSI needed to be addressed, including the climatic characteristics and duration factors. With the calculations for the SC-PDSI accounting for each individual location, the index becomes more reflective of what is happening at each site and allows for comparisons between regions to be more accurate. The positive consequences of the new calculations associated with the SC-PDSI provided the following results: 1) The range of the PDSI values is close to an expected range of -5.0 to 5.0, where values below -4 and above 4 represent extreme conditions. 2) The sensitivity of the index is based on the local climate. 3) The SC-PDSI has different sensitivities to moist periods and dry periods.

Figure F-7: Drought Severity Index Trends for Paradise Hydrologic Station #046685



Data Source for Figure F-7 (University of Nebraska, 2023):

Figure F-7 above shows that in recent years, the frequency of drought at the Paradise Hydrologic Station is increasing. Between the years 1958 to 2008, the index never fell below -4. However, between the years 2008 to 2020, the index fell below -4 on three occasions, and this represents an increasing frequency of severe droughts.

Groundwater

There are several groundwater wells located in the Butte Creek Watershed, as shown in Figure F-8 below:

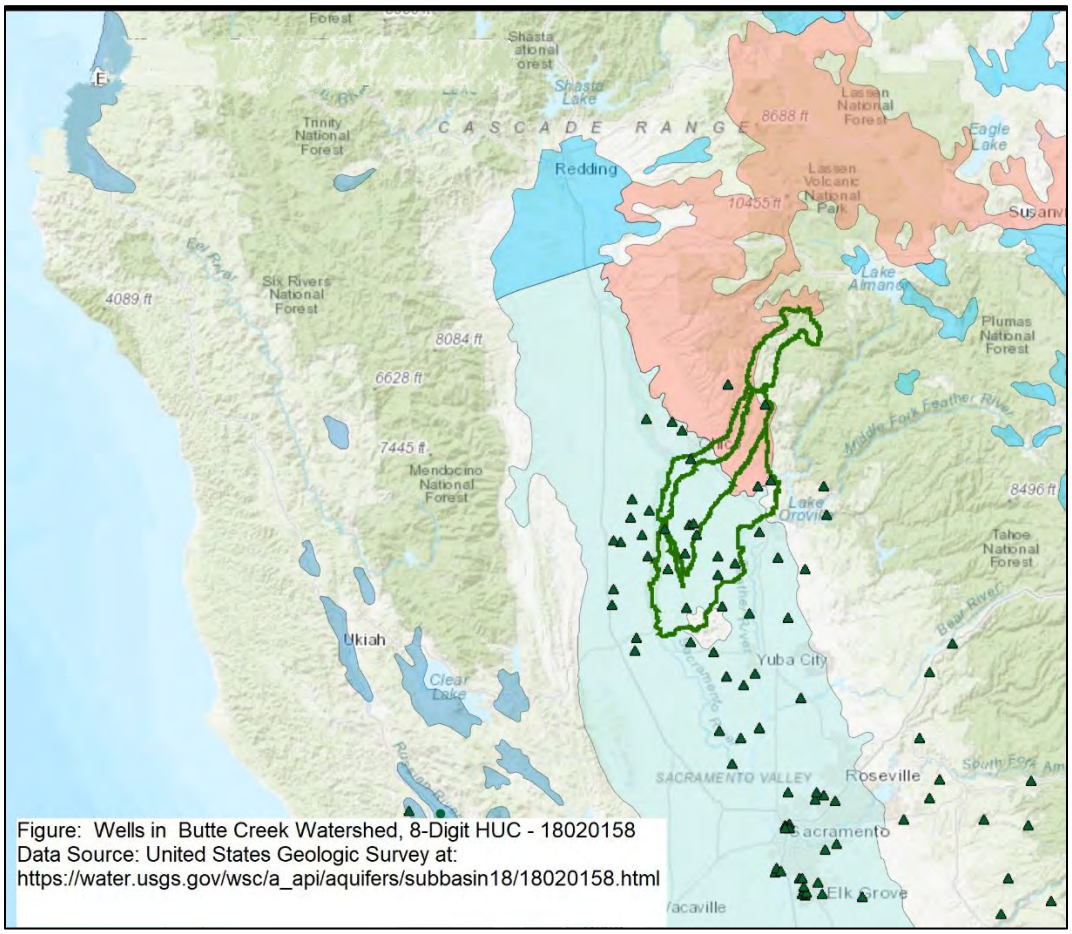
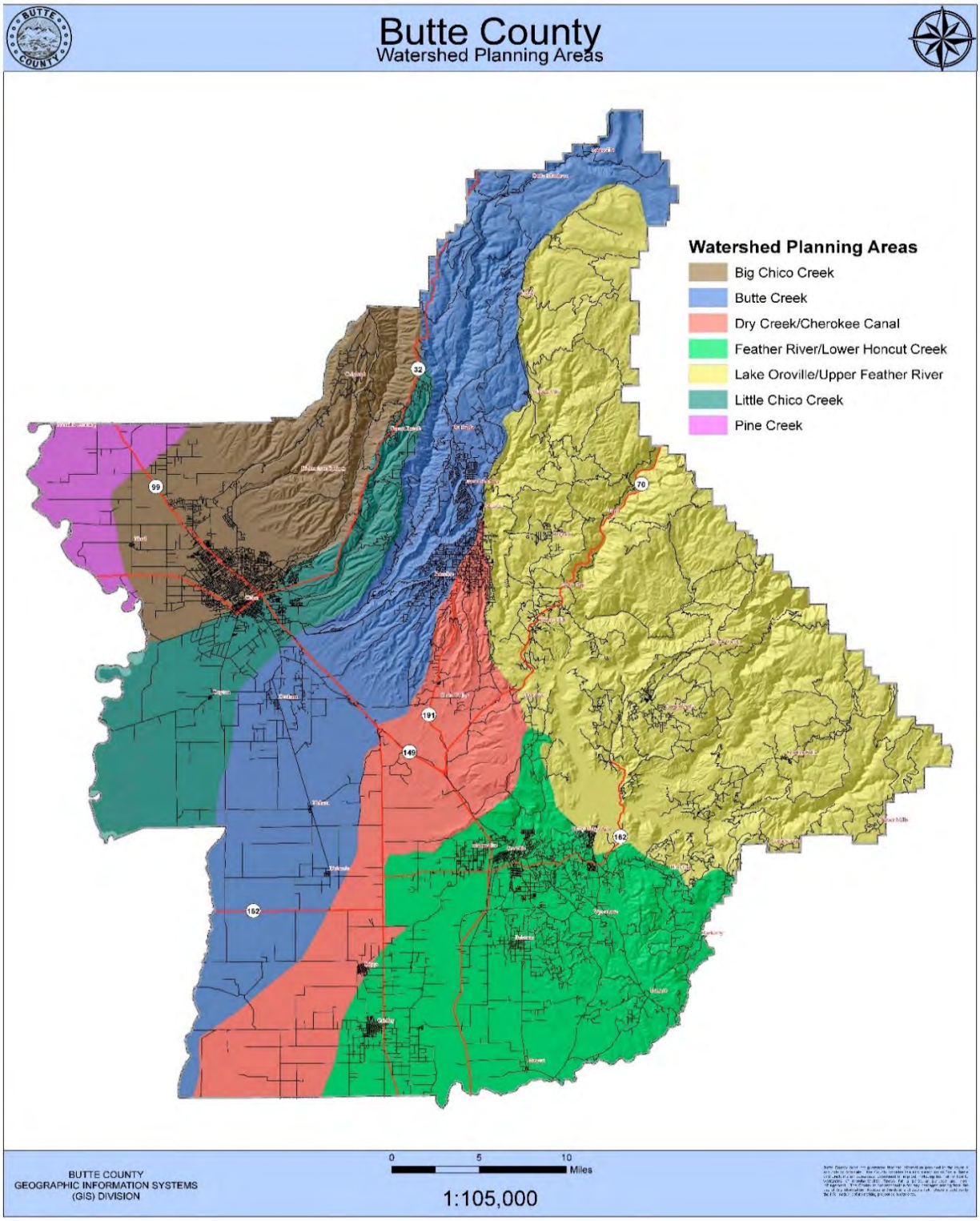


Figure: Wells in Butte Creek Watershed, 8-Digit HUC - 18020158
Data Source: United States Geologic Survey at:
https://water.usgs.gov/wsc/a_api/aquifers/subbasin18/18020158.html

Erosion in the Butte Creek Watershed

As a result of the Camp Fire, erosion in the fire's footprint has become a concern. (The 2018 Camp Fire is described in Chapters 3 and 4 of this MSR.) Erosion threatens to choke streams, turn dirt roads into sedimentation sources, and harm wildlife. Under ideal circumstances a local non-profit or government agency would work to assess, inventory and find funding for erosion control problems on roads and hillsides across the region. However, it is unclear as to whether funding for this type of work is available.

Figure F-9: Spatial Distribution of Watershed Planning Areas in Butte County



Rebuilding

Rebuilding the Town of Paradise is important for the local community. This rebuilding process will likely have a mixture of both positive and negative consequences for the management of the surrounding forest. The local community is investigating options for the use of prescribed fire, to promote forest health treatment for Paradise Ridge and the surrounding Butte Creek watershed. However, the use of prescribed fire requires careful management and expertise. Extensive training is necessary for local fire departments including both paid staff and volunteers. To pursue this goal, in 2019, Butte County Fire Safe Council and the Sacramento River Watershed Program (SRWP) received funding to develop a web-based data portal and decision support tool. Their work will supply a wide range of watershed data for fuels reduction project planning and update the Community Wildfire Protection Plan for Butte County.

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Appendix G

Water and Wastewater Recommendations from American Society of Civil Engineers

Appendix G: Water and Wastewater Recommendations from American Society of Civil Engineers

Introduction

The American Society of Civil Engineers (ASCE) was founded in 1852 and is the nation's oldest engineering society. ASCE represents more than 150,000 members of the civil engineering profession in 177 countries. In the California, the chapter of ASCE published a report entitled "Report Card for California's Infrastructure". An excerpt from this report is provided in the following pages. Readers are invited to view the full-report on the ASCE website as listed in the bibliography provided on the next page.

Drinking Water: Recommendations To Raise The Grade

Recommendations related to potable water supply and associated infrastructure are listed below.

- ADDRESS AGING INFRASTRUCTURE NEEDS. As water rates are usually set by locally elected boards and commissions that generally run on low water rate platforms, there is a need for additional consumer education on the current funding needs and the negative impacts of further delaying action to facilitate fair and appropriate water rates needed to fund infrastructure improvements for all water systems statewide.
- CONTINUE TO MAKE CONSERVATION A CALIFORNIA WAY OF LIFE. The Water Conservation Act of 2009 requires a 20% reduction in urban per capita water use by December 31, 2020. Though a great start, more can and must be done. Key areas of future focus include expanded development of sustainable water supplies at the regional level and agricultural water use efficiency.
- INCREASE REGIONAL SELF RELIANCE AND INTEGRATED WATER MANAGEMENT ACROSS ALL LEVELS OF GOVERNMENT. The State's Integrated Water Management Planning program is a 21st century approach that supports regionally driven, multi benefit projects that increase regional self-reliance and sustainable practices. Funding for the program should be expanded to foster improved alignment between land use and water, provide assistance to disadvantaged communities, and support better use of local water supplies such as recycling, stormwater capture, and desalination.
- ACHIEVE THE CO EQUAL GOALS FOR THE DELTA. The co-equal goals of the Delta Stewardship Council are to provide a more reliable water supply for California and to protect, restore and enhance the Delta ecosystem. Implementation must start on the Delta Plan, including California EcoRestore, which will restore more than 30,000 acres of critical Delta habitat.

- MANAGE AND PREPARE FOR DRY PERIODS. Temporary shortages caused by extended, severe dry periods will become more frequent with climate change. Effective management of water resources through all hydrologic conditions will reduce impacts of shortages and lessen costs of response actions. Among the necessary steps to secure more reliable water supplies is updating dam and delivery operations to respond to extreme conditions. This will require continued improvement in water forecasting and cooperation among agencies.

Wastewater: Recommendations To Raise The Grade

- Make risk-based decisions on capital improvements, maintenance, and operations (i.e. – implement asset management programs).
- The State of California should continue to provide loans and grant funding for the repair and rehabilitation of wastewater collection and treatment systems, as well as reuse projects.
- The State of California should continue to implement indirect and direct potable reuse regulations.
- Implement an education program at the state and local level about what a wastewater treatment plant is, what kind of wastes it can treat, as well as what impact wastes have on the sewer pipes such as grease and flushable wipes, etc. Continue educational programs on how to identify a sewer overflow and who to call if such an event occurs.
- Continue advancements in water reuse/recycling. Expand recommendation on re-use/recycling

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##

Stanford University

Appendix H
Hospital Article from Stanford

Paradise's recovery from the Camp Fire became harder when the only hospital left

Years after a devastating fire, a recovering city finds itself a health care desert.

By **Sarah Raza < https://andthewest.stanford.edu/author/sarah-raza/>**
July 21, 2023 < https://andthewest.stanford.edu/2023/paradises-recovery-from-the-camp-fire-became-harder-when-the-only-hospital-left/>

Rebuilding homes this spring in a Paradise neighborhood leveled by the 2018 Camp Fire. *Felicity Barringer*

By Sarah Raza < https://stanforddaily.com/author/sraza/>

Sharon LeRossignol's husband, Thomas, had already been in deteriorating health when he contracted coronavirus in the pandemic's first year. When he had his first heart attack a decade ago, his trip to the nearby hospital in Paradise, California, took ten minutes, although he then had to make a second trip to a larger facility for heart surgery.

But the 2021 hospital trip to try to save his lungs and his life didn't take 10 minutes, it took 45. Why? The hospital they had been closest to, physically and emotionally, was gone.

In the months after the devastating 2018 Camp Fire, the LeRossignols, who had decamped to Chico, were among a smattering of residents who had returned to Paradise. The community where they had spent a lifetime, damaged and largely deserted as it was, was still home. "He didn't want to die in Chico," Sharon LeRossignol said.

In the end, he did. Paradise's only hospital, Adventist Health Feather River, closed down after it was damaged in the fire, so the ambulance took Thomas LeRossignol to the Enloe Medical Center in Chico for coronavirus treatment. He died there nine days later, at the age of 76.

A different sort of tragedy lingers

The now-unused main building of the Adventist Feather River Hospital in Paradise. Felicity Barringer

California's most devastating fire meant a massive loss of lives and homes and, for Paradise residents, the end of any sense of security from natural disaster. Closure of the Feather River hospital meant a different kind of loss: of the kind of security provided by proximity to emergency care and medical specialists. The continued presence of a well-appointed clinic and a variety of medical providers does not fill the gap. The Paradise area has become one of 68 hospital deserts in the state; there are hundreds more around the West.

With all the focus on everything else Paradise has lost — 86 victims of the fire, more than 11,000 houses burned to the ground, including the LeRossignol home — the loss of the hospital seems more an afterthought. But becoming a hospital desert is its own, different sort of tragedy that lingers, even as the town's rebuilding proceeds.

Scenes from the furious battle against the Camp Fire in November 2018. Josh Edelson / AFP via Getty Images

What happened after the Camp Fire

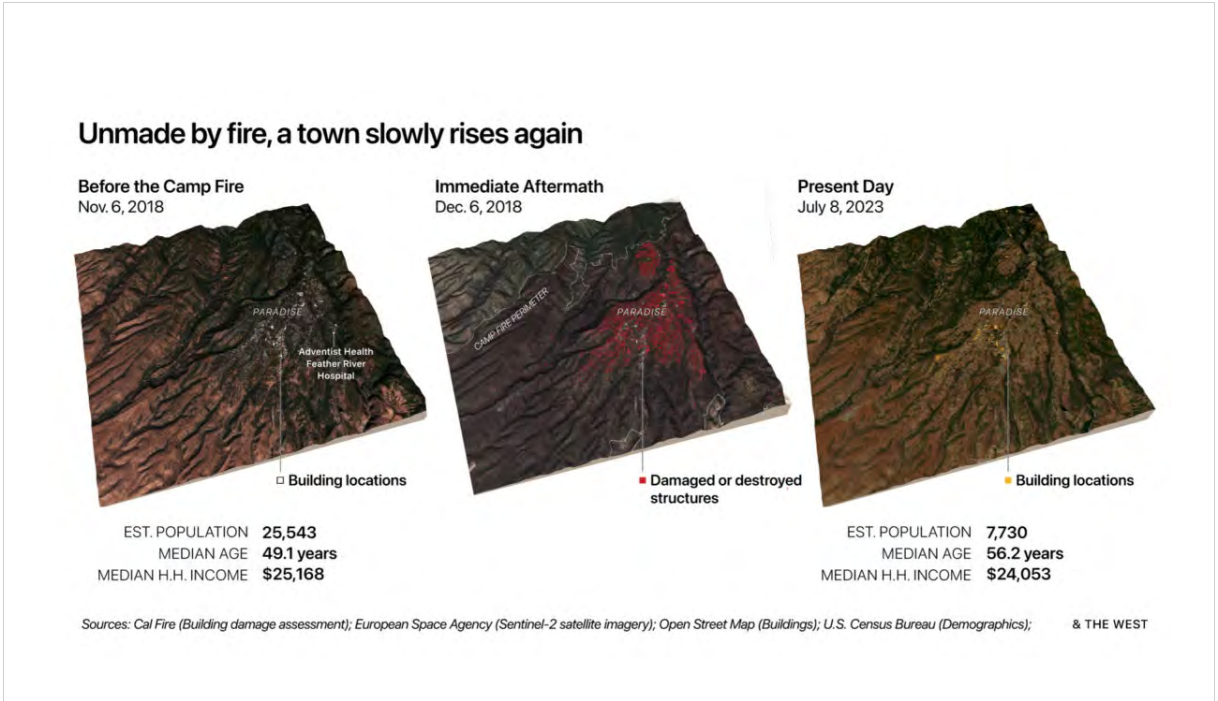
Paradise is a small town situated on top of a ridge where the ground of eastern Butte County in northern California rises to become part of the Sierra Nevada and its forests. Freshly painted homes line the streets, and neon orange construction signs sit on every corner. On the hills, you can still see the charred trees from the wildfire that leveled the town.

h.

Construction work was widespread in mid-May 2023. Felicity Barringer

The Camp Fire of 2018 was California's deadliest and most destructive wildfire, killing 86 people and causing more than $16 billion in damages. Ninety-five percent of Paradise was destroyed; smoke and water damage rendered the unburnt homes uninhabitable.

Without running water or electricity, no one could live in Paradise for nearly eight months, and residents like the LeRossignols had to find somewhere else to go: some lived with family in nearby Chico, while others never returned. The town's population has dwindled from 25,000 to less than 8,000.



A portion of Paradise's hospital Adventist Health Feather River was damaged in the fire. A few

years ago, residents held out hope that the hospital may return once the fire-damaged sections were replaced. But lacking a staff to operate the facility and a sizable population to care for, the Sacramento-area-based Adventist Health has no intention to reopen.

The collapsed roof of the Adventist Health Feather River Hospital's emergency room in March 2019, from a survey conducted by ***researchers studying the wildfire damage to structures*** **< https://link.springer.com/article/10.1007/s11069-020-04197-0#Sec2>** . Erica Fischer, Oregon State University

"As part of the Camp Fire in 2018, Adventist Health Feather River experienced considerable structural and physical plant damage, rendering it inoperable and ultimately leading to its closure in Nov. 2018," Adventist Health spokesperson Japhet De Oliveira wrote in a statement.

He went on, "as the community and world has changed dramatically since 2018, our approach to care delivery prior to the fire has been realigned and further realigned after COVID-19, which ultimately has led to our decision not to rebuild the hospital."

A loss of security and a loss of jobs

The loss of the town's only hospital had another impact: the loss of a major employer.

Feather River hospital employed close to 1,300 people, a sizable number for the town's small population. Brandon Mortimer, 40, used to work at the hospital part-time as a respiratory therapist and now has pivoted to civil engineering. "Paradise has never been a wealthy community, but [working for the hospital] was one of the best jobs you could have," he said.

Trish Fulton, a nurse who used to work at Feather River before it closed, says that Adventist Health was "gracious" after the fire. The hospital looked at their employees' wages for the month prior to the fire and continued to pay them at that level for the three months following the hospital closure.

Adventist Health offered to move some people's employment to one of their other facilities, both in Butte County and across the country. Some accepted; other employees decided to seek employment elsewhere.

The hospital's bonds to the community

Feather River first opened for services in 1950 to serve the communities of Paradise, Magalia and smaller neighbors; it joined Adventist Health, a faith-based nonprofit, in 1973. The 101-bed hospital boasted an emergency room, cancer center, maternity unit, outpatient surgery center, cardiology services and radiology services.

LeRossignol spoke to how tight-knit the community was and how well she knew everyone at the hospital. "They took good care of people," she said. "I had my daughter there, she had three kids there and my granddaughter had four."

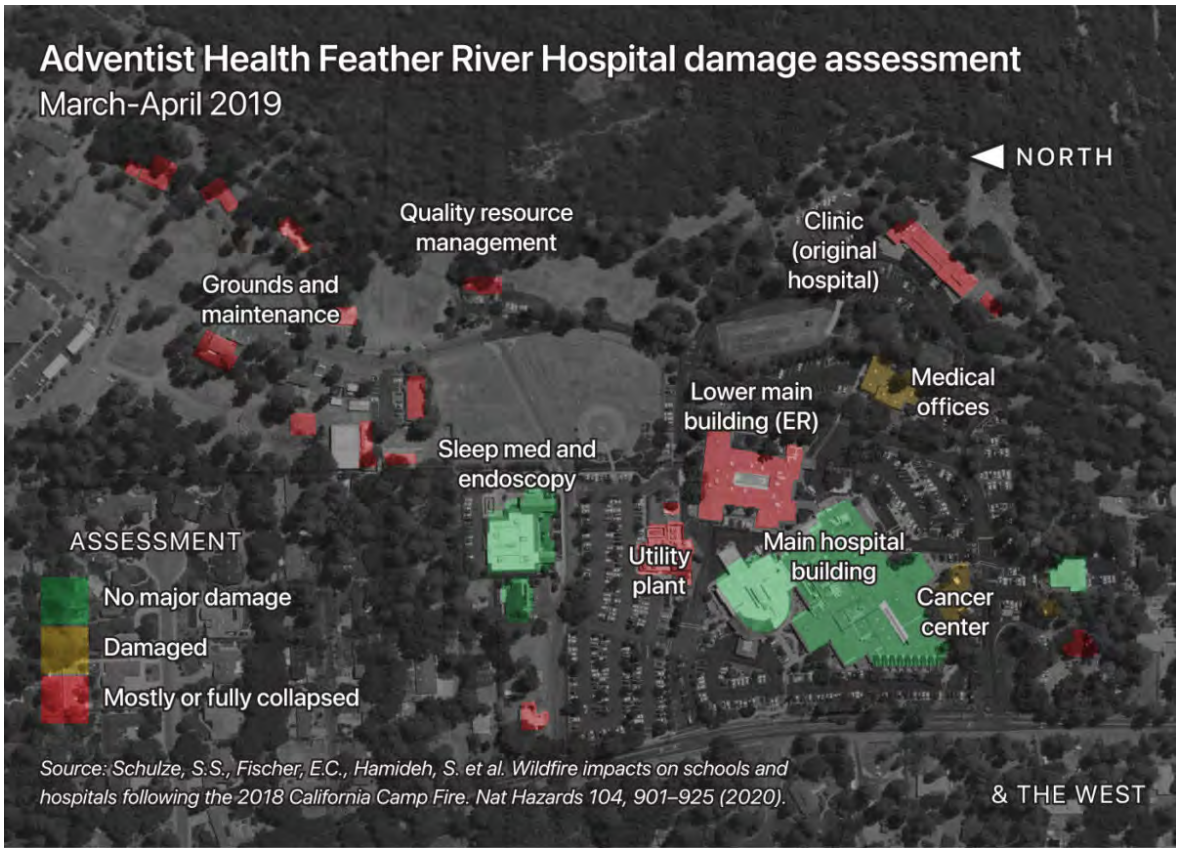
"As nurses and physicians, we interacted with our patients outside in the community," said Fulton. "We were very close."

Fulton recalls working at the cancer center early in the morning of the fire. She and her supervisor remarked about the high winds outside and the fire in the distance. Fulton was worried, but her supervisor said that they would be told when they needed to take action. At around 8 a.m., she looked out her office window to see a fire blazing across the parking lot.

> The older parts burned, but the newe ones, including the emergency room and the surgical unit, remained intac But even the parts that didn't burn were inoperable without water and electricity.

She and her colleagues evacuated all the 69 patients in their unit, who were then transported — by helicopter, ambulances and employee vehicles — to other hospitals in the area.

Nearly half of the hospital was damaged by the fire, Fulton said. The older parts burned, but the newer ones, including the emergency room and the surgical unit, remained intact. But even the parts that didn't burn were inoperable without water and electricity.



Hopes for a reopening

In mid-May, the hospital stood shuttered, cleared out from the inside and lettering fading away from the building. Geralynne Rader, 58, a Paradise resident, now knows that it is gone for good. But some in her circle still hold out hope. "Even talking to folks today," she said, "a lot of people don't understand that the hospital has pulled out."

Surrounding hospitals absorbed the influx of patients at the height of the wildfire evacuation. One of these is Enloe Medical Center, where Thomas LeRossignol died, and Oroville Hospital, a general hospital located south of Paradise. Most Americans live less than 10 miles from the nearest hospital, but these hospitals are 18 miles and 21 miles from Paradise.

Paradise currently has a medical facility run by Adventist Health that offers primary care services. There's a clinic offering vision and dental services, another offering physical therapy. There are resources for general practitioners, not for specialists.

The shuttered entrance to the former emergency room. Felicity Barringer

What distance from medical care means

In the immediate aftermath of the fire, evacuated residents were likely closer to one of the other facilities. But as residents tried to move back eight months later, the lack of healthcare access posed serious concerns.

For a short time, the emergency roon in the hospital building in Paradise w reopened by some staff who wanted return and operate it as a standalone emergency room. It didn't stay open long.

Fulton, the nurse, noted that when she had a gastrointestinal issue with active bleeding, her doctors at Enloe told her to stay in Chico because, in the event of an emergency, an ambulance would be too slow."The doctor said, 'If you start to bleed, you will not make it to the hospital in time,'" Fulton recalled.

For a short time, the emergency room in the hospital building in Paradise was reopened by some staff who wanted to return and operate it as a standalone emergency room. It didn't stay open for long; without the capacity to admit patients into a nearby hospital, a standalone emergency room wasn't feasible.

Patients also find it hard to keep up with the high turnover of health-care providers, according to Director of Butte County Behavioral Health Scott Kennelly. If a doctor or nurse has moved to a different location, Kennelly said, it said it disrupts the trust already established. "They don't want to rebuild a relationship with a trusted provider who no longer works for them and has

left the area."

LeRossignol has switched her provider multiple times over the last few years because many of them keep leaving Paradise. But in addition to becoming acquainted with a new provider, she said, she also has to pay a new patient fee.

The strain on neighboring healthcare providers

Without Feather River, the responsibility of caring for thousands of people has fallen on the shoulders of neighboring healthcare facilities.

"Enloe Medical Center spent over $5.3 million, without any external funding or help, to keep up with the overwhelming need and continue caring for patients," Enloe spokesperson Suzie Lawry Hill wrote in a statement. The ramifications of such strain is seen in the reduced availability of health care providers, increased wait times at specialty clinics, longer hospital stays due to a lack of post-acute care facilities.

Ambulance costs have also skyrocketed, as the transport time from Paradise to the nearest emergency room has jumped from 5 or 10 minutes to 30 minutes. When Mortimer's mother-in-law had to be transported to Enloe by ambulance, they were looking at a bill upwards of seven thousand dollars, Mortimer said.

Without a hospital to rely on, LeRossignol said most of her family living in Paradise never moved back. Of the 45 family members she had in town, only six returned once the town was inhabitable again. Without a hospital, "the community pretty much falls apart," she said. Every time she needs medical help, she has to make the drive to Chico.

"Paradise has never been a wealthy community, but [working for the hospital] was one of the best jobs you could have." *Brandon Mortimer, 40, used to work at the hospital part-time as a respiratory therapist and now has pivoted to civil engineering.* Felicity Barringer

Geralynne Rader, who lives in an assisted care facility in Paradise, worries that an ambulance wouldn't get her to the hospital in time in case of a stroke, heart attack or fall.

Though Brandon Mortimer, the respiratory therapist, isn't too concerned about the lack of a hospital — he is 40 — he said his parents never returned after the fire for this reason. "A hospital for a community, it's a sense of security," he said. "[The lack of a hospital] undermines your confidence in your ability to live somewhere."

In a changed town, changes in healthcare needs

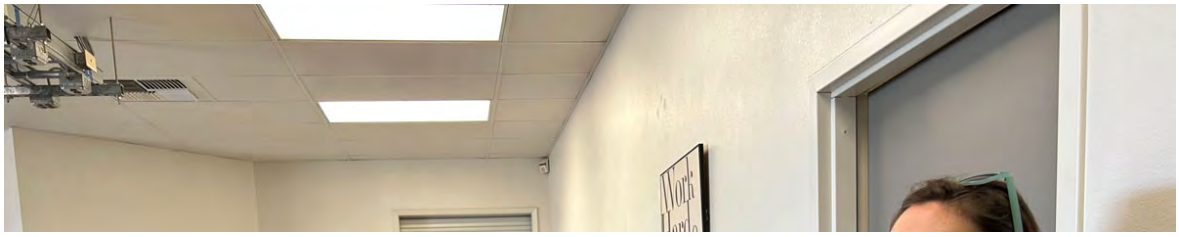
Nearly five years later, much of Paradise remains frozen in time, little filling the emptiness left by the Camp Fire. Felicity Barringer

The town has changed: it's newer and emptier. The only visible signs of the fire are the charred trees on the hills and empty lots along the streets where buildings used to stand. Congregations are younger and smaller, and fewer grandparents accompany the schoolchildren.

People now go to Enloe in Chico to have babies if they have insurance; otherwise they go to Adventist Health and Rideout Hospital in Marysville, which is an hour's drive south but offers cost-effective care.

Substance abuse and addiction have risen significantly following the fire, according to Kennelly. A couple weeks following the Camp Fire, Kennelly noticed customers leaving Costco with two items: toilet paper and alcohol. As residents have struggled with their mental health since the fire, Kennelly said that the lack of a hospital and access to primary care has certainly added stress as patients had to shift to telemedicine and were unable to see their providers in person.

Who is moving back



Joelle Chimmock at the Hope Center, a Paradise-based charity. Felicity Barringer

The lack of a hospital isn't the only thing deterring people from returning. The town is a site of immense grief for many; any smell of smoke produces a panic and triggers past trauma, said Joelle Chimmock, director of the Hope Center, which distributes free furniture to residents struggling to rebuild their homes.

"Everyone's in one stage of trauma or another," agreed Butte County Environmental Health Director Elaine McSpadden.

And many residents can't afford to move back, Chimmock said. They struggle with housing, permitting and if homeowner's insurance is available — not a given — they can't afford the premiums. Since few homes survived the fire, most homes up for sale are newly built ones. The price per square foot has jumped since the fire, from $170 per square foot to $270, according to Movoto market trends data. Payouts from the PG&E settlement continue to be delayed.

Meanwhile, wages have remained stagnant. The cost of living has skyrocketed, affecting even those who have been able to retain their jobs since the fire. A 2022 census report showed that 15.9 percent of Paradise residents live below the poverty line. Of those seeking help from the Hope Center, 93 percent self-reported an annual salary of under $20,000.

"Disaster doesn't discriminate, but recovery does," Chimmock said.

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Past Contributors

Appendix I

Sphere of Influence
AND
Agency Reorganization

Options for Future Updates

For

Paradise Irrigation District

Appendix I: Sphere of Influence Options for Future Updates

Sphere of Influence Considerations

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 requires that LAFCo review and update the Sphere of Influence (SOI or Sphere) for each of the special districts and cities within the county. In determining the Sphere of Influence for an agency, LAFCo must consider and prepare written determinations with respect to four factors [Government Code §56425(e)]. These factors relate to the present and planned land uses including agricultural and open-space lands, the present and probable need for public facilities and services, the present capacity of public facilities and adequacy of public services, and the existence of any social or economic communities of interest in the area.

Generally, the intent of an SOI is to identify the most appropriate areas for an agency's service area in the *probable future.* Typically, LAFCo discourages inclusion of land in an agency's Sphere if a need for services provided by that agency cannot be demonstrated. Accordingly, territory included in an agency's Sphere is an indication that the probable need for services has been established, and that the subject agency has been determined by LAFCo to be the most logical service provider for the area.

Sphere of Influence Options

This Appendix presents several potential options for updating the sphere of influence (SOI) in the future for the Paradise Irrigation District (PID). Both generalized and customized options are described. The presented options are informational only, and may assist the Commission in considering future informational needs and next steps. When LAFCo moves to update an individual SOI at some future date, the Commission may also consider additional information beyond that presented herein. For example, the current status of any nearby Disadvantaged Unincorporated Communities (DUCs) will be recognized. LAFCo's process provides for a meeting/conference with each potentially affected District prior to updating a District's SOI. Additionally, the Commission will hold a public hearing and adopt written statements of fact regarding the SOI prior to adopting any updates.

General Options

In California, LAFCOs generally consider several options when evaluating a Sphere of Influence. Four of the most common generalized options are listed below:

- Consider growth and development and the need for municipal services over time. The Commission utilizes MSR data and general plan policies to evaluate proposals that may affect a district in the next 10 to 20 years.
- Determine an agency's ability to provide municipal services beyond its current boundary. For an agency that does not plan to provide municipal services beyond its present

boundary, a Sphere boundary that is the same as the agency boundary is called a Coterminous Sphere of Influence.

- Reducing the current Sphere of Influence of an agency may be considered by LAFCO. A Reduced Sphere of Influence is adopted by excluding territory currently within an agency's Sphere.
- When there are SOI areas for which municipal services are not intended to be provided; that is, areas within a Sphere which will remain undeveloped (such as open space or 'protected lands'), it is considered a special case. This situation would require the agency to demonstrate why an area should be included within a Sphere for which no municipal services will be provided.

Customized Options

Several significant observations which may influence water supply and demand within the geographic vicinity were identified in this 2023 MSR as listed below:

- PID serves a relatively small geographic area, consisting of 11,438.5 acres within its boundary.
- The County of Butte has approved low-density residential developments in the surrounding areas outside of PID's boundary. Many of these low-density neighborhoods receive served water through mutual water companies or private water companies. The Calif. Human Right to Water tool identifies several of these water service areas as being constrained by limited access to water or a lack of water affordability as shown in Figure G.2, below. Additionally, water supply affordability and accessibility on the Ridge and in the Chico area must also be considered to ensure that the affected residents are receiving the most equitable water service available.
- The County of Butte is considering an application to construct residential homes and businesses on a site known as Tuscan Ridge along the Skyway. This site will request management of their water and sewer infrastructure by PID.
- PID water sales to Del Oro Water Company
- Place of Use associated with PID's water rights

LAFCO should continue to consider what reorganization options exist that are best suited to provide comprehensive water services over the long-term with the greatest efficiency and least cost.

Given the considerations addressed in this 2023 Water Services MSR for the PID, several customized conceptual options have been identified on a regional basis as listed below. This section is provided for informational purposes only. When Butte LAFCo next updates a Sphere for the agencies, it may wish to consider these or other options.

1) ***Retain the status quo***. The existing boundary and SOI for PID would remain in their current configuration. No changes would be made under this option.

2) ***Add Groundwater Basin Collaboration Area into SOI or Area of Interest:*** This option acknowledges that PID has one well which utilizes groundwater as a water source to serve its customers. Additionally, Figure 3.4 shows that many portions of the Paradise area aquifer has a medium to high risk of poor water quality. A "High" water quality risk represents areas where contaminants are above the maximum contaminant level. Under this Option, LAFCo would utilize existing information about the groundwater basin's geographic extent to consider whether PID shares any groundwater resources through hydrologic connections with other stakeholders. This geographic extent would inform whether an agency's SOI should be expanded or contracted to provide a focus on those portions of a groundwater basin, where recharge areas should be protected, water quality should be improved, and/or where several other water users share this resource. In summary, this option will further study and consider details associated with the hydrology of groundwater connections and stormwater connections to determine whether any changes to PID's SOI is necessary. A hydrological study would be recommended in association with this option. It is also noted that the proposed Tuscan Ridge development project hopes to utilize groundwater as its primary water source.

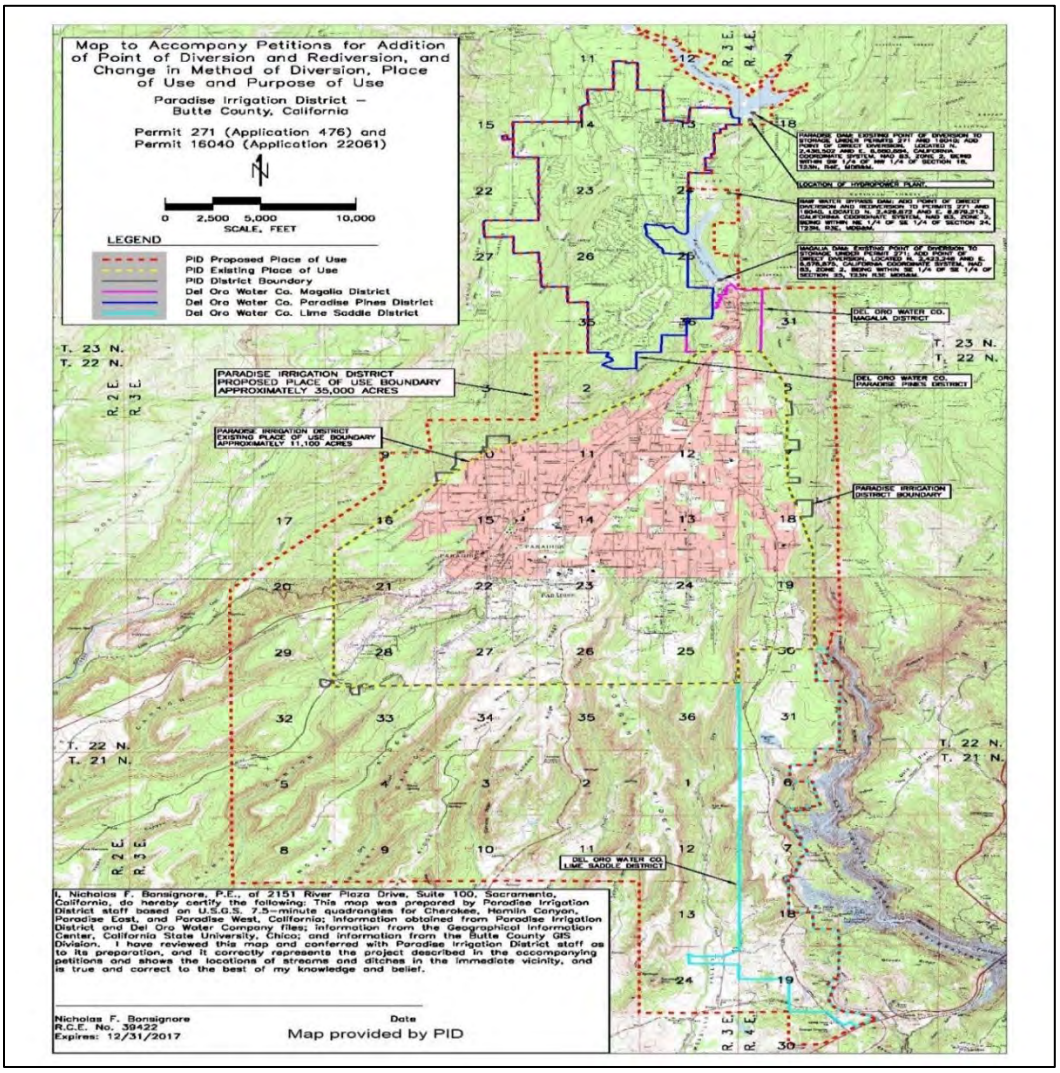
3) ***Study Natural Resources***. Under this option, LAFCO would conduct a natural resource study of the land in and adjacent to PID's SOI boundaries. The study would be based on the watershed description provided in Appendix F and would also evaluate other natural resource characteristics including:
   a. fire hazard classifications such as "Very High" or "High" could be excluded from any proposed SOI expansion.
   b. CA Department of Conservation farmland mapping data could be utilized to identify agricultural land grazing land. These agricultural lands could be excluded from future SOI expansion.
   c. Terrain that contains steep hillsides would be mapped. These have a low probability of infrastructure extension and could be excluded from SOI expansion.
   d. Vegetation and aquatic resources protection. PID may wish to take a more active role in watershed management activities such as vegetation management. Specific resource management areas may logically be included or excluded from PID's SOI, depending on the circumstances.
   e. Consider both water rights and actual available water flow in the Creek. PID has submitted an application to the State to perfect its water rights. However, a final decision on this application has not yet been made. Those results along with newer hydrologic information could be considered in this option.

The aim of this optional study would be to identify areas where PID could expand within a 10 to 20-year timeframe, ensuring that infrastructure could be reasonably extended and that natural resources could be protected.

4) ***Update the PID SOI to include "Place of Use."*** The State Water Board issued or will soon issue a water right/permit to PID and this water right is associated with a designated "Place of Use." The California Water Board defines the "place of use" where that water may be applied. The "place of use" is not directly related to LAFCO. However, if the water will actually be utilized in a location that is outside of the LAFCO-approved boundary, then PID should seek approval from the Commission. Under this option, LAFCO would map this "Place of Use" and then consider adjusting the boundaries or SOI of PID to achieve consistency. Alternatively, LAFCO can submit comments to the State Water regarding the "Place of Use" and ask them to respect the SOI that LAFCO has previously established. PID is encouraged to keep LAFCO apprised of the status of this place of use designation. For example, PID submitted Application #476 under Permit 271 and Application #22061 under Permit 16040 in 2017 to petition for an addition of a point of diversion and rediversion, a change in the method of diversion, and changes to the place of use and purpose of use. A map depicting the PID's proposed place of use is shown in Figure G.1 below.

5) ***Water Supply Affordability and Accessibility On The Ridge And In The Chico Area*****:** Generally, water supply reliability on the Ridge and in the Chico area is a current challenge for the local communities. Although the PID has a reliable source of water, several of its neighbors will likely face difficulties in the future during times of drought. Ideally these communities would create a watershed hydrologic model and conduct environmental monitoring to help them manage water resources. Nevertheless, if PID has excess or surplus water in the future, neighboring communities will likely request an opportunity to purchase it. If neighboring areas request an "extra-territorial water service" or request to be annexed into PID's water system, LAFCO would become involved in the public decision-making process. Therefore, it is important for LAFCO to work with PID to consider its boundaries, SOI, and any extra-territorial services with a long-term vision for how to best manage water resources.

Figure G.1: PID Application for Place of Use Update



Source: PID, 2023

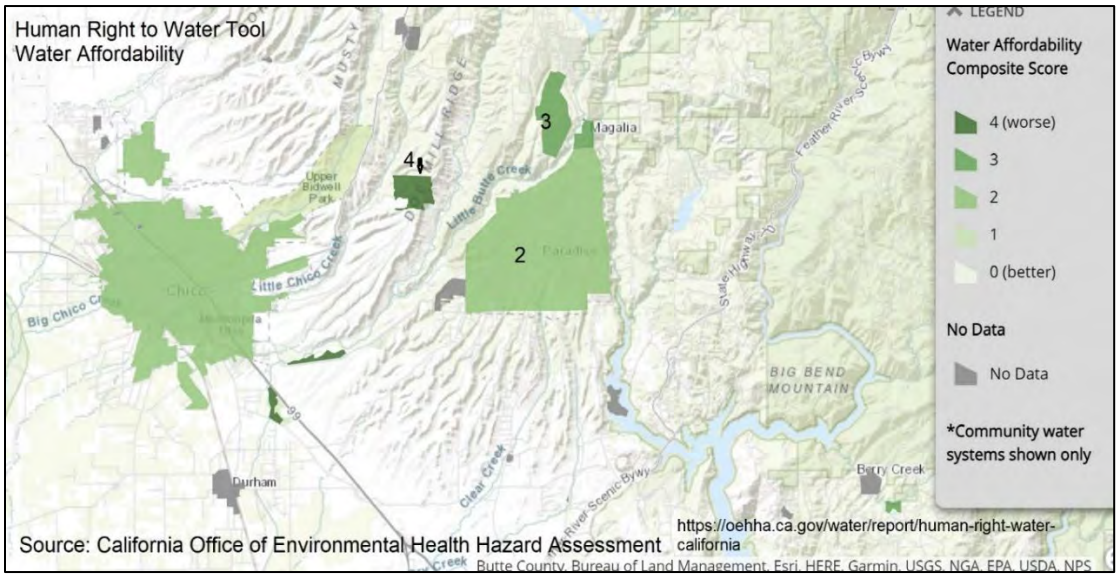
As shown above, PID's water rates are generally affordable for most of its customers and it has an affordability rating of "2-Good". The Human Right to Water Tool shows the Del Oro Water Co.-Paradise Pines (PWSID: CA0410011) system serves 9,808 people and has a Water Affordability Composite Score of "3-Poor". The Del Oro Water Company - Buzztail Dist. (PWSID: CA0400091) system serves 69 people and has a Water Affordability Composite Score of "4-Worst". West of PID and closer to Chico is the Gran Mutual Water Co (PWSID: CA0400008). This system serves 200 people and has a Water Affordability Composite Score of "4-Worst". Similarly, the Butte Creek Estates Mutual Water Co (PWSID: CA0400007) system serves 399 people and has a Water Affordability Composite Score of "4-Worst". As a specific example, as detailed in Chapter 7, PID sells water to and maintains several interties with the Del Oro Water Company. LAFCO may

wish to research in more detail the relationship between PID and the Del Oro Water Company including:

- Quantity and frequency of PID's water sales
- the percentage of Del Oro Water Company's water supply comprised of PID's water
- customer rates for water service from Del Oro Water Company as compared to PID
- water affordability

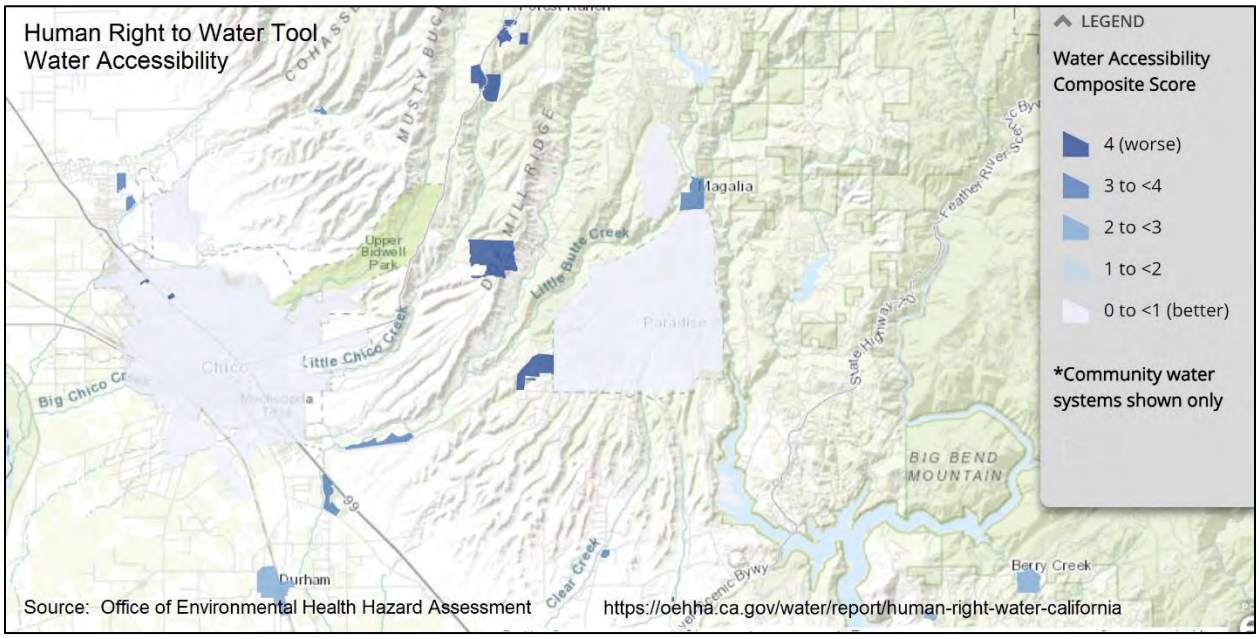
Water affordability is a concern in Butte County. Figure G.2 shows the Human Right to Water Tool database results for the Paradise Area.

Figure G.2: Water Affordability in the Region



Water Accessibility is also a concern for those communities located in close geographic proximity to PID which are vulnerable to running out of water, may be more likely to ask PID or Butte County for assistance. The Human Right to Water Tool measures a Water Accessibility Composite Score is based on physical vulnerability to water outages. The Water Accessibility composite score ranges from 0 to 4, with higher scores indicating worse outcomes. This indicator assesses how vulnerable a water system is to a supply outage (or shortage). It identifies a system's main water source type (e.g., groundwater, surface water, or combined groundwater and surface water), whether the system purchases water from a wholesale system, and how many permanent and backup/emergency sources a system uses in case of emergencies, such as a period of drought. Included in this count are consecutive connections between water systems, also known as interties, which represent water that a system can purchase from another water system provider, or wholesale system. There are several communities near PID that have a water accessibility score of "4-Worst" meaning they are vulnerable to potential future outages as shown in Figure G.3, below.

Figure G.3: Water Accessibility



The CA Office of Environmental Health Hazard Assessment's communities with the worst or poor water accessibility are listed below:

- Del Oro Water Co.-Magalia (PWSID: CA0410009). This system serves 924 people. Water Accessibility Composite Score: 3.00 – Poor
- Blue Oak Terrace Mutual (PWSID: CA0409181). This system serves 50 people. Water Accessibility Composite Score: 4.00 - Worst
- Del Oro Water Company - Buzztail Dist. (PWSID: CA0400091). This system serves 69 people. Water Accessibility Composite Score: 4.00 - Worst
- Humboldt Highlands Mutual (PWSID: CA0400123). This system serves 50 people. Water Accessibility Composite Score: 4.00 - Worst
- Plus, several others

6) Align PID's SOI with Town of Paradise Sphere of Influence

The SOI for the Town of Paradise extends north of the Town as shown in Figure 5-1. This option would update the PID SOI to match the SOI for the Town of Paradise. This would study whether PID could provide water service to areas in which the Town might expand in the future. However, there are other water service providers in the area north of Town and therefore this option would need additional geographic and technical study.

7) Options Listed in the Options Study Report (June 2022)

The Options Study Report (GEI, 2022) was prepared to evaluate options for improvements to PID's water system infrastructure and finances to ensure the long-term sustainability of the community's water system(s) and to support recovery from the 2018

Camp Fire and redevelopment of the community. The Options Study identified eight (8) options as listed below:

- Baseline
- No Project
- Financial Claims
- Agency Reorganization
- Water Transfers
- Infrastructure
- Others
- Funding Augmentation

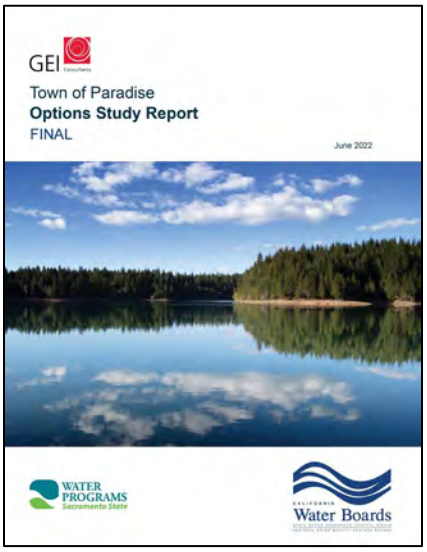
As part of its Agency Reorganization option, the Study noted that "with the current challenges encountered by PID, there are some potential financial benefits if PID is reorganized with other agencies that have strong managerial, technical, and financial capabilities. PID can potentially be reorganized by restructuring PID into other agencies or other agencies into PID. Any agency reorganization would be performed in collaboration with the Butte Local Agency Formation Commission (Butte LAFCo) to ensure that all decisions are made locally." (GEI, 2022). The Options Study listed three (3) Agency Reorganization sub-options as listed below:

- **Town of Paradise -** Most of the population served by PID resides within the Town. The Town offers its residents several services such as police and fire protection. However, the Town relies on PID for water treatment and distribution to serve its residents. Reorganizing PID into the Town would allow the two entities to leverage existing managerial and technical capabilities and existing funding, and optimize operating expenses, which would assist PID to overcome the financial (operational) deficit until their customer base returns. In addition, reorganization to merge/consolidate PID and the Town can address the following: 1) the agencies serve the same customer base/population, 2) there is some duplicate services, 3) cost efficiencies, and 4) reduced number of elected's needed.

- **South Feather Water and Power Agency -** Formed in 1919, SFWPA is located approximately 20 miles southeast of the Town, in the Sierra foothills of southeast Butte County. SFWPA provides treated water service to the communities of Oroville, Palermo, and Bangor in Butte County, and operates the South Feather Power Project, a Federal Energy Regulatory Commission (FERC) licensed hydropower project and serves residents within Butte County's First Supervisorial District. SFWPA is substantially larger than PID, and thus reorganizing PID into SFWPA would permit continued operations and an absorption of deficit until PID's customer base returns.

- **Del Oro Water Company** ("Del Oro"), is an investor-owned utility established in 1963 and currently serves the water needs of multiple districts throughout the State of California. Paradise Pines, Lime Saddle, Magalia, and Buzztail districts

surrounding the Town are currently served by Del Oro with approximately 6,000 connections. Reorganizing any of these districts or a combination of these districts would allow the two entities to leverage existing managerial and technical capabilities and optimize operating expenses, which would assist PID to overcome the financial deficit until their customer base returns.



Data Source: GEI Consultants, Inc. June 2022. Final Town of Paradise Options Study Report. Prepared for Sacramento State University, Office of Water Programs. Funded by Calif Water Board. 133-pages.

Other Reorganization Options

Although not listed in the Options Study by GEI, LAFCO may wish to consider possible reorganizations between PID and other local service providers. For example, the Paradise Recreation & Park District shares a similar interest in watershed management with PID. Both agencies manage natural resource and are in geographic proximity.

APPENDIX J

Example: Fire Standard Water Supply

CAL FIRE
San Luis Obispo
County Fire Department

635 N. Santa Rosa • San Luis Obispo, CA 93405
Phone: 805.543.4244 • Fax: 805.543.4248
www.calfireslo.org

Scott M. Jalbert, Unit Chief

Standard 1
Water Supply

Scope

This standard provides a method of identifying the minimum water supply requirements for firefighting purposes relative to commercial, industrial or residential development. This standard provides requirements for water from fire hydrants for fire suppression activities.

General Requirements

All fire hydrants and required access roads shall be installed prior to structural construction.

Definitions

- CBC — California Building Code 2016, California Code of Regulations Title 24, Part 2.
- CFC — California Fire Code 2016, California Code of Regulations, Title 24, Part 9.
- CRC — California Residential Code 2016, California Code of Regulations, Title 24, Part 2.5.
- FPE — Fire Protection Engineer
- Floor Area, Gross — For the purpose of calculating square footage for the application of fire sprinkler requirements and for fire flow requirements, the floor area shall include all combustible areas attached to the structure, including garages, patio covers, overhangs, covered walkways, etc.
- Fire Flow — The flow rate of a water supply, measured at 20 pounds per square inch (PSI) (137.9kPa) residual pressure, that is available for firefighting. When water supply tanks are approved for use, the flow rate of a water supply may be at draft.
- Local Ordinance — Amendments to the California Fire Code (CFC) adopted by the County of San Luis Obispo, Avila Beach Community

	Services District, Cambria Community Services District, Cayucos Fire Protection District, City of Pismo Beach, Los Osos Community Services District and Templeton Community Services District.
• NFPA 13	National Fire Protection Association 2016, Standard for the Installation of Sprinkler Systems.
• Occupancy Type	The purpose for which a building or part thereof is used or intended to be used, as determined by California Building Code (CBC), Chapter 3, Use and Occupancy Classification.
• PRC	Public Resources Code
• Single Family Dwelling (SFD)	One and two family dwellings, included attached or detached private garages. Also, sometimes referred to as Single Family Residence (SFR).
• SFM	State Fire Marshal
• Type of Construction	Determined from Chapter 6 of the California Building Code (CBC).
• Water Purveyor	A public utility, a mutual water company, a governmental body, or other entity, owning and operating a water system and holding a valid permit from the State or County Health Department to purvey water.

Water Storage Requirements

This information is derived from the current adopted California Fire Code, Local Ordinances and NFPA. If your project requires fire sprinklers, please contact an approved FPE or C-16 contractor. A current list of San Luis Obispo County approved fire protection engineers can be found at:
http://calfireslo.org/Documents/Prevention/Standards&Exhibits/Approved%20FPE.pdf

Defensible Space Requirements

California law (PRC 4291) requires property owners and/or occupants to create 100 feet of defensible space around homes and buildings. Defensible space is a perimeter that provides a buffer to stop or slow the spread of an encroaching wildland fire or prevent a structure fire from escaping into the adjacent wildland. Defensible space is an area of reduced and/or modified fuel that will not readily transmit or carry fire and will provide firefighters with a safe working environment that allows them to protect buildings and structures from encroaching wildfires and minimizes the chance that a structure fire will escape to the surrounding wildland.

CAL FIRE requires that landscaping selections do not readily transmit fire. Landscaping and vegetation shall be in accordance with San Luis Obispo County Planning and Building "New Landscaping Requirements" http://www.slocounty.ca.gov/planning/New_Water_Requirements/New_Landscaping_Requirements.htm

Our website www.calfireslo.org has several links with recommended planning tools for landscape and fuel management plans.

Residential

For purposes of this section, residential refers to one and two family dwellings.

Remodel / Alterations

In calculating square footage for the application of fire sprinkler requirements and fire flow requirements, the floor area shall include all combustible areas attached to the structure. This includes garages, patio covers, overhangs, and covered walkways. Alterations, additions and remodel square footage will be considered a combined and cumulative sum of floor area.

Private Water System

1. A C-16 contractor will design the sprinkler system and determine the required dedicated fire water storage amount for structure of design.
2. *CAL FIRE* will determine minimum dedicated fire water storage amount for structure(s) and site (minimum 2,500 gallons per NFPA 1142). See FP-2 and FP-3 for schematics.
3. Most projects will require a minimum of a 5,000 gallon water storage tank. The 2,500 gallon minimum dedicated fire water reserve combined with average domestic water usage dictates a standard tank size of 5,000 gallons.
4. *CAL FIRE* does not require the installation of a dedicated fire water tank, only the required dedicated water storage amount.

Exceptions

In some instances, with prior approval from the Fire Department:

- Large shops, multi-level residential and/or large atrium or vaulted ceiling designs may require the review of a fire protection engineer.
- Large and/or multiple structures with less than 50 feet separation may require additional dedicated fire water storage.

Community Water System

One and two family dwellings on a community water system shall meet the California Fire Code Appendix B fire-flow requirements and Appendix C, "Fire hydrant locations and distribution". A signed will-serve letter from the water purveyor must be submitted with your fire safety plan application, and received prior to final inspection of the project. You can find that document here: http://calfireslo.org/Documents/Prevention/Standards&Exhibits/2016%20Community%20Water%

Building construction type and square footage will determine fire flow requirements. The minimum allowable fire flow will be 1000 gpm for 2 hours if structure is less than 3,600 square feet. For determining fire flow requirements on any structure over 3,600 square feet refer to Appendix B, table B105.1 of the CFC.

Exceptions

In some instances, with prior approval from the Fire Department:

- Los Osos Community Services District, a reduction to 750 gpm is permitted in areas served by the water purveyors.

Commercial

An approved FPE is required to design and review fire protection systems in new commercial development. This link will give you the approved FPE's for San Luis Obispo County projects:
http://calfireslo.org/Documents/Prevention/Standards&Exhibits/Approved%20FPE.pdf
For complex facilities, a master fire protection plan is also required. The FPE will determine water storage capacity.

The minimum fire-flow and flow duration for buildings other than one and two family dwellings shall be as specified in CFC Appendix B, Table BB105.1. Building over 100,000 square feet will require secondary power supply for the fire protection system pumps.

Exceptions

In some instances, with prior approval from the Fire Department:

- A reduction in fire-flow of up to 75%, as approved by the Fire Chief, is allowed when the building is provided with an approved automatic sprinkler system. The resulting fire-flow shall not be less than 1,500 gallons per minutes.

- In rural areas where there are no water purveyors and the building is protected by an approved automatic sprinkler system, the provisions in NFPA 13 for combined inside and outside hose lines may be utilized to determine fire-flow and duration. The water storage total quantity will be a combination of the sprinkler demand and the fire-flow requirements. The location, connections and other appurtenances of tanks shall be approved by the fire department.

    - When using this option, the resulting fire-flow (hose demand) shall double for every 10,000 square feet of building area or portion thereof. The fire sprinkler demand only needs to be provided once per building. Use of this option is limited to up to 2 buildings on the same property and ownership.
    - Buildings classified as Group U, agricultural buildings used as barns, storage structures, stables, poultry buildings and other similar uses with a total fire area of 3,000 square feet or less are not required to provide fire-flow.
    - Buildings classified as Group U, agricultural buildings used as greenhouses, horticultural structures, nurseries and similar uses may use NFPA 1142 provisions for water storage regardless of number of buildings of this type.
    - Buildings with a total floor area of 500 square feet or less are not required to provide fire-flow.
    - Domestic water demands shall be in addition to required fire water storage.

Subdivisions

Subdivisions will require community water systems that comply with CFC Appendix C. For additional information relative to this requirement, contact the San Luis Obispo County Planning and Building Department.

Schools

Public Schools

The State Fire Marshal (SFM) requires the Division of State Architect (DSA) to request water and access requirements and approval from the local jurisdiction. The minimum fire-flow and duration for public school buildings shall be as specified in CFC Appendix B, Table BB105.1.

- A reduction in fire-flow of up to 75%, as approved by the Fire Chief, is allowed when the building is provided with an approved automatic sprinkler system. *CAL FIRE* will consult with the approving FPE prior to permitting reduced fire-flow.

Private Schools

Private schools shall comply with all the requirements for an educational building. Local requirements are applicable to private schools.

Multiple Tanks

Connecting several tanks together, also known as daisy chaining, is strictly prohibited.

Exceptions

In some instances, with prior approval from the Fire Department, multiple tanks may be installed.

- When topographical or soil conditions prohibit large tanks (technical report required) and/or
- Planning and Building Department land use conditions require reduced visual impact (Coastal Zone screening) and/or
- Where approved by the Fire Chief.

If approved, multiple tanks systems must have:

1. all valves chained and locked open,
2. each tank must be installed with monitored tamper resistance,
3. all tanks must feed into one common manifold serving the fire protection systems, and
4. onsite hydrants or other appurtenances.

Tenant Improvements

Tenant improvements requiring a Fire Safety Plan and alterations to an existing fire sprinkler system must also provide a letter and/or review from an FPE verifying fire and life safety function of the installed system. Examples of thresholds for alterations requiring FPE review include walls moved, removed or added, occupancy change, hazard class change and/or additional sprinkler heads added to system.