

Technical Memorandum

To: Rowland Hickel, Dan Breedon, and Paula Daneluk, Butte County

From: Danny Kerns, P.E & Ken Shuey, P.E., Provost & Pritchard

Subject: Butte County Upper Ridge Community Plan, Infrastructure & Services Analysis

Date: April 12, 2021

Background

Below is a summary of existing conditions for the water, wastewater, and stormwater utilities for the Upper Ridge Community Plan. The information was provided by Butte County and Del Oro Water Company.

A base map of the Magalia CDP (CDP Area) boundary is included as **Figure 1**. Note that this report reviews infrastructure and services within the CDP Area, which may not exactly match the Upper Ridge Community Plan Area. Boundaries of the Del Oro Water Company service area and boundaries of County Service Area (CSA) No. 004 (Sierra Del Oro Drainage, Street Lighting, Water Quality Testing and Road Maintenance District) and CSA No. 098 (Oro Monte Estates Drainage District) are also included in **Figure 1**. See the discussion on *County Service Areas* below for a full description of the services provided by these two CSAs.

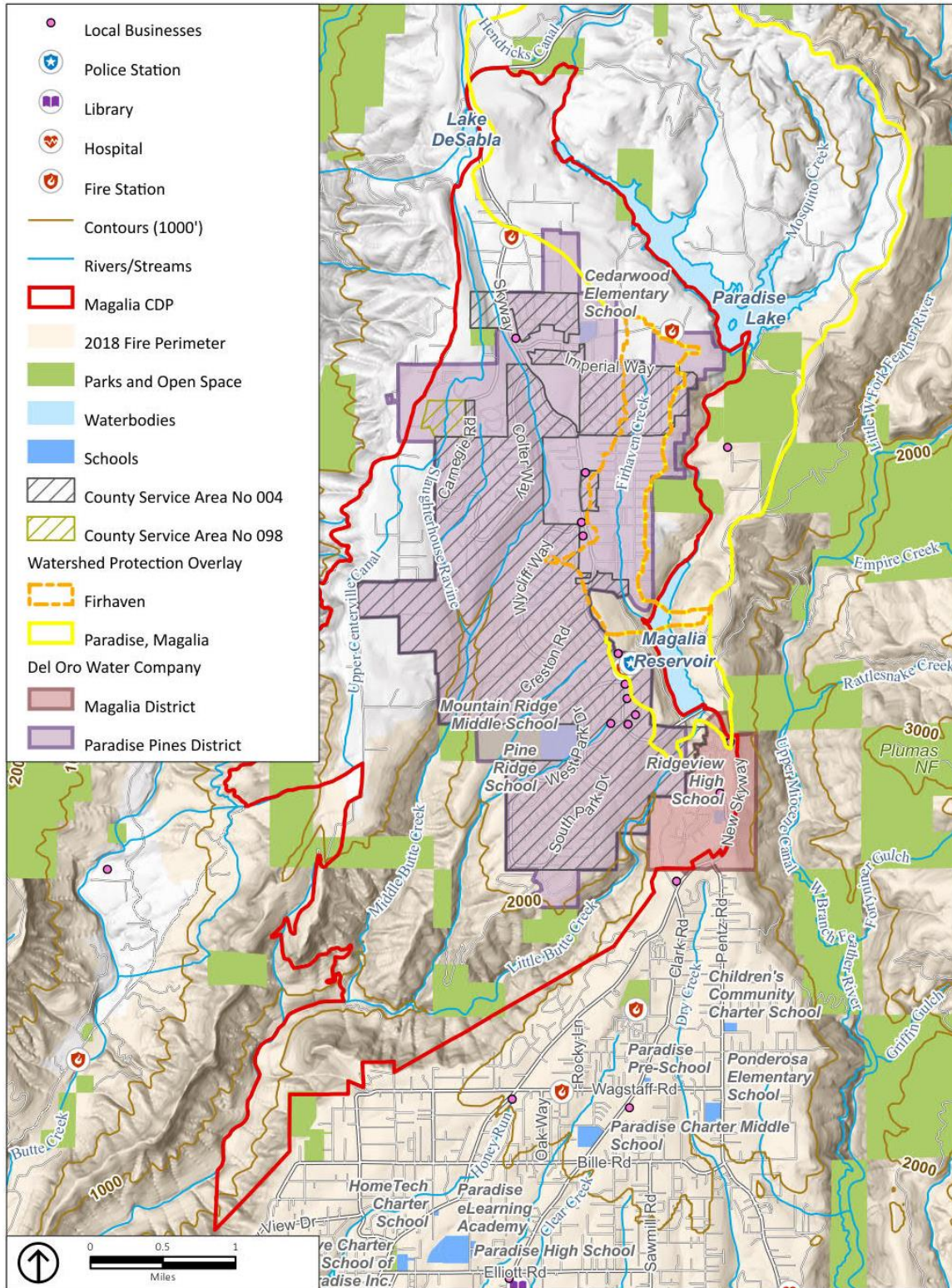
Water

Water service in the CDP Area is provided from several different sources. Del Oro Water Company owns and operates two water systems that are largely within the CDP Area, and drinking water service in the remainder of the CDP Area is provided by private wells permitted by Butte County. No water is diverted directly from Butte Creek.

Del Oro Water Company

Del Oro Water Company owns and operates the Paradise Pines and Magalia Water Districts within the CDP Area (see **Figure 1**). The primary water source for both water systems is from six deep water wells (four in the Paradise Pines District and two in the Magalia District) which can each deliver between 600 gallons per minute (gpm) to 900 gpm. In order to reduce withdrawals from the groundwater wells in the summer months, surface water is also supplied to both systems from the Sterling Bluffs District, which is also owned by Del Oro Water Company and located northeast of the CDP Area in Sterling City, CA. The Sterling Bluffs District typically uses only a portion of the allotted water supply from Pacific Gas & Electric Company and therefore the remainder can be conveyed to the Magalia Reservoir and then pumped into both the Paradise Pines and Magalia Water Districts. Prior to introduction into the distribution systems, the surface water is treated by Paradise Irrigation District's water treatment facility located near the Magalia Reservoir. The groundwater wells have wellhead pH control treatment and introduce chlorine for disinfectant residual in the distribution systems.

Figure 1. Service Area Boundaries



The Paradise Pines District serves approximately 3,708 acres (41%) of the CDP Area. Prior to the Camp Fire there were 4,842 active services with an annual average water usage of approximately 350 million gallons. The majority of the services are residential, with a minority being commercial services. There are three water storage tanks within the system with 440,000 gallons, 1,000,000 gallons, and 1,500,000 gallons of storage capacity. The system has three pressure zones which utilize pressure reducing valves to gravity flow between the zones. Booster pump stations are utilized to pump to the upper zones. The water distribution system is comprised of approximately 341,000 linear feet of pipe. The pipe diameters range from 4 to 12 inches, and pipe materials include asbestos-cement (AC), polyvinyl chloride (PVC), and steel. According to Del Oro Water Company staff, the Paradise Pines District is built out to capacity. Except for minor infill development, further development in the area would require additional study to determine serviceability. There are no current plans to annex additional areas to the Paradise Pines service area.

The Magalia Water District serves approximately 259 acres (3%) of the CDP Area. Prior to the Camp Fire there were 282 active services with an annual average water usage of approximately 25 million gallons. The majority of the services are residential, with only a few being commercial services. There is one water storage tank within the system having a 250,000 gallon capacity. The system has only one pressure zone. The water distribution system is comprised of approximately 24,000 linear feet of pipe. The pipe diameters range from 4 to 8 inches, and pipe materials include asbestos-cement (AC) and polyvinyl chloride (PVC). According to Del Oro Water Company staff, the Magalia Water District is built out to capacity. Except for minor infill development, any further development in the area would require additional study to determine serviceability. There are no current plans to annex additional areas into the Magalia Water District service area.

The Camp Fire burned through the CDP Area in November of 2018. Both the Paradise Pines and Magalia Water Districts were impacted. The Paradise Pines system had 4,842 services prior to the fire, and only 3,199 of those are in service as of December 2020. Similarly, the Magalia system had 282 services before the fire, and only 91 active services in December 2020. The reduction of active services affects revenue for Del Oro Water Company. Additionally, any reactivation of a service after the Camp Fire requires benzene testing of that service. As of December 2020, only four services between the two systems needed replacement due to concerns of benzene leaching from fire damaged plastic water supply pipes into the delivered water. Magalia Water District lost one pumping station in the fire which has since been replaced.

Butte County Groundwater Wells

Domestic water service within the CDP Area but outside the Del Oro Water Company's service areas is provided by private wells. There are no restrictions in place that would limit the development of new wells as long as established setbacks to property lines and on-site wastewater disposal systems are met. Setback requirements for private water wells to on-site wastewater systems generally range from 50 feet to 150 feet. There are no known concerns about water supply outside the Del Oro Water Company's service area except that the ridgeline properties (along Nimsheew Road and Coutolenc Road) have very deep wells (upwards of 1,000 feet) due to the geologic formation in that area. All wells are subject to Butte County requirements and permitting.

Wastewater

Wastewater service in the Study Area is provided by on-site holding tanks and conventional septic systems. No centralized collection, treatment, and disposal system exists. There are no current plans to develop a centralized system specifically for the CDP Area. The Town of Paradise is exploring providing a centralized system for a portion of the area within the Town's jurisdiction, but connection of a portion of the CDP Area to the proposed centralized system is not being considered at this time.

Permitting and construction are governed by Butte County's Local Agency Management Program (LAMP) and are administered by the Butte County Department of Environmental Health. Department of Environmental Health staff was contacted regarding the LAMP and how it generally applies to the CDP Area. County staff related that soils in the area generally were adequate for conventional septic systems. Lots in the CDP Area that are less than 0.25 acre may have trouble meeting setback requirements and LAMP requirements for an area reserved for a replacement disposal field. Smaller lots outside of Del Oro Water Company service areas are further constrained by setback requirements between water wells and septic systems. Applications are evaluated on a case-by-case basis using criteria in the LAMP.

There are no new programs planned that would impact the current regulations. Existing systems that fail or may have been damaged or destroyed by the Camp Fire may have been installed prior to the establishment of new standards allowing reduced setbacks from wells and water bodies. New systems will be required to meet current regulations including Watershed Protection Overlay setbacks, which specify 50-foot minimum setbacks, in addition to the Vegetative Buffer setbacks of up to 250 feet total to lakes/reservoirs and 150 feet to perennial and intermittent rivers/streams specifically around Magalia Reservoir and Paradise Lake, and surrounding creeks in this overlay. See **Figure 1** for Watershed Protection Overlay boundaries. Butte County Department of Environmental Health determines if a failing septic system can be repaired or must be replaced.

Stormwater

Stormwater improvements in the CDP Area generally consist of culverts and ditches to channel stormwater to prevent localized flooding of roadways and other improvements. Butte County Department of Public Works maintains the stormwater improvements.

Public Works staff provided the following information:

- The County has no current stormwater master plan or plans to prepare one. If development intensifies in the CDP Area, a master plan would be a useful tool in determining impacts to the overall stormwater system.
- The current system performs its desired function of conveying stormwater to prevent flooding. As capacity issues arise, they are addressed on a case-by-case basis.
- Post-Camp Fire hydrology and impacts on runoff have not been an issue except for sediment loading (soil, rocks, and debris that is carried by stormwater runoff into drainage channels and culverts), which has increased and can impact the stormwater system. Increased sediment loading can lead to deposits in stormwater facilities decreasing their capacity and leading to uncontrolled stormwater runoff. The County is aware of and monitoring the potential issues related to sediment loading and will develop remediation plans as appropriate.

A portion of the CDP Area is located within the Watershed Protection Overlay boundary, which can affect storm drainage in the area. Additionally, while stormwater runoff in the CDP Area is not currently regulated under an MS4 permit¹, the development intensity of the area and proximity to

waterways increases the likelihood that stormwater runoff may be regulated in the future. Therefore, any future stormwater master planning efforts should consider hydromodification measures consistent with State Water Resources Control Board Order 2013-0001-DWQ as well as stormwater attenuation systems and/or strategies consistent with MS4 requirements.

The Town of Paradise is planning to issue a Request for Proposals for a comprehensive Storm Drain Master Plan for the Town. The master plan is expected to be completed within 36 months. The project area for this project does not appear to overlap with the CDP Area.

Requirements for stormwater and drainage improvements for new development are outlined in the Butte County Public Works Improvement Standards, Chapter 10.²

County Service Areas

A County Service Area (CSA) is a type of dependent special district governed by the Board of Supervisors. CSAs are established as a mechanism for counties to furnish municipal-type services to unincorporated areas beyond those uniformly provided countywide. Only residents who benefit from services provided by the CSA pay for the services received. In Butte County, CSAs are typically formed to provide services to defined areas, such as a subdivision, during the project approval process, although some CSAs provide services Countywide.³

CSA formation is initiated either by resolution of the Board of Supervisors (BOS) or by petition. Petitions must be signed either by 25 percent of the registered voters living in the area to be included in the CSA or 25 percent of the number of owners of land who own no less than 25 percent of the assessed value of land within the area to be included in the CSA.⁴ If formation is initiated by petition, then no action is required by the BOS. The resolution or petition by landowner or voter is forwarded to the Butte County Local Agency Formation Commission, which then undertakes proceedings in accordance with Cortese-Knox-Hertzberg⁵ to approve or deny the formation of the CSA.

As noted above, there are two CSAs within the CDP Area: CSA No. 004 and CSA No. 098. Following are descriptions of the services provided by each.

CSA No.004: Sierra Del Oro Drainage, Street Lighting, Water Quality Testing, and Road Maintenance District

CSA No. 004 is located in the unincorporated community of Paradise Pines, north of the Town of Paradise. It provides financing for drainage maintenance, water quality monitoring, street lighting and enhanced road maintenance. The CSA consists of approximately 4,471 parcels. Development of the parcels consists of approximately 4,091 single-family dwellings and 34 commercial uses, with 220 parcels designated for residential uses but currently undeveloped. Property taxes (AB 8 allocation) and interest earnings are the sources of revenue for the CSA. The estimated balance on June 30, 2020 is \$361,677. Estimated revenue for fiscal year 2020- 21 is \$103,971, with planned use of \$178,796 for maintenance of the drainage system, road maintenance for damage caused by the 2018 Camp Fire, utility charges, water quality testing, and reimbursement of County staff time for work performed on behalf of the CSA.²

CSA No. 098: Oro Monte Estates Drainage District

CSA No. 098 is located along Timber Ridge Road in the unincorporated community of Paradise Pines, north of Paradise, and provides financing for storm water drainage services. The CSA consists of approximately 13 parcels developed with single-family residential uses. An annual

parcel service charge and interest earnings are the sources of revenue for the CSA. The estimated balance on June 30, 2020 is \$8,627. Estimated revenue for fiscal year 2020-21 is \$713, with planned use of \$1,426 for maintenance of the drainage system and reimbursement of County staff time for work performed on behalf of the CSA.²

¹ Municipal Separate Storm Sewer Systems (MS4) permits are National Pollution Discharge Elimination System (NPDES) permits issued by the Environmental Protection Agency (EPA), by way of the State Water Resources Control Board (SWRCB) and authorize governmental entities to discharge stormwater collected by their storm sewer systems to waters of the United States.

² The October 2006 version of this document can be found here: <https://www.buttecounty.net/Portals/22/downloads/IS-06/ImprovementStd2006.pdf?ver=2020-02-19-124024-510>

³ <http://www.buttecounty.net/Portals/1/Budget/FY20-21RecommendedBudget/csa.pdf?ver=2020-06-01-111712-633#:~:text=In%20Butte%20County%2C%20CSAs%20and%20PRDs%20are%20typically,approval%20process%2C%20although%20some%20CSAs%20provide%20services%20Countywide.>

⁴ Government Code Section 25211.1(c).

⁵ Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, as amended.