



Chapter 1 Introduction

1.1 Purpose

Butte County, five incorporated communities, and ten special districts prepared this Local Hazard Mitigation Plan (LHMP) Update to the Federal Emergency Management Agency (FEMA) approved 2014 Butte County LHMP. The purpose of this LHMP Update is to guide hazard mitigation planning to better protect the people and property of the County from the effects of hazard events. This LHMP Update demonstrates the community’s commitment to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources. This LHMP Update 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).

1.2 Background and Scope

Each year in the United States, natural disasters take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. These monies only partially reflect the true cost of disasters, because additional expenses incurred by insurance companies and nongovernmental organizations are not reimbursed by tax dollars. Many natural disasters are predictable, and much of the damage caused by these events can be reduced or even eliminated.

Hazard mitigation is defined by FEMA as “any sustained action taken to reduce or eliminate long-term risk to human life and property from a hazard event.” The results of a three-year, congressionally mandated independent study to assess future savings from mitigation activities provides evidence that mitigation activities are highly cost-effective. On average, each dollar spent on mitigation saves society an average of \$6 in avoided future losses in addition to saving lives and preventing injuries (National Institute of Building Science Multi-Hazard Mitigation Council 2017 Interim Report).

Hazard mitigation planning is the process through which hazards are identified, likely impacts determined, mitigation goals set, and appropriate mitigation strategies determined, prioritized, and implemented. This plan documents Butte County’s hazard mitigation planning process and identifies relevant hazards and vulnerabilities and strategies the County and participating jurisdictions will use to decrease vulnerability and increase resiliency and sustainability in the community.

This Butte County LHMP Update is a multi-jurisdictional plan that geographically covers the entire area within Butte County’s jurisdictional boundaries (hereinafter referred to as the Planning Area). The following jurisdictions participated in the planning process and are seeking FEMA approval of the LHMP Update:

- Butte County*

- City of Biggs*
- City of Chico*
- City of Gridley*
- City of Oroville*
- Town of Paradise*
- Paradise Irrigation District*
- Thermalito Water and Sewer District*
- Durham Irrigation District
- North Yuba Water District
- Feather River Recreation and Park District
- Butte County Fire Safe Council
- Lake Oroville Area Public Utility District
- Paradise Recreation and Park District
- South Feather River Water and Power Agency
- Butte County Office of Education (representing Butte County School Districts)

* Participated in 2014 Butte County LHMP

All plan participants from the 2014 Butte County Plan are participating in this LHMP Update.

This LHMP Update was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 (Public Law 106-390) and the implementing regulations set forth by the Interim Final Rule published in the Federal Register on February 26, 2002, (44 CFR §201.6) and finalized on October 31, 2007. (Hereafter, these requirements and regulations will be referred to collectively as the Disaster Mitigation Act (DMA) or DMA 2000.) While the act emphasized the need for mitigation plans and more coordinated mitigation planning and implementation efforts, the regulations established the requirements that local hazard mitigation plans must meet in order for a local jurisdiction to be eligible for certain federal disaster assistance and hazard mitigation funding under the Robert T. Stafford Disaster Relief and Emergency Act (Public Law 93-288). This planning effort also follows FEMA’s 2013 Plan Preparation Guidance. Because the Butte County Planning Area is subject to many kinds of hazards, access to FEMA grant programs is vital.

Information in this LHMP Update will be used to help guide and coordinate mitigation activities and decisions for local land use policy in the future. Proactive mitigation planning will help reduce the cost of disaster response and recovery to communities and their residents by protecting critical community facilities, reducing liability exposure, and minimizing overall community impacts and disruptions. The Butte County Planning Area has been affected by hazards in the past and is thus committed to reducing future impacts from hazard events and maintaining eligibility for mitigation-related federal funding.

1.3 Community Profile

Butte County lies in north central California at the northern end of the Sacramento Valley, approximately 150 miles northeast of San Francisco and 70 miles north of Sacramento. State Highways 70 and 99, which extend in a north-south direction through the County, define the principal transportation corridors connecting the County to the region. State Routes 32 and 162 provide sub-regional connections to areas to the west of the County and to Interstate 5.

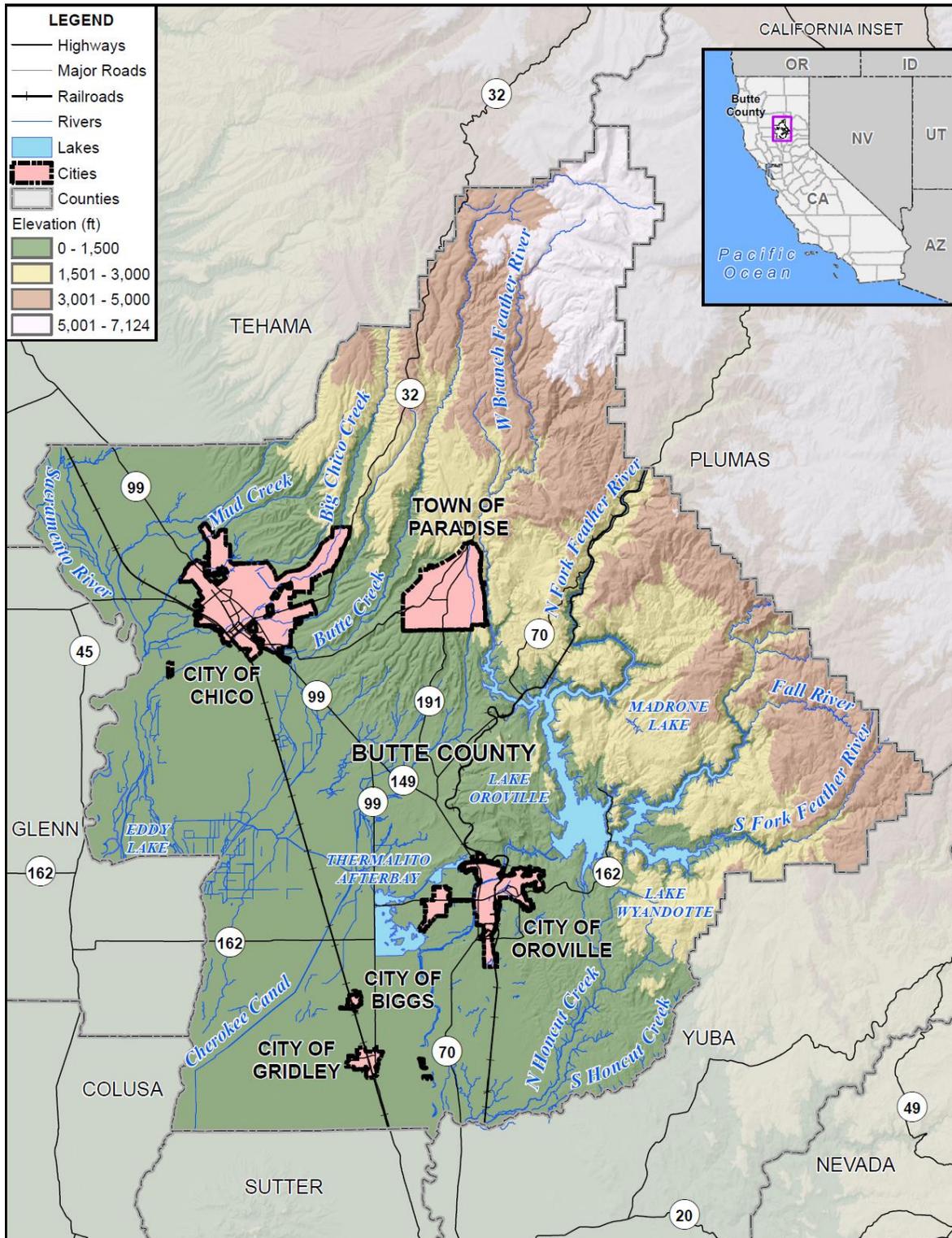
The County contains five incorporated cities: Chico, Oroville, Gridley, Biggs, and the Town of Paradise, and several small unincorporated rural communities. The County is also home to the Mechoopda Maidu tribe. 70 members of the tribe live on the Chico Rancheria, which is located approximately 3.5 miles south of Chico. The U.S. Forest Service is a major landowner in Butte County with holdings in Plumas National Forest (81,972 acres) and Lassen National Forest (49,240 acres). The U.S. Bureau of Land Management owns 18,960 acres, consisting of scattered foothill lands. Combined, these two Federal agencies own and control 12.3 percent of the land area in Butte County.

Butte County covers an area of approximately 1,670 square miles and can be divided into three general topographical areas: a valley area, a foothill region east of the valley area, and a mountain region east of the foothills. These topographic areas comprise approximately 46 percent, 23 percent, and 31 percent, respectively, of the County's land. Butte County is watered by the Feather River and the Sacramento River. The County in general is drained by the Feather River, Butte Creek, and Chico Creek Watersheds. Part of the County's western border is formed by the Sacramento River.

Butte County has rich fertile valley soil, rolling hills, volcanic peaks and mesas and some of the most dramatic canyons carved by beautiful streams and rivers. Butte County is a diverse 1,068,000 acres. Its highest point is Humboldt Peak at 7,870 feet, while the lowest point is about 90 feet above sea level. Large areas of this rural area are preserved unaltered in the nearly 60,000 acres of parkland and wildlife preserves within the County. The valley remains a vital wintering site for 60% of the waterfowl that migrate through the Pacific Flyway. Ducks, geese, swans and many other graceful birds literally cover the sky from November through March. From mid-February to mid-March, Butte County's countryside of almond, prune, kiwi, pear and apple orchards blossom into color. The orchard show is followed by an encore of spectacular wildflowers that bloom throughout the area from March to June. A map of the County is shown in Figure 1-1.

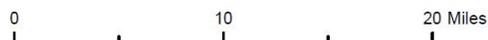
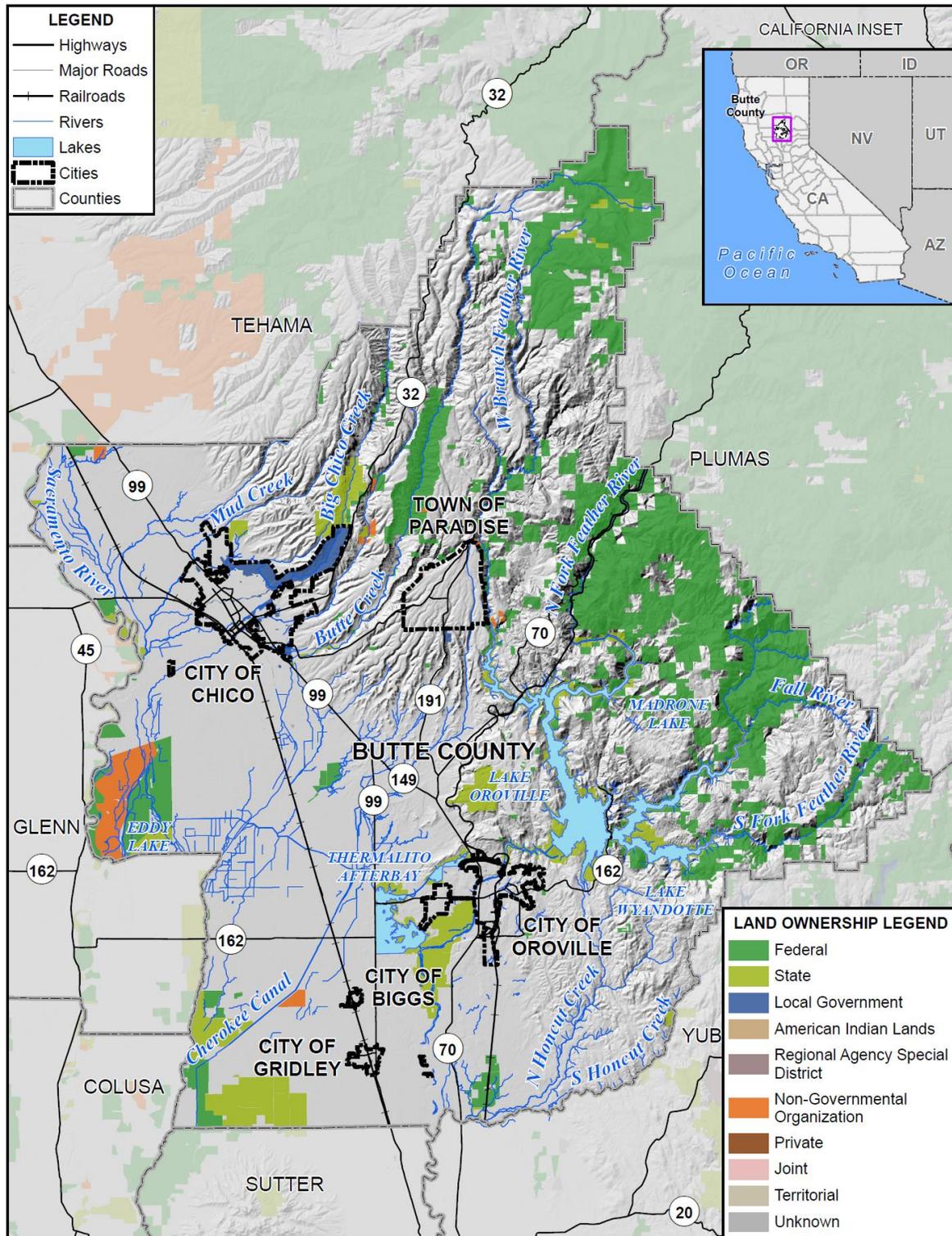
Multiple entities own land in Butte County. A land ownership map can be seen on Figure 1-2.

Figure 1-1 Butte County



Data Source: Butte County GIS, Cal-Atlas; Map Date: 3/1/2019.

Figure 1-2 Butte County – Land Ownership



Data Source: USGS, Gap Analysis Program (GAP), May 2016. Protected Areas Database of the United States (PAD-US), version 1.4, Butte County GIS, Cal-Atlas; Map Date: 3/1/2019.

1.3.1. History

The Native Americans were the first inhabitants of the Butte County area. The County included the territories of four groups of Native American peoples: the Maidu (mountain Maidu), the Nisenan (southern Maidu), the Konkow (northwestern Maidu) and Yana. Many Native Americans continue to reside in the area. The northern County was Maidu territory; they inhabited the mountain valleys from Honey Lake to Lassen Peak and generally at altitudes higher than 4,000 feet. The Nisenan territory was generally bounded by the Sacramento River in the west, the lower Feather River to the south, and the crest of the Sierra Nevada mountains to the east. The Konkow people inhabited the Feather River area, from west of Richbar almost to the Sutter Buttes, and the Sacramento River area from Butte City in the south to Butte Meadows in the north. The Yana people occupied a wide range of the County, from the edge of the Sacramento Valley to the crests of the Cascade and Sierra Nevada mountains. The last member of the Yana tribe was a man called Ishi. Ishi was also the last Native American in northern California to live the majority of his life outside of European American influence. Ishi and his ancestors occupied the foothill region near Mount Lassen, which is modern-day Butte County.

Spaniards explored parts of the area now known as Butte County as early as 1808, in search of mission sites. Hunters and trappers, such as Jedediah Strong Smith and a group of Hudson's Bay Company trappers, explored the present-day Butte County prior to the California gold rush of 1848. At that time, the region was outside the mainstream of both Mexican and American settlement and was scattered with just a handful of ranches on Mexican land grants. The discovery of gold in 1848 brought an influx of gold seekers to the region. Thousands of miners descended upon the area and set up transitory encampments, such as Bidwell Bar, Long Bar and Hamilton on the Feather River, and others along Butte Creek, where some gold was discovered. Mining camps established during the Gold Rush gradually developed into trading centers for mining and then for lumbering and agricultural goods.

In the latter part of the 19th century, the Gold Rush waned and the population steadied. The County's economic emphasis shifted back towards agriculture, with many lucrative crops including rice, almonds, walnuts and peaches. In 1850, Butte County became incorporated into the State of California as one of the original 27 counties. In 1856, the County's boundaries were redrawn to their current configuration. The County's first municipality, the City of Chico, was incorporated in 1860. Biggs was incorporated in 1903, Gridley was incorporated in 1905, Oroville was incorporated in 1906, and Paradise was incorporated in 1979.

Early migrants to the Richvale area of Butte County quickly realized that the soil was heavy and clay-like, unlike the fertile soil of the San Joaquin Valley. Although the soil was unaccommodating for the crops the settlers were accustomed to growing, Richvale soil was perfect for rice cultivation. In 1912, the first 1,000 acres of rice were planted in the Butte County community of Richvale, the birthplace of California's rice cultivation.

Major roadways were another significant development for Butte County in the early 1900s. State Route 162, the major east-west connection in the County, connecting the Mendocino coast to the City of Oroville was established in 1919. State Route 99, the north-south highway running through Gridley and Chico, was paved and finished in the early 1930s, as was State Route 70, the north-south connection from Oroville to Marysville.

The need to secure water resources for the growing population in southern California prompted the State Legislature to pass the Central Valley Act in 1933. The Act authorized construction of various water projects, both local serving as well as major State-wide developments that involved transporting water from northern California to the south. The Act authorizes the construction of the tallest dam (770 feet) in the United States, the Oroville Dam. Construction of the Oroville Dam and Lake Oroville began in 1961.

Since the 1970s there has been a sharp increase in the amount of development occurring throughout the foothill areas of the County. This development has been associated with an influx of retirement-age residents who moved to Butte County to enjoy its rural setting and take advantage of a relatively low cost of living. In the early 2000s, the unincorporated portion of Butte County experienced greater amounts of residential development spurred by the booming statewide demand for housing. This was especially the case in areas with municipal sewer service, such as Thermalito and southeast Oroville.

Nevertheless, the prime agricultural regions of the County have maintained their productivity and remain economically viable. These lands have been protected from development through a variety of means, including the Williamson Act, which Butte County adopted in 1967; the Chico Area Greenline, created in 1982; the Agricultural Element, adopted in 1995; and the Agricultural Buffer Ordinance, adopted in 2007.

1.3.2. Geography and Climate

Butte County is bounded to the west by Glenn and Colusa Counties, with the Sacramento River forming half of the western boundary; to the north and northwest by Tehama County; to the east by Plumas County; to the south by Sutter County; and to the southeast by Yuba County, with Honcut Creek forming the southeastern boundary.

No large, natural lakes exist within the County's boundaries. Several artificial lakes serve as domestic water, irrigation, and power dam reservoirs and are located in the mountain and foothill areas. Some examples of these are the Oroville, Philbrook, and Madrone reservoirs.

State Highway 99 and the main line of the Union Pacific Railroad cross the western lowland portion of Butte County. State Highway 70 runs northeasterly from Oroville into the scenic Feather River Canyon. The Western Pacific Railroad follows a similar route. The eastern part of Butte County is very mountainous, but most parts can be reached by car. There are airports at Chico and Oroville

Butte County has a typical Mediterranean climate with hot, dry summers and cool, wet winters. Cooler summers and cold winters are common in the areas of higher elevation. Annual precipitation, generally in the form of rain, ranges from 18 inches along the Sacramento River to 80 inches in high elevation areas, where snow falls regularly. Easterly winds are common above 3,500 feet in elevation. Average wind speeds are less than 8 miles per hour, and prolonged calm periods are common.

Prevailing winds are generally from the southwest during half of the year and from the northwest for the remainder. Southerly winds are normally associated with approaching winter storms and are usually moisture-bearing because of their origin over the Pacific Ocean. Northerly winds are usually associated with winter and spring high pressure ridging (fair weather) and occasional summer daytime breezes. Northerly winds tend to be dry.

1.3.3. Population and Demographics

The California Department of Finance 2018 estimates for population of the County and its jurisdictions are shown in Table 1-1.

Table 1-1 Butte County Population by Jurisdiction, 2018

Jurisdiction	Total Population
Biggs	1,913
Chico	92,348
Gridley	6,937
Oroville	18,144
Paradise	26,572
Unincorporated County	81,707
Total	227,621

Source: California Department of Finance, 2018 E-1 Report

Select social and economic information for the County and participating jurisdictions are shown in Table 1-2.

Table 1-2 Butte County – Select Social and Economic Statistics

Statistic	Number
Populations	
Population under 5	5.6%
Population over 65	15.4%
Median Age	37.2
Racial Makeup	
White	81.9%
Black or African American	1.6%
American Indian or Alaska Native	2.0%
Asian	4.1%
Native Hawaiian or Pacific Islander	0.2%
Some Other Race	5.5%
Two or more races	4.7%
Income	
Median income	\$46,516
Mean Income	\$66,251
Poverty rate	
All families	12.0%
All people	20.5%

Statistic	Number
Unemployment Rate (December 2018)	5.3%

Source: 2010 US Census, 2017 US Census Bureau American Community Survey, California Employment Development Department

1.3.4. Economy and Tax Base

Butte County has a diverse economy. US Census estimate show economic characteristics for the County. These are shown in Table 1-3.

Table 1-3 Butte County Civilian Employed Population 16 years and Over

Industry	Estimated Employment	Percent
Agriculture, forestry, fishing and hunting, and mining	3,782	4.0%
Construction	5,121	5.5%
Manufacturing	5,931	6.3%
Wholesale trade	1,800	1.9%
Retail trade	12,331	13.2%
Transportation and warehousing, and utilities	3,077	3.3%
Information	1,520	1.6%
Finance and insurance, and real estate and rental and leasing	5,132	5.5%
Professional, scientific, and management, and administrative and waste management services	8,614	9.2%
Educational services, and health care and social assistance	25,966	27.8%
Arts, entertainment, and recreation, and accommodation and food services	11,018	11.8%
Other services, except public administration	4,809	5.1%
Public administration	4,338	4.6%

Source: US Census Bureau American Community Survey 2017 Estimates

Major employers in the County are shown in Table 1-4.

Table 1-4 Major Employers in Butte County

Name of Employer	Services Offered	Location	Number Employed
California State University	School-Universities & Colleges/Academic	Chico	1,000-4,999
California State-Chico	Schools-Universities & Colleges/Academic	Chico	1,000-4,999
Enloe Medical Center	Hospitals	Chico (Esplanade)	1,000-4,999
Pacific Coast Producers	Canning (MFRS)	Oroville	1,000-4,999
Enloe Medical Center	Hospitals	Chico (Cohasset)	500-999
Feather River Hospital	Hospitals	Paradise	500-999
Lifetouch	Photographers-Portrait	Chico	500-999

Name of Employer	Services Offered	Location	Number Employed
Lodge at Feather Falls	Casino	Oroville	500-999
Behavioral Health Dept.	County Government-Public Health Programs	Chico	250-499
Bettendorf Trucking	Trucking	Oroville	250-499
Build.com	Online Retailer	Chico	250-499
Butte Community Insurance Agency	Insurance	Chico	250-499
Butte County Behavioral Health	Government Offices-Community	Chico	250-499
Butte County Social Welfare	County Government-Social/Human Resources	Oroville	250-499
County Sheriff	Sheriff	Oroville	250-499
Enloe Homecare & Hospice SVC	Home Health Service	Chico	250-499
Enloe Rehabilitation Center	Rehabilitation Services	Chico	250-499
Gold Country Casino	Casino	Oroville	250-499
National Heritage Insurance Company	Insurance-Health & Accident	Chico	250-499
Northern California Homes	Real Estate	Paradise	250-499
Rabobank	Banks	Chico	250-499
United Healthcare	Business Services NEC	Chico	250-499
Walmart	Department Store	Chico	250-499
Walmart	Department Store	Oroville	250-499

Source: Butte County Economic Development Corporation

The County has a wide and varied tax base. Tax base information is tracked and maintained by the Butte County Assessor's Office. The following tables show the tax base for the County as well as for the incorporated jurisdictions.

- Table 1-5 shows the secured real property value by property use for the entire County prior to the Camp Fire.
- Table 1-6 shows the secured real property value by property use for the entire County after the Camp Fire.
- Table 1-7 shows the secured real property value by jurisdiction prior to the Camp Fire.
- Table 1-8 shows the secured real property value by jurisdiction after the Camp Fire.

*Table 1-5 Butte County Planning Area – Pre-Fire Distribution of Value by Property Use**

Property Use	2018 Value (\$)	Percent of Current Roll
Agricultural	\$1,803,473,837	8.21%
Commercial	\$3,414,289,867	15.54%
Industrial	\$679,484,586	3.09%
Residential	\$16,057,139,220	73.11%
Unknown	\$10,077,946	0.05%
Total	\$21,964,465,456	100.0%

Source: 2018 Butte County Assessor's Office data

*includes land, structure, and other values

*Table 1-6 Butte County Planning Area – Pre-Fire Distribution of Value by Property Use**

Property Use	2019 Value (\$)	Percent of Current Roll
Agricultural	\$1,869,058,364	9.28%
Commercial	\$2,616,747,685	12.99%
Industrial	\$710,096,532	3.52%
Residential	\$14,944,703,220	74.17%
Unknown	\$9,850,283	0.05%
Total	\$20,150,456,084	100.0%

Source: 3/28/2019 Butte County Assessor's Office data

*includes land, structure, and other values

*Table 1-7 Butte County Planning Area – Pre-Camp Fire Local Assessment Roll Totals by Jurisdiction**

Jurisdiction	2018 Value (\$)	Percent of Current Roll
City of Biggs	\$105,767,537	0.48%
City of Chico	\$9,171,292,117	41.76%
City of Gridley	\$409,466,110	1.86%
City of Oroville	\$1,274,852,919	5.80%
Town of Paradise	\$2,397,707,244	10.92%
Unincorporated Butte County	\$8,605,379,529	39.18%
Grand Total	\$21,964,465,456	100.0%

Source: 2018 Butte County Assessor's Office data

*includes land, structure, and other values

*Table 1-8 Butte County Planning Area – Post-Camp Fire Local Assessment Roll Totals by Jurisdiction**

Jurisdiction	2019 Value (\$)	Percent of Current Roll
City of Biggs	\$106,238,998	0.53%
City of Chico	\$8,488,678,633	42.13%
City of Gridley	\$369,326,649	1.83%
City of Oroville	\$1,131,495,618	5.62%
Town of Paradise	\$1,627,157,865	8.08%
Unincorporated Butte County	\$8,427,558,321	41.82%
Grand Total	\$20,150,456,084	100.0%

Source: 3/28/2019 Butte County Assessor's Office data

*includes land, structure, and other values

1.4 Plan Organization

This Butte County LHMP Update is a multi-jurisdictional plan that geographically covers the entire area within Butte County’s jurisdictional boundaries (i.e., the Planning Area). The Butte County Local Hazard Mitigation Plan update is organized as follows:

Base Plan

- Chapter 1: Introduction
- Chapter 2: What’s New
- Chapter 3: Planning Process
- Chapter 4: Risk Assessment
- Chapter 5: Mitigation Strategy
- Chapter 6: Plan Adoption
- Chapter 7: Plan Implementation and Maintenance

Annexes

- Annex A: City of Biggs
- Annex B: City of Chico
- Annex C: City of Gridley
- Annex D: City of Oroville
- Annex E: Town of Paradise
- Annex F: Paradise Irrigation District
- Annex G: Thermalito Water and Sewer District
- Annex H: Durham Irrigation District
- Annex I: North Yuba Water District
- Annex J: Feather River Recreation and Park District
- Annex K: Butte County Fire Safe Council
- Annex L: Lake Oroville Area Public Utility District
- Annex M: Paradise Recreation and Park District
- Annex N: South Feather Water and Power Agency
- Annex O: Butte County Board of Education

Appendices

- Appendix A: Planning Process
- Appendix B: References
- Appendix C: Mitigation Strategy
- Appendix D: Adoption Resolution
- Appendix E: Threatened and Endangered Species
- Appendix F: Critical Facilities
- Appendix G: Watershed Analysis

The **Base Plan** provides the overall framework for this multi-jurisdictional LHMP. It is the umbrella document that includes the planning process, methodologies, and procedural requirements for all participating jurisdictions (i.e., unincorporated County and all Jurisdictional Annexes). As such, Chapters 1-7 of the Base Plan apply to the unincorporated County, the five incorporated communities, and the ten special Districts as participants to this LHMP Update seeking FEMA approval of the Plan. Because this is

a multi-jurisdictional plan, the Base Plan addresses the LHMP hazard mitigation planning elements specific to the Butte County Planning Area which includes data, information and analysis specific to all participating jurisdictions and also includes data, information, and analysis specific to unincorporated Butte County.

The **Jurisdictional Annexes** detail the hazard mitigation planning elements specific to each additional participating jurisdiction to this Butte County LHMP Update. Each annex is not intended to be a standalone document, but appends to, supplements, and incorporates by reference the information contained in the Base Plan document. As such, all Chapters 1-7 of the Base Plan, including the planning process and other procedural requirements and planning elements apply to and were met by each participating jurisdiction. The annexes provide additional information specific to each participating jurisdiction, with a focus on providing additional details on the risk assessment and mitigation strategy.

The **Appendices** provide additional information, data, and planning process documentation that applies to all participating jurisdictions (i.e., unincorporated County and all jurisdictional annexes) to this Butte County LHMP Update.