



# Town of Paradise

## Safety Element



Prepared for:  
Town of Paradise  
Draft December 2023







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# GENERAL PLAN | SAFETY ELEMENT

## INTRODUCTION

The Safety Element is the primary document for linking land use, conservation, and housing decisions to local safety planning. The goal of the element is to protect public health and safety by reducing potential short- and long-term unreasonable risk of death, injuries, property damage, and economic impacts resulting from the effects of natural and non-natural hazards. Natural hazards for the town of Paradise include fire hazards, seismic and other geologic hazards, flooding, drought, and hazardous materials. The Safety Element also includes sections on climate resiliency and disaster preparedness and recovery, which include evacuation routes and emergency services.

The impacts of climate change pose an increasing and growing challenge to the safety and well-being of the residents of Paradise. California will continue to experience effects of climate change in different ways, including increased likelihood of wildfires, heat waves, drought, flooding, severe weather, and sea-level rise. The Safety Element also addresses climate vulnerability and adaptation. The primary goals of the Safety Element are to protect the residents of Paradise from these hazards and to ensure that law enforcement and fire protection continue to meet the demands of new and existing land use development.

In November of 2018, Paradise and some surrounding areas in Butte County faced one of the most destructive wildfires in California history. This fire, known as the 2018 Camp Fire, resulted in the loss of 85 lives, nearly 19,000 structures, the burning of more than 150,000 acres over two weeks, and \$9 billion in insurance claims. It took less than six hours for the Camp Fire to destroy over 90 percent of Paradise. Thousands were left without a home to return to and some were only fortunate enough to grab a few of their possessions before escaping. The fire was reported 100 percent contained 17 days after it began. Addressing short- and long-term risks associated with wildfires and other hazards is important to ensure the improved safety of the community and assist in rebuilding with additional resiliency as Paradise recovers from the Camp Fire.

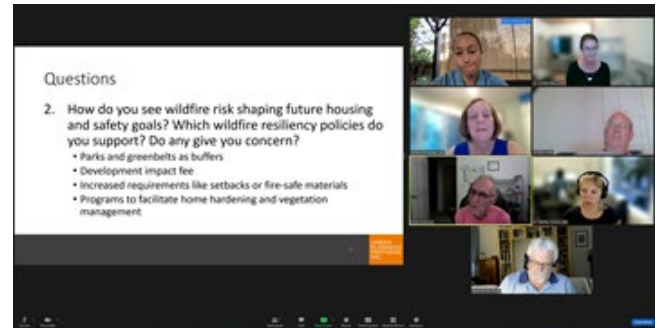
The Safety Element is organized as described below.

- **Introduction** provides context and outlines the purpose of this document.
- **Planning Process and Outreach** summarizes stakeholder outreach conducted in development of the Safety Element.
- **Regulatory Framework** outlines the various regulatory bodies and documents that also govern safety issues and describes the Safety Element’s relationship to these other policies and plans.
- **Community Profile** describes the geographic context of the town as well as information on population and development trends and existing circulation.
- **Hazard Profiles** are provided for each required hazard: fire, geologic and seismic hazards, flooding, hazardous materials, climate resilience/severe weather, and drought. This section also discusses the Town’s efforts and existing programs related to disaster preparedness, response, and recovery.
- **Goals, Policies, and Programs** establishes new (and identifies ongoing) policies and implementation programs to continue to protect residents and property.

## PLANNING PROCESS AND OUTREACH

In tandem with the Housing Element update, the Safety Element update involved community outreach through stakeholder interviews as well as a community meeting, which offered valuable feedback on safety and resiliency policies. The public community meeting was held on September 21, 2021 which utilized breakout rooms (see Figure 1) and a live poll to gather community feedback. The live poll was made available as an online survey to gather additional public feedback for one week following the meeting.

Figure 1: Public Community Meeting



Based on this meeting and survey, it was understood that community members strongly supported establishing greenbelts or parks on key parcels to serve as wildfire buffers around the periphery of town. Other supported policies included easements to allow the Town to perform vegetation management on private property, increasing resiliency standards for new construction, and programs to educate and facilitate property owners on hardening their homes. See Figure 2 for an excerpt of the survey results.

In addition, consistent with [Government Code Section 65302\(g\)\(8\)](#), the Town reached out to the California Geological Survey of the Department of Conservation and the Office of Emergency Services to request data sources and provide opportunity for consultation. No consultations were requested.

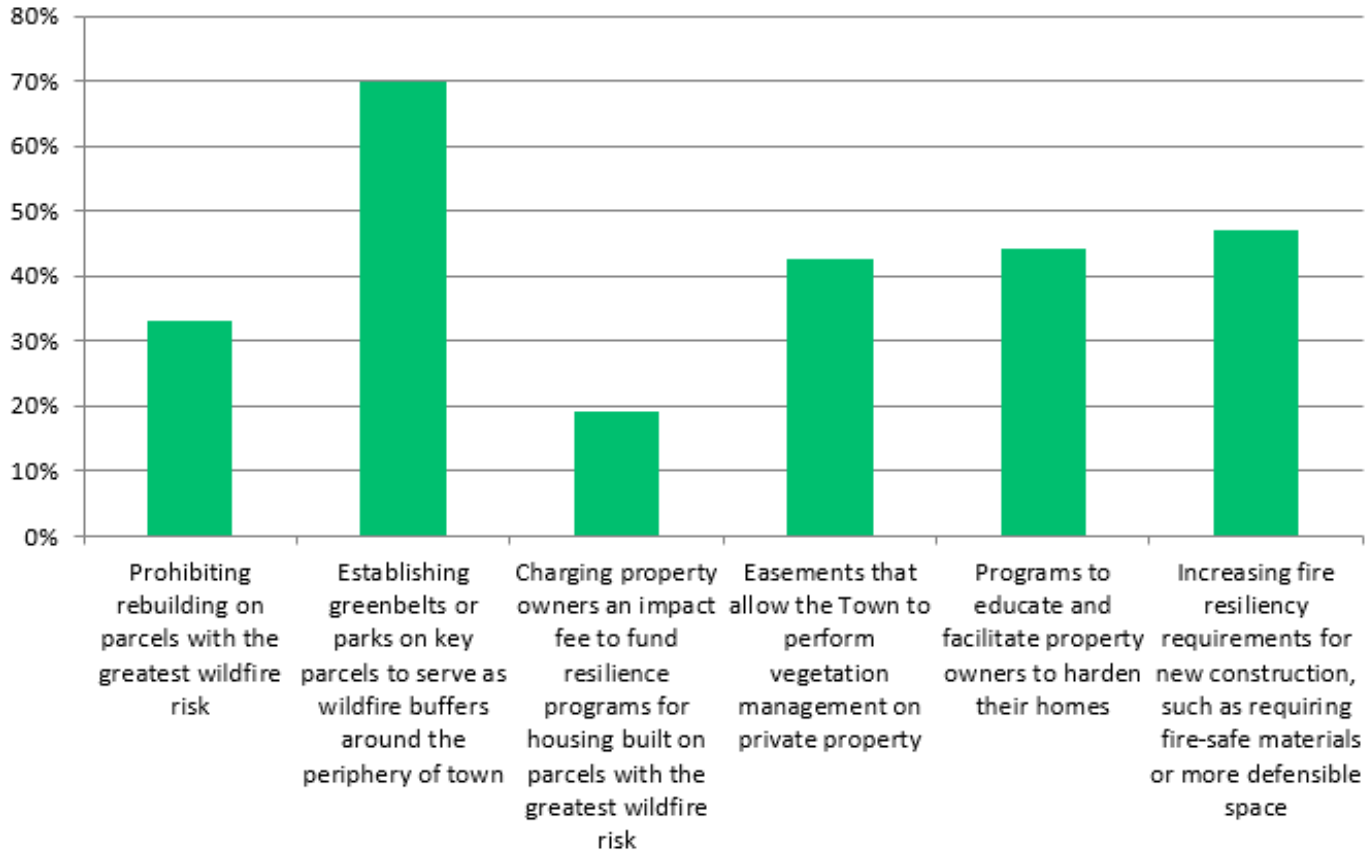
## REGULATORY FRAMEWORK

This chapter describes the regulatory context of the Safety Element and its relationship to other local planning documents.

All counties and incorporated communities in California must prepare a General Plan, and one of the required elements (or chapters) of the General Plan is a Safety Element. This Safety Element meets these requirements, which are laid out in California law, particularly [Section 65302\(g\) of the California Government Code](#). State law requires that the Safety Element address the following:

Figure 2: Excerpt of Survey Results

Of the resiliency solutions listed below, which do you support? Select all that apply.



- Protect the community from risks associated with a **variety of hazards**, including seismic activity, landslides, flooding, and wildfire, as required by the California Government Code Section 65302(g)(1).
- Map and assess the risk associated with **flood hazards**, develop policies to minimize the flood risk to new development and essential public facilities, and establish effective working relationships among agencies with flood protection responsibilities, as required by California Government Code Section 65302(g)(2).
- Map and assess the risk associated with **wildfire hazards**, develop policies to reduce the wildfire risk to new land uses and essential facilities, ensure there is adequate road and water infrastructure to respond to wildfire emergencies, and establish cooperative relationships between wildfire protection agencies, as required by California Government Code Section 65302(g)(3).
- Assess the risks associated with **climate change** on local assets, populations, and resources. Note existing and planned development in at-risk areas and identify agencies responsible for providing public health and safety and environmental protection. Develop goals, policies, and objectives to reduce the risks associated with climate change impacts, including locating new public facilities outside of

high hazard areas, providing adequate infrastructure in at-risk areas, and supporting natural infrastructure for climate adaptation, as required by California Government Code Section 65302(g)(4).

- Identify "residential developments in any hazard area identified in the safety element that do not have at least two **emergency evacuation routes**" as required by California Government Code Section 65302(g)(5), added by SB 99 (2019).

### RELATIONSHIP TO OTHER PLANS

This Safety Element is one of several plans that address public safety, disaster mitigation, wildfire protection, and other related topics. The Safety Element is consistent with these other plans, ensuring the Town and the surrounding region have a unified strategy to address public safety issues. The Safety Element's relationship to other local plans is detailed below.

#### **Butte County Local Hazard Mitigation Plan (LHMP)**

LHMPs are required by the Federal Disaster Mitigation Act of 2000 (Public Law 106-390). Having an approved LHMP is needed in order for a local jurisdiction to qualify for certain federal disaster assistance and hazard mitigation funding. LHMPs are required to be updated every five years.

The Butte County LHMP was developed in accordance with the Disaster Mitigation Act of 2000 (DMA 2000) and followed FEMA's Local Hazard Mitigation Plan guidance. The LHMP incorporates a process where hazards are identified and profiled, the people and facilities at risk are analyzed, and mitigation actions are developed to reduce or eliminate hazard risk. The implementation of these mitigation actions, which include both short and long-term strategies, involve planning, policy changes, programs, projects, and other activities.

The LHMP can be found at this location: <https://www.buttecounty.net/808/Local-Hazard-Mitigation-Plan>.

The Town of Paradise has participated in the LHMP multi-jurisdictional effort and has adopted each update of the LHMP. The LHMP was also developed, among other things, to ensure Butte County and participating jurisdictions' continued eligibility for certain federal disaster assistance, specifically the FEMA Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Program (PDM), and the Flood Mitigation Assistance Program (FMA).

The Safety Element is aligned with and draws heavily from the Butte County LHMP. The LHMP and Safety Element requirements are very similar in many respects, but not identical. The LHMP focuses on more specific mitigation actions while the Safety Element provides a higher-level view and more general safety-related policies across a broader array of topics. AB 2140 (2006) encourages (but does not require) a jurisdiction to incorporate the LHMP by reference into the Safety Element. Recent State legislation, SB 379 (2015) and SB 1035 (2018), have linked required updates of the Safety Element to the required updates of the LHMP and Housing Element.

The Town of Paradise has adopted and hereby incorporates by reference the most current Butte County LHMP as part of this Safety Element.

#### **Butte County Community Wildfire Protection Plan**

A Community Wildfire Protection Plan (CWPP) is a planning and funding prioritization tool authorized by the Federal Healthy Forests and Restoration Act of 2003 as an incentive for communities to engage in comprehensive forest and fire hazard planning and help define and prioritize local needs. CWPPs are updated every five years.

The [Butte County CWPP](#) was collaboratively developed through interested parties including Federal, State, City, Town, and County agencies within the Unit (the Unit includes Butte County and



some adjacent areas). The plan identifies and prioritizes pre-fire and post-fire management strategies and tactics meant to reduce the loss of values at risk within the Unit. It is intended to be used as a planning and assessment tool only. By placing the emphasis on what needs to be done long before a fire starts, the fire plan strives to reduce firefighting costs and property losses, increase firefighter safety, and enhance ecosystem health. The Butte County CWPP has been developed based upon the priority goals and objectives identified by the Butte County Fire Department and by local collaborators. The plan addresses the pre-fire strategies and tactics that will be implemented in cooperation with the fire agencies in Butte County, the Butte County Fire Safe Council, local community groups, and landowners.

The Butte CWPP can be found at this location: <https://buttefiresafe.net/document-library/butte-county-community-wildfire-protection-plan-cwpp-2021-2025/>.

The Butte CWPP also serves as the Butte Unit Fire Plan, further described below.

### **Butte Unit Fire Plan**

California Department of Forestry and Fire Protection (CAL FIRE) operations are divided into 21 operational units. Each unit is required to have a Unit Fire Plan. Annual updates to the [Unit Fire Plans](#) are due June 1 of each year. Each unit plan addresses how each CAL FIRE Unit and Contract County is achieving the goals and objectives of the California Strategic Fire Plan. For the CAL FIRE Butte Unit, the Butte County CWPP also serves as the Butte Unit Fire Plan.

The Butte Unit Fire Plan can be found at this location: <https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/fire-plan/#unit>.

### **Long Term Community Recovery Plan**

The Town of Paradise Long Term Community Recovery Plan (LTCRP) was created in 2019 by the

community in direct response to the 2018 Camp Fire. The LTCRP includes an overview of the disaster, a detailed description of the community engagement process, the full recovery plan, and detailed recovery projects, both Town-led and partner-led. The LTCRP is centered around a consensus vision and goals generated by community members through outreach efforts. Projects proposed in the LTCRP include road evaluation and rehabilitation, a walkable downtown, reseeded the town, broadband services, public safety, and much more. In 2022, the LTCRP was updated to reflect new priorities and projects in the Town's recovery.

The LTCRP and any updates can be found at this location: <https://www.townofparadise.com/recovery>.

### **Town of Paradise Transportation Master Plan**

Funded by a United States Economic Development Administration (EDA) grant, the Town of Paradise Transportation Master Plan (TMP) is a foundational document that guides the Town of Paradise's (Town) recovery through transportation initiatives and strategies consistent with the Town of Paradise LTCRP. The TMP is a critical step to both the Town's short-term recovery and vibrant long-term future. The TMP includes a comprehensive analysis of the Town's transportation daily needs, as well as recommend gap closures to strengthen future traffic evacuation demands. Additionally, the TMP considers how travel within the community can benefit from dedicated sidewalks and bikeways, and how transportation improvements can increase safety and support economic growth. The TMP will help to ensure safe, modern travel options, and efficient evacuation routes for the Town's residents, business owners, and visitors.

The TMP can be found at this location: <https://www.townofparadise.com/pwe/page/transportation-recovery-efforts>.

**Town of Paradise – Other General Plan Elements**

The Safety Element is one of the required elements of a general plan in California. State law requires that “the general plan and elements and parts thereof comprise an integrated, internally consistent, and compatible statement of policies.” The Safety Element is being updated concurrently with the Housing Element. The Housing Element for 2022-2030 was adopted in 2022. The remainder of the Town of Paradise General Plan was adopted in 1994 and last amended in 2008. A comprehensive update of the remaining elements of the General Plan is proposed for 2023-2025.

Several Safety Element goals and policies are related to topics and policies in other general plan elements, including the Land Use, Circulation, Housing, and Open Space/Conservation/Energy Elements. Goals and policies most relevant to the Safety Element are listed below.

- LUP-2 The environmental and infrastructure constraints analysis system should be used to determine future zoning classifications, densities, and intensities of land use and to evaluate future development projects.
- LUG-8 Assure that law enforcement and fire protection services are enhanced sufficiently to meet the demands of new and existing land use development.
- LUP-14 Growth and land use development should be linked to the availability of public services and facilities, and to the degree of overall infrastructure and environmental constraints affecting property in the town.
- LUP-20 New land use development shall not cause the levels of police and fire protection to fall below the service levels established by this plan.
- LUG-10 Encourage infill development consistent with open space needs, neighborhood character and infrastructure capacity.
- LUG-13 Designate appropriate areas for high density residential use and for institutional and public uses in centralized and convenient locations.
- LUP-27 The town shall create a Central Commercial area generally bounded by Skyway, the Paradise Memorial Trailway, Elliott Road, and Pearson Road, evidencing the following: ready access from a variety of directions, visibility, established businesses, available developable land, and sufficient infrastructure planned or in place to support a more concentrated form of activity.
- LUP-82 Proposed development projects in the tertiary planning area shall acknowledge potential high wildland fire hazards, and include a comprehensive approach to regional fire protection, consistent with State and local fire protection laws and standards.
- OCEI-9 Establish open space, resource conservation, or low density rural residential zoning on sensitive (environmentally constrained) lands, such as areas of resource production, stream corridors and slopes greater than 30 percent.
- OCEI-25 Eliminate leaf burning after establishing a program for disposing of yard waste in an environmentally sensitive manner.
- CG-4 Provide adequate access, including access for emergency vehicles and evacuation, to all new parcels and to existing parcels when feasible.
- HG-2 Improve, rebuild, and preserve safe, decent housing and neighborhoods for all Paradise residents, including preparation for wildfire resiliency.

**Paradise Household Hazardous Waste Element**

In accordance with the requirements of State law, the Town of Paradise adopted a Household Hazardous Waste Element (HHWE) in 1992, which is

hereby incorporated by reference into this Safety Element.

### **Town of Paradise Emergency Operations Plan**

The Town of Paradise Emergency Operations Plan (EOP) addresses the Town's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies in or affecting the Town of Paradise. The plan does not apply to normal day-to-day emergencies or the established departmental procedures used to cope with such emergencies. Rather, this plan focuses on operational concepts and would be implemented relative to large-scale disasters that can pose major threats to life, property, and the environment requiring unusual emergency responses. The plan establishes the emergency management organization required to mitigate any significant emergency or disaster and identifies the roles and responsibilities required to protect the health and safety of Paradise residents and public and private property. The plan also establishes the operational concepts associated with a field response to emergencies, the Town of Paradise Emergency Operations Center (EOC) activities, and the recovery process.

The Emergency Operations Plan can be found at this location: <https://www.townofparadise.com/community/page/emergency-operations-plan>.

### **Paradise Skypark Airport Land Use Plan**

The Paradise Skypark Airport is a privately owned and operated general aviation airport located south of the Town limits between Neal Road and Pentz Road. Land uses around airports are subject to the limitations established by the Airport Land Use Commission (ALUC) through the adoption of Airport Land Use Compatibility Plans.

The Butte County Airport Land Use Compatibility Plan adopted by the ALUC provides compatibility criteria for use by local jurisdictions in preparing land

use plans and ordinances and review of proposed development. The Airport Influence Area extends up to approximately one mile into the Town of Paradise (approximately 1.8 miles from the north end of the runway). The Butte County Airport Land Use Compatibility Plan is hereby adopted by reference into this Safety Element.

The Butte County Airport Land Use Compatibility Plan can be found at this location: <https://www.buttecounty.net/541/Airport-Land-Use-Commission-ALUC>.

## **COMMUNITY PROFILE**

Incorporated in 1979, the town of Paradise is located at the juncture of the western slopes of the Cascade and Sierra Nevada systems in north central Butte County. Topography and drainage patterns have had a major influence on development patterns in the area. This area is defined by steep canyons—to the east by the West Branch of the Feather River drainage, and to the northwest by the Butte Creek-Little Butte Creek drainage. The town of Paradise is accessible via Skyway, State Highway 191, Neal Road, and Pentz Road from the south. Skyway is the main entrance to town from the north. Paradise occupies an area identified as the Lower Ridge, which ranges from 2,200 feet in elevation in the north to 1,500 feet in elevation at the town's southern boundary. The area encompassing Paradise has a hot-summer Mediterranean climate.

Originally settled during the Gold Rush era, the Town of Paradise and surrounding area grew very slowly during the first half of this century. Paradise is predominately residential in character, and most of its dwelling units are single-family units. Multi-family units, at densities ranging from 8 to 12 units per acre, are found primarily in central Paradise, near commercial uses, and along major arterial streets. The Town's central business district consists of a narrow band of commercial uses along both sides of Skyway generally between Pearson Road and Elliott Road and stretching as far east as Black Olive Drive. The Town contains relatively little industrial

development. Agricultural uses, including vineyards, orchards, and grazing land, are located primarily in the southern third of the town.

The population of Paradise remained relatively constant, within a few hundred people, between 2000 and 2018. The Town was projected to reach a population of 29,547 by 2030, a growth rate of less than 1 percent per year, which is about half as much growth as was expected for the County. However, according to California Department of Finance estimates, the 2018 Camp Fire led to a population decrease from 26,581 as of January 1, 2018 to 4,474 as of January 1, 2019. Population has since increased to 9,142 as of January 1, 2023.

Historically, the highest percentage of jobs in Paradise and Butte County have been in Health & Education Services at 31 percent and 26 percent, respectively. Between 2002 and 2015, the number of jobs in Paradise increased by 17 percent, and then dropped again by 7 percent between 2015 and 2018. After the 2018 Camp Fire, many jobs, especially related to the hospital, were lost or moved elsewhere in the County due to the destruction caused by the fire.

Paradise's housing stock in 2015 was made up of 69 percent single-family detached homes, 16 percent mobile homes, and 9 percent multi-family homes with 2 to 4 units. The Camp Fire led to significant decreases in all housing stock, from 13,091 units in 2018 to 1,720 in 2019 to 4,365 in January 2023 according to the California Department of Finance. In 2023, the housing stock consisted of a 66 percent single-family detached or single-family attached homes, 15 percent multi-family homes with 2 to 4 units, 6 percent multi-family homes with five or more units, and 13 percent mobile homes.

Transportation within and around Paradise is predominately done by private vehicle. North to South circulation is provided by four main streets: Skyway, Neal Road, Clark Road, and Pentz Road. Circulation east to west is more constrained, as there is not one road that crosses the entire town's

diameter. Larger east to west roads include Wagstaff Road, Bille Road, Elliott Road, and Pearson Road. The Town of Paradise uses a great number of private streets as local streets. Development patterns have resulted in narrow, substandard streets with deteriorated lanes, which affects access for fire and police protection. The Butte Regional Transit (B-Line) is the regional public transit system. B-Line routes 40 and 41 serve Paradise with service to Chico and Magalia.

As previously mentioned, the existing development in Paradise is primarily single-family homes, followed by small multi-family buildings (i.e., duplexes, triplexes, and fourplexes). Through the Regional Housing Needs Allocation process, the Town has been assigned 7,179 housing units for which it has to plan for the 2022-2030 planning period. The Housing Element envisions reaching this number with increased density along Skyway and Clark Road where a sewer system is planned in addition to the rebuilding of single-family homes lost to the Camp Fire.

## HAZARD PROFILES

This section outlines the existing hazardous conditions and other public safety issues in Paradise. Consistent with State law, the hazard events discussed include those related to fires, geologic and seismic hazards, flooding, hazardous materials, climate change related severe weather (e.g., extreme heat, power shutoffs), and drought. This section also discusses emergency preparedness.

Each of the identified hazards includes a discussion of the existing conditions, past examples of the hazard in and around Paradise, and the regulatory setting and responsible agencies associated with the hazard.

### FIRE HAZARDS

Given its combination of complex terrain, Mediterranean climate, and ample natural ignition sources from productive natural plant communities,

California is a very fire-prone area. In addition, utilities have frequently been the cause of wildfire, including in the case of the Camp Fire where a spark from an aging power line was determined to have started the blaze.

### Existing Conditions

Wildland fire is an ongoing concern for the Town of Paradise, as exemplified by the Camp Fire in 2018. Generally, the fire season extends from early spring through late fall of each year during the hotter, dryer months. Fire conditions arise from a combination of high temperatures, low moisture content in the air and fuel, accumulation of vegetation, and high winds. Throughout California, communities are increasingly concerned about wildfire safety as increased development in the foothills and mountain areas and subsequent fire suppression practices have affected the natural cycle of the ecosystem.

The topography of the town contributes to the fire hazards. Paradise is flanked by steep canyons to the northwest and east sides of the community and intermediary drainages to the south. At the southern end of Paradise, 1,600-foot elevation wildland fuels consist of light grass and brush with residential structures intermixed within the wildland fuels. The wildland fuels transition to heavy brush in the adjoining canyons and conifer forests through the majority of town to the northern extent at 2,300-foot elevation.

The climate in Butte County is Mediterranean which means summer conditions are warm, dry, and often accompanied by wind. The topography, fuel conditions, and Mediterranean climate combine to make the town of Paradise and surrounding areas of Butte County at high risk for wildfire. This coupled with the relatively moderate residential population of Paradise and the surrounding area present a unique wildland urban interface firefighting problem. The

Town can best be described as a mix of relatively high-density wildland urban interface environment where structures on the northwest and eastern sides of town abruptly adjoin the wildland, and on the southern end of town, a moderate density wildland urban intermix where homes are intermixed with the wildland vegetation.

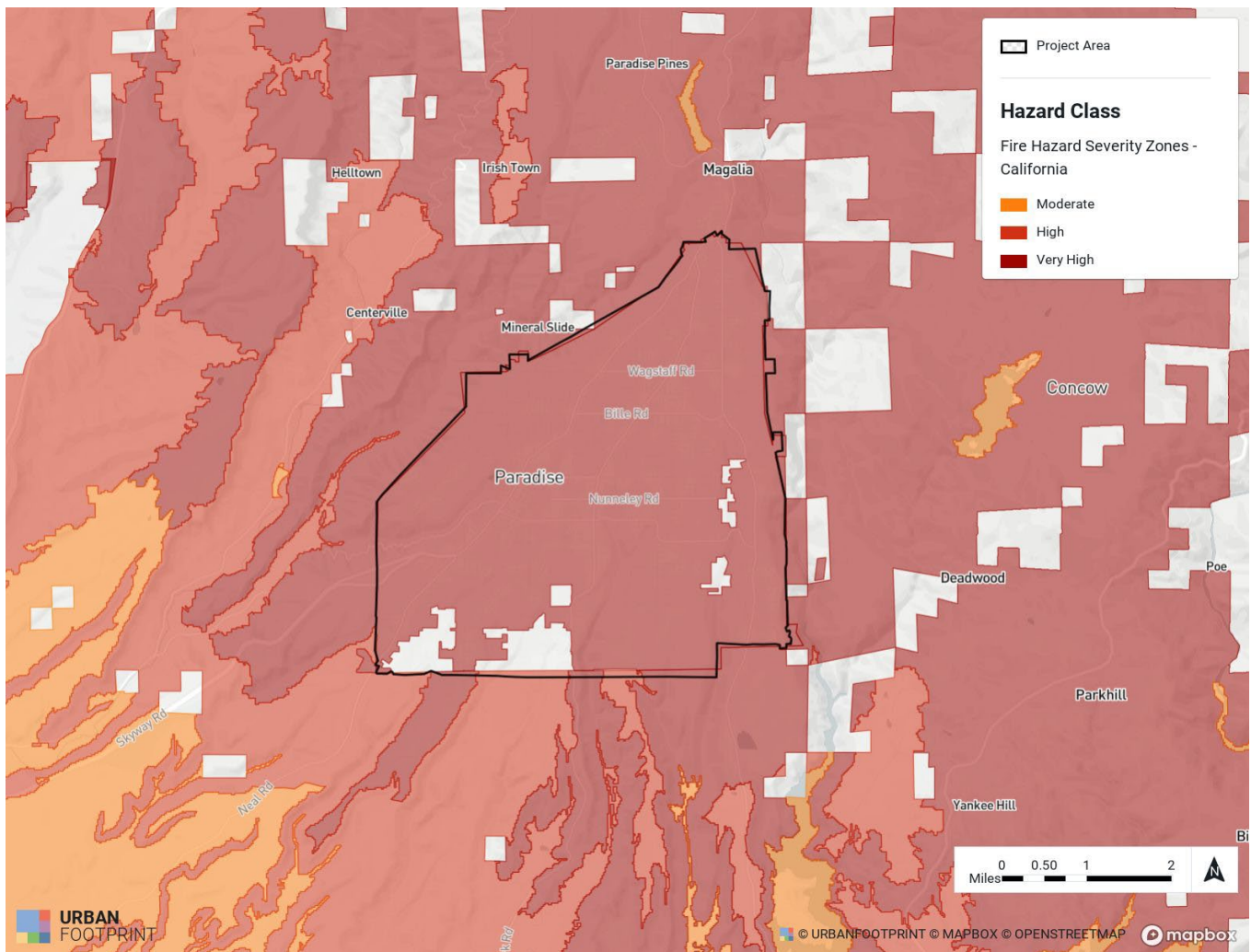
CAL FIRE is required by Government Code Section 51178 to map areas of moderate, high, and very high fire hazard severity zones based on “fuel loading, slope, fire weather, and other relevant factors including where winds have been identified...as a major cause of wildfire spread.” These designations, referred to as Fire Hazard Severity Zones (FHSZ), mandate how people construct buildings and protect property to reduce risk associated with wildland fires. There are three zones, based on increasing fire hazard: medium, high, and very high. Maps of the FHSZs are provided by the California Department of Forestry and Fire Protection’s Fire and Resource Assessment Program (FRAP). FRAP issues maps for Local Responsibility Areas (LRA) such as Paradise and State Responsibility Areas (SRA).

As shown in Figure 3 below, wildfire threat as identified by the FRAP maps within the town is almost entirely Very High Fire Hazard Severity Zone (VHFHSZ). Some areas along the southern boundary of the Town and along the Dry Creek west of Pentz Road are non-VHFHSZ.

Although a few areas are not designated VHFHSZ by the FRAP maps, the Town, by local ordinance, has designated the entire town in a VHFHSZ concurrently with the adoption of the California Building Standards Code. The Camp Fire showed that the whole town has extreme fire risk and based on professional opinion, the entire region known as the Ridge (e.g., Paradise, Concow, Magalia, Pulga) has extreme fire hazard severity potential.<sup>1</sup>

<sup>1</sup> Lunder, Zeke, Founder and Pyrogeographer, 2021. Personal communication with Deer Creek Resources, November 4.

Figure 3: Fire Hazard Severity Zones



Source: California Department of Forestry and Fire Protection, Fire and Resource Assessment Program (FRAP), Fire Hazard Severity Zone Map for Paradise (<https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/wildfire-preparedness/fire-hazard-severity-zones/fire-hazard-severity-zone-maps/>).

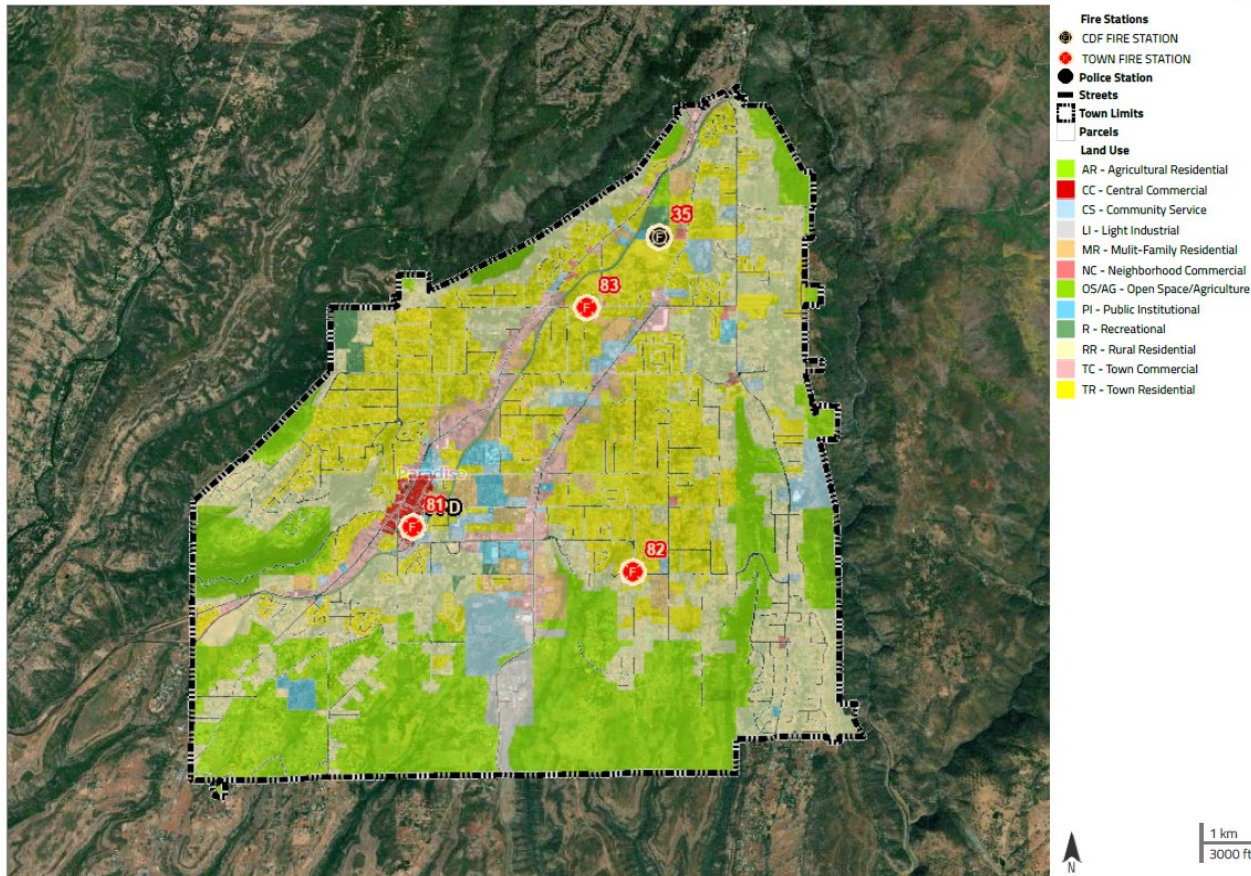
Critical facilities, such as Police and Fire Stations, as located along primary evacuation routes and are therefore in accessible locations. There are no areas of the Town lacking service. Figure 4 shows the General Plan Land Use designations, Police and Fire Stations.

The Town’s interactive geographic information system (GIS) including zoning, land use and other information can be found here: <https://www.townofparadisemapping.com/>.

Fire Hazard Severity Zones Maps for both LRAs and SRAs can be found here: <https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/wildfire-preparedness/severity-zones/fire-hazard-severity-zone-maps/>.

Areas designated VHFHSZ are subject to more stringent requirements for buildings and property maintenance. California’s wildland building codes (CBC Chapter 7A) apply to the design and construction of new buildings located in VHFHSZs in Local Responsibility Areas. Local ordinances may require ignition-resistant construction for remodel

Figure 4: General Plan Land Use and Critical Facilities



Source: Town of Paradise, 2023 (see: <https://www.townofparadisemapping.com/>).

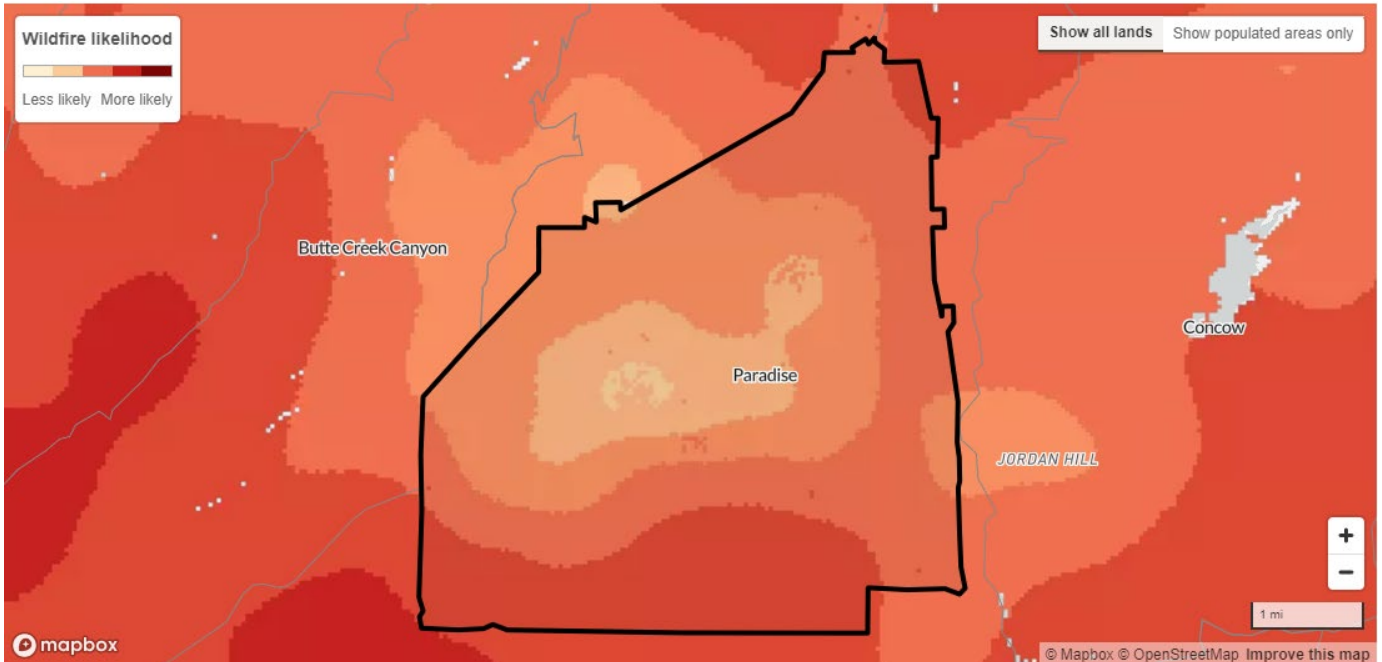
projects. The Town considers any additions or remodels to be new construction and therefore subject to wildland building codes when 50 percent or more of the exterior weight bearing walls are removed or demolished. In addition, [Government Code Section 51182](#) calls for defensible space clearance and other wildland fire safety practices for buildings. Owners are also required to make a natural hazard disclosure as part of a real estate transfer. Beginning July 1, 2021, California Assembly Bill 38 (AB 38, 2019) requires all homes in a High or VHFHSZ to be compliant following a Defensible Space Inspection.

Another resource to help understand wildfire risk is the [Wildfire Risk to Communities maps](#) provided by

the USDA Forest Service. These maps are based on a variety of data, including vegetation and fuels from LANDFIRE, weather from the national Weather Service and community data from the U.S. Census Bureau. Figure 5 shows the Wildfire Hazard Potential for Paradise using these datasets. Compared to the CAL FIRE FHSZ maps, this map shows more areas of lower risk. Many of the lower-risk areas to the east around Concow were mapped as lower hazard because of the presence of the 2008 fire scar there. This assumption (recent burns will have lower severity fire) was not borne out by the Camp Fire. Fire experts recommend looking at potential future vegetation, not just existing conditions and for this reason, caution against considered areas on the Ridge as low fire risk.<sup>2</sup>

<sup>2</sup> Ibid.

Figure 5: Wildfire Likelihood



Source: U.S. Department of Agriculture Forest Service, Wildfire Risk to Communities, 2023.

**Historical Data**

The 2018 Camp Fire was the most destructive and deadliest fire in the State’s history up to that point.<sup>3</sup> Fire was first reported around 6:30 a.m. on November 8 near Poe Dam and grew rapidly given extreme (up to almost 50 mph) winds, entering the Town of Paradise by 8:00 a.m. The Butte County Fire Department issued an evacuation order for the entire town, but many residents of Paradise were unable to evacuate before the fire arrived. Failures in the emergency alert system, including the loss of 17 cell towers, compounded the danger of the situation. Four at-risk areas in the town were not notified of evacuation orders due to human error and a technical error led to 94 percent of residents in some areas not being notified of emergency alerts.

In its first week, the fire burned tens of thousands of acres per day. The western half was contained once

the fire reached highway and roadway arteries that formed barriers, but the eastern half continued to burn into a second week. Heavy rain fell starting on November 21 which helped contain the fire, and on November 25, CAL FIRE declared it 100 percent contained. The counts of structures damaged and destroyed in the Town of Paradise are provided in Table 1.

**TABLE 1: TOWN OF PARADISE - STRUCTURES DAMAGED IN THE CAMP FIRE BY LEVEL OF DAMAGE**

Damage Assessment	Damaged Structure Count	% of Total Structure Count
Destroyed (>50%)	14,352	86.9%
Major (25-50%)	18	0.1%
Minor (10-25%)	69	0.4%
Affected (1-9%)	449	2.7%
No Damage	1,633	9.9%
Town of Paradise Total	16,521	100%

Source: CAL FIRE, Camp Incident Damage Inspection Report (DINS) November 26, 2018.

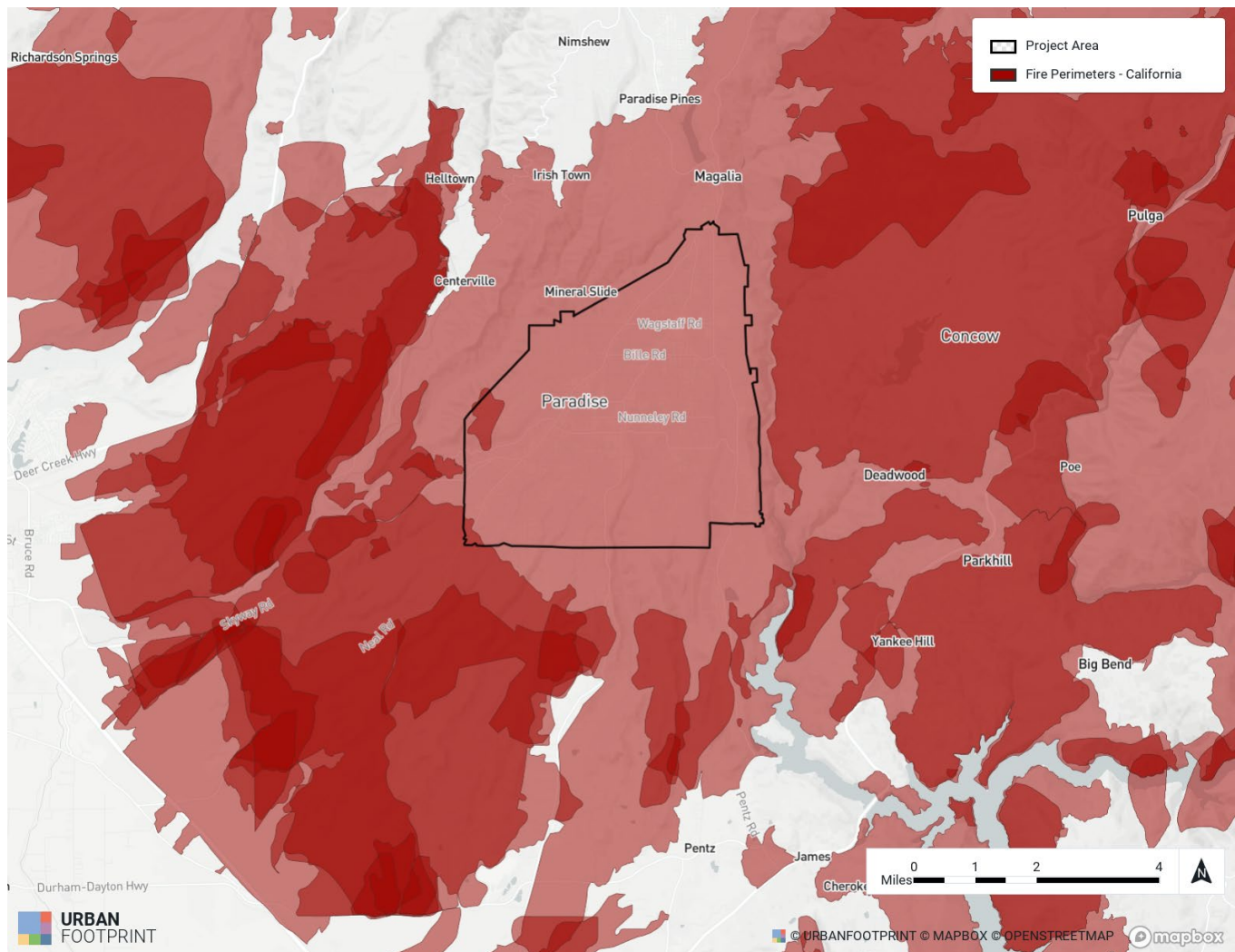
<sup>3</sup> Butte County Office of Emergency Management, Butte County Camp Fire Response County-Wide After Action Report, August 2020, p. 5.



In addition to the Camp Fire, there have been multiple wildfires over the years in and near the Town, as noted in the LHMP. More details including maps of previous fires are contained in the LHMP Volume 1. The previous fires in and near the Town of Paradise are shown in Figure 6 and summarized below.

- August 26, 2016 – Santos Incident. A small fire occurred off Highway 32 at Santos Ranch Road, south of Forest Ranch. Evacuation warnings were issued, but the fire was contained before evacuations became necessary.
- September 6, 2016 – Saddle Fire. On September 5, a fire was started off Pentz Road and Lime Saddle Road south of the Town of Paradise. Sparks from a malfunctioning exhaust started the blaze. Evacuation orders were issued for residents on both sides of Pentz Road from Lago Vista to Messilla Valley Road. Evacuation shelters were opened, as were animal shelters. The blaze consumed 850 acres before being contained, causing three injuries and destroying three structures.

Figure 6: Map of Historical Fires



Note: Darkness of red indicates overlap of multiple fires. Note that the severity of the fire is not shown here, only its perimeter.

Source: California Department of Forestry and Fire Protection, Fire and Resource Assessment Program (FRAP), Map of Fire Perimeters, 2022.

- July 2, 2017 – De Sabla Incident. A small fire occurring in the vicinity of De Sabla Powerhouse Rd and Humbug Rd. The fire burned 14 acres.
- October 10, 2017 – Honey Fire. Active for 91 days, 150 acres burned.
- December 12, 2017 – Fire vicinity of Clark and Bille.
- September 24, 2018 – NimsheW Incident. A small fire occurred in the vicinity of NimsheW Road and Centerville Road. The fire burned 33 acres and was active for 102 days.
- November 8, 2018 – Camp Fire. Active for 229 days, 153,336 acres burned, 18,793 structures, 85 fatalities.

According to data from Urban Footprint, the Camp Fire had the most destruction, relatively speaking, on residential buildings built in 1911-1920 (95 percent of these structures were destroyed) and 1951-1961 (92 percent of structure destroyed). Newer construction tended to fare better. In 2008, Chapter 7A of the California Building Code was adopted, which requires certain fire resistance measures in fire hazard severity zones. Of the residential structures built between 2001-2010, 71 percent of structures were destroyed and 63 percent of residential structures built between 2011 and 2016 were destroyed, compared to an overall destruction rate of 86 percent for the residential building stock in general. However, research has found that the difference in survival percentage for homes built before and after adoption of Chapter 7A is not statistically significant. Instead, the following factors were strongest predictors of home survival: distance to nearest destroyed structure, number of structures destroyed within 100 meters, and pre-fire overstory tree canopy within 100 meters.<sup>4</sup>

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<sup>4</sup> Knapp, Erik et al, 2021. Housing Arrangement and Vegetation Factors Associated with Single-Family Home Survival in the 2018 Camp Fire, California. Available at

## Regulatory Setting/Responsible Agencies

### *Town of Paradise Fire Department / CAL FIRE*

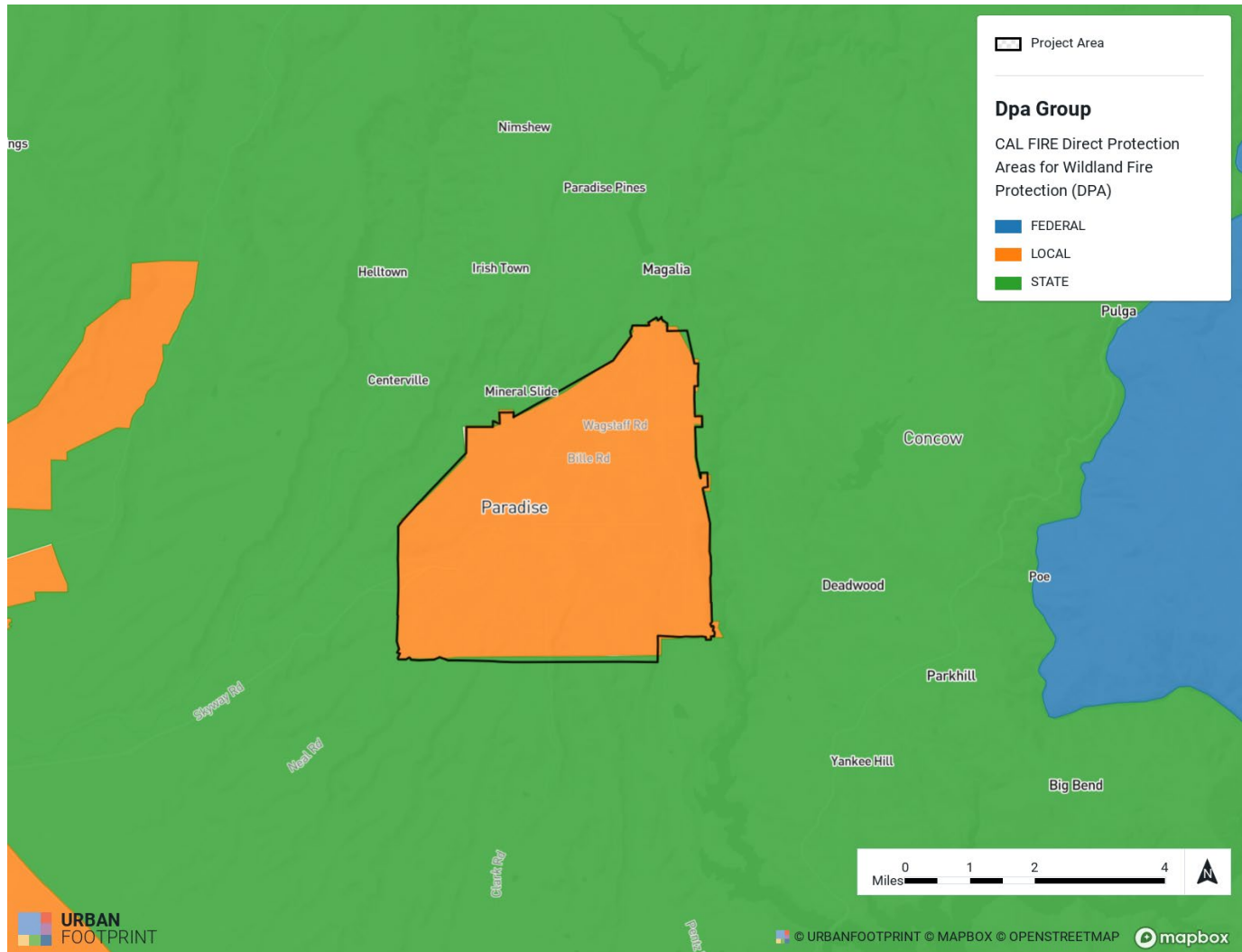
The Town of Paradise and CAL FIRE provide fire protection services through a cooperative agreement. By contracting with CAL FIRE, the Town is able to staff two fire stations with three-person engine companies, and one station with a two-person engine company. In addition to the Town's resources, CAL FIRE maintains their own stations in Paradise and the neighboring community of Magalia. These resources are available to assist with the Town's fire protection efforts as necessary. The Town of Paradise employs two fire prevention inspectors, fire marshal, and administrative assistant for the fire department. The Town also utilizes citizen volunteer firefighters.

Paradise's fire chief (or his/her designee) is responsible for enforcing Chapter 8.58 Defensible Space and Hazardous Fuel Management of the Paradise Municipal Code. This includes inspecting properties, requesting records, and filing notices and public nuisance abatement in order to rectify violations.

The Direct Protection Area (DPA) map in Figure 7 identifies who responds when a fire breaks out. CAL FIRE is responsible for emergency response, fire suppression, and fire prevention in the State Responsibility Area (SRA). The Town of Paradise is bordered entirely by SRA, as shown in Figure 7. Maps maintained by the State illustrate Federal Responsibility Areas (FRA) in addition to SRAs. The [SRA viewer](#) illustrates who pays for firefighting on a given acre. For example, the State would respond to fires on the Bureau of Land Management (part of the U.S. Department of Interior) lands outside Paradise, but the Federal government pays for the costs of fire suppression

<https://fireecology.springeropen.com/articles/10.1186/s42408-021-00117-0>, October 4.

Figure 7: CAL FIRE Direct Protection Areas



Source: California Department of Forestry and Fire Protection, Fire and Resource Assessment Program (FRAP), Map of State Responsibility Areas, 2022

*Town of Paradise Building Department*

The Town of Paradise Building Department is responsible for ensuring that building code and local requirements for fire resilient structures are included in new and remodeled buildings. The Town of Paradise has adopted changes to the California Building Standards Code based on the town’s climatic, geologic, and topographical conditions. The Town’s local amendments include requirements for automatic fire sprinkler systems, ignition-resistant roofing materials, ignition-resistant outbuildings, and non-combustible gutters.

In 2022, the Town adopted requirements for new construction that are consistent with the Wildfire Prepared Home program for single-family homes developed by the Insurance Institute for Business and Home Safety (IBHS). These requirements address:

- Home Ignition Zone – The first 5 feet around the home is noncombustible.
- Accessory structures and outbuildings, including a minimum 10-foot separation.
- Enclosing decks or porches 4 feet or less above the ground.

- Non-combustible fencing within 5 feet of the home and eliminating back-to-back fencing.

The updated LTCRP calls for adoption of the Wildfire Prepared Home Multifamily and Wildfire Prepared Community standards when they are completed.

Retrofitting and maintenance of existing homes for fire safety are encouraged or required by a number of programs, including:

- Town of Paradise Defensible Space Requirements
- Wildfire preparedness programs of Paradise Ridge Fire Safe Council and Butte County Fire Safe Council

#### *Butte County Safe Fire Council*

The Butte County Fire Safe Council (BCFSC) formed in 1998 and is Butte County's largest ally in educating and assisting the public with wildfire preparedness.

The BCFSC is a non-profit community organization funded by grants and community donations. The organization operates in cooperation with local, State, and federal fire agencies throughout Butte County.

The BCFSC is the "parent" organization to several active local fire safe councils, including the Paradise Ridge Fire Safe Council, and nationally recognized FIREWISE Communities throughout the County. The BCFSC Board of Directors is comprised of representatives from the local councils and representatives of many public and private stakeholders throughout Butte County. The organization staff help implement projects, connect with community members, and leverage partnerships.

#### **Peak Load Water Supplies**

In order to have effective fire suppression capability, it is necessary to have an adequate and reliable supply of water. The Paradise Irrigation District (PID) provides water to most areas of the Town of Paradise. The PID obtains its surface water from the

Little Butte Creek watershed and a single groundwater well. A few small areas near the edges of the Town limits are served by Del Oro Water Company.

The PID's distribution system suffered severe damage from the 2018 Camp Fire and related clean-up activities. The 2020 [Urban Water Management Plan](#) (UWMP) for the PID states that the PID will continue to rely on their existing water rights post Camp Fire as the quality and availability of these surface water supplies has remained unaltered. The UWMP states that as regrowth of the Town continues, PID is actively working toward the reconstruction and recovery of critical infrastructure as well as ways to increase the reliability and quantity of available supply for the future. PID continues to work on the rehabilitation of the water distribution system. Two major projects were completed in 2023, including the two new 1.5 million gallon tanks that replaced Reservoir B and a new waterline from the treatment plant to Reservoir A. The largest components of the recovery work include replacing the main pipelines, water meters, and service laterals which will take several years to complete.

The UWMP found that the supply and drought risk assessment do not anticipate a water deficit for a single-year or for a five-year consecutive drought in the near term or long term.

#### **GEOLOGIC AND SEISMIC HAZARDS**

Seismic and geologic hazards are caused when different part of the Earth's crust move. Seismic hazards refer to earthquakes whereas geologic hazards are related to unstable soils, minerals in the soil, or certain ground formations. Landslides and soil erosion are examples of geologic hazards.

#### **Existing Conditions**

The State of California has identified five areas of critical seismic concern including surface ruptures, ground shaking, ground failure, tsunamis, and seiches. Each of these is caused by earthquake activity thereby creating hazards for life and

property, which has the potential anywhere in California. Paradise is not at risk for tsunamis or seiches due to its inland location and the absence of nearby large bodies of water. Earthquakes can also cause liquefaction. Liquefaction is a process whereby soil is temporarily transformed to a fluid formed during intense and prolonged ground shaking.

The amount of energy released during an earthquake is usually expressed as a magnitude and is measured directly from the earthquake as recorded on seismographs. Seismologists have developed several magnitude scales, as discussed in Section 4.2.9 of the LHMP. The [Richter Scale](#) is used to quantify the magnitude or strength of the seismic energy released by an earthquake, expressed in whole numbers and decimals (e.g., 6.8). Another measure of earthquake severity is intensity. The [Modified Mercalli Intensity \(MMI\) Scale](#) is an expression of the amount of shaking at any given location on the ground surface, rated from I to XII. Seismic shaking is typically the greatest cause of losses to structures during earthquakes.

There are a number of faults within Butte County and a large number of relatively nearby faults that could be considered potentially active, based either on the fairly restrictive criteria developed by the California Geological Survey. These faults are detailed in the Butte County LHMP beginning on page 4-82 and shown in Figure 8 to include the following near the Town of Paradise:

- **Magalia Fault.** The Magalia Fault is located near the northern end of the Foothill Fault System, a system of northwest trending east dipping normal fault formed along the margin of the Great Valley and the Sierra Nevada provinces. The DSD, based on Fault Activity Guidelines in 2001 reclassified the Magalia Fault as conditionally active. The Paradise Irrigation District commissioned a study by Holdrege & Kull, dated January 2007 to evaluate the Magalia Fault.
- **Foothills Shear Zone.** The Foothills shear zone extends into southern Butte County. A possible

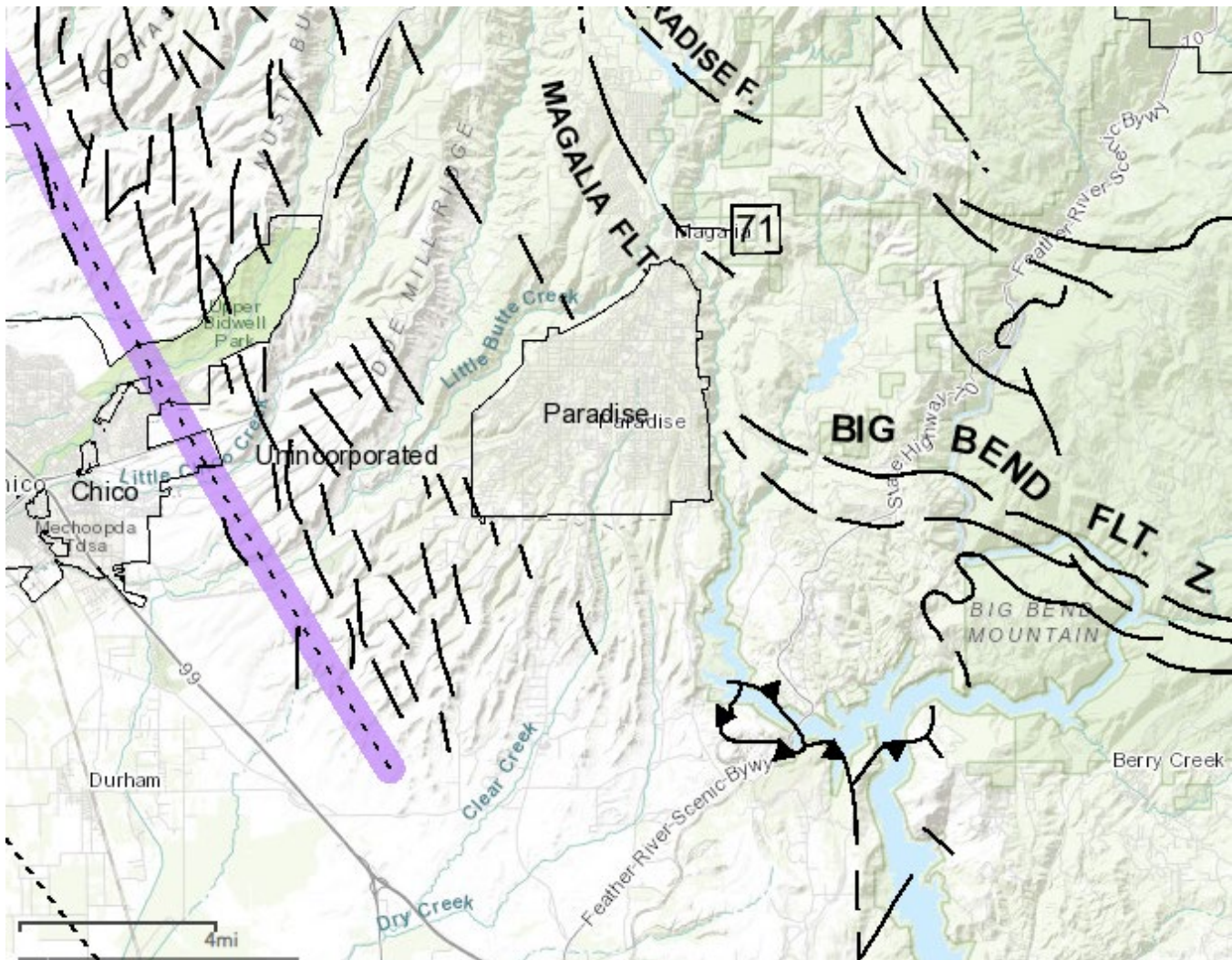
magnitude 7.0 earthquake in this zone would result in intensities as high as IX in Butte County.

Since earthquakes are regional events, the whole of the town is at risk to earthquake. However, Paradise and the surrounding area are relatively free from significant seismic and geologic hazards. There are no known or inferred active faults within the town. The only known active fault in Butte County is the Cleveland Hills fault, the site of the August 1975 Oroville earthquake. This earthquake had a Richter magnitude of 5.7. Due to the proximity of the Town to the nearby Cleveland Hills Fault, the Town can expect low to medium intensity shocks from time to time.

In 2016, the USGS and the California Geological Survey (CGS) released an update of the time-dependent version of the Uniform California Earthquake Rupture Forecast (UCERF III) model. The UCERF III results have helped to reduce the uncertainty in estimated 30-year probabilities of strong ground motions in California. The UCERF III map is shown in Figure 4-40 of the Butte County LHMP and indicates that Butte County has a low to moderate risk of earthquake occurrence, which coincides with the likelihood of future occurrence rating of occasional. This is consistent with Figure 9 below, which shows the expected relative intensity of ground shaking and damage in Paradise and its surroundings from anticipated future earthquakes. Shaking potential is calculated as the level of ground motion that has a 2 percent chance of being exceeded in 50 years.

Similar to earthquakes, the town is at risk of occasional landslides. The areas surrounding the town are where the topography most dramatically changes and are at greater risk to landslide. Figure E-9 and Table E-26 of the Butte County LHMP Paradise Annex show the geographical extent of land in landslide potential areas. The majority of the town is in the low to moderate susceptibility category.

Figure 8: Map of Faults



Source: California Department of Conservation, Fault Activity Map of California, 2010.

**Historical Data**

Historical data on earthquakes Magnitude 5.0 or greater within 90 miles of Butte County is contained in the Butte County LHMP base plan. The largest of these was the August 1, 1975 Oroville Earthquake at 5.7 Richter magnitude. Structural damage, consisting mainly of cracks in chimneys and walls, broken windows and plaster, and loosened light fixtures occurred at several schools, hospitals, and houses in the Oroville-Thermalito area. Many chimneys toppled or had to be taken down in Oroville and Palermo. Property damage was estimated at \$2.5 million.

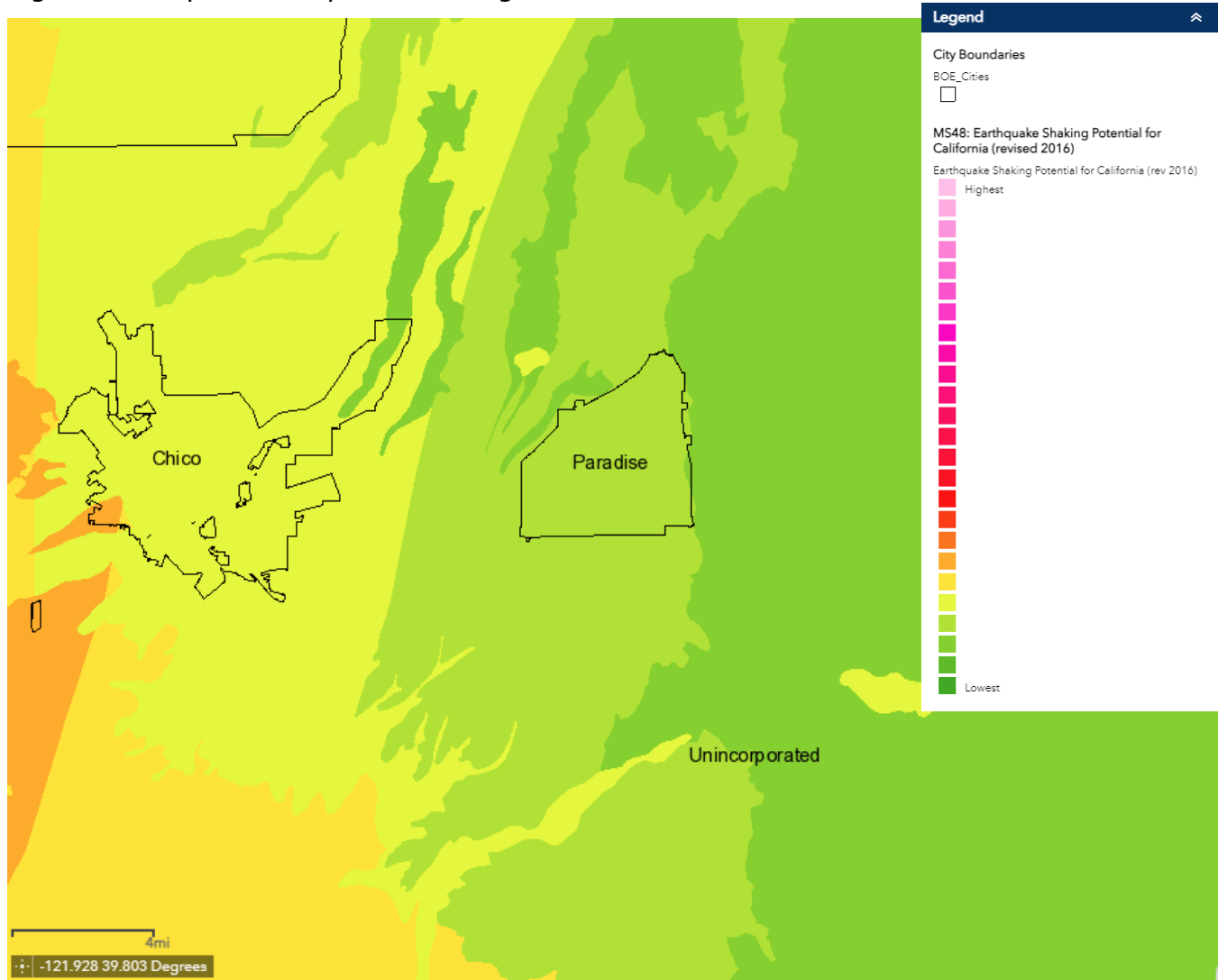
Paradise does not have any significant past occurrences of landslides or mudslides.

**Regulatory Setting/Responsible Agencies**

*Uniform Building Code*

The Uniform Building Code (UBC) identifies four seismic zones in the United States. The zones are numbered one through four, with Zone 4 representing the highest level of seismic hazard. The UBC establishes more stringent construction standards for areas within Zones 3 and 4. All of California lies within either Zone 3 or Zone 4. The town of Paradise is within Zone 3.

Figure 9: Map of Earthquake Shaking Potential



Source: California Department of Conservation, 2016.

*Town of Paradise Building Department*

The Building Department is responsible for ensuring the UBC is followed for new and renovated structures.

*California Division of Safety of Dams (DSOD)*

Also of concern during an earthquake event are the various dams located near the town of Paradise. The DSOD regulates dams to prevent failure, safeguard life, and protect property. The DSOD inspects each dam on an annual basis.

**FLOODING**

Floods are usually caused by large amounts of precipitation, either from a period of very intense precipitation or a long period of steady precipitation. In addition to storms, floods can also be caused by very rapid snow melting or from infrastructure failure, such as dam collapses or burst water storage tanks.

**Existing Conditions**

Paradise’s location on a ridge makes it less susceptible to flooding and thus it does not have any

designated flood hazard areas as depicted on the Federal Emergency Management Agency (FEMA) [Digital Flood Insurance Rate Map \(DFIRM\)](#). The entire Town of Paradise is located outside both the 1 percent and 0.2 percent annual chance flood zone as defined by FEMA. (See Figure E-7 in the Butte County LHMP Paradise Annex.) Any flooding that occurs is localized in nature, resulting from a temporary lack of capacity or blockage of a drainage basin.

According to the Butte County LHMP Paradise Annex, dam failure is unlikely in the town and limited in severity. See Table 4-72 of the Butte County LHMP for dam counts and inundation classifications. The Paradise Dam north of the town is considered an Extremely High Hazard dam for inundation, but the inundation area is completely outside of the town limits (see Figure 4-95 of the Butte County LHMP). Paradise Irrigation District's 2012 Water System Emergency Response plan includes an Emergency Action Plan for dam failure.

Although not mapped as a flood event by FEMA, there have been smaller, more frequent storm events, that have led to flooding of streets, homes, and buildings. During the Camp Fire, numerous culverts within Paradise were destroyed as a result of the wildfire. An On-System Culvert Replacement is one of the Infrastructure Recovery Projects identified by the Town. This project is in process. The Town Council adopted a Resolution on 1/11/2022 to award the contract to Escheman Construction. Replacement of damaged plastic culverts with reinforced concrete pipe culverts will decrease future possible damage to storm water infrastructure, improving safety along evacuation routes and effectively managing storm water runoff. A Storm Drain Master Plan was approved in June 2022 and will be used to prioritize replacements and improvements in coordination with transportation improvements to reduce the potential for localized flooding.

## Historical Data

As discussed in the LHMP Paradise Annex, the only past occurrences of flood were related to storm water and had minor affects and damages to the Town. The LHMP lists the following occurrences of localized storm water flooding in the Town:

- October 20, 2017 – Heavy rain and localized flooding.
- December 15, 2016 – Heavy rain and localized flooding.
- November 19, 2015 – Localized flooding.

In addition, the Town suffered flood damage in January 1997. Most of the east/west roads that have dips such as Elliott, Bille, and Wagstaff were flooded as well as some homes and the Eden Roc Trailer Condominium Park. Subsequent to the 1997 flooding, the Town obtained a FEMA mitigation grant and did major improvements to the storm drain system to address these issues.

See Tables E-24 and E-25 of the LHMP Paradise Annex for State and Federal Disaster Declarations from Flood in Butte County from 1950-2018 and a list of roads with localized flooding problems.

## Dam Inundation

The Town of Paradise is outside the potential inundation areas for both the Paradise Dam and the Magalia Dam, as shown on the maps approved by the California Department of Water Resources, Division of Safety of Dams.

## Regulatory Setting/Responsible Agencies

### *Federal Emergency Management Agency (FEMA)*

Using the results of flood insurance studies, FEMA prepares Flood Insurance Rate Maps (FIRMs) that depict flood risk. FEMA is responsible for maintaining the FIRMs as communities grow and as new or better scientific and technical data concerning flood risks becomes available.



*California Division of Safety of Dams (DSOD)*

The DSOD regulates dams to prevent failure, safeguard life, and protect property. The DSOD inspects each dam on an annual basis.

**HAZARDOUS MATERIALS**

Hazardous materials include toxic chemicals, flammable or corrosive materials, petroleum products, and unstable or dangerously reaction materials. Risks related to hazardous materials can arise when these materials are released through human error or broken equipment or indirectly via another emergency (e.g., a fire damages a hazardous material storage tank). Spilling or releasing large quantities of hazardous materials could result in a fire, explosion, or toxic cloud, as well as the contamination of water, people, or property. Health problems could be immediate, such as corrosive effects on skin and lungs, or gradual, such as the development of cancer from a carcinogen.

**Existing Conditions**

The LHMP assessed the potential for transportation-related hazardous materials releases from transportation corridors in the County. In the Town of Paradise, this included a 1-mile buffer on each side of Highway 191. The LHMP indicated four Essential Services Facilities (Fire, two Public Assembly Points, Emergency Animal Shelter) and one At Risk Population Facility (school) within this buffer area. The LHMP concludes that impacts from hazardous materials transportation incidents vary by location and severity, depending on the type of event and can be expected to continue to occur in the future.

**Historical Data**

One incident recorded by Butte County Environmental Health occurred on Clark Road,

between McKale Road and Easy Street. The incident recorded on March 12, 1998, involved a transportation spill of 30-40 gallons of diesel. The incident was properly cleaned up under the oversight of Butte County Environmental Health and Regional Water Quality Control Board (RWQCB).

**Regulatory Setting/Responsible Agencies**

The Butte County Public Health Department is the Certified Unified Program Agency (CUPA) managing hazardous wastes in Butte County. The CUPA is certified by CalEPA to implement and enforce several State laws regarding hazardous waste. The CUPA program was created by SB 1082 (1993), eliminating the requirement for each County to have a Hazardous Waste Management Plan.

In accordance with the requirements of State law, the Town of Paradise adopted a Household Hazardous Waste Element (HHWE) in 1992, which is hereby incorporated by reference into this Safety Element.

**CLIMATE RESILIENCY/SEVERE WEATHER**

In accordance with the requirements of SB 379 (2015), codified at Government Code section 65302(g)(4), climate change adaptation and resilience must be addressed in the safety element of all general plans in California. This section provides advice to support a jurisdiction's compliance with the requirements of Government Code section 65302(g)(4), including use of the California Adaptation Planning Guide (Cal-Adapt).

Climate change refers to a change in the climate that can be identified by changes in the mean and/or variability of its properties and that persists for an extended period, typically decades or longer.<sup>5</sup> Climate change is already impacting the Town of Paradise and Butte County, contributing to the

<sup>5</sup> Intergovernmental Panel on Climate Change (IPCC), 2014. "Annex II: Glossary," eds. K.J. Mach, S. Planton, and C. von Stechow, in *Climate Change 2014: Synthesis Report*, eds. Core Writing Team, R.K. Pachauri, and L.A.

Meyer (Geneva, Switzerland), pp. 117–130. Available at: <https://www.ipcc.ch/report/ar5/syr/>, accessed October 24, 2021.

intensity of wildfires, and is anticipated to cause more instances of severe weather in the future. This section will address the general impacts of climate change/severe weather and then provide additional discussion on each of the severe weather categories. This section draws substantially from the Butte County Climate Change Vulnerability Assessment and the Butte County LHMP.

The LHMP includes the summary of Cal-Adapt Climate Projections for the North Central Valley Region in Table 2.

TABLE 2: BUTTE COUNTY – CAL-ADAPT CLIMATE PROJECTIONS	
Temperature Change 1990-2100	January increase in average temperature of 4°F to 6°F and between 8°F and 12°F by 2100. July increase in average temperature of 6°F to 7°F in 2050 and 12°F to 15°F by 2100. (Modeled average temperatures; high emissions scenario)
Precipitation	Annual precipitation is projected to decline by approximately 1 to 2 inches by 2050 and 3 to 6 inches by 2100. (Community Climate System Model Version 3 (CCSM3) climate model; high carbon emissions scenario)
Heat Wave	Heat wave is defined as five days over 102°F to 105°F except in the mountainous areas to the east. Two to 3 more heat waves per year are expected by 2050 with 5 to 8 more by 2100.
Wildfire	By 2085, the north and eastern portions of the region will experience an increase in wildfire risk, more than four times current levels in some areas. (Geophysical Fluid Dynamics Laboratory (GFDL) climate model; high carbon emissions scenario).

Source: Cal-Adapt.

The Butte County Climate Change Vulnerability Assessment, July 2021 (BCCCVA) provides a qualitative analysis of how climate change may impact Butte County in the 21<sup>st</sup> Century and is hereby incorporated by reference. The BCCCVA is also found in Appendix A. The BCCCVA utilizes the process outlined in the Cal-Adapt model to complete Phases 1 and 2 of the Cal-Adapt recommended process to provide a vulnerability assessment, as illustrated in Figure 10. Each jurisdiction is then able to draw on this information to complete Phases 3 and 4 to define

an adaptation framework and strategies and specify how these will be implemented and monitored.

Figure 10: Climate Change Vulnerability Assessment



Source: LHMP Base, p. 4-49.

**Key Findings of BCCCVA**

Out of the 71 populations and assets Butte County analyzed, 50 are highly vulnerable to at least one hazard condition. Wildfire is responsible for the highest vulnerability scores, followed by severe storms, severe wind, and extreme heat. The following list provides the key findings and critical vulnerabilities identified in the Climate Change Vulnerability Assessment:

- Populations and assets in the eastern portion of the county are most vulnerable to wildfires and populations in the western portion of the county are most vulnerable to severe storms.
- Outdoor workers and low-resourced ethnic minorities are the most vulnerable populations, and highly vulnerable to all climate change hazards.
- Electrical transmission infrastructure and energy delivery services are highly vulnerable to damage or Public Safety Power Shutoff (PSPS) events from extreme heat, severe wind, severe storms, and wildfire. Energy delivery services are a key supporting factor for everyday activities, economic drivers, and key services.
- Water and wastewater serving both the county and other areas of California can be disrupted

from drought, severe wind, severe storms, and wildfire.

- Major roads, highways, and single-access roads can become impassable due to severe wind, severe storms, and wildfire, isolating populations in remote areas of the county and disrupting services to those areas.
- Recreation infrastructure and recreation on regional, State, and federal land can be disrupted by all climate change hazards.
- Agriculture is the most vulnerable economic driver in Butte County.
- Conifer forests and open water ecosystems are the most vulnerable ecosystems.

### Key Recommendations of the BCCCVA

The resilience of these populations and assets can increase through the implementation of adaptation measures. Adaptation is the adjustment to natural and human systems, in response to actual or expected changes in climate conditions to reduce the harmful effects of actual or expected changes.<sup>6</sup>

Potential adaptation measures that could reduce vulnerability in Butte County, and some of which are planned items in the LHMP, include:

- Promoting the creation of community support networks to check on persons without access to lifelines, seniors living alone, and persons with disabilities during dangerous conditions.
- Collaborating with PG&E and other utility providers to underground electricity transmission lines.
- Increasing funding through grants or private organizations for fuel reduction and vegetation management projects for both neighborhoods and infrastructure.
- Continuing to provide residential assistance programs to help homeowners create and

maintain defensible space and fuels management on their properties.

- Conducting structural retrofits for at-risk bridges and ensuring that these retrofits include protections against flooding and landslides.
- Expanding the chipper program throughout the county to help private homeowners dispose of trees near structures, supplementing existing cost-sharing programs.
- Working with farming organizations and the University of California Cooperative Extension to promote the availability of crop varieties that are more resilient to climate change while meeting market demand for yield and quality, as options become available.
- Continuing to work with State and federal land management agencies to support fuel and pest management activities.
- In coordination with local, State, and federal plant and wildlife management agencies and organizations, monitoring shifts in habitats, and preserving habitats where habitat migration may be needed.
- Working with local, State, and federal plant and wildlife management agencies and organizations to protect vulnerable habitat and improve ecosystem connectivity.
- Coordinating with utility providers to conduct regular evaluations and retrofits of energy transmission and delivery infrastructure.
- Incentivizing water conservation measures by establishing indoor plumbing retrofit and turf replacement programs.
- Support the implementation of Groundwater Sustainability Plans that take into consideration of the increased severity of droughts and climate change.
- Identifying equitably located resilience hubs in each community in the County to provide

<sup>6</sup> Cal OES, 2020. California Adaptation Planning Guide. Available at <https://www.caloes.ca.gov/HazardMitigation>

[Site/Documents/CA-Adaptation-Planning-Guide-FINAL-June-2020-Accessible.pdf](#), June.

emergency assistance and information, cooling spaces on extreme heat days, and refuge for those who are unable to evacuate during hazardous conditions.

### Extreme Heat

According to the Cal-Adapt tool, an [extreme heat day](#) is a day when the maximum/minimum temperature exceeds the 98<sup>th</sup> percentile of observed historical data from 1961–1990 between April and October. A [heat wave](#) is four or more consecutive days of extreme heat. By this calculation, eight consecutive extreme heat days would count as two heat waves.

Heat kills by taxing the human body beyond its abilities. In extreme heat and high humidity, evaporation is slowed and the body must work extra hard to maintain a normal temperature. Most heat disorders occur because the victim has been overexposed to heat or has over-exercised for his or her age and physical condition. Older adults, young children, and those who are sick or overweight are more likely to succumb to extreme heat. Conditions that can induce heat-related illnesses include stagnant atmospheric conditions and poor air quality. Consequently, people living in urban areas may be at greater risk from the effects of a prolonged heat wave than those living in rural areas. Also, asphalt and concrete store heat longer and gradually release heat at night, which can produce higher nighttime temperatures known as the urban heat island effect.

#### *Existing Conditions*

Heat is a regional phenomenon and affects the whole of the Town. Heat emergencies are often slower to develop, taking several days of continuous, oppressive heat before a significant or quantifiable impact is seen. Heat waves do not strike victims immediately, but rather their cumulative effects slowly take the lives of vulnerable populations. Heat waves do not generally cause damage or elicit the

immediate response of floods, fires, earthquakes, or other more “typical” disaster scenarios.

The National Weather Service (e) has in place a system to initiate alert procedures (advisories or warnings) when extreme heat is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. The [NWS Heat Risk forecast](#) provides a quick view of heat risk potential over the upcoming seven days. The heat risk is portrayed in a numeric (0-4) and color (green/yellow/orange/red/magenta) scale which is similar in approach to the [Air Quality Index \(AQI\)](#) or the ultraviolet (UV) Index. This can be seen in Section 4.2.2 of the Base Plan.

Health impacts are the primary concern with this hazard, though economic impacts are also an issue. Heat can exacerbate drought and can increase wildfire risk.

The elderly and individuals below the poverty level are the most vulnerable to extreme temperatures. Nursing homes and elder care facilities are especially vulnerable to extreme heat events if power outages occur and air conditioning is not available. In addition, individuals below the poverty level may be at increased risk to extreme heat if use of air conditioning is not affordable. This is especially true of homeless people and the transient population. Reliance on air conditioning causes a strain on the electrical energy in the Town. Occasionally peak demands outweigh supply and a condition known as brown-out occurs. This is an extremely dangerous situation for electrical equipment as it operates without the needed electricity causing damage to the systems. Periods of extended heat and dryness (droughts) can have major economic, agricultural, and water resources impacts. Extreme heat can also dry out vegetation, making it more receptive to wildfire ignitions.

Vulnerability to extreme heat will increase as the average age of the population in each city shifts. The residents of nursing homes and elder care facilities

are especially vulnerable to extreme temperature events. It is encouraged that such facilities have emergency plans or backup power to address power failure during times of extreme heat and in the event of a Public Safety Power Shutoff. Low-income residents and homeless populations are also vulnerable. Cooling centers for these populations should be utilized when necessary. However, many of the residents of the Town are accustomed to living with extreme heat and take precautions to guard against the threat of extreme heat. In addition, the shading provided by the numerous trees around town will be significantly different with the loss of an estimated 350,000 trees.

The Cal-Adapt tool looks at the 30-year average annual frequency of extreme heat days and uses four different Global Climate Models (all models were by California's Climate Action Team for performance in California) to project the number of heat waves lasting more than three days. Figure 11 shows the average across all four models. Paradise and the majority of Butte County are estimated to experience a high degree of heat waves in the future, an estimated annual average of 14 to 18 heat waves in 2070-2099, compared to an average of 1 per year in 1961-1990 and 5 per year in 2035-2064.

#### *Historical Data*

The LHMP Base Plan in Section 4.2.2 includes a list of past heat events, noting fourteen extreme heat events between 1993 and October 31, 2018.

#### *Regulatory Setting/Responsible Agencies*

Several general disaster preparedness efforts by the Town will also improve the ability of the Town to respond to extreme heat events, including enhanced public education (LHMP Action 2), improved Early Warning System (LHMP Action 3), and Public Works signs (LHMP Action 4).

### **Extreme Freeze and Winter Storms**

According to the National Weather Service (NWS) and the Western Regional Climate Center (WRCC),

extreme cold often accompanies a winter storm or is left in its wake. Prolonged exposure to cold can cause frostbite or hypothermia and can be life-threatening. Winter snowstorms can include heavy snow, ice, and blizzard conditions.

#### *Existing Conditions*

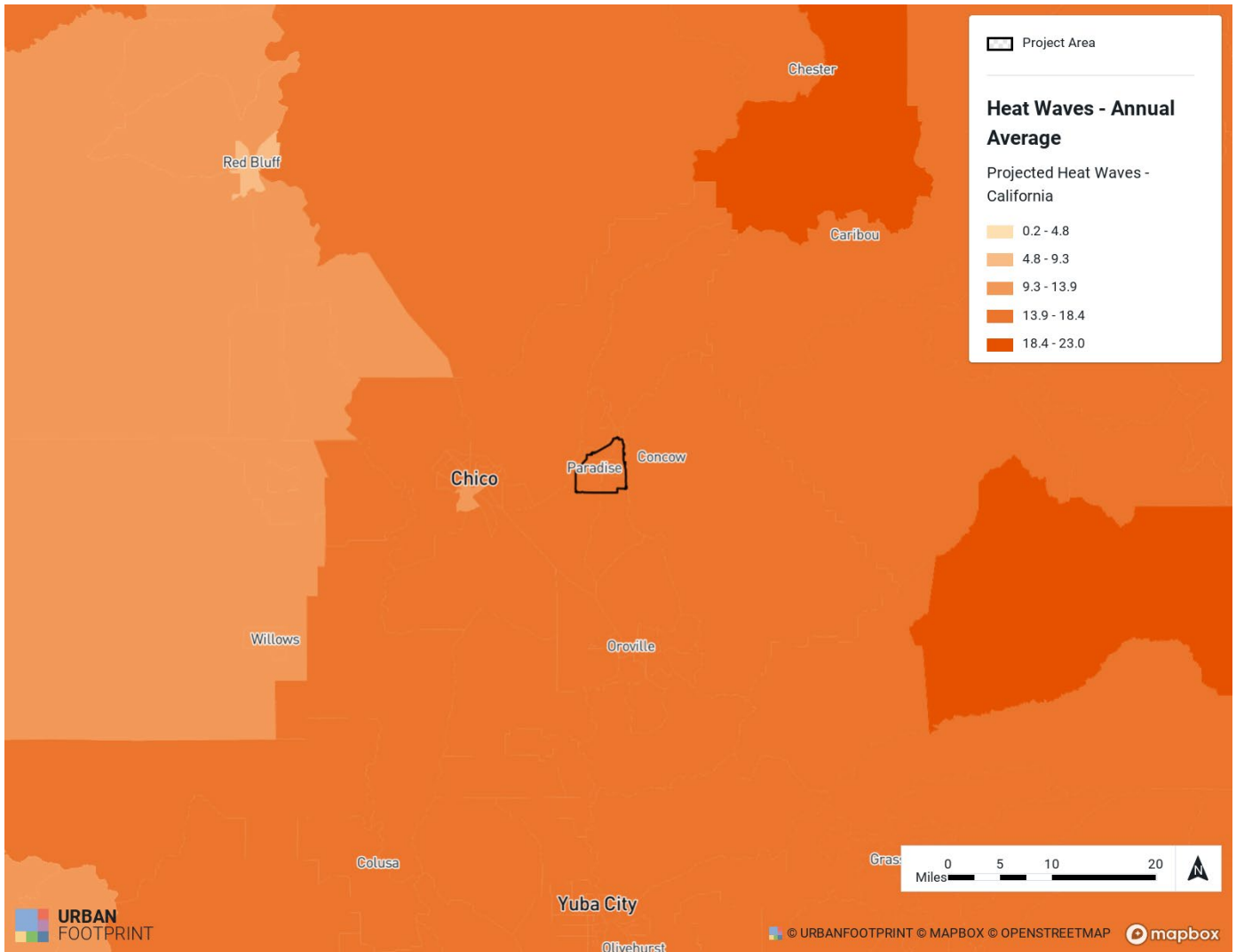
Freeze and winter storms are regional issues, meaning the entire town is at risk. While there is no scale (e.g., Richter, Enhanced Fujita) to measure the effects of freeze, temperature data from the WRCC indicates that there are 21.8 days that fall below 32°F in eastern Butte County, with no days falling below 0°F. Freeze has a slow onset and can generally be predicted in advance. Freeze events can last for hours (i.e., in a cold overnight) or for days to weeks at a time. Snowfall is measured in snow depths. It is rare for snow to fall in the town, and even rarer that snow accumulates in the town. Snowfall has an onset similar to freeze in the Town.

#### *Historical Data*

Between 1950 and 2019, Butte County had two State disaster declarations for freeze or winter storms. [Severe weather data](#) from the National Oceanic and Atmospheric Administration's (NOAA's) National Centers for Environmental Information (NCEI), shows 139 freeze and winter storm events in Butte County between 1993 and 10/31/2018. The Town Planning Team for the LHMP noted that since freeze and winter storm is a regional phenomenon, events that affected the lower elevations of the County also affected the Town. Those past occurrences were shown in the Base Plan in Section 4.2.3.

A significant winter storm event occurred in February 1990 that did major damage to buildings including the collapse of the bowling alley, Long's Drugs, the Cannery grocery store, a tire shop, and also many homes damaged by snow and downed trees. The snowstorm immobilized the Town for ten days with power outages lasting over two weeks. After the 1990 storm, the Town changed the building snow load requirements above 1,800 feet elevation.

Figure 11: Projected Heat Waves – California and Historical Heat Health Events



Source: Cal-Adapt, 2022

In addition, the following freeze and winter storms since 2014 were noted in the LHMP:

- February 22, 2018 – Snowstorm/Winter Storm (road closures).
- February 23, 2017 – Freezing Temperatures.

The Town experiences temperatures below 32°F during the winter months. The temperature moves to the teens in rather extreme situations. Freeze normally does not impact structures but is a life safety issue. Secondary impacts of extreme cold can affect the supporting mechanisms or systems of a community’s infrastructure. For example, when

extreme cold is coupled with high winds or ice storms, power lines may be downed, resulting in an interruption in the transmission of that power shutting down electric furnaces, which may lead to frozen pipes in homes and businesses.

Occasionally, winter storms with snow and ice can affect the Town. Transportation networks, communications, and utilities infrastructure are the most vulnerable physical assets in the Town. The ability for the Town to continue to operate during periods of winter storm and freeze is paramount.

The elderly population in the planning area is most vulnerable to temperature extremes. The residents of nursing homes and elder care facilities are especially vulnerable to extreme temperature events. It is encouraged that such facilities have emergency plans or backup power to address power failure during times of extreme cold. Transient and homeless populations are also at risk to freeze.

#### *Regulatory Setting/Responsible Agencies*

Several general disaster preparedness efforts by the Town will also improve the ability of the Town to respond to extreme freeze and winter storm events, including enhanced public education (LHMP Action 2), improved Early Warning System (LHMP Action 3), Public Works signs (LHMP Action 4).

The Town's Building Department is responsible for enforcing building code requirements related to building snow loads and insulating pipes from freezing temperatures in new construction. Future development built to code should be able to withstand snow loads from severe winter storms. Pipes at risk of freezing should be mitigated by either burying or insulating them from freeze as new facilities are improved or added. Vulnerability to extreme cold will increase as the average age of the population in the County shifts. Greater numbers of future senior citizens will result from the large number of baby boomers in the planning area. The elderly are more at risk to the effects of freeze. However, many of the residents of the town are accustomed to living with freeze and take precautions to guard against the threat of freeze.

#### **Extreme Rain and Storms**

Storms in the Town of Paradise occur annually and are generally characterized by heavy rain often accompanied by strong winds and sometimes lightning and hail. Approximately 10 percent of the thunderstorms that occur each year in the United States are classified as severe. A thunderstorm is classified as severe when it contains one or more of the following phenomena: hail that is three-quarters

of an inch or greater, winds in excess of 50 knots (57.5 mph), or a tornado.

High winds can cause significant property and crop damage, threaten public safety, and have adverse economic impacts from business closures and power loss. High winds, as defined by the NWS glossary, are sustained wind speeds of 40 mph or greater lasting for 1 hour or longer, or winds of 58 mph or greater for any duration. These winds may occur as part of a seasonal climate pattern or in relation to other severe weather events such as thunderstorms.

#### *Existing Conditions*

Heavy precipitation in the Town falls mainly in the fall, winter, and spring months. Location and Extent Heavy rain events occur on a regional basis. Rains and storms can occur in any location of the Town. All portions of the Town are at risk to heavy rains. Most of the severe rains occur during the winter months. There is no scale by which heavy rains and severe storms are measured. Magnitude of storms is measured often in rainfall and damages. The speed of onset of heavy rains can be short, but accurate weather prediction mechanisms often let the public know of upcoming events. Duration of severe storms in California, Butte County, and the Town is often short, ranging from minutes to hours. In some cases, rains can continue for days at a time.

The entire Town is subject to significant, non-tornadic (straight-line), winds. Each area of the Town is at risk to high winds. Magnitude of winds is measured often in speed and damages. These events are often part of a heavy rain and storm event, but can occur outside of storms. The speed of onset of winds can be short, but accurate weather prediction mechanisms often let the public know of upcoming events. Duration of winds in California is often short, ranging from minutes to hours. The Beaufort scale is an empirical measure that relates wind speed to observed conditions at sea or on land. Its full name is the Beaufort wind force scale. It can be seen in Section 4.2.5 of the Base Plan.

*Historical Data*

Information on precipitation extremes can be found in Section 4.2.4 of the Base LHMP. According to historical hazard data, severe weather is an annual occurrence in the Town of Paradise.

Damage and disaster declarations related to heavy rains and storms have occurred and will continue to occur in the future. Heavy rain and severe storms are the most frequent type of severe weather occurrences in the Town. Wind and lightning often accompany these storms and have caused damage in the past. Hail is rare in the Town. Actual damage associated with the primary effects of severe weather have been limited. It is the secondary hazards caused by weather, such as fire, that have had the greatest impact on the Town. Impacts to property, critical facilities (such as utilities), and life safety can be expected. The risk and vulnerability associated with these secondary hazards are discussed in the flood and localized flood sections of the LHMP Paradise Annex.

According to historical hazard data, high winds are an annual occurrence in the Town of Paradise. These high wind events are typically expected 7 to 8 times per year.

*Regulatory Setting/Responsible Agencies*

The Town Building Department is responsible for enforcing building code requirements developed to minimize damage from high winds in new development.

Several general disaster preparedness efforts by the Town will also improve the ability of the Town to respond to extreme rain and storm events, including enhanced public education (LHMP Action 2), improved Early Warning System (LHMP Action 3), Public Works signs (LHMP Action 4).

New critical facilities such as communications towers and others should be built to withstand hail damage, lightning, and thunderstorm winds. While deaths have occurred in the planning area in the past due to

2019 lightning, it is difficult to quantify future deaths and injuries due to lightning. Future losses to new development should be minimal.

**Power Shutoffs**

Public Safety Power Shutoffs (PSPS) are used to reduce the risk of power equipment inducing wildfires, as was found to be the cause of the Camp Fire. According to PG&E, factors considered include low humidity levels, high winds, and fuel conditions. Another potential cause of power shutoffs is a rotating outage (rolling blackout) caused by demands on the power grid. During heat waves, the California Independent System Operator (CAISO), the organization that runs the state’s electric grid, can call for rotating outages when power demand threatens to exceed the capacity of the system.

*Existing Conditions*

PSPS events may be limited to specific areas or affect broad regions of the state. Power outages combined with high heat or extreme cold events can add to the risks to the public, especially for vulnerable populations such as low-income residents and the homeless. Power outages can also impact emergency communications and operations.

*Historical Data*

In 2019, PSPS events occurred in the County on June 8-9, August 23-25, and again on September 23-24.

*Regulatory Setting/Responsible Agencies*

The California Public Utilities Commission (CPUC) has adopted guidelines and rules that the power utilities must follow regarding PSPS events. PG&E must file reports with the CPUC for each PSPS event.

In 2019, PG&E completed significant upgrades to its Wildfire Safety Operations Center (WSOC) to assist in evaluating whether to enact a PSPS. PG&E provides a Medical Baseline Program to provide extra notifications during PSPS to Medical Baseline customers.



## DROUGHT

Drought is different than many of the other natural hazards in that it is not a distinct event and usually has a slow onset. Drought can severely impact a region both physically and economically. Drought affects different sectors in different ways and with varying intensities. Adequate water is the most critical issue and is critical for manufacturing, tourism, recreation, and commercial and domestic use. As the population in the area continues to grow, so will the demand for water.

### Existing Conditions

As discussed in the LHMP Base Plan, drought and water shortage are regional phenomenon. The whole of the County, as well as the whole of the Town, is at risk. Drought has a slow speed of onset and a variable duration. Drought can last for a short period of time, which does not usually affect water shortages. Should a drought last for a long period of time, water shortage becomes a larger issue.

### Historical Data

Since drought is a regional phenomenon, past occurrences of drought for Paradise are the same as those for the County. Those past occurrences can be found in Section 4.2.8 of the LHMP Base Plan.

Based on historical information, the occurrence of drought in California, including the Town of Paradise, is cyclical, driven by weather patterns. Drought has occurred in the past and will occur in the future. Periods of actual drought with adverse impacts can vary in duration, and the period between droughts is often extended. Although an area may be under an extended dry period, determining when it becomes a drought is based on impacts to individual water users.

The vulnerability of the Town of Paradise to drought is Town-wide, but impacts may vary and include reduction in water supply and an increase in dry fuels. The increased dry fuels result in an increased fire danger. Areas of Paradise are in the foothill

interface and become more susceptible to wildfire as drought conditions increase. Residents of these areas are often times dependent upon ground water (water wells) for their water supply. As these water wells begin to fail during periods of drought, the ability of the residents to water landscaping decreases, and fire fuel loads increase.

Other qualitative impacts associated with drought in the planning area are those related to water intensive activities such as wildfire protection, municipal usage, commerce, tourism, and recreation.

Voluntary conservation measures are typically implemented during extended droughts. Drought conditions can also cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding. With more precipitation likely falling as rain instead of snow in the Sierra's, and warmer temperatures causing decreased snowfall to melt faster and earlier, water supply is likely to become more unreliable. In addition, drought and water shortage is predicted to become more common. This means less water available for use over the long run, and additional challenges for water supply reliability, especially during periods of extended drought. These and other impacts are thoroughly evaluated in the Paradise Irrigation District's 2020 Urban Water Management Plan, including a 2021 Water Shortage Contingency Plan.

Post Camp Fire, the Paradise Irrigation District is restoring potable water to standing homes, permitted homes, businesses, and Town buildings. While the process will take time, the District is working diligently to restore water to the community. The UWMP found that the supply and drought risk assessment do not anticipate a water deficit for a single-year or for a five-year consecutive drought in the near term or long term.

In addition, the Town's LTCRP has a project for the development of a wastewater system in the Town. As this Recovery project takes shape, a sewer system in the commercial areas would incentivize economic growth and reduce environmental impacts in the Town.

## DISASTER PREPAREDNESS, RESPONSE, AND RECOVERY

### Police

The Town strives to ensure a town-wide five-minute response time for police. The Paradise Police Department currently has 23 employees and 5 units: Administration, Patrol, Investigations, Communication/Records, and Animal Control. The Paradise Police Department is currently contracting 911 emergency and non-emergency dispatch services with the Butte County Sheriff's Office.

Patrol operations is the largest of the five units, with 11 authorized sworn patrol officers and 5 sergeants. Patrols provide 24/7 service every day of the year. Patrol personnel are the first responders to routine calls and crimes that are in progress. According to the Town of Paradise's police webpage, traffic safety is one of the most significant police issues in Paradise. The Police Department reports that there has been a reduction of injury collisions.

As previously mentioned, the Town of Paradise has an Emergency Operations Plan in place, in which all employees of the Paradise Police Department are subject to immediate recall. The Emergency Operations Plan also includes response from fire, medical and health, communication, and transportation services and facilities, to cope with problems around rescue, relief, evacuation, rehabilitation, and reconstruction in the event of a disaster.

### Communications

As mentioned earlier, flaws in the Town's communications systems were exposed by the Camp Fire. There were failures in the emergency alert system, including the loss of 17 cell towers, and four at-risk areas in the town were not notified of evacuation orders due to human and technical errors.

Following the 2018 Camp Fire, the Town of Paradise has made improved communications a key priority,

consistent with the LTCRP. The Town is utilizing funds from FEMA's Hazard Mitigation Grant Program to develop and implement an early warning system throughout the town. The system would immediately notify residents of hazardous events via sirens, text messages, voice messages, and more. 21 towers will be constructed across the Town as the basis of an audible system. 20 are operational as of October 2023.

The Town currently uses direct contact with residents by Town officials and mass media to notify residents of evacuation. AM radio, TV, and social media are all suggested sources for residents to stay informed and aware when an evacuation is ordered or warning issued.

The Town is also pursuing the installation of a fiber optic network that would be accessible to all residents and businesses in Paradise. A fiber optic network would improve access to the Internet and would provide a safer method of internet service distribution. The feasibility study for this project was completed in 2021. A funding request is part of the Town's federal advocacy platform.

### Evacuation Planning

The topography and development history of the Town present problems in delivery of emergency services, including fire protection and evacuation. Hilly terrain with narrow, winding roads with little circulation, limited escape routes, and limited ingress and egress to access the Town limits rapid access and orderly evacuations. There are many miles of public streets and private roads, many of which were built years ago. Private roads may be substandard in design and access capability due to topography.

The Paradise Municipal Code sets a maximum cul-de-sac length of 1,800 lineal feet, measured as the distance between the cul-de-sac's terminus and its nearest intersection with a through street. For this Safety Element, areas are identified as having inadequate access if they are served exclusively by a cul-de-sac or dead-end road that exceeds this

standard (i.e., areas that do not have at least two emergency evacuation routes).

See Figure 12 for existing areas with inadequate emergency access/evacuation routes. These areas are predominantly located in the southern portion of the Town along South Libby Road and Edgewood Lane. With implementation of the TMP, described below, the areas with inadequate access/evacuation routes would be reduced, as shown in Figure 13.

Post-Camp Fire, one of the community’s biggest concerns has been to improve emergency evacuation routes and evacuation planning. Consistent with the LTCRP, the Town of Paradise approved a TMP on May 10, 2022 that looks at emergency evacuation planning and local roadway safety with detailed information in [Appendix D, Evacuation Technical Memorandum](#). The TMP evaluated the impact of permanent improvements and potential temporary modifications on emergency evacuation, focusing on an “all at once” event similar to the Camp Fire evacuation but applicable for a range of emergency scenarios.

The high-level town-wide evacuation analysis prepared for the TMP was completed for several different scenarios as shown in Table 3.

**TABLE 3: OVERALL EVACUATION SCENARIOS ANALYSIS SUMMARY**

Tested Scenario	Impact on Evacuation Time
Full Town of Paradise (Baseline Scenario)	N/A Baseline Scenario
Partial Evacuation of Paradise (North to South from Clark Road to Pentz Road)	Total evacuation time decreases by over 50%
Partial Evacuation of Paradise (North to South from Skyway to Clark Road)	Total evacuation time decreases by over 50%
Full Town of Paradise & Magalia	Total evacuation time decreases by 15% from Baseline Scenario
Staggered Full Town of Paradise & Magalia	Total evacuation time decreases by approximately 30% from full town of Paradise & Magalia scenario

Source: Transportation Master Plan, [Appendix D, Evacuation Technical Memorandum](#), April 5, 2022, p. 10.

The TMP effort has included a high-level capacity analysis to determine major and secondary evacuation routes, potential areas of congestion (intersections or roadway segments), and opportunities for roadway extensions/connections on dead-end streets for additional routes and increased evacuation capacity. Figure 14 shows the primary, secondary, and potential future evacuation routes, as well as the number of travel lanes.

The TMP effort has developed a Roadway Improvement Plan, as shown in Figure 15, that identifies proposed improvements such as:

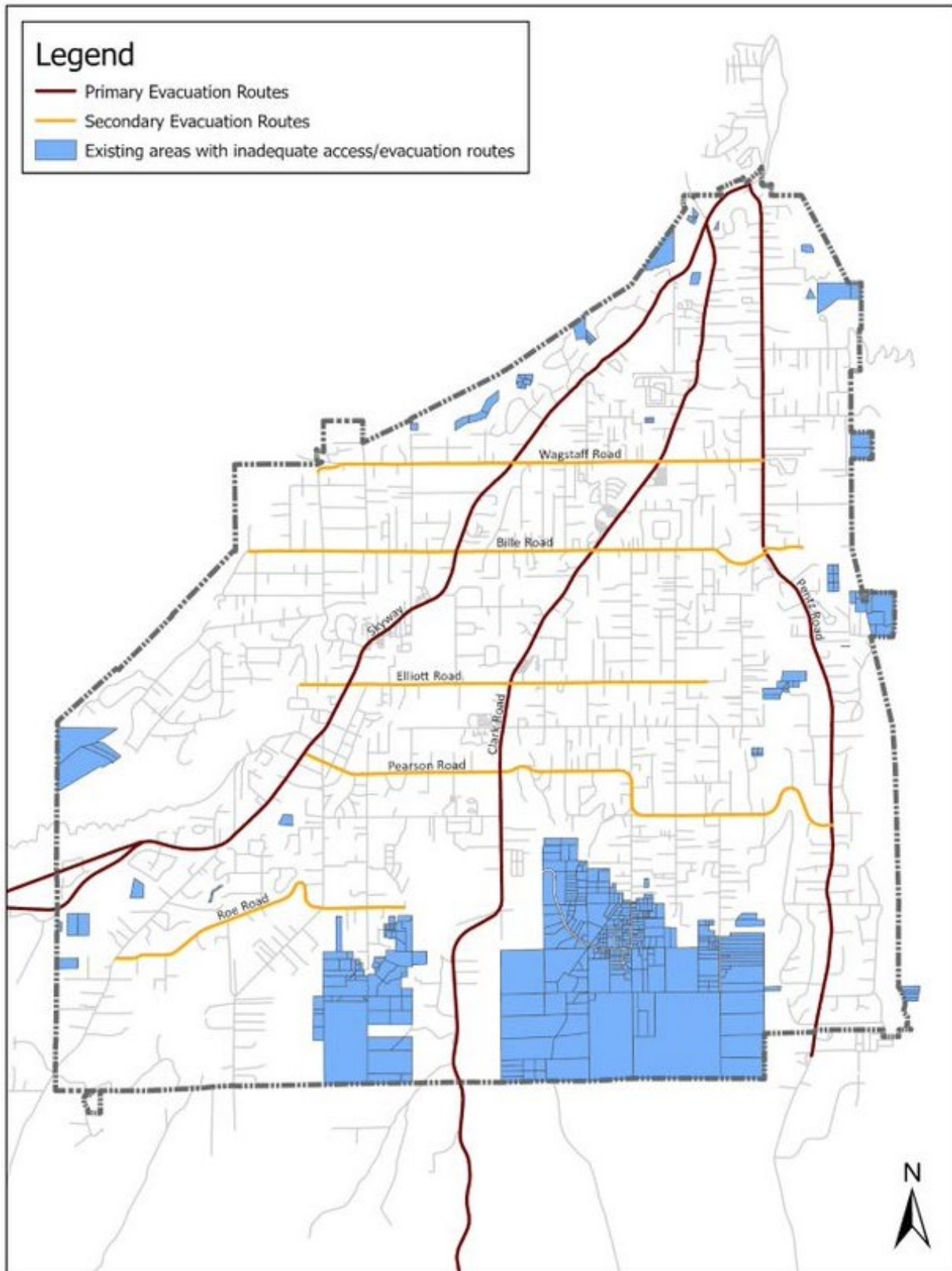
- Roadway widening, particularly downtown Skyway between Elliott Road and Pearson Road.
- Roadway widening plus a multiuse path that could be used by first responders during an evacuation on segments of Skyway, Neal Road, Clark Road, and Pentz Road.
- New roadway extensions including Roe Road, Elliott Road extension and others.
- Intersection improvements at select locations.

One identified project on Figure 15, “Skyway Capacity Improvements” including removal of the median and bulb outs on Skyway to facilitate flow during an evacuation, has been implemented. Another landscape median on Pearson Road is planned to be removed in 2024.

The TMP builds on the Camp Fire After-Action Report (AAR) and Corrective Action Plan (CAP) to develop the actions and recommendations in the TMP. The TMP includes recommendations for:

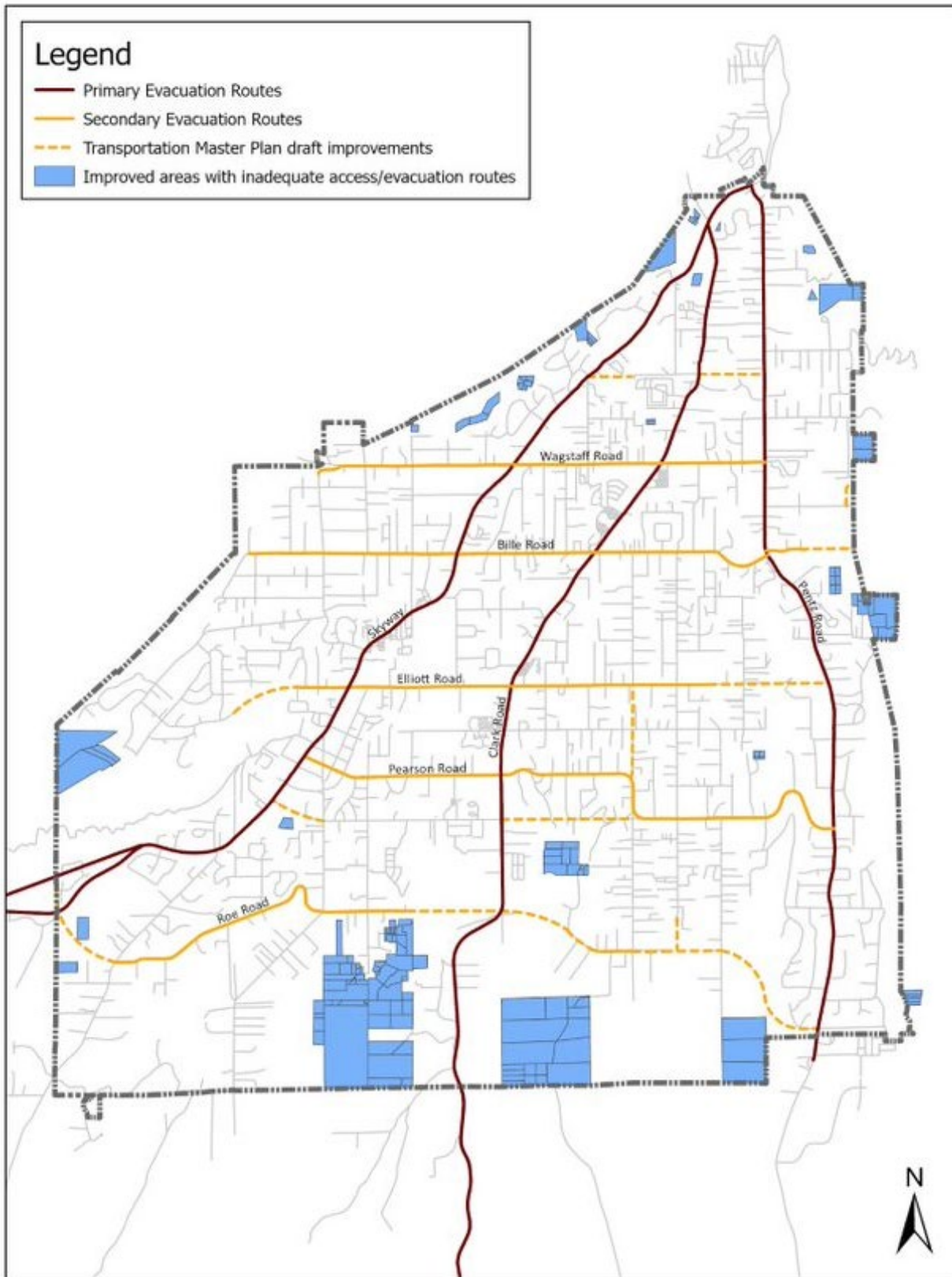
- Traffic control for evacuation.
- Facilitate multiagency collaboration.
- Non-roadway projects, such as signage, a traffic management center, and traffic signal interconnect.

Figure 12: Inadequate Emergency Access: Existing



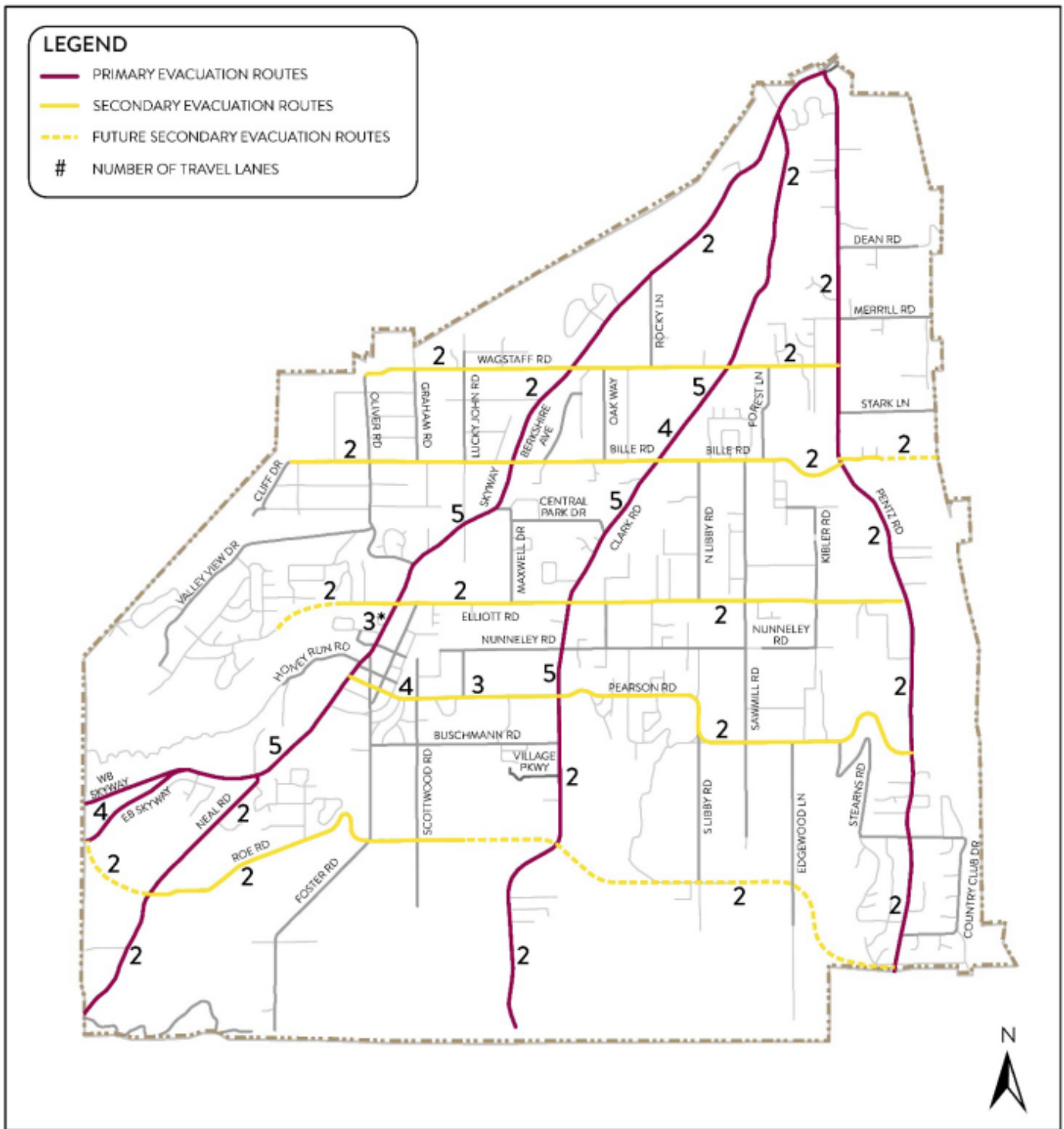
Source: Town of Paradise, 2022.

Figure 13: Inadequate Emergency Access: After Transportation Master Plan Improvements



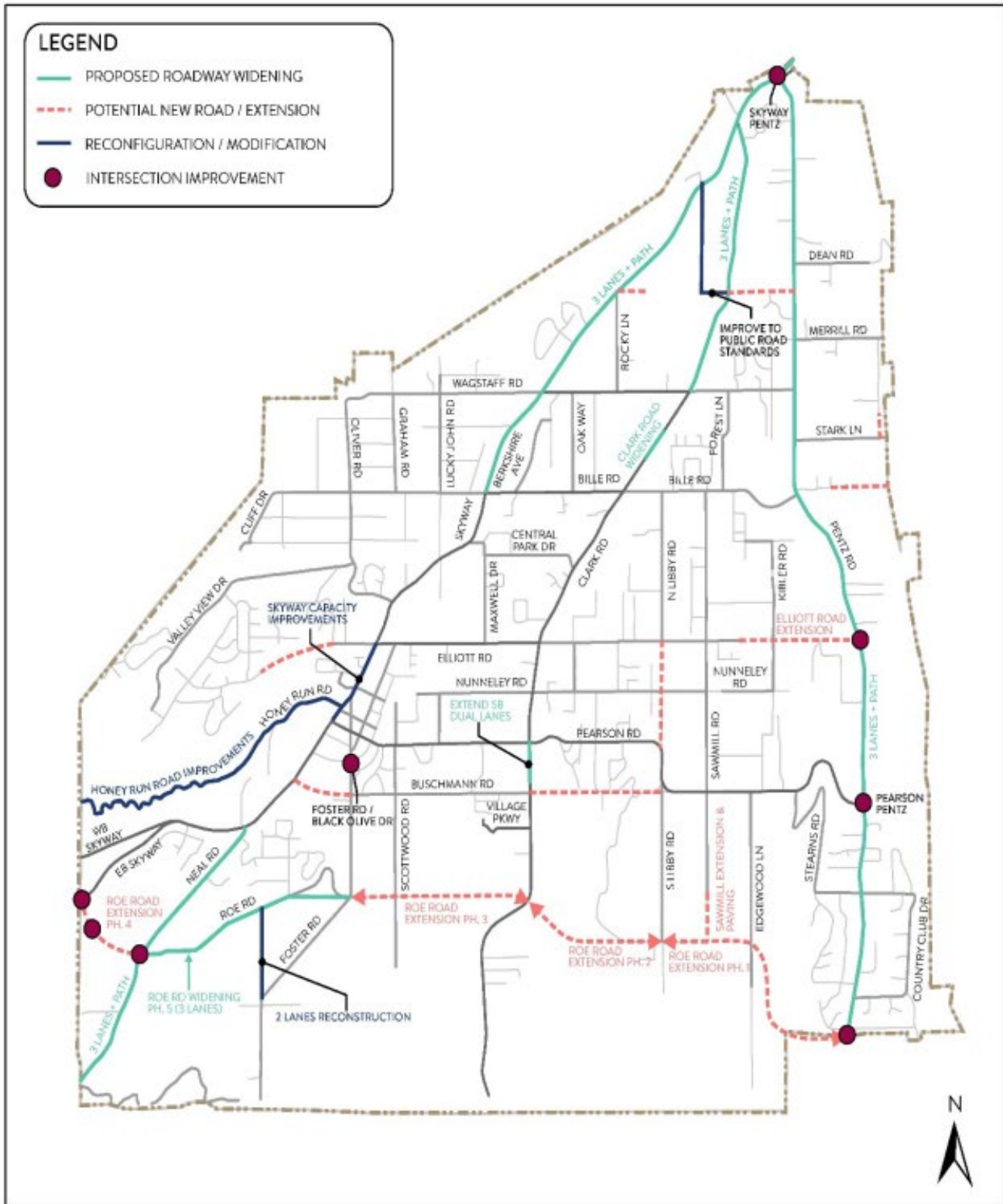
Source: Town of Paradise, 2022.

Figure 14: Evacuation Routes



Source: Town of Paradise, 2022.

Figure 15: Transportation Master Plan Roadway Improvement Plan



Source: Town of Paradise, 2022.

Proposed evacuation improvements have also been identified, including signal timing plans and multiagency coordination to address flow at key intersections outside the Town.

The TMP also provides a framework for identifying, evaluating, and prioritizing transportation safety improvements on local streets, as well as other roadway-related standards and policies.

**Roadway Standards**

Existing roadway requirements are contained in Sections 17.06.090 and Chapter 16.06 of the Paradise Municipal Code. Per Section 17.06.900, the Town does not allow any discretionary permit or project that seeks to increase the existing residential density on parcels that are on a cul-de-sac that exceeds 1,800 lineal feet. Chapter 16.06 requires all access easements or rights-of-way to be 50 feet in width, except for those which serve four or fewer lots. However, subdivision applicants may request widths of less than 50 feet for privately maintained roads (see Table 4). They must connect, via private roads if necessary, with a publicly-maintained street. The Town’s maximum cul-de-sac length for new streets is 1,320 lineal feet.

**TABLE 4: NEWLY CREATED ACCESS EASEMENT OR RIGHT-OF-WAY WIDTH REQUIREMENTS**

Total Lots Served by Road or Street	Minimum Access Width Required (Feet)
5+	Public Street: 60 (Access width of 50 feet may be acceptable to Town engineer if underground utilities are installed) Private Street: 50*
4	40
3	30
2	25
1	20

\* Unless special circumstances warrant a 60-foot access width, as determined by the Town engineer.  
Source: Town of Paradise, 2021.

Concurrent with approval of the TMP, the Town adopted Roadway Design Guidelines that include Roadway Standard Drawings. This includes a

minimum paved width of 14 feet for driveway access to single dwelling units and increased widths based on the roadway classification, as shown in Table 5.

**TABLE 5: ROADWAY DESIGN GUIDELINES**

Roadway Type	Roadway Description	Minimum Surface Width (Feet)
A-1	Access for Single Family	14
A-2a	Private Interior Road	16
A-2b	Private Interior Road	18
A-3a, b	Private Interior Road, 5+ lots	20
B-1	Public Interior Road	24
B-2	Collector Residential	28
B-3	Multi-Family	40
B-4	Commercial	40
B-5	Local Road	32
B-6A, 6B	Collector	36
C-1	Arterial	60
C-1A	2-Lane Principal Arterial	40
C-1B	Minor Arterial without Sidewalk	40
C-2	Arterial-Divided Highway	28
C-2A	Principal Arterial 2-Lane	40
C-2B	Principal Arterial (Urban Diet)	46
C-3A	Principal Arterial No TWLTL	58
C-3B	Principal Arterial	72
C-3C	Principal Arterial with Multi-Use Trail	72

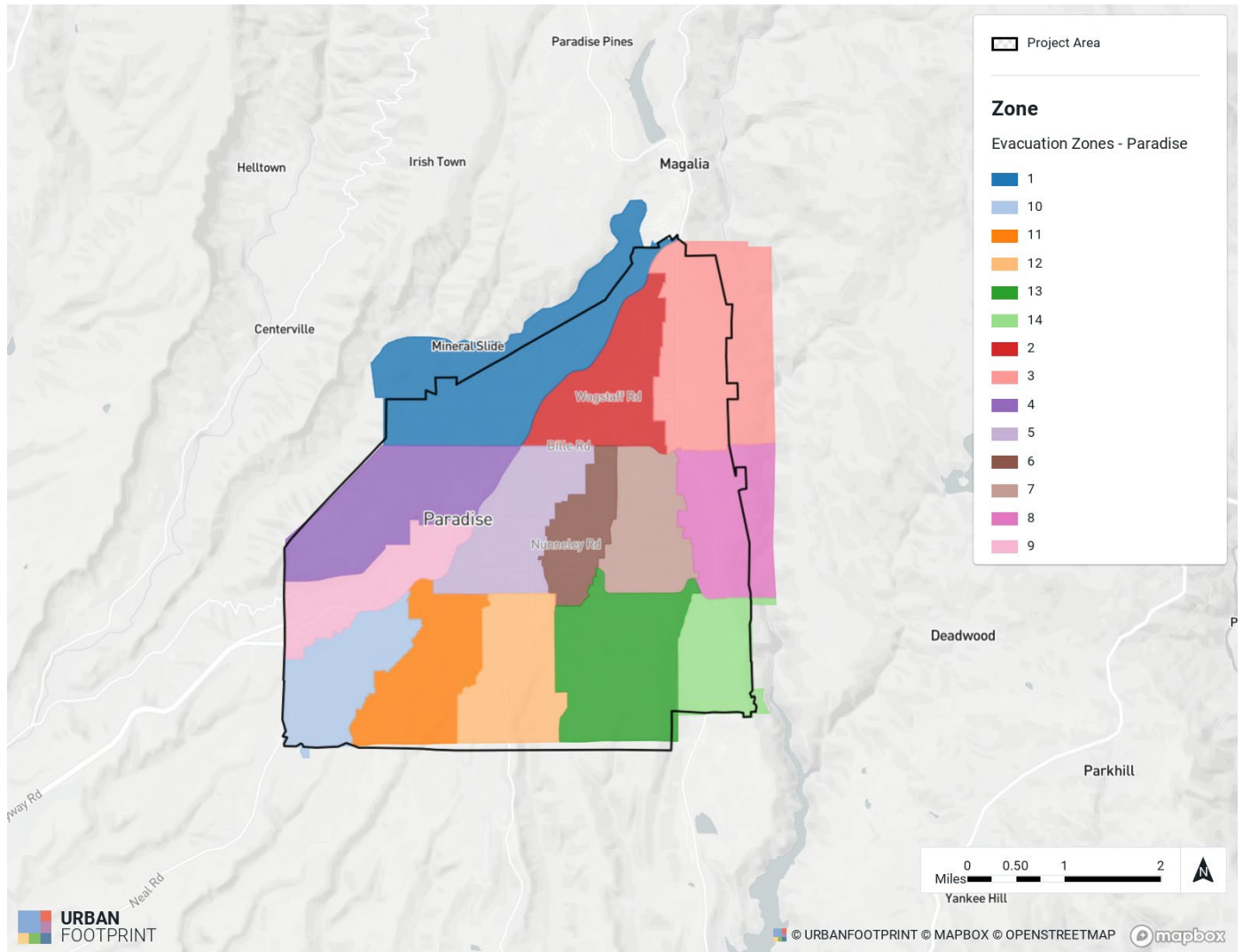
Source: Town of Paradise.

**Evacuation Zones**

The Town has 14 evacuation zones, shown in Figure 16. The Town has also identified Paradise Alliance Church and Paradise Auditorium as assembly points. The primary evacuation routes are Skyway, which provides access to Highway 99 and Chico; Neal Road; Clark Road, which provides access to Highway 70 and Oroville; and Pentz Road. Officials will determine which routes to use and to avoid given the specific circumstances of the emergency. Residents are encouraged to know several routes out of their neighborhood and their community.



Figure 16: Evacuation Zones



Source: Town of Paradise, 2022.

According to the BCFSC, evacuation notices can be provided directly to residents by law enforcement, volunteers in police service, or fire or other public safety personnel, or given indirectly through mass media (e.g., radio, TV) or social media. There is a notification service residents can subscribe to for cell phone and email evacuation notifications.

### Resources Related to Implementation

The studies and resources available related to emergency preparedness and especially related to wildfires is constantly growing. Contained below is a short list of resources related to program implementation:

- [Building a Wildfire-Resistant Home: Codes and Costs](#)
- [Butte County Camp Fire Response – County-wide Corrective Action Plan](#)
- [Butte County Community Wildfire Protection Plan \(CWPP\)](#)
- [Butte County Fire Safe Council website](#)
- [Butte County Local Hazard Mitigation Plan \(LHMP\)](#)
- [CAL FIRE – Ready for Wildfire website](#)
- [California Department of Insurance – Safer from Wildfires Program](#)
- [Community Planning Assistance for Wildfire](#)
- [Fire Adapted Communities Learning Network](#)
- [Knapp, Eric E et al: Housing arrangement and vegetation factors associated with single-family home survival in the 2018 Camp Fire, California](#)
- [Next10 Report – Rebuilding for a Resilient Recovery](#)
- [Paradise Forest Management Plan](#)
- [Paradise Grazing Plan](#)
- [Paradise Nature-Based Fire Resilience Project Report](#)
- [Town of Paradise Emergency Services Information website](#)
- [Town of Paradise Emergency Operations Plan](#)
- [Town of Paradise Transportation Master Plan](#)
- [ULI Report – Firebreak: Wildfire Resilience Strategies for Real Estate](#)
- [Wildfire Risk to Communities](#)

## GOALS, POLICIES, AND PROGRAMS

This chapter describes safety goals (SG), policies (SP), and programs for the Town of Paradise. A goal is defined as a general statement of the highest aspirations of the community. A policy is a course of action chosen from among many possible alternatives. It guides decision-making and provides a framework around which the housing programs operate. An implementation program (SI) is a specific action that implements the policy and moves the community toward the achievement of its goals.

The goals of this Safety Element are consistent with and build off of the Butte County LHMP. The Safety Element goals are:

- SG-1 – Minimize risk and vulnerability of the community to hazards and reduce damages and protect lives, properties, and public health in Paradise.
- SG-2 – Provide protection for critical facilities, infrastructure, and services from hazard impacts.
- SG-3 – Increase public awareness of the risk and vulnerability of the community to hazards and promote personal awareness and responsibility.
- SG-4 – Increase the community's ability to be prepared for, respond to, and recover from a disaster event.
- SG-5 – Reduce fire severity and intensity in Paradise and surrounding lands.
- SG-6 – Increase community resiliency to climate change's influence on disasters.
- SG-7 – Collaborate with the USDA Forest Service (USFS), Bureau of Land Management (BLM), California Department of Forestry and Fire Protection (CAL FIRE), and other fire protection agencies and stakeholders to mitigate the risk of wildfire.
- SG-8 – Collaborate with Butte County Fire Safe Council, Paradise Ridge Fire Safe Council, Paradise Recreation and Park District, and other

community groups and organizations to increase homeowner awareness of and participation in voluntary wildfire resiliency and climate change adaptation interventions.

- SG-9 – Utilize Paradise’s experiences with wildfire to advocate for State and federal policies and regulations that assist in creating disaster resilient communities and facilitate post-disaster recovery.

For each implementation measure, the party responsible for implementation, funding source, timing of implementation, and quantified results (where appropriate) are identified.

SG-1 MINIMIZE RISK AND VULNERABILITY OF THE COMMUNITY TO HAZARDS AND REDUCE DAMAGES AND PROTECT LIVES, PROPERTIES, AND PUBLIC HEALTH IN PARADISE.

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- SP-1 The Town will consider extreme heat days in building and landscape design, including park design.
- SP-2 The Town will stay informed on methods for home hardening and periodically review whether to include additional requirements as the town continues to recover and more science and information become available. The Town will evaluate home hardening and construction requirements annually and amend local buildings codes as warranted to take into account additional stressors on buildings including, but not limited to, building materials to reduce the impacts of high heat days, fire resistance in areas of increasing wildfire risk, and flood proofing for intermittent inundation.
- SP-3 The Town will consider the costs of mandates and increased standards for climate change adaptation regulations and those standards and regulations on housing affordability. These standards and regulations may include home hardening, building materials standards, landscaping,

and siting. Policies should balance the need for climate adaptation with the negative impact of decreasing housing affordability for vulnerable populations.

- SP-4 The Town will ensure adaptation planning includes best available science, adequate mapping, and consideration of planning horizons. Best available, up-to-date scientific information about hazards shall be used in vulnerability assessments, permit applications that present hazard risks, and the preparation of technical reports and related findings. Map areas subject to existing and future hazards that present risks to life and property using multiple scenarios, including worst case scenario.
- SP-5 The Town will encourage infill development near services and evacuation routes through regulatory levers such as reduced or waived permitting fees and zoning incentives. The proposed Sewer Service Area Overlay Zone will include considerations to incentivize development that has fewer GHG emissions relative to sprawl and to encourage building in safer parts of town.
- SP-6 Because, by local designation, the entire Town is located in a Very High Fire Hazard Severity Zone (VHFHSZ), it is not feasible to avoid or minimize new residential development within VHFHSZs. The Town will improve the resiliency of residential development through enforcement of State requirements as well as local requirements for defensible space and fire resilient construction, consistent with the Fire Safe Regulations and Public Resources Code (PRC) 4290.
- SP-7 The Town will limit and discourage construction of new development (including rebuild projects) in zones or overlay areas that have been identified or designated as key parcels for wildfire risk reduction.

- SP-8 The Town will conduct an assessment that identifies housing units and neighborhoods in fire hazard severity zones that do not meet current fire safe building codes or road standards and develop retrofit programs that target highest risk areas including but not limited to programs to encourage lot consolidation, taking into consideration the increase in frequency and severity of wildfires.
- SP-9 The Town will identify, map and establish land use designations and development standards that protect areas of significant habitat, biodiversity, carbon-sequestration, ecological integrity and those areas with high natural resilience to climate change to reduce loss of critical habitat, increase biodiversity, mitigate climate change effects and protect ecological resources.
- SP-10 The Town will continue to implement provisions of the California Fire Code for Very High Fire Hazard Severity zones.
- SP-11 The Town will revise the Paradise Municipal Code to adopt development standards that meet or exceed Title 14, California Code of Regulations (CCR), Division 1.5, Chapter 7, Subchapter 2, Articles 1-5 (commencing with Section 1270) (SRA Fire Safe Regulations) and Title 14, CCR, Division 1.5, Chapter 7, Subchapter 3, Article 3 (commencing with Section 1299.01) (Fire Hazard Reduction Around Buildings and Structures Regulations), and PRC 4290. These standards will include but not limited to 30-foot setbacks for all buildings from all property lines or mitigation measures, designation and preservation of undeveloped and strategic ridgelines, and standards for emergency ingress and egress.
- SP-12 New fire station(s) shall be located so that all areas within Town limits are within a five-minute emergency response time for 90 percent of all emergency incidents. New fire station locations should be within a 0.5-mile radius of the symbols indicated on the *Land Use Diagram*.
- SP-13 The Town will endeavor to maintain an overall Insurance Services Office (ISO) rating<sup>7</sup> of three or better and an emergency fire response time within five minutes from 90 percent of all emergency incidents within the Town limits.
- SP-14 The Town will strive to reduce the impact of pollutants on the well-being of Paradise citizens.
- SP-15 The Town shall ensure that any new development or project for improvement of a structure located within potential floodways consider and account for special flood hazards by enforcing the Paradise Municipal Code standards for building in areas prone to flood hazards.
- SP-16 Detrimental and toxic discharge into natural waterways shall not be permitted.
- SP-17 Development projects should be designed to minimize soil erosion and shall be required to comply with all Town of Paradise-adopted soil erosion standards maintained by the Paradise Public Works Department.
- SP-18 Butte County and its cities and towns, including Paradise, shall act to provide for the safe, effective management of hazardous wastes generated within the county. New off-site hazardous waste management facilities shall be primarily limited to a scale necessary to meet the hazardous waste management needs of this

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<sup>7</sup> ISO Fire Suppression Rating Schedule (FSRS), evaluates four primary categories of fire suppression — fire department, emergency communications, water supply,

and community risk reduction. The FSRS includes standards set by the National Fire Protection Association (NFPA).

county; larger facilities may be permitted in accordance with effective inter-jurisdictional agreements reached between Butte County and other jurisdictions or upon determination of the local governing body that the project meets local planning criteria and serves public needs.

- SP-19 Butte County and its cities and towns, including Paradise, encourage multi-county and regional efforts to plan and implement alternatives to land disposal of untreated hazardous wastes and to limit the risks posed by the transportation of hazardous wastes around the state. Agreements for new facilities to provide the offsite capacity needed for hazardous waste treatment and residuals disposal should be reached among jurisdictions according to their fair share of the hazardous waste stream, each jurisdiction's environmental suitability for different types of facilities, their economic interests, and the economic viability of different types and sizes of facilities.
- SP-20 Butte County and its cities and towns, including Paradise, shall ensure that on-site and offsite hazardous waste treatment facilities are subject to complete local review.
- SP-21 Butte County and its cities and towns, including Paradise, should designate a system of preferred transportation routes for hazardous wastes within the county. Selection of preferred routes should be determined on the criteria of minimal risk of accident, and minimal exposure of the county's population to the consequences of any accidents. The designation of preferred routes need not imply any restrictions on other routes, nor any conflict with the California Highway Patrol's role in establishing transportation routes for hazardous materials.
- SP-22 Butte County, and its cities and towns, including Paradise, shall require that all local

land use decisions on siting specified hazardous waste management facilities are consistent with Butte County Public Health Department requirements and State law.

**SI-1 INCREASE SHADE AND REDUCE HEAT IMPACTS**

The Town will amend landscaping and development standards to ensure landscaping and building features such as awnings, canopies, arcades, and/or colonnades that can encroach in the public sidewalk area are used to create shade for pedestrians and reduce heat absorption.

The Town will develop design standards for parks to ensure that all park facilities, including recreational sports complexes, include a tree canopy, shade structures, and materials with low solar gain to improve usability on high heat days and reduce heat retention.

Responsible Party: Planning  
 Funding Source: General Fund  
 Implementation Schedule: Ongoing

**SI-2 BALANCED AND EVOLVING NEEDS**

Annually, the Town will review its building requirements against best practices for sustainability and fire resistance and construction costs. The Wildfire Prepared Home Program adopted in 2022 establishes standards for new fire resistant single-family home construction. Based on the Town's progress in recovery and the cost of requirements, the Town will identify whether requirements around building materials, construction methods, and/or energy systems should be made more stringent to achieve goals around minimized risk and reduced damage to property. Items to consider include building construction and operation practices that consume less energy and/or facilitate passive design; incorporating residential Electric Vehicle (EV) charging capabilities; facilitating decarbonization, such as converting from gas-powered to electric appliances; supporting back up energy systems; and requiring additional fire-resistant building materials

and practices such as ignition resistance improvements.

The Town will utilize incentives and aid whenever possible to offset the costs associated with increased resiliency. Potential incentives include rebates, reduced or waived fees, density bonuses, and/or a revolving loan or grant program to assist vulnerable populations, and owners of the properties that provide housing to these groups, with modifications to dwelling units. The Town will seek partnerships with non-profit organizations and funding mechanisms to assist property owners with climate adaptation and resiliency interventions, such as home hardening, expansion of defensible space, and energy improvements.

Responsible Party: Planning, Building, Recovery and Economic Development

Funding Source: General Fund

Implementation Schedule: Ongoing

### SI-3 REMOVE RISK AND INCENTIVIZE INFILL

Utilizing the work of the Paradise Nature-Based Fire Resilience Project,<sup>8</sup> the Town will identify and map parcels to prioritize as Wildfire Risk Reduction Buffers (WRRBs). The Town will explore and implement at least one tool to disincentivize development on these parcels, such as a fire risk impact fee or an overlay zone that provides heightened development standards.

At the same time as development on the riskiest parcels is disincentivized, development in the town core will be encouraged. With the development of a sewer system, the Town will develop a zoning overlay for mixed-use and multi-family development in the Sewer Service Area (SSA) predominantly around Skyway and Clark. Increased densities up to 30 units/acre will be allowed in this area, which is better served by transit, flatter, and easier to evacuate. The Town will prepare a fact sheet on the sewer service overlay to send to active developers that will include a map of the SSA and a clear

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<sup>8</sup> Conservation Biologist Institute in partnership with The Nature Conservancy and Paradise Recreation & Parks

explanation of development standards within the overlay. The Town will explore other regulatory incentives to apply with or without the sewer, such as reduced permit fees, expedited processing, a special permitting desk, California Environmental Quality Act (CEQA) streamlining through a Specific Plan, and/or density bonus programs.

Responsible Party: Planning, Building, Recovery, and Economic Development

Funding Source: General Fund

Implementation Schedule: Ongoing

### SI-4 DEVELOPMENT STANDARDS

Consistent with the Board of Forestry and Fire Protection (Board) State Minimum Fire Safe Regulations, the Town will notify the Board before revising local regulations and will utilize technical assistance for the Board as appropriate.

The Town will monitor the approval and codification of the State Minimum Fire Safe Regulations into the California Code of Regulations and will amend the Paradise Municipal Code to adopt development standards that meet or exceed Title 14, California Code of Regulations (CCR), Division 1.5, Chapter 7, Subchapter 2, Articles 1-5 (commencing with Section 1270) (SRA Fire Safe Regulations) and Title 14, CCR, Division 1.5, Chapter 7, Subchapter 3, Article 3 (commencing with Section 1299.01) (Fire Hazard Reduction Around Buildings and Structures Regulations), PRC 4290, and PRC 4291 consistent with the local designation of the entire Town as a VHFHSZ.

Through the development review process, the Town will also ensure that future development is designed and constructed to take maximum advantage of known fire and crime prevention siting, orientation, and building techniques. The Town will incorporate these measures as objective development standards.

Responsible Party: Fire

Funding Source: General Fund

District, 2020. Paradise Nature-Based Fire Resilience Project, June.

Implementation Schedule: Objective design standards to be completed by December 2024.

**SI-5 FIRE PROTECTION PLANS**

New development projects in the Town shall prepare a Fire Protection Plan for adequate emergency water flow, emergency vehicle access, visible addressing and signage, evacuation routes, fuel management, defensible space, fire safe building construction, and wildfire preparedness.

Responsible Party: Planning and Fire

Funding Source: General Fund and EDA grant

Implementation Schedule: Adopt requirements for Fire Protection Plans by July 2024.

**SI-6 STORMWATER MANAGEMENT**

The Town will also assure that increased runoff resulting from additional coverage of surface area on developing properties does not adversely affect surrounding properties, roads, or stream courses. All development will be checked for compliance with the Master Storm Drain Study and Facilities Plan. Development will not be permitted if potential flooding and drainage impacts cannot be overcome by sound engineering practices.

The Town will require all development proposals on sites which contain slopes exceeding 20 percent and/or which border or include significant and sensitive stream courses or natural drainageways, to include programs for replanting and slope stabilization, erosion control plans, and to incorporate designs which minimize grading and cut-and-fill. Building on slopes in excess of 30 percent will not be permitted.

Responsible Party: Planning and Public Works

Funding Source: EDA Grant

Implementation Schedule: Ongoing

**SI-7 HAZARDOUS WASTE**

The current Paradise General Plan recommends the siting of community collection and transfer facilities in the industrial area of Paradise (see Figure 8-11, Hazardous Waste Management Plan). The Town has

a Household Hazardous Waste (HHW) and recycling center which has been temporarily closed post-fire. The Town’s goal is to reopen the HHW facility within 2-3 years. In the meantime, residents are directed to use the regional HHW facility in Chico.

The Town’s development review process shall take into consideration the findings, recommendations, and requirements of the Certified Unified Program Agency (CUPA), State law, and the Town’s Household Hazardous Waste Element.

The Town will work with Butte County to seek agreements with other counties in the region to site regionally scaled facilities designed to meet the needs of hazardous waste generators from several counties and to develop a program for ongoing hazardous waste data collection to increase accuracy and reliability of data estimates during subsequent plan updates. The Town will also work with Butte County to develop a countywide hazardous waste reduction program which will identify economically feasible waste reduction practices and incentives available to the following key target groups: large and small quantity industrial and commercial hazardous waste generators, agriculture, and individual households. In particular, the Town will work with Butte County to establish a program to manage waste oil produced by households and small quantity generators in Butte County.

The Town will work with Butte County to prepare countywide air quality control standards pertaining to siting of hazardous waste treatment facilities as necessary to protect the health and welfare of the residents of Butte County.

Responsible Party: Planning

Funding Source: General Fund

Implementation Schedule: Ongoing

**SI-8 EMERGENCY RESPONSE**

The Town will evaluate the need for and establish, as applicable, law enforcement and fire protection for new land use development sufficient to assure that adequate levels of protection are maintained. The

potential to levy fees on existing land uses will also be evaluated. The Town will consider the burden fees put on property owners and will balance construction feasibility with the need for emergency response.

Responsible Party: Planning and Economic Development

Funding Source: General Fund

Implementation Schedule: Ongoing

**SG-2 PROVIDE PROTECTION FOR CRITICAL FACILITIES, INFRASTRUCTURE, AND SERVICES FROM HAZARD IMPACTS.**

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**SP-23** The Town will seek funding sources to provide assistance in installing efficient air conditioning or cooling alternatives in existing structures to reduce peak electrical demands during high heat events to ensure reliability of the electrical grid (new homes will have efficient air conditioning as part of new construction).

**SP-24** The Town will strive to harmonize the General Plan, the community’s capital improvements plan and annual fiscal budget with climate action and/or adaptation policies.

**SP-25** The Town will partner with community organizations to develop and maintain a community capacity inventory to facilitate drawing on the strengths of the community’s individuals and organizations to work toward community goals, such as safety and resiliency. The inventory will identify the hard assets (e.g., educational institutions, community organizations) in and/or serving Paradise.

**SP-26** The Town will maintain and implement the Town’s Storm Drain Master Plan to provide safe and effective management of stormwater to reduce flooding.

**SP-27** The Town will continue to implement infrastructure recovery projects to improve the safety and longevity of key infrastructure, including evacuation routes.

**SP-28** The Town will require all new development to comply with the airport height restriction policy, airport safety area(s) policies, and land use guidelines for safety compatibility of the Paradise Skypark Airport as contained in the Butte County Airport Land Use Compatibility Plan.

**SP-29** The Town will locate, when feasible, new essential public facilities along major evacuation routes, including hospitals and healthcare facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities.

**SI-9 ELECTRICAL GRID INTEGRITY**

Design an incentive program, such as providing forgivable loans or a rebate program, to encourage alternatives to conventional air conditioning for retrofitting existing buildings constructed to older standards, such as high efficiency heat pumps, ceiling fans, air exchangers, increased insulation and low-solar-gain exterior materials to reduce peak electrical demands during high heat events to ensure reliability of the electrical grid. Cooling products that recirculate inside air and do not bring in outside air such as efficient heating, ventilation and air conditioning (HVAC) systems and heat pumps will be prioritized given the added air quality benefits of these methods when wildfire smoke may force residents to close their windows.

Responsible Party: Housing Division

Funding Source: TBD

Implementation Schedule: Ongoing

**SI-10 IDENTIFY COMMUNITY ASSETS**

The Town will engage non-profits and community-based organizations to develop and maintain a map or directory of community assets. The effort will require first defining the elements that should be included (such as critical facilities and community services), engaging non-governmental organizations (NGOs) and Town agencies to utilize current work, and then developing and sustaining standardized, transferrable procedures for collecting and managing



data. Partnerships with NGOs such as Code for America could yield an open-source, collaborative format for collecting and sharing this information.

Responsible Party: Planning

Funding Source: TBD

Implementation Schedule: Ongoing

**SI-11 STRENGTHEN INFRASTRUCTURE**

The Town will review standards for roadway widths, maximum cul-de-sac lengths, emergency access, and road and structural identification and amend as necessary to meet or exceed State Fire Safe Regulations.

Consistent with the Long Term Community Recovery Plan (LTCRP) and the ongoing Transportation Master Plan, the Town will continue to implement long-term recovery projects related to improving and protecting infrastructure, including the following:

- Replace damaged plastic culverts with reinforced concrete pipe culverts to improve the safety and long-term maintenance of evacuation routes.
- Remove and replace damaged hardscape, including concrete curb, gutter and sidewalk lighting, planters, and amenities.
- Repair damaged roadways and roadway signs along evacuation routes.
- Rehabilitate Neal Road, a key evacuation route, from Wayland Road to Skyway.
- Remove standing burnt trees on private lands that are hazardous to public safety.
- Repair off-system (i.e., local, public roads that are not part of the federal aid system) roadways along evacuation routes.
- Widen key evacuation routes (i.e., Upper Skyway from Bille Road to Pentz Road, Clark Road from Wagstaff Road to Skyway, Pentz Road from Skyway to Town limits, Neal Road from Skyway to Town limits) to include a center turn lane, widened shoulders, and a multi-use pathway to improve evacuation and increase evacuation capacity.

- Implement other circulation improvements in the Transportation Master Plan that will provide benefits for emergency preparedness, response, and evacuation.
- Develop a program to prioritize and facilitate correction of existing non-conforming development in terms of road standards and vegetative hazard.

The Town will include emergency vehicle access requirements in the Paradise Municipal Code subdivision and zoning ordinances, Town-adopted road standards, and Town-adopted current California Fire Codes. Through the development review process and in accordance with the Butte County Community Wildfire Protection Plan, adequate roads shall be required to be constructed and/or improved for emergency vehicle access.

The Town will maintain and continue to implement the updated Storm Drain Master Plan.

Responsible Party: Public Works Planning and Recovery

Funding Source: FHWA – Emergency Relief, FEMA – Hazard Mitigation Grant, FEMA – Public Assistance and some unsecured

Implementation Schedule: Ongoing

**SI-12 AIRPORT**

The Town will submit all zoning, subdivision, and General Plan amendment applications within the adopted airport area of influence to the Butte County Airport Land Use Commission for review and approval. In conjunction with the General Plan update, the Town will adopt zoning changes within the Skypark Airport’s “C” Compatibility Zone to meet the standards of the Airport Land Use Compatibility Plan.

Responsible Party: Planning

Funding Source: General Fund

Implementation Schedule: Ongoing

**SI-13 CRITICAL FACILITIES**

In conjunction with the General Plan update, the Town will look at the current public-institutional (P-I) and community-service (C-S) land use designations

and, where feasible, ensure these designations are along or near major evacuation routes, recognizing it is not feasible to locate such facilities outside VHFHSZs because, by local designation, the entire Town is designated a VHFHSZ. Existing and new critical facilities will continue to provide visible street signs and adequate clearance for emergency response vehicles.

In conjunction with the Town’s ongoing development of an early warning system, emergency communications facilities will be sited with consideration for future disasters.

Whenever feasible, critical facilities that serve the town will be placed outside of VHFHSZs. Within Town limits, the development of new critical facilities will be prohibited in WRRBs.

Responsible Party: Planning

Funding Source: General Fund

Implementation Schedule: Ongoing

**SG-3 INCREASE PUBLIC AWARENESS OF THE RISK AND VULNERABILITY OF THE COMMUNITY TO HAZARDS AND PROMOTE PERSONAL AWARENESS AND RESPONSIBILITY.**

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SP-30 Incorporate links and references in system maps and incorporate interpretive signage at multi-use path trailheads providing education on climate change related health threats including heat-related illness and wildfire smoke and personal care steps.

SP-31 Require residential property managers and landlords to disclose hazard risk information to renters in a manner similar to that required when residential properties are sold.

SP-32 Continue to maintain and disseminate education and resources on wildfire risk and mitigation using a variety of methods and materials to reach at-risk or hard to reach populations.

SP-33 Conduct practice exercises to increase awareness of emergency operations for Town staff and members of the public.

SP-34 Conduct outreach and education around safe handling and disposal of household hazardous materials using a variety of methods and materials to reach at-risk or hard to reach populations.

**SI-14 COMMUNITY AWARENESS**

The Town to install signage along the Yellowstone Kelly Heritage Trailway, the planned Paradise Transit Center, and the planned multi-use pathways along main ingress and egress routes to remind residents of climate change related threats, including heat-related illness and wildfire smoke. The Town will work with local public health professionals to provide information on personal care steps to prevent heat-related illness and wildfire smoke in a brochure or placard that can be placed at trailheads and park entrances and on municipal bulletin boards.

Responsible Party: Public Works Department

Funding Source: TBD

Implementation Schedule: Ongoing

**SI-15 PUBLIC EDUCATION**

The Town will also amend the Town’s Health and Safety Code (Title 8 of the Paradise Municipal Code) to require all residential property managers and landlords to disclose information in rental leases that identifies areas of unreasonable risks (pursuant to California Government Code 65302(g)(1)), including but not limited to California Department of Forestry and Fire Protection (CAL FIRE) fire hazard severity zone for the property and specifies whether the property is in an area prone to flood pursuant to Chapter 8.55 of the Municipal Code, in a high liquefaction susceptibility zone, or at risk of ground shaking.

Responsible Party: Planning

Funding Source: General Fund

Implementation Schedule: Ongoing

The Town will conduct Emergency Operations Center (EOC) training exercises throughout the life of the Safety Element, in addition to simulation exercises with the public.

The Town will initiate public education programs for household hazardous waste to increase public awareness of proper hazardous waste disposal. Working with Butte County and the franchised solid waste hauler, the Town will develop small quantity generator and residential hazardous waste educational programs. Such programs should provide information as to types of hazardous waste products, State and local requirements for disposal of hazardous wastes, available means for disposal of small quantities of hazardous wastes, and the risks associated with illegal disposal of hazardous wastes in septic systems, public wastewater treatment facilities and the municipal waste stream, and disposal to Land. Public information programs will also improve the level of general understanding about hazardous waste management and siting issues; educate Butte County residents as to particular hazardous waste issues of concern, such as the risk to groundwater and drinking water supplies; involve the public in hazardous waste management; and build a vehicle for incorporating public concerns into subsequent Safety Element updates.

The Town will educate residents regarding the dangers of seismic activity public outreach efforts and promotion of the findings contained within the adopted Butte County Local Hazard Mitigation Plan (LHMP), which hereby is incorporated by reference within the Paradise General Plan.

Public education efforts shall include outreach using a variety of methods and materials to reach at-risk or hard to reach populations.

Responsible Party: Planning  
 Funding Source: General Fund and TBD  
 Implementation Schedule: Ongoing

**SI-16 PROMULGATE WILDFIRE MATERIALS**

The Town will maintain its Emergency Services Information webpage and associated resources, including but not limited to the ember awareness checklist, disaster supplies kit checklist, evacuation routes map and plan, and defensible space brochures. The Town will periodically utilize its social media accounts to disseminate information on wildfire risk and reduction and will staff information tables or booths at community and/or neighborhood events (e.g., Paradise Chocolate Festival, Party in the Park, National Night Out) at least three times per year to pass out informational resources. In conjunction with Goal 8, the Town will continue to partner with the Butte County Fire Safe Council and other community organizations to lift up training sessions and share education resources. Working with community partners, the Town will explore the feasibility of holding an annual fire prevention and risk reduction day of awareness or workshop that could be held on the anniversary of the Camp Fire.

Responsible Party: Recovery and Fire Department  
 Funding Source: FHWA – Emergency Relief, FEMA – Hazard Mitigation Grant, FEMA – Public Assistance and some unsecured  
 Implementation Schedule: Ongoing

**SG-4 INCREASE THE COMMUNITY’S ABILITY TO BE PREPARED FOR, RESPOND TO, AND RECOVER FROM A DISASTER EVENT.**

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- SP-35 Implement the Emergency Operations Plan.
- SP-36 Prioritize the needs of vulnerable and disadvantaged communities, including renters and low-income homeowners, during the emergency response and disaster recovery efforts.
- SP-37 The Town shall develop policies and provide updates, as appropriate, that ensure recovery and redevelopment after a large fire reduces future vulnerabilities to fire hazard risks through site preparation, redevelopment layout design, fire-resistant landscape planning, and ignition resistant building design and materials.

- SP-38 Provide adequate access, including emergency vehicle access and evacuation, to all new parcels and existing parcels in accordance with Title 14, California Code of Regulations (CCR), Division 1.5, Chapter 7, Subchapter 2, Articles 1-5 (commencing with Section 1270) (SRA Fire Safe Regulations) and Title 14, CCR, Division 1.5, Chapter 7, Subchapter 3, Article 3 (commencing with Section 1299.01) (Fire Hazard Reduction Around Buildings and Structures Regulations), and PRC 4290, where feasible and preferable in accordance with the town-adopted Butte County Community Wildfire Protection Plan.
- SP-39 Continue to implement the Transportation Master Plan to improve circulation infrastructure used for evacuation and ensure it is appropriately sized for future populations and explore capital expenses for maintaining the system to ensure reliability in an emergency. Incorporate into appropriate plans the role of the active transportation options (such as walking paths, sidewalks, and bikeways) and local transit agency(s) in providing evacuation options based upon the duration and severity of events as well as different community needs, particularly those residents with access and functional needs.
- SP-40 Continue to implement standards to prohibit or limit development on parcels without adequate emergency access.
- SP-41 The Town will develop and provide a multi-layered, redundant communications system to be used for disaster preparedness education and emergency communications.
- SP-42 The Town will work with community partners to run disaster event simulations twice per year for community members to be able to practice evacuation.

SP-43 The Town will designate an emergency aircraft landing area(s) within the Paradise primary and secondary planning areas.

**SI-17 TOWN ACTION TO HELP VULNERABLE COMMUNITIES**

The Town will support post-disaster funding for multi-family and affordable housing development, including manufactured housing. To the extent feasible within the Community Development Block Grant-Disaster Recovery (CDBG-DR) funding requirements, the Town will prioritize the replacement of affordable housing units that have been damaged or demolished, as well as the deployment of interim housing in vulnerable communities and the creation of new affordable housing.

Ensure that vulnerable populations and agencies and non-governmental organizations that work with these populations are represented in the development of any emergency response plan(s) and climate adaptation strategies.

Responsible Party: Housing and Planning  
Funding Source: CDBG-R and General Fund  
Implementation Schedule: Ongoing

**SI-18 AFTER ACTION REPORTING**

An after-action report shall be prepared following any declaration of a local emergency by the Town for which the governor proclaims a state of emergency, pursuant to the California Code of Regulations, Title 19, Section 2450 and Section 3.1 of the [Town of Paradise Emergency Operations Plan](#). The after-action report will serve as a source for documenting the Town emergency response activities and identifying areas of concern and successes. It will also be utilized to develop a work plan for implementing improvements.

Responsible Party: Recovery and Planning  
Funding Source: General Fund/TBD  
Implementation Schedule: Ongoing

**SI-19 DISASTER RESPONSE INFRASTRUCTURE**

The Town will develop and maintain an early warning system that includes sirens, text messages, voice messages, and other alert best practices so that there are multiple layers of communication and built-in redundancy in case of disaster-driven failures. The warning system will be used at least twice per year for disaster simulations, which could occur on the anniversary of major past disasters like the Camp Fire. The simulations will help residents overcome behavioral obstacles related to evacuation as they become familiar with assigned evacuation routes and practice their own response plans.

Through its General Plan update process, the Town will designate an emergency aircraft landing area. This could be within Paradise’s primary or secondary planning area.

The Town will continue to explore funding resources for improving and maintaining its evacuation system. The Town will continue to implement the evacuation route upgrades recommended in the Long-Term Community Recovery Plan and the Transportation Master Plan (TMP), and implementation will be according to the priority levels identified in the TMP. As mentioned under SG-3, the Town will continue to provide education around evacuation zones and routes and other disaster recovery educational resources.

The Town will continue to limit the densities of development on parcels that do not have adequate emergency access. At a minimum, the Town will not approve any discretionary permit or project that requests an increase of existing residential density on parcels that are served access by either an existing or resultant cul-de-sac exceeding a maximum length of 1,800 lineal feet. The Town will look to the TMP and Board of Forestry and Fire Protection for guidance on potentially developing more stringent access requirements. New development will be assessed on a project basis to ensure that new land uses will not cause emergency responses times to fall below acceptable levels. The Town will strive to maintain an

overall fire insurance (ISO) rating of three or better, and an emergency fire response within five minutes for 90 percent of all emergency incidents within the Town Limits.

Responsible Party: Recovery and Public Works

Funding Source: HMGP

Implementation Schedule: Ongoing

**SI-20 EARLY NOTICING FOR CONSTRAINED AREAS**

The Town will establish a new evacuation zone for areas identified as having inadequate access/evacuation routes. Parcels within this new evacuation zone will be notified when the Town issues a warning or notice to any other evacuation zone, giving residents additional time to prepare.

Responsible Party: CAL FIRE and Planning

Funding Source: General Fund

Implementation Schedule: Ongoing

**SG-5 REDUCE FIRE SEVERITY AND INTENSITY IN PARADISE AND SURROUNDING LANDS.**

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SP-44 Adopt an urban canopy ordinance that includes guidance and standards for new tree planting, proper tree pruning, and vegetation management to preserve the structural integrity of trees while ensuring fire resistance and fuels management. Recommendations for fire-resistant trees species (e.g., black oak) will be included.

SP-45 The Town will encourage the acquisition of high hazard parcels on the periphery of town (i.e., the Wildfire Risk Reduction Buffers identified by the Conservation Biology Institute) for open space or similar uses that serve as wildfire buffers. Explore zoning changes or other policy tools like the Bureau of Land Management’s Area of Critical Environmental Concern planning process or the establishment of an impact fee to discourage or prohibit development in the most dangerous places.

SP-46 Support efforts to reduce health hazards from wildfire smoke, such as access to

respirators and air filtration systems, access to clean air refuge centers, and limits on outdoor activities.

SP-47 Support hazardous fuel reduction, defensible space clearing and forest fuel reduction in rural forested areas with high tree mortality and unnaturally high fuel loads to reduce the size and severity of catastrophic wildfires which reduces the release non-anthropogenic black carbon and methane.

SP-48 Continue to ensure that defensible space and hazardous fuel management requirements of Chapter 8.58 are enforced as expeditiously as possible. Maintain resident records as the Town continues to rebuild so that citations can be served more quickly.

SP-49 Work with community organizations to provide grants or volunteer assistance for vegetation management to help offset costs for low-income households. Assistance will prioritize seniors, persons with disabilities, and low-income residents. Consider contracting for or subsidizing a herd of goats or sheep in order to provide fuels management services to property owners at reduced rates. Grazing programs are most effective for fuels management in large areas and areas with steep or difficult terrain.

#### SI-21 WILDFIRE BUFFERS

Planning staff will meet with Paradise Parks and Recreation District staff, the Nature Conservancy, Conversation Biology Institute, and other stakeholders to identify the highest priority parcels for Wildfire Risk Reduction Buffers. The Paradise Nature-Based Fire Resilience Project Final Report will be used as a starting point for discussion.

The Town will work with potential funders and other partners to facilitate undeveloped, high-priority parcels being turned into parks or open space. If these parcels are not able to be acquired for open space use, the Town will explore establishing an

impact fee for future development on these parcels that will go to fund fire prevention and resilience efforts, such as vegetation management programs and circulation upgrades for evacuation purposes. Development on these parcels would be subject to the most stringent fire and building codes.

Responsible Party: Recovery, Planning, and Recreation & Parks  
Funding Source: TBD  
Implementation Schedule: Ongoing

#### SI-22 VEGETATION MANAGEMENT

The Town will provide educational and financial resources to facilitate adequate fuels management. Assistance resources can include volunteer days in partnership with a local service organization, provision of goats or sheep to provide grazing services, and grants to help offset costs for low-income households. Assistance will prioritize seniors, persons with disabilities, and low-income residents. The Town will also continue to publicize local weed abatement businesses through the Town's online business directory: <https://www.townofparadise.com/business-directory>.

The Town of Paradise Public Works Department will continue to implement the annual roadside vegetation management program in a manner that is consistent with the California Department of Forestry and Fire Protection (CAL FIRE) Butte Unit Fire Plan and the Butte County Community Wildfire Protection Plan.

The Town will continue to enforce defensible space requirements and to publicize its system for code enforcement complaints related to hazardous fuel management. Based on community feedback, the Town will consider shortening the length of time that property owners have to become compliant with the Town's requirements from 30 calendar days to 20 calendar days and to look at opportunities to streamline the abatement process for properties that don't comply.

Responsible Party: Recovery, Public Works, Planning, Fire, and Recreation & Parks  
Funding Source: TBD

Implementation Schedule: Ongoing

**SI-23 STATE COMPLIANCE**

The Town will enforce and comply with the provisions of Title 14, California Code of Regulations (CCR), Division 1.5, Chapter 7, Subchapter 2, Articles 1-5 (commencing with Section 1270) (SRA Fire Safe Regulations) and Title 14, CCR, Division 1.5, Chapter 7, Subchapter 3, Article 3 (commencing with Section 1299.01) (Fire Hazard Reduction Around Buildings and Structures Regulations), and PRC 4290 and Town-adopted California Fire Code, the Town will also require adequate clearance around structures.

Responsible Party: Recovery, Planning, and Fire

Funding Source: General Fund/Building Enterprise Fund/FEMA – Hazard Mitigation Grant

Implementation Schedule: Ongoing

**SG-6 INCREASE COMMUNITY RESILIENCY TO CLIMATE CHANGE’S INFLUENCE ON DISASTERS.**

SP-50 The Town will encourage or require native, low-water-use, drought-tolerant and fire-resistant plant species for use with open space and park development. The list will also be included in landscaping standards for private development to reduce reliance on potable and recycled water resources.

SP-51 The Town will develop a public outreach and engagement strategy to address impacts of climate change and its associated hazards, especially disproportionate impacts on vulnerable populations, that identifies all stakeholders, utilizes methods to engage the entire community, and includes education components in all planning and policy-making processes for climate change and adaptation.

SP-52 Educate and encourage property owners to consider site design and building features that can increase energy efficiency and improve the resiliency of structures.

SP-53 Complete a comprehensive General Plan update to align land uses and other Town

policies with post-fire recommendations, community needs, and the threats of climate change.

SP-54 Work to provide safeguards so that infrastructure will be available to support residents during extreme weather and disasters.

**SI-24 ENCOURAGING RESILIENCY**

The Town will develop a guidance project checklist for building and site adaptation measures. The checklist, included with permit applications, will provide education to permit applicants on modifications to site plans and structures that can improve a project’s resiliency to existing and potential future climate change hazards. The items on the checklist are not requirements but simply information on practices that could increase energy efficiency, reduce greenhouse gas emission, and increase resiliency. The checklist will include information on weatherizing techniques, solar panels, and wind energy.

In the public realm, consider using impact fees or other funding mechanism to develop battery charging stations for residents during power outages that can double as cooling stations during extreme heat days.

Responsible Party: Planning and Building

Funding Source: TBD

Implementation Schedule: Ongoing

**SI-25 FUTURE PLANNING**

The Town will continue its comprehensive General Plan update and will use the update process as an opportunity to continue to infuse resiliency into land use planning and local policy. Any General Plan updates will include robust community engagement processes that uses a combination of engagement methods (e.g., digital exercises, in-person meetings both large and small, phone-based engagement), culturally competent messaging, and engagement activities to target vulnerable populations that have historically been excluded from the planning process.

Targeted engagement activities could include focus groups with residents with protected characteristics, interviews with community-based organizations serving these populations, using stipends to remove barriers to participation, scheduling meetings at transit-served locations, and other equitable best practices.

Responsible Party: Planning

Funding Source: General Fund

Implementation Schedule: Ongoing

SG-7 COLLABORATE WITH THE USDA FOREST SERVICE (USFS), BUREAU OF LAND MANAGEMENT (BLM), CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION (CAL FIRE), AND OTHER FIRE PROTECTION AGENCIES AND STAKEHOLDERS TO MITIGATE THE RISK OF WILDFIRE AND OTHER HAZARDS.

SP-55 Adopt plans and support projects for forest management activities to restore California forest lands that have high tree mortality and unnaturally dense fuel loads to a fire resilient condition that will mitigate wildfire size and severity.

SP-56 The Town will continue to maintain adoption of a current California Fire Code amended to reflect the unique needs of Paradise and require compliance with its provisions. In addition, the Town shall require that, after a large fire event, a detailed and comprehensive evaluation of redevelopment of the affected area(s).

SP-57 The Town will harmonize and coordinate updates to hazard mitigation and safety planning. The Town will align and coordinate updates to the community's General Plan and Local Hazard Mitigation Plan to efficiently meet requirements and SB 379 (2015) and synchronize future updates of the Safety and Housing Element to ensure compliance with Senate Bill 1035 (2018) and consistency between policies, strategies, and implementation measures. Paradise will

collaborate with Butte County jurisdictions and applicable, consider adoption of a multi-jurisdictional climate adaptation plan, climate action plans, capital improvements plans, transportation plans, or Local Hazard Mitigation plan(s) that can address cross jurisdictional issues or issues in which coordination and pooling of resources is a benefit.

SP-58 Designate an inter-departmental/inter-agency working group to coordinate the implementation and monitoring of the community's climate action and/or adaptation strategies.

SP-59 Designate a department, or staff position within an existing department, with responsibility for monitoring, reporting and progress towards implementation of the Safety Element.

SP-60 Support hazardous fuel reduction and forest fuel reduction in rural forested areas with unnaturally high fuel loads to reduce the size and severity of catastrophic wildfires. Ensure forest fuels reductions benefit the upper-watershed water quality, quantity, and timing.

SP-61 The Town will promote fire prevention by continuing to require brush removal and fuel load clearing in accordance with Title 14, California Code of Regulations (CCR), Division 1.5, Chapter 7, Subchapter 2, Articles 1-5 (commencing with Section 1270) (SRA Fire Safe Regulations) and Title 14, CCR, Division 1.5, Chapter 7, Subchapter 3, Article 3 (commencing with Section 1299.01) (Fire Hazard Reduction Around Buildings and Structures Regulations), and PRC 4290., the Butte County Local Hazard Mitigation Plan (LHMP), and the Butte County Community Wildfire Protection Plan as ongoing conditions of development approval and property maintenance.



SP-62 The Town will work with Del Oro Water Company and the Paradise Irrigation District to assure the adequacy and long-term maintenance of water supply, fire flow, and peak-load water supplies in accordance with Town-adopted current California Fire Codes.

**SI-26 AGENCY COOPERATION**

The Town will continue to coordinate with local, state, and federal agencies to update emergency, evacuation, and hazard mitigation plans, as necessary, to support inter-agency preparedness coordination, and establish and maintain mutual aid agreements where feasible.

The Town will continue to serve as a partner for fire protection agencies, including USDA Forest Service (USFS), Bureau of Land Management (BLM), California Department of Forestry and Fire Protection (CAL FIRE). The Town will distribute information on behalf of these organizations to Paradise residents as appropriate and will continue to publicize fire safe programs and resources from firefighting agencies.

In particular, the Town will continue to promote and support the vegetation clearance, defensible space activities, and fire prevention programs of the Fire Safe Councils, community organizations, and other local agencies such as the California Department of Transportation (Caltrans).

The Town will alert fire agencies of all evacuation drills in the event that fire fighters or agency representatives would like to participate. The Town will strive to establish emergency service training that meets or exceeds State or national standards, as provided by CAL FIRE. The Town will work with CAL FIRE to execute the trainings.

The Town will reduce wildland fuels through community fuel reduction, including lineal fuel breaks within and adjacent to the town and defensible space around homes through hazard abatement at the parcel level, particularly in

reference to the Town of Paradise Defensible Space Ordinance the Butte County Local Hazard Mitigation Plan (LHMP), and the Town-adopted Butte County Community Wildfire Protection Plan. The Town will also endeavor to establish an assured funding means and cooperative partnership program(s) for ongoing maintenance of existing and proposed fuel breaks as well as private and public road clearances.

Through the development review and long-range planning processes, the Town will continue to coordinate and assure current and future water supply for fire suppression needs. The Town will establish standards for adequate fire flows for new land use development and expansion of existing development in accordance with the requirements of the Town-adopted California Fire Code.

Responsible Party: Planning and Fire  
 Funding Source: General Fund and TBD  
 Implementation Schedule: Ongoing

**SI-27 COUNTY COLLABORATION**

Maintain the Butte County Local Hazard Mitigation Plan (LHMP) and Butte County Community Wildfire Protection Plan. Share information and resources with other Butte County jurisdictions as the Town continues to recover.

The Town shall encourage Butte County to enforce standards conforming to the fire safety standards established by the Board of Forestry and Fire Protection for State Responsibility Areas within the Paradise secondary and tertiary planning areas, including the following:

- Road standards for fire equipment access. Common road standards for the Town’s sphere of influence have been adopted by Butte County and the Town of Paradise.
- Standards for signs identifying streets, roads, and buildings, including standards for address identification.
- Minimum private water supply reserves for emergency fire use.

- Fuel breaks and greenbelts.
- Land use policies and safety standards that take into account the recurrent nature of wildland fires.
- Design standards establishing minimum road widths and clearances around structures.
- Emergency preparedness protocol and procedures.
- Maximum length of cul-de-sac roadways.

The Town will share its Operations Playbook (see SI-18) with other Butte County jurisdictions to promote collaboration and collective problem solving.

Responsible Party: Planning, Fire, and Public Works

Funding Source: General Fund and TBD

Implementation Schedule: Ongoing

SG-8 COLLABORATE WITH BUTTE COUNTY FIRE SAFE COUNCIL, PARADISE RIDGE FIRE SAFE COUNCIL, PARADISE RECREATION AND PARK DISTRICT, AND OTHER COMMUNITY GROUPS AND ORGANIZATIONS TO INCREASE HOMEOWNER AWARENESS OF AND PARTICIPATION IN VOLUNTARY WILDFIRE RESILIENCY AND CLIMATE CHANGE ADAPTATION INTERVENTIONS.

SP-63 Work with local fire officials to educate homeowners and landlords through social media and education programs on how to reduce fire risk to structures and landscaping as wildfire risk continues to increase due to climate change.

SP-64 Ensure coordination between emergency management personnel and local hospitals, urgent care medical providers, and area doctors to develop community-wide communications and response plans for high heat days exacerbated by climate change. These response plans should include alerts to medical professionals to ensure providers are equipped to handle increased patient load, allow local providers to check in or notify their vulnerable patients, and first

responders are properly staffed and equipped to transport vulnerable patients to community heat shelters or medical facilities, if experiencing emergent conditions.

SP-65 Ensure all segments of the Paradise community, and especially vulnerable populations, are aware of and involved in adaptation planning. Utilize methods to engage the entire community and include education components in all planning and policy-making processes for climate change and adaptation.

SP-66 Work with community partners, local officials, and non-profit organizations to incorporate social media, traditional forms of outreach, and education programs into community plans, such as the Paradise Fuel Reduction Program, that seek to educate homeowners and landlords on how to reduce risks to structures, landscaping, and property.

SP-67 Work with community partners to implement recognition program(s) such as Firewise Community, Wildfire Prepared Home (see SI-2), and the California Department of Insurance Safer from Wildfires program to recognize new and existing properties that have implemented best practices for siting structures outside of the wildland-urban-interface, incorporated fuel reduction in landscaping, and incorporated building retrofitting and/or new construction standards to harden structures against fire.

**SI-28 INCLUSIVE ENGAGEMENT AND EDUCATION**

Seek opportunities to fund and partner with existing, successful community-based programs (e.g., community health programs, neighborhood associations and advocacy organizations, volunteer groups, and others) to connect community members to hazard and climate change risk information. An

example of such an expansion would be the promotion of voluntary retrofits to building owners in coordination with the public health sector Healthy Homes educational campaigns. The Town will encourage and promote neighborhood-based communication networks through which community members can post requests for assistance, availability of tools/supplies, local 'news' updates, helpful resources, etc. The Town will continue to post links to the Butte County Fire Safe Council and California Wildland Coordinating Group and its fire prevention website.

The Town and its partners will utilize best practices for inclusive engagement and education, including holding varying meeting times to accommodate different schedules, holding meetings in locations accessible to those without transportation, providing culturally relevant language, providing childcare, diversifying outreach through storytelling and active listening techniques, and ensure all materials are designed to communicate effectively to all groups.

Responsible Party: Planning  
 Funding Source: General Fund  
 Implementation Schedule: Ongoing

**SI-29 ONGOING EDUCATION**

The Town will continue to maintain and publicize information resources and workshop opportunities from the Butte County Fire Safe Council, including on the Town's Recovery Facebook page and other social media accounts. The Town will also continue to make fire safety resources available online, such as the ember awareness checklist, disaster supplies kit checklist, evacuation routes map and plan, and defensible space brochures.

The Town will approach local community partners about their interest in holding an annual fire prevention and risk reduction day of awareness or workshop that could be held during the NFPA National Fire Prevention Week. Should there be interest and feasibility, the Town will serve as a connector and play a role in support, with one of the Fire Safe Councils taking a more lead role.

Responsible Party: Planning and Fire  
 Funding Source: General Fund and TBD  
 Implementation Schedule: Ongoing

**SG-9 UTILIZE PARADISE'S EXPERIENCES WITH WILDFIRE TO ADVOCATE FOR STATE AND FEDERAL POLICIES AND REGULATIONS THAT ASSIST IN CREATING DISASTER RESILIENT COMMUNITIES AND FACILITATE POST-DISASTER RECOVERY**

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SP-68 Advocate for new sources of State or federal financing for adaptation and resilience.

SP-69 Support the integration of disaster resilience and hazard mitigation planning into existing regional planning processes, including the Regional Housing Needs Assessments.

SP-70 Explore funding mechanisms for climate adaptation and fire resiliency, including but not limited to special districts, impact fees, a parcel tax, establishment of a regional adaptation authority, or enabling the Butte County Association of Governments to raise revenue.

SP-71 Engage with insurance companies in the area to identify ways to align insurance policies and incentive programs with wildfire mitigation priorities, such as allowing policyholders to lower their rates through home hardening and vegetation management or other risk reduction measures, or through programs such as those mentioned in SP-67. Offer grants or no-interest loans to low and moderate-income households to ensure the most vulnerable households are not left behind.

SP-72 Encourage local utilities to retain and enhance lifeline programs for life sustaining services such as water and electricity for vulnerable populations, especially due to hazards such as an increase in high heat and the potential for related power disruptions. Partner with utilities to provide education to program participants and property owners to

encourage retrofitting of appliances, lighting, plumbing fixtures and landscaping to reduce energy and water demand and backup power for life-dependent in-home medical equipment and devices.

SP-73 The Town will maintain and regularly update its 2021 Federal Advocacy Platform as recovery continues and more lessons are learned.

**SI-30 REGIONAL COLLABORATION**

The Town will work with Butte County and its cities to explore new sources of funding, such as establishing a regional adaptation authority or enabling the Butte County Association of Governments to raise revenues. The Town will continue to work with other jurisdictions on implementing and maintaining collaborative plans like the Butte County Local Hazard Mitigation Plan (LHMP) and Butte County Community Wildfire Protection Plan (CWPP). The Town will continue to participate in cross-jurisdictional planning processes, especially should a Butte County climate action or resiliency plan be instigated.

When feasible, Town staff who were/are integral to Camp Fire recovery and emergency operations should participate in professional development events, including speaking on panels or participating in roundtables, so that the Town can continue to learn best practices and share their experience with other jurisdictions. The Town will email its Operations Playbook (see SI-18) with all other Butte County jurisdictions to promote collaboration and collective problem solving. The Town should consider a press release and Q&A event for other jurisdictions and agencies with the release of the playbook to facilitate information-sharing.

Responsible Party: All departments, but especially Recovery  
Funding Source: General Fund  
Implementation Schedule: Ongoing

**SI-31 ADVOCACY**

The Town will maintain and implement its 2021 Federal Advocacy Platform. As the Town becomes aware of potential fundings resources and/or State legislation relevant to wildfire, the Town will share its experiences and continue to try to establish systems and policies that can help other communities recover from large wildfire events.

Town officials will reach out to local insurance providers to gauge interest in a partnership to reform property insurance. The intended reform would incentivize private fire mitigation actions with a program that allows policyholders to lower their rates through home hardening and vegetation. The Town will work with local, regional, and State level organizations and politicians to scale up the program should there be interest.

Responsible Party: Town Manager and Fire  
Funding Source: General Fund/TBD  
Implementation Schedule: Ongoing