Clark County Fire Community Wildfire Protection Plan

Prepared by Clark County Fire and Nevada Division of Forestry

INTRODUCTION

The Healthy Forests Restoration Act (HFRA) of 2003 provides the impetus for wildfire risk assessment and planning at the county and community level. HFRA refers to this level of planning as Community Wildfire Protection Plans (CWPP). The CWPP allows a community to evaluate its current situation with regards to wildfire risk and devise ways to reduce risk for protection of human welfare and other important economic or ecological values. The CWPP may address issues such as community wildfire risk, structure flammability, hazardous fuels mitigation, and non-fuels mitigation, community preparedness, and emergency procedures. The Project Team provided the collection of information used for the development of the CWPP and its implementation in Clark County.

The focus of the Clark County CWPP is county-wide. The plan emphasizes the communities at risk within the vicinity of federal lands that are most vulnerable to the threat of wildfire as identified in the 2001 Federal Register (Appendix G). Human life and welfare are values at risk to wildfire because of the buildup of hazardous fuels around communities and structures, poor emergency vehicle ingress and egress, major transportation routes and traffic flow, a large area to cover with the fire authorities, and volunteer (part-time) fire suppression authorities. Throughout the County, there are scattered small communities and ranches with houses and out-buildings without structural fire protection. Other economic values at risk include businesses, farmland, ranchland, grazing land, hunting and other recreational land, historic and cultural sites, and critical infrastructure.

The Nevada Department of Forestry contacted Clark County Fire Department who assembled a project team of experts in the fields of fire behavior and suppression, natural resource ecology, ranch management, county management, and geographic information systems (GIS) to review the assessment for each Clark County community listed in the Federal Register. The Nevada Division of Forestry (NDF) Project Team spent several days inventorying conditions in several communities within Clark County and completing the primary data collection and verification portions of the risk assessment.

The specific goals of the Nevada Community Risk/Hazard Assessment Project are to:

- Assess the wildfire hazards present in each community on the Federal Register list of communities at risk in Nevada.
- Identify firefighting resource needs (e.g. equipment and infrastructure).
- Conduct fuel hazard mapping for high fuel hazard communities.
- Describe proposed risk and hazard mitigation projects in enough detail to aid communities in applying for future implementation funds.
- Distribute assessment results and proposed mitigation project descriptions to each County in a format that will be easily updated and useful for public meetings and other public education activities.

During the 10 -year period of 2013 to 2023, there were 1,135 fires encompassing 145,691.14 acres. 755 fires were human caused, 160 were natural causes, and 220 were undermined. Although these fires have been predominantly in areas without residents or other structures, the economic impact to agriculture and environment remains substantial.

The Clark County Fire Department is the local agency with the largest area of responsibility in Clark County. As such, this agency responds to wildfires for the majority of the rural communities described in this report.The Clark County Fire Department has 742 authorized positions in fire suppression, 84 fire prevention, 7 fire investigators, 71 admin and support staff, and 93 volunteer firefighters. The department has 32 career and 10 fire stations.

Wildfire resources may be dispatched at any given time from the nearest Clark County Fire Department station to respond to wildfires in rural communities. Equipment and resources stationed at each rural fire station are described in the community sections of this report.

Interagency Communications

The US Forest Service, Bureau of Land Management, and the National Park Service are all dispatched through the Las Vegas Interagency Communications Center (LVICC). The federal agencies provide mutual aid to Clark County fire department and Nevada Division of Forestry through mutual aid agreements within the State Wildland-Fire Protection Plan. LVICC coordinates with the Combined Communication Center (FAO) during incidents that require local, state, and national resources. In 2004 the Nevada Division of Forestry was dispatched through the Sierra Front Interagency Dispatch Center in Minden, Nevada. These systems locate the nearest available fire suppression resource according to incident command and computer aided dispatch protocols.

Clark County Fire Department Detection and Communication

Clark County's FAO is supported by the Clark County FIre Department, Las Vegas Fire and Rescue, and North Las Vegas Fire Department. The FAO uses a Computer Aided Dispatch (CAD) system to provide 911 service and to dispatch fire and EMS services.

Fires are reported in Clark County through:

- 911 callers
- Calls directly to FAO
- Calls direct to LVICC

Fires are communicated to fire response personnel through the use of:

- Emergency Dispatch
- Radios, pagers, cell phones, telephones. Some volunteers use a combination of all.

The Las Vegas Metropolitan Police Department has access to the state mutual aid frequencies and the radio system is compatible with neighboring agencies. Gaps in radio coverage are present in many areas.

Fire Department Presonnel Qualifications

The Clark County Fire Departmentment offers quarterly fire training on a continuous basis to all volunteer fire stations with Nevada Firefighter I serving as the training goal. In 2023, 24 firefighters and one Assistant Chief attended an annual fireline refresher and pack test. These individuals hold certifications that are recognized by the National WIldfire Coordinating Group

(NWCG). Firefighters in all Clark County agencies are required to conduct wildland firefighter training as part of their credentialing for Firefighter I, but are generally not issued PPE, tools, or other equipment for use in suppression of wildland fires.

Work Load

In 2022 the department responded to 156,108 incidents, of which 5,451 were fire calls. Of those calls, 680 were incidents in rural areas, including 78 fires.

Financial Support

Funding for the Clark County Fire Department's operating expenses comes from the County General Fund, which is generated mostly through property taxes in Clark County. Additional fund generation comes from grants, special event fees, and GEMT revenue. Clark County Rural is funded through the general fund in a separate cost center.

Community Preparedness and Education

Community Preparedness is achieved through the office of Fire Prevention and Office of Emergency Management (OEM). OEM maintains and builds Community Emergency Response Teams (CERT) with the City of Las Vegas's CERT Coordinator. Additionally, Fire Prevention creates preparedness through code compliance, including the International WUI code in 2023, and conducting public education during community events and fire station open houses.

Signatures of Approval

In accordance with the Healthy Forests Restoration Act of 2003, the following entities mutually agree
with and approve the contents of the Clark County Fire Community Wildfire Protection Plan 2023 update that:

- Was collaboratively developed. Local, state, and federal government representatives and interested parties have been consulted.
- Identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the
types and methods of treatments that will protect at-risk communities and essential infrastructure.
- Recommends measures that homeowners and communities can take to reduce the ignitability of structures.

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PARTNER AGENCIES AND COLLABORATION

The CWPP plan area has a strong cadre of fire management agencies that have a long history of cooperation and partnerships in wildfire suppression and prevention. The partner fire agencies in the plan area all work cooperatively to provide the most successful response to wildland fire and hazardous fuels reduction. This includes sharing of resources, combined interagency dispatch centers, the utilization of closest forces regardless of jurisdiction, and providing training to all Nevada fire suppression forces.

A core planning group was created with volunteer representatives from each Community Wildfire Protection Zone and fire agency personnel from the Nevada Division of Forestry (NDF), the Bureau of Land Management (BLM), the US Forest Service (USFS), and Clark County . This group developed the recommendations brought forward in this CWPP Update. In addition to specific recommendations that address conditions in each Community Wildfire Protection Zone, District-wide recommendations are included to address conditions and needs common to all areas. Meeting the objectives of this CWPP to support and expand Fire Adapted Communities, engage all stakeholders in preparing to withstand wildfire without loss of life or property, improving firefighter safety and suppression effectiveness, and continuing education for homeowners on defensible/survivable space strategies depend upon continued public involvement to accomplish the recommendations described in this CWPP Update.

Numerous agencies and individuals were involved in the planning and implementation of this effort. Special thanks and acknowledgement are given to:

- Bureau of Land Management (BLM)
- US Forest Service (USFS)
- Nevada Division of Forestry (NDF)
- University of Nevada Cooperative Extension (UNCE)
- Clark County County Manager
- County residents
- Clark County Communities
- Fire Chiefs county-wide

1.0 COMMUNITIES ASSESSED

Sixteen communities in proximity to federal lands within Clark County were identified in the Federal Register (66 FR 160) and are included in this assessment:

- Cold Creek
- Kyle Canyon
- Lee Canyon
- Mountain Springs
- Nelson
- Torino
- Trout Canyon
- Indian Springs
- Goodsprings

- Sandy Valley
- Searchlight
- Blue Diamond
- Bunkerville
- Calnevari
- Palm Garden Estates
- Moapa/Logandale/Overton and Warm Springs (Assessed but they have their own response)

There may be additional rural areas or small subdivisions within Clark County that were not included on the Federal Register list, but are included in the scope of this project. Conditions in and around some of these communities may warrant future individual hazard/risk assessment. However, many of the recommendations developed for similar communities in this report may apply to additional areas.

1.3 COMMUNITIES NOT CURRENTLY ASSESSED

1.3.1 Laughlin, Mt. Charleston, Las Vegas; North and South Las Vegas, Arden, Cottonwood Cove, Glendale, Henderson, Logandale, Mesquite, Overton, Primm and Sloan and Fort Mojave and Moapa Indian Reservation, Nellis and Creech Air Force Bases.

All but Sloan are outside the Clark County Fire protection. They have their own response and fire districts. For the purpose of this CWPP, it will be for Clark County Fire district jurisdiction.

Sloan is located in the southern Clark County area on the California/Nevada border along interstate 15 about 40 miles south of Las Vegas There is no residential community on the property and no one currently lives there. The risk/hazard assessment was not completed for Sloan because it is not a residential community.

2.0 METHODOLOGY

2.1 PROJECT TEAM

The Project Team was composed of experts in the fields of fire behavior and suppression, geographic information systems (GIS), and natural resource ecology who collaborated to complete a Community Risk/Hazard Assessment for each community. The Project Team included USFS and NDF fire specialists with extensive wildland fire prevention and suppression experience in Nevada, NDF Fire Adapted Partnership Coordinator, and University of Nevada Reno (UNR) natural resources specialists experienced in the Southern Nevada environment. The depth of knowledge of the Project Team was deepened through the addition of County government leadership, communities and Fire Protection District Fire Chiefs.

2.2 Base Map Data Collection

The Project Team compiled and reviewed existing statewide geospatial data to create field maps for recording baseline data and data verification. Data sources for the maps were the Nevada Division of Forestry and the Bureau of Land Management. Datasets and sources utilized are listed below:

- Land Ownership
- Vegetation Classes
- Fuel Types
- Fire History
- Rangeland Fire Protection Associations
- Greenstrip Projects
- Community Sites (Appendix C)

Maps are located in Appendix E.

2.3. WILDFIRE HISTORY

Wildfire history was mapped using Bureau of Land Management and US Forest Service datasets that identify wildfire perimeters on federally managed lands covering the past 19 years. This dataset was updated at the BLM Nevada State Office at the end of each fire season from information provided by each Nevada BLM Field Office. The dataset is the central source of historical GIS fire data used for fire management and land use planning on federal lands.

Fires that occur on private lands are generally recorded on paper maps and have not been consistently included in federal agency GIS datasets. Additional fire locations identified during interviews with local fire personnel were recorded on the field maps where possible and added to the project wildfire perimeter dataset. In addition to the fire perimeter information, point data for all fire ignitions within Nevada from 2013-2023 was obtained from the Nevada Fire Intel within the National Interagency Fire Center (NIFC) of Boise, ID. This dataset includes an ignition point coordinate and an acreage component as reported to NIFC through a variety of agencies.

The wildfire history and ignition history data were used to formulate risk ratings and to develop recommendations specific to areas that have been repeatedly impacted by wildland fires. Observations made from the Project Team and comments from local fire agency personnel were also used to develop recommendations in areas without recent wildfire activity where a significant buildup of fuels or expansion of urban development into the interface area represents a growing risk.

2.4 Community Risk/Hazard Assessment

The wildland-urban interface is the place where homes and wildland meet. This project focuses on identifying risks and hazards in the wildland-urban interface areas countywide by assessing each community individually. Site-specific information for each community was collected during field visits conducted between March 1, 2023, and April 30, 2023.

The predominant conditions recorded during these site visits were used as the basis for the Community Risk and Hazard Assessment ratings. See Community Risk/Hazard Assessment reports in Appendix D.

To arrive at a score for the community, five primary factors that affect potential fire hazard were assessed: community design, construction materials, defensible space, fire suppression capabilities, and physical conditions that affect fire behavior such as fuel loading and topography. A description of each of these factors and their relative importance in developing the overall score for the community is provided below. Individual community score sheets presenting the point values assigned to each element in the hazard assessment are provided at the end of each community assessment.

2.5 Community Design

Many aspects of community design can be modified to make a community more fire safe. Factors considered include:

2.5.1 Interface Condition Community safety is affected by the density and distribution of structures with respect to the surrounding wildland environment. Four interface condition classes are used to categorize the wildland-urban interface.

2.5.2 Access. Design aspects of roadways influence the hazard rating assigned to a community. A road gradient of greater than five percent can increase response times for heavy vehicles carrying water. Roads less than twenty feet in width often impede two-way movement of vehicles and fire suppression equipment. Hairpin turns and cul-de-sacs with radii of less than 45 feet can cause problems for equipment mobility. Adequately designed secondary access routes and loop roads in a community can lower a hazard rating. Visible, fire-resistant street and address identification and adequate driveway widths also reduce the overall community wildfire hazard rating.

2.5.3 Utilities. Poorly maintained overhead power lines can be a potential ignition source for wildfires. It is important to keep power line corridors clear of flammable vegetation, especially around power poles and beneath transformers. Keeping flammable vegetation cleared from beneath power lines and around power poles reduces potential hazards from damaged power lines. Power failures are especially dangerous to a community without a back-up energy source. Many communities rely on electric pumps to provide water to residents and firefighters for structure protection and fire suppression.

2.6 Construction Materials

While it is not feasible to expect all structures in the wildland/urban interface area to be rebuilt with non-combustible materials, there are steps that can be taken to address specific elements that strongly affect structure ignitability in the interface area. Factors considered in the assessment include:

2.6.1 Structure Building Materials. The composition of building materials determines the length of time a structure could withstand high temperatures before ignition occurs. Houses composed of wood siding and wood shake roofing are usually the most susceptible to ignitions. Houses built with stucco exteriors and tile, metal, or composition roofing are able to withstand much higher temperatures and longer heat durations, thereby presenting a much lower ignition risk from firebrands or the proximity to advancing flames when defensible space conditions are adequate.

2.6.2 Architectural Features. Unenclosed or unscreened balconies, decks, porches, eaves, or attic vents on homes can create drafty areas where firebrands and embers can accumulate, smolder, and ignite, rapidly spreading fire to the house. A high number of houses within a wildland-urban interface area with these features imply a greater hazard to the community.

2.7 Defensible Space

The density and type of fuel around a home determines the potential fire exposure and the potential for damage to the home. A greater volume of trees, shrubs, dry weeds and grass, woodpiles, and other combustible materials near the home will ignite more readily, produce more intense heat during a fire, and increase the threat of losing the home. Defensible space is one of the factors that homeowners can most easily manipulate in order to improve the chances that a home or other property avoids damage or complete loss from a wildfire.

2.8 Suppression Capabilities

Knowledge of the capabilities or limitations of the fire suppression resources in a community can help the residents take action to maximize the resources available. Factors considered in the assessment include:

2.9 Availability, Quantity, and Training Level of Firefighting Personnel

When a fire begins in or near a community, having the appropriate firefighting personnel available to respond quickly is critical to saving structures. Whether there is a local paid fire department, volunteer department, or no local fire department impacts how long it takes for firefighters to respond to a reported wildland fire or a threatened community.

2.9.1 Quantity and Type of Fire Suppression Equipment. The quantity and type of available fire suppression equipment has an important role in minimizing the effect of a wildfire on a community. Wildland firefighting requires specialized equipment.

2.9.2 Water Resources. The availability of water resources is critical to fighting a wildland fire. Whether there is a community water system with adequate flow capabilities, or whether firefighters must rely on local ponds or other drafting sites affects how difficult it will be for firefighters to protect the community. Additionally, communities served by water systems that are dependent upon electricity for operation may be left defenseless in the event of a power outage and backup power generation is not in place.

2.10 Physical Conditions

Physical conditions include slope, aspect, topography, fuel type, and fuel density. With the exception of changes to the fuel composition, the physical conditions in and around a community cannot be altered to make the community more fire safe. Therefore, an understanding of how these physical conditions can influence the behavior of a fire is essential to planning effective preparedness activities such as fuel reduction treatments. Physical conditions considered in the assessment include:

2.10.1 Slope, Aspect, and Topography.

In addition to local weather conditions, slope, aspect, and topographic features are also used to predict fire behavior. Steep slopes greatly influence fire behavior. Fire usually burns upslope with greater speed and longer flame lengths than on flat areas. Fire usually burns downhill at a slower rate and with shorter flame lengths than in upslope burns. West and south facing aspects are subject to more intense solar exposure, which preheats vegetation and lowers the moisture content of fuels. Canyons, ravines, and saddles are topographical features that are prone to higher wind speeds than adjacent areas. East facing slopes in the Great Basin routinely experience strong down slope winds in the afternoon that can rapidly push fires down slope. Fires pushed by winds grow at an accelerated rate compared to fires burning in non-windy conditions. Homes built mid-slope, at the crest of slopes, or in saddles are most at risk due to wind-prone topography in the event of a wildfire.

2.10.2 Fuel Type and Density.

Vegetation type, fuel moisture values, and fuel density around a continuous, vegetative fuels carry a higher hazard rating than communities situated in areas of irrigated, sparse, or non-continuous fuels. Several consecutive years of above normal precipitation will result in excessive cheatgrass growth and ground litter, ranging as high as two to four tons per acre. In Clark County, where a large percentage of BLM administered lands have converted to cheatgrass following wildfires, these conditions, in combination with steep slopes or high winds, can create a situation in which the

worst-case fire severity scenario can occur. Photographs of representative fuel types in the interface area throughout Clark County are provided in Appendix C.

2.11 Fuel Hazard Mapping

Fuel hazard maps were initially generated by the Bureau of Land Management Nevada and Utah State Offices. A total of 65 vegetation types were mapped statewide and reclassified into four wildfire hazard categories (low, moderate, high, and extreme) based on the anticipated fire behavior for each vegetation cover type.

The Project Team visited high and extreme hazard communities and verified the BLM fuel hazard information by comparing the hazard ratings on the existing fuel hazard map to vegetation, slope, and aspect conditions directly observed in the field. Where necessary, changes to the ratings were drawn on the maps and used to update the wildfire hazard potential layer of the project database.

2.11.1 Interviews with Fire Personnel

The Project Team interviewed local fire department personnel and local fire management officers to obtain information on wildfire training, emergency response time, personnel and equipment capability and availability, evacuation plans, pre-attack plans, and estimates of possible worst-case scenarios. Local fire personnel reviewed maps showing the history of wildfires to ensure that local information on wildfires was included. A list of fire agency personnel contacted for information used in the assessments is included in Appendix D.

2.11.2 Recommendation Development

A wide variety of treatments and alternative measures can be used to reduce ignition risks, mitigate fire hazards, and promote fire safe communities. Proposed recommendations typically include physical removal or reduction of flammable vegetation, increased community awareness of the risk of fires and how to reduce those risks, and coordination among fire suppression agencies to optimize efforts and use of resources.

3.0 Description of the County

3.1 Demographics, Location, Topography, and Climatic data

Clark County is located in northern Nevada, adjacent to the Oregon border and immediately east of Washoe County, Nevada. Clark County is approximately 6.2 million acres in size. A jurisdictional summary of land management administration is provided in Table 3-1 and presented on Figure 3-1. The majority of land within Clark County is administered and managed by federal agencies. See Map 4 in Appendix F.

Clark County is on the southernmost tip of the state of Nevada and shares borders with Nye County and Lincoln County in Nevada. Interstate neighbors are California and Arizona. The

majority of the County's metropolitan area is located in the valley (Las Vegas Valley), surrounded by several mountain ranges. Clark County is approximately 270 miles northeast of Los Angeles, CA and 280 miles northwest of Phoenix, AZ. The County covers an area of 8,061 square miles, approximately 169 square miles of which are covered by water and the remaining 7,891 square miles are covered by land. The majority of the population, an estimated 2,205,207 (2016) is located in the Las Vegas Valley, with the area being made up of unincorporated Clark County, city of Las Vegas, city of North Las Vegas, and There are 33 relatively small unincorporated communities and census-designated places in Clark County.
The unincorporated communities include: Arden; Cactus Springs; Cottonwood Cove; Coyote Springs; Glendale; Jean, Logandale; Mountain Springs; Nelson; Overton; Primm; Sloan; and Sutor. Census designated places include: Blue Diamond; Bunkerville; Cal-Nev-Ari; Crystal; Enterprise; Fort Mojave Indian Reservation (part); Goodsprings; Indian Springs; Laughlin; Moapa Town; Moapa Valley; Mount Charleston; Paradise; Sandy Valley; Searchlight; Spring Valley; Summerlin South; Sunrise Manor; Whitney; and Winchester. The Las Vegas Paiute Tribe and the Moapa Band of Paiutes make up the two tribes in Clark County.

The Colorado River forms the county's southeastern boundary, with Hoover Dam forming Lake Mead along much of its length. The lowest point in the state of Nevada is on the Colorado River just south of Laughlin in Clark County, where it flows out of Nevada into California and Arizona. Greater Las Vegas is a tectonic valley, surrounded by four mountain ranges, with nearby Mount Charleston being the highest elevation at 11,918 ft (3,633 m), located to the northwest. Other than the forests on Mount Charleston, the geography in Clark County is a desert. Creosote bushes are the main native vegetation, and the mountains are mostly rocky with little vegetation.[8] The terrain slopes to the south and east.[9] The county has an area of 20,879 km² (8,061 sq mi), of which 20,438 km² (7,891 sq mi) is land and 441 km² (170 sq mi) (2.1%) is water. Twenty official wilderness areas in Clark County are part of the National Wilderness Preservation System. Many of these are in, or partially in, one of the preceding protected areas, as shown below. Many are separate entities that are managed by the Bureau of Land Management (BLM).
Clark County has diverse desert flora and fauna, including higher-elevation mountain areas, the desert floor, and the Colorado River/Lake Mead ecosystems. Variations in diurnal temperature as well as seasonal swings in temperature create demanding adaptation elements on the species of this county. Population expansion, especially since 1970, has placed additional pressure on species in the area.

3.2 Wildfire History

During the 10 -year period of 2013 to 2023, there were 1,135 fires encompassing 145,691.14 acres. 755 fires were human caused, 160 were natural causes, and 220 were undermined. Although these fires have been predominantly in areas without residents or other structures, the economic impact to agriculture and environment remains substantial.

3.2.1 Ignition Risk Factors

Wildfire ignition risks fall into two categories: natural and human caused. Human caused ignitions can come from a variety of sources such as burning material thrown out of vehicle windows or ignited during auto accidents, off-road vehicles, railroads, arcing power lines, agricultural fires, unattended campfires, debris burning in piles or burn barrels, target shooting, and fireworks.