City of Sparks Jurisdiction-Specific Annex – Washoe County Regional Hazard Mitigation Plan

2020 Plan Update

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1. INTRODUCTION

1.1 City of Sparks Hazard Mitigation Program

The City of Sparks has a fully integrated approach to hazard mitigation planning and program implementation. Throughout the 2020 update process, the following Hazard Mitigation Plan (HMP) participation roles were recorded:

Name	Position	Role in Hazard Mitigation
Mark Meranda	Building Official	Mitigation Program Lead
Michael Drinkwater	Treatment Plant Manager	Subject Matter Expert and program implementation
Brian Cason	Capital Projects Manager	
Armando Ornelas	Assistant Community Services Director	
Pete Krall	Police Chief	
Jim Reid	Fire Chief	
Jon Ericson	City Engineer	

1.2 What's New in the 2020 Update?

With the 2020 HMP update, Washoe County and its regional partners have recognized changes in planning priorities by placing an added emphasis on incorporating actionable strategies in the mitigation implementation plan and moving away from including ongoing coordination activities. Recent disasters and emerging hazards have also influenced the planning priorities and development of mitigation actions for the 2020 HMP update.

In the years since the release of the 2015 HMP, the city has undergone near constant change—with a growing population, some vulnerabilities have increased, while others have been effectively mitigated to an acceptable level. New development in the city has primarily occurred in the Spanish Springs Valley, which is more prone to wildland fire hazards. Mitigation actions have been added in the 2020 HMP update to reflect the increase in priority of actions to address wildland fire hazards.

The 2020 update of the HMP includes the following major revisions to the 2015 plan:

- Incorporation of additional hazards and more comprehensive risk assessments (see Chapter 3);
- Expanded capability assessment (see Chapter 4);
- Integration of hazard mitigation planning into existing mechanisms (see Section 4.5); and
- Comprehensive and focused mitigation strategy with prioritized mitigation actions (see Chapter 5).

See Appendix C in the Basic Plan for the completed Federal Emergency Management Agency (FEMA) Local Plan Mitigation Review Tool for the Washoe County Regional HMP.

1.3 Plan Adoption

44 CFR §201.6(c)(5) requires that the HMP be formally adopted by elected officials from each participating jurisdiction. City Council formally adopted the 2020 update of the Washoe County Regional HMP on [Date].

This HMP was approved by FEMA Region IX on [Date]. A copy of the City of Sparks' adoption resolution is included in Appendix H of the Basic Plan.

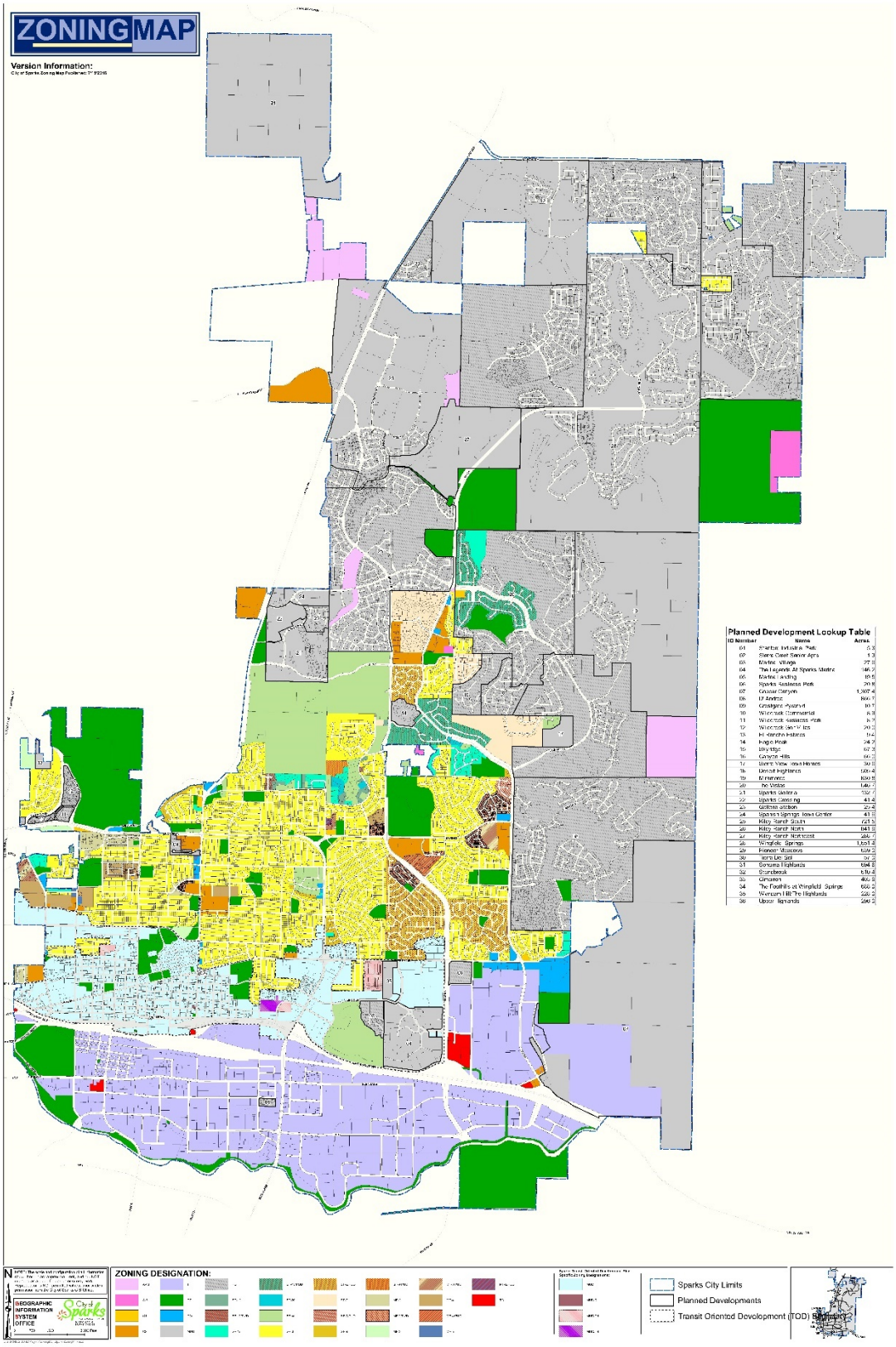
2. COMMUNITY PROFILE

2.1 Governance

The city of Sparks was established as a planned community by the Southern Pacific Railway Company (Southern Pacific), and incorporated in 1905. The City of Sparks government operates using a council/ manager form of government, under which the mayor and city council make policy decisions that are implemented by the city manager and staff. The mayor and the five members of city council are elected for staggered four-year terms.

The City is organized into the following departments and offices, which oversee a variety of divisions and programs:

- Building Permits
- Business License Department
- City Attorney's Office
- City Clerk and Records Management
- City Manager's Office
- Code Enforcement
- Community Services
- Customer Service
- Engineering Services
- Environmental Control Section
- Financial Services
- Fire Department
- Fire Prevention Bureau
- Government Affairs
- Housing Program
- Human Resources
- Maps and Geographic Information System (GIS) Resource Portal
- Parks & Recreation
- Planning and Zoning
- Police Department
- Public Information/Community Relations
- Purchasing
- Public Works
- Sparks Municipal Court



City of Sparks Zoning Map (2018 City GIS Services)

2.2 Geography and Climate

Sparks is located at 4,410 feet above sea level in the semi-arid Truckee Meadows basin, situated between the Sierra Nevada range and the Great Basin. The city covers approximately 36 square miles east of the city of Reno. Interstate 80 (I-80) crosses the southern part of the city from east to west, and the Truckee River forms most of the city's southern boundary. The oldest parts of the city are located in the south between the railroad line and the river. Starting in the 1970s, commercial and residential development began to spread to areas north and east of downtown, and during the 1990s, Sparks expanded its city limits northward into the Spanish Springs Valley.

The Truckee Meadows region has a semi-arid climate, with summer highs averaging in the 80s (Fahrenheit) to low 90s and winter lows in the 20s. The region generally experiences low humidity and precipitation, though severe snowstorms and heavy precipitation can occur.

2.3 Population and Demographics

The 2010 Census recorded a population of 90,264 people in the city of Sparks (U.S. Census Bureau n.d.[a]). Between 2010 and 2017, the population grew by approximately 12%, resulting in an estimated 2017 population of 100,878 people (U.S. Census Bureau 2017a).

Table 2-1 City of Sparks Demographic Characteristics

	City of Sparks (%)	Nevada (%) (2017)
Population by age, 2017		
Under 10 years old	10%	13%
Under 20 years old	22%	25%
60 years and older	24%	21%
Women, 2017	50%	50%
Race/Ethnicity, 2017		
White	60%	49%
Black	1%	9%
American Indian, Alaskan Native	1%	1%
Asian, Native Hawaiian, other Pacific Islander	6%	9%
Hispanic or Latino, any race	28%	29%

Source: U.S. Census Bureau 2017a,b

As of 2017, an estimated 5.5% of Sparks's population under the age of 65 years is disabled, and 3.4% of the city's population under age 65 do not have health insurance (U.S. Census Bureau 2017c). The median household income in 2017 was $58,961, with 8.3% of the city's population living in poverty. In the time range between 2013 and 2017, approximately 25% of children between ages 5 and 17 and 25% of people over the age of 18 spoke a language other than English at home (U.S. Census Bureau 2017a).

As of 2017, the city of Sparks had 41,471 housing units, of which 55% are owner-occupied. The median value of owner-occupied homes is $305,800 (U.S. Census Bureau 2017a). During this time, 95% of households owned a computer, and 87% had a broadband internet subscription (U.S. Census Bureau 2017d).

The 2017 American Community Survey 1-year estimates reported that approximately 65.4% of the population over 16 years old within the city was employed and 4.0% of the population over 16 years old was unemployed (U.S. Census Bureau n.d.[a]). Per capita income in the city in 2017 was $31,254, and approximately 8.3% of the city's population lived below the poverty line (U.S. Census Bureau 2017).

2.4 Economy

In 2009 Business Week named Sparks the number one city in Nevada to start a new business. Nevada has no corporate income or gross receipts taxes, which supports economic development.

By employment, the largest sectors of Sparks's economy are the service sectors of entertainment, hotel, and food services, followed by education. Construction also plays a major roll. The city has benefited from recent development of advanced manufacturing and technology facilities in the Reno-Sparks metropolitan area, which has resulted in a period of job growth (City of Sparks 2016).

Downtown is a redevelopment district.

BUSINESS HIGHLIGHT

El Rancho Flea Market

Pac Machine Company

Haws

its logistics

Nugget Casino

Baldini's Sports Casino and Restaurant

2.5 Land Use and Ownership Trends

According to its Comprehensive Plan, the City of Sparks experienced 38% growth from 2000 to 2010 and an additional 4% from 2010 to 2015. "People who live in Sparks appreciate its quality of life and small-town feel. Sparks is known as the premiere special events venue for northern Nevada, hence the City Slogan "It's Happening Here." Most properties in the city are privately owned. The City of Sparks owns and operates public facilities, including government administration facilities; City parks and open space; public works facilities and utilities, including the Truckee Meadows Water Reclamation Facility (jointly owned with the City of Reno); libraries; and fire and police stations.

The Comprehensive Plan provides the following information (City of Sparks 2016):

"As of January 2016, Sparks covers approximately 36 square miles with an estimated current population of 93,581 (Source: Nevada State Demographer). Situated at 4,410 feet above sea level in a semiarid valley, daily temperatures are temperate with daily highs and lows varying by as much as 45 degrees Fahrenheit. The sun shines roughly 290 days a year, or eight of every 10 days. Annual precipitation averages 8.26 inches per year. Sparks has four seasons with a relatively short growing season.

Sparks is one of two incorporated cities within Washoe County (County). The other city is Reno. Sparks is connected to the western United States by U.S. 395, Interstate 80 and the Union Pacific Railroad and is served by the Reno-Tahoe International Airport.

Older housing is located within the vicinity of downtown while most of the newer housing is located in the Spanish Springs Valley. Single family detached houses make up approximately 64 percent of the housing stock. The City of Sparks utilizes a strong city manager form of government. The city manager reports to the mayor and a five-member city council."

Historically—in the early 1900s—the area was just swampland and ranches. When Southern Pacific altered its railroad lines, they offered incentives for employees to move to lots in what became Sparks in 1905. Sparks remained small until growth in Reno pushed populations outward in the 1950s. "In the 1970s, the area south of the railroad to the Truckee River started to develop with warehouses and industry and in time became the main employment area for Sparks. During the 1970s, Sparks experienced a housing boom in the area north and east of its downtown, which continued into the 1980s." Numerous commercial spaces were developed in the decades that followed, including a high-rise hotel/casino, movie complex, and public plaza. By the 1990s city limits were expanded northward to Spanish Springs Valley, which continues to grow with 15 approved developments.

In 1997, a 77-acre lake was developed. "From 1999 through 2006, the City of Sparks experienced an upward trend in revenue, number of building permits, jobs and new businesses. The number of both building permits and planning cases peaked in 2006. Starting in 2007, City revenues and the number of building permits and planning cases, all indications of a growing economy, began to contract. The Great Recession, which proved to be more severe and last longer that in many parts of the United States, had come to Sparks.

Consolidated Taxes (the primary component of which is sales taxes), a major source of revenue for the City's general fund, dropped for the first time ever in 2007. This was followed by a six-year decline in total General Fund revenue. Nationally, the Great Recession is recorded as lasting from December 2007 to June 2009, but not until 2014 did Sparks begin to see an increase in revenues. During those tough years, one third of city personnel were laid-off. The City is still recovering, but it has not significantly increased personnel or City services."

2.6 Natural Resources

The following major natural systems are present in the Truckee Meadows basin:

- **Geology:** The city of Sparks and Washoe County are located on the western edge of the geological formation known as the Great Basin, which is part of the Basin and Range geological province. The Basin and Range Province is characterized by high desert punctuated by rows of mountain ridges that run roughly north to south. As these mountain ridges push up through the earth's crust, they can cause earthquakes, making this region one of the most earthquake prone in the United States. These ridges also create a closed basin, meaning water that falls within the basin stays there until it evaporates or is removed through human activity (Earth Observatory n.d.).
- **Watersheds:** Sparks lies within the Truckee River watershed. The Truckee River flows 140 miles from Lake Tahoe to Pyramid Lake, north of Sparks. The river drains an area of 3,120 square miles in western Nevada and eastern California. The basin includes 11 major streams that drain into the river. Most of the river flow is allocated to users through a system of user rights set out in the Truckee River Operating Agreement (2015).
- **Wildlife:** Species that are native to lower montane woodlands and sagebrush habitats in the Truckee Meadows region include raptors like the ferruginous hawk and bald eagles, bats, sparrows, burrowing owls, lizards, small mammals such as the dark kangaroo mouse and kit fox, mule deer, pronghorn antelope, and sage grouse. Natural communities and open spaces contribute to the region's scenic character and provide recreational opportunities for residents (Washoe County 2008).

2.7 Cultural Resources and Values

Cultural resources can be defined as the "physical evidence or place of past human activity: site, object, landscape, structure; or a site, structure, landscape, object or natural feature of significance to a group of people traditionally associated with it" (National Park Service 2015). Evidence of long-term human inhabitation of the Truckee Meadow region still exists in archaeological sites, including rock art, seasonal camps, and residential communities, and the artefacts that may be found at these sites. The region was part of the territory of the Northern Paiutes, who inhabited and moved between a variety of habitats. Historic buildings within the city that are older than 50 years and eligible for listing in the National Register of Historic Places also are considered cultural resources and important contributors to the city's character (City of Sparks 2016).

Most cultural sites in the city have not been mapped or surveyed, which can lead to the degradation of these sites if they are developed. Private development has the potential to degrade archaeological sites because federal and state regulations do not require protection of cultural resources on private property. Unregulated use of off-road vehicles, mountain bikes, or hiking can also damage archaeological sites (City of Sparks 2016).

3. HAZARD PROFILES AND VULNERABILITY ASESSMENTS

Chapter 3 contains hazard profiles and vulnerability assessments to determine the potential impact of hazard to the people, economy, and built and natural environments of the city of Sparks. They have been streamlined to increase the effectiveness and usability of the HMP. Additional details are contained within Appendix F in the Basic Plan.

FEMA	**B1.** Does the Plan include a description of the type, location, and extent of all natural hazards that can affect [the City of Sparks]? (Requirement §201.6(c)(2)(i)) **B2.** Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for [the City of Sparks]? (Requirement §201.6(c)(2)(i)) **B3.** Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement 44 CFR 201.6(c)(2)(ii))

3.1 General

Washoe County has experienced several major disaster declarations that may have affected the city of Sparks. In total, the County has received 20 major disaster declarations, including four since the previous HMP update. Table 3-1 identifies the declarations since 2015 that affected the city of Sparks.

Table 3-1 Major Disaster Declarations in Washoe County Since 2015

Disaster Number	Individual Assistance Program Declared	Public Assistance Program Declared	Hazard M Program Declared	Declaration Date	Title
4307	No	Yes	Yes	3/27/2017	Severe Winter Storms, Flooding, and Mudslides
4303	No	Yes	Yes	2/17/2017	Severe Winter Storms, Flooding, and Mudslides
4303	No	Yes	Yes	2/17/2017	Severe Winter Storms, Flooding, and Mudslides
4303	No	Yes	Yes	2/17/2017	Severe Winter Storms, Flooding, and Mudslides

Source: FEMA 2019

The hazard profiles and vulnerability assessments contained in this annex represent a considerable amount of work performed by the Mitigation Planning Team (MPT). Planning Team members ranked hazards using several key considerations, followed by activities to validate hazard analysis results and identify specific areas of risk. Table 3-2 displays the high-priority hazards that City of Sparks representatives to the MPT selected for further assessment.

Refer to the HMP Basic Plan for regional risk assessments for moderate and low-priority hazard profiles.

Table 3-2 Hazards Addressed in Plan

Hazard Type	Hazard Name
Natural Hazards	Wildland Fire Severe Storms (Windstorm) Earthquake
Human-Caused Hazards	Criminal Acts and Terrorism
Technological Hazards	Energy Emergency

3.2 Hazard Ranking Methodology

The hazards identified in the HMP were initially ranked based on MPT feedback during MPT Meeting #1.

Following the individual hazard ranking activity, the results were added up and aggregated to show an average score for all City of Sparks MPT members (Table 3-3).

3.3 Hazard-Specific Profiles and Risk Assessments

The following sections profile and assess the risks associated with hazards that are high planning priorities for the City of Sparks, which are hazards that were scored an average of 3.00 or higher during the hazard ranking activity. No natural hazards that have the potential to affect the city were omitted from the initial hazard assessment and ranking activity. The hazard profiles and risk assessments align with EMAP standards by focusing on hazards with a high magnitude or high probability. Each risk assessment considers the following attributes:

- **Location:** An indication of geographic areas that are most likely to experience the hazard.
- **Past Occurrences/History:** Similar to location, a chronological highlight of recent occurrences of the hazard accompanied by an extent or damage cost, if available.
- **Extent/Probability:** A description of the potential magnitude of the hazard, accompanied by the likelihood of the hazard occurring (or a timeframe of recurrence, if available).
- **Vulnerability:** A description of the potential magnitude of losses associated with the hazard. Vulnerability may be expressed in quantitative or qualitative values depending on available data. Identifies development trends' impact on the city's vulnerability to each hazard since the 2015 plan development (Increased, decreased, unchanged).

Note: Hazard Descriptions, Potential Impacts from Future Climate Conditions, and Cascading Impacts can be found in Section 4 of the HMP Basic Plan, as these are not place-specific.

Table 3-3 City of Sparks Hazard Rankings

Jurisdiction: City of Sparks - Hazards									
	Probability (1=lowest, 5=highest)	*Magnitude (1=lowest, 5=highest)*	*Frequency (1=lowest, 5=highest)*	*Onset (1=slowest, 5=fastest)*	*Duration (1=shortest, 5=longest)*	*Change in Risk (↑, ↓, ↔ since 2015)*		*Average*	*Rank*
Wildland Fire	4.00	3.00	4.00	4.00	2.00	1.00		3.75	1
Energy Emergency	3.00	2.00	5.00	5.00	3.00	1.00		3.75	1
Severe Storms (Windstorm)	4.00	2.00	5.00	3.00	2.00	0.00		3.50	3
Earthquake	4.00	4.00	1.00	5.00	1.00	1.00		3.50	3
Flooding	4.00	3.00	3.00	3.00	3.00	0.00		3.25	5
Severe Storms (Winter Storm)	4.00	2.00	4.00	3.00	3.00	0.00		3.25	5
Criminal Acts and Terrorism	3.00	3.00	2.00	5.00	2.00	1.00		3.25	5
Avalanche and Landslide (Landslide)	2.00	2.00	1.00	5.00	1.00	0.00		2.50	8
Hazardous Materials Incident	2.00	2.00	1.00	5.00	2.00	0.00		2.50	8
Drought	4.00	1.00	2.00	1.00	5.00	1.00		2.00	10
Infectious Disease	1.00	3.00	2.00	2.00	4.00	-1.00		2.00	10

Note: Radiological waste transport and volcano hazards were not initially ranked by the MPT. In subsequent meetings, these hazards were identified as low probability but potentially high magnitude hazards. Risk assessments for both hazards are included in Section 4.5 of the Basic Plan. Avalanche and Landslide and Transportation Incident (Aircraft Crash) were not identified as hazards for Sparks.

3.3.1 Wildland Fire

Wildland Fire

Probability	Magnitude	Frequency	Onset	Duration	Average	Rank
4.00	3.00	4.00	4.00	2.00	3.75	1

Location

South of Baring Boulevard and N. McCarran Boulevard, Sparks is largely built out. Developed properties and open spaces in this part of the city have a very low to moderate potential for wildland fire. Since the 1990s, development has spread from the city's urban center north into areas of increased fire risk. Wildland-urban interface (WUI) areas occur in the foothills of the northern and eastern parts of the city, where the potential for wildland fire is rated between moderate and very high. As residential development occurs in the foothills, more homes are located in areas of increased fire risk in the WUI. For example, in the Spanish Springs Valley north of Vista Boulevard, residential development has occurred in an area with high to very high fire potential.

Past Occurrences/History

Past wildland fires within the city between 2015 and 2018 are listed below. This information supplements the past wildland fire occurrences that may have affected the city listed in Section 4.5.1 of the Basic Plan.

- The **Earthstone Fire** in 2017 burned 41,515 acres in the northeastern part of the city. This fire was determined to be human caused.
- The **Prater Fire** in 2017 burned 2,816 acres in the eastern part of the city near the foothills. The cause of this fire has not been determined.
- The **I-80 Fire** in 2017 burned 514 acres adjacent to I-80 on the southern edge of the city. The cause of this fire has not been determined.
- The **S Fire** in 2016 burned 2,554 acres in the southeastern part of the city near the foothills. The cause of this fire has not been determined.

Extent and Probability

As economic growth continues to increase demand for residential and commercial growth, more development is likely to occur in the foothills east of the city center and to the north in the Spanish Springs Valley. Increased development in these areas increases the risk that future wildland fires will cause damage to structures, including homes and businesses.

In Washoe County, wildland fires are frequent and inevitable due to the arid climate, availability of fuels such as sagebrush, rabbit brush, and cheat grass, and mountainous terrain (City of Sparks 2016). The vast majority of wildland fires burn between June and October. While Washoe County experiences wildland fires nearly every year, fewer fires have historically occurred in the city of Sparks. No fires were recorded in the city between 2002 and 2015. Based on recent historic occurrences of wildland fires, there is an estimated 10% to 15% chance of a wildland fire occurring in the city each year.

Future Probability Trend – Based on projected changes in the timing and quantity of snowmelt and increases in the frequency and magnitude of drought and extreme heat, the city may be impacted by an **increase** in the probability of future wildland fires.

Wildland Fire

Vulnerability

As development continues to increase in the WUI, the risk of wildland fire damage to homes and other structures will increase. New development in the Spanish Springs Valley has extended the response area for the city's fire department, resulting in longer response times that may increase the city's vulnerability to wildland fires. Currently, the city relies on the Truckee Meadows Fire Protection District to provide fire response in areas of the Spanish Springs Valley through a mutual aid agreement. Mitigation action AH-5, discussed in Section 5, is designed to address this vulnerability.

Property

- Critical facilities in the city are in areas of very low wildland fire potential.

Recent Development Trends

- **Economic:** Continued economic development across the region is likely to result in additional population growth in Sparks, increasing the demand for fire response services. (Increased Vulnerability)
- **Land Use:** Residential development has increased in the Spanish Springs Valley and foothills near the edges of the city, which have a moderate to very high potential for wildland fire. (Increased Vulnerability)

Future Land Use

Future development is planned in areas with a moderate to very high potential for wildland fire. Mitigation action AH-5 would somewhat reduce this increased vulnerability by constructing a new fire station in the northern part of the city, reducing response times to locations in the Spanish Springs Valley.

See Appendix F in the Basic Plan for maps.

3.3.2 Energy Emergency

Energy Emergency

Probability	Magnitude	Frequency	Onset	Duration	Average	Rank
3.00	2.00	5.00	5.00	3.00	3.75	1

Location

Any area of the city may potentially be impacted by an energy emergency or power outage. Sparks is an urban area, and sufficient redundancy in electrical infrastructure exists in most areas of the city to prevent widespread power outages as a result of localized damage to the power system.

Past Occurrences/History

Historically, power outages have been caused by natural events and human-caused accidents, but have not been recorded in a way that is publicly accessible. Numerous power outages occur every year and may last as short as hours or as long as weeks. A recent power outage in July 2019 affected

Energy Emergency

more than 7,000 customers in Sparks until electrical service was restored to all customers approximately 11 hours later. Previous longer-duration power outages have led to temporary increases in welfare checks and needs for medical care, as well as negatively impacting local economic interests.

Interruptions in energy services may also be planned, for example to allow for system repairs or maintenance. In 2019, NV Energy and Pacific Gas and Electric Company (PG&E) (in California) began implementing extensive public safety outage management programs in areas with extreme fire risks. To prevent downed power lines and damaged equipment from causing fires, these electric providers may de-energize parts of the electrical grid during weather conditions conducive to wildland fires (e.g., high temperatures, low humidity, high winds, lightning storms) or based on field observations or information from first responders (NV Energy 2019). Planned outages have the potential to affect fuel availability for Washoe County. Outages affecting PG&E's system would cut power to the equipment that controls operation of the fuel pipeline serving the region.

Extent and Probability

It is difficult to predict the impacts of future energy emergencies, but they have the potential to impact all government and business operations and cause extensive economic losses, among other impacts. Due to the sporadic nature of power outages and other energy emergencies, it is also difficult to estimate how frequently such failures will occur, or their duration. The city's electric provider, NV Energy, generally deals with power outages multiple times per year, with many of them only lasting a matter of hours. Every several years, more significant power outages are experienced.

Future Probability Trend – Based on potential increases in heat waves and increasing regional development resulting in greater demand, the city may be impacted by an increase in the probability of future energy emergencies.

Vulnerability

NV Energy has provided electric power to northern Nevada for over 150 years. Customers in the Reno-Sparks area are served by multiple power generation facilities and a transmission system with built-in redundancy, which decreases the risk for widespread and longer-duration power outages. However, power outages have the potential to disrupt government and business operations over time periods ranging from several hours to several days. Electricity customers in areas on the fringes of the electric system may be some of the last to have service restored as repairs to urban areas with more customers are prioritized.

Recent Development Trends

- **Economic:** NV Energy is actively diversifying its energy generation facilities by adding renewable energy facilities to its system. NV Energy handles planning, expansion, and maintenance of its electric facilities in accordance with Nevada Public Utility Commission regulations. (Decreased Vulnerability)
- **Land Use:** The city's upward trend in development increases the overall demand on utilities. (Increased Vulnerability)

Energy Emergency

Future Land Use
Additional development will increase demand on utilities and may increase the severity of power outages or other energy emergencies. NV Energy will continue to expand and diversify its energy generation facilities, which will reduce the overall vulnerability of the city to power outages.

3.3.3 Severe Storms (Windstorm)

Severe Storms (Windstorm)

	Probability	Magnitude	Frequency	Onset	Duration	Average	Rank
Windstorm	4.00	2.00	5.00	3.00	2.00	3.50	3

Location
Any area of the city may be affected by windstorms. Windstorms can result in power outages from downed power lines, tree damage, damage to homes and other buildings and aboveground structures, and damaged or blocked roads and bridges.

Past Occurrences/History

High winds can accompany winter storms and severe thunder storms and may occur multiple times a year. The National Oceanic and Atmospheric Administration's National Climatic Data Center records that the Reno-Sparks area experienced 50 days with weather events that had measured wind speeds above 40 knots (46 miles per hour) between January 2015 and July 2019. One of these high wind events resulted in reports of property damage outside of the city of Sparks.

Extent and Probability

A severe windstorm could cause moderate damage and disrupt economic activity, electric service, government operations, and transportation across the city. High winds can accompany other types of severe storm events like thunderstorms and winter storms and typically occur multiple times each year.

Future Probability Trend – The city is likely to continue to experience a high frequency of wind storms. There is no reliable data indicating whether or not windstorms will increase or decrease in frequency or intensity due to climate change.

Vulnerability

Windstorms may affect any aboveground structures and can cause secondary effects like damage to buildings, power outages caused by fallen trees or tree limbs, or disruption to transportation if roads are blocked by debris. Sparks businesses, residents, and visitors who rely on electric power would be affected in the event of a power outage caused by a windstorm, and high winds could potentially disrupt government operations and business activities, especially those operating outdoors.

Recent Development Trends

- **Economic:** The City has established policy to work with utility companies to place new electric transmission infrastructure underground to minimize safety risks and the risk of outages. (Decreased Vulnerability)

Severe Storms (Windstorm)

- **Land Use:** Increased development in the foothills may expose more properties and structures to damaging winds. (Increased Vulnerability)

Future Land Use
As the city continues to build out, additional structures will be at risk of damage from windstorms. Taller structures and development in the foothills will be more vulnerable to damage.

3.3.4 Earthquake

Earthquake

Probability	Magnitude	Frequency	Onset	Duration
4.00	4.00	1.00	5.00	1.00

Average	Rank
3.50	3

Location
Any area of Washoe County, including the city of Sparks, is vulnerable to the noticeable effects of earthquakes. The most hazardous fault zones in the County are the Mount Rose fault zone, West Tahoe fault, and Pyramid Lake fault. While these fault zones do not underlie Sparks, smaller faults do occur within the city boundaries, and the city may experience noticeable shaking and damage resulting from an earthquake along any of the region's faults.

During an earthquake, the city may experience severe seismic ground motion hazards. Most of the city, including areas north of E. Prater Way and east of Vista Boulevard, may experience peak ground acceleration with a 2% probability of exceedance in 50 years of between 48 and 64 percent gravity, which would be experienced as severe shaking capable of causing moderate to heavy damage. Areas of the city generally south of Prater Way and E. Prater Way and west of Vista Boulevard could experience more severe shaking. These areas may experience peak ground acceleration with a 2% probability of exceedance in 50 years of greater than 64 percent gravity, which would be experienced as violent shaking with the potential to cause heavy damage.

Past Occurrences/History
Information on previous major earthquakes with magnitudes greater than 5 on the Modified Mercalli Intensity (MMI) Scale in Washoe County is included in Section 4.5.4 of the Basic Plan. Shaking from these earthquakes would have been felt in the city of Sparks and may have caused structural damage.

See Section 4.5.4 of the Basic Plan for more details.

Extent and Probability
A major earthquake has the potential to cause widespread and significant damage to structures in the city of Sparks, as well as injuries and deaths. Because of their potential to cause damage to structures, roads, and utilities, earthquakes may disrupt government operations and the local economy for a period of days to weeks and may require evacuations or create increased demand for emergency medical services. Response to and recovery from an earthquake may require state and federal support.

Earthquake

Future Probability Trend – A total of 17 earthquakes with a magnitude greater than 5 on the MMI Scale have occurred in Washoe County in the last 150 years. The probability of future occurrence can be estimated at 10%; this means that there is roughly a 10% chance of an earthquake with magnitude >5 to occur every year. Climate, economic, and land use trends do not affect the probability of an earthquake; however, economic trends and land use patterns can affect the amount of damage caused by an earthquake. With additional development occurring in the city of Sparks, there is an **increased** probability that future earthquakes will result in damage to structures, roads, and utilities in the city.

Vulnerability

Earthquakes have the potential to cause significant, widespread structural damage throughout the region. Critical facilities in Sparks are located in areas that may experience relatively high seismic ground motion hazards. Most of these facilities may experience peak ground acceleration with a 2% probability of exceedance in 50 years of between 48 and 64 percent gravity, which would be experienced as severe shaking capable of causing moderate to heavy damage. For most critical facilities in the city, smaller earthquakes (resulting in peak ground acceleration with a 10% probability of exceedance in 50 years) could produce ground motion ranging from 32 to 48 percent gravity. These levels of peak ground acceleration would be experienced as very strong to severe shaking with the potential to cause moderate to heavy damage. Figures F-3 and F-4 in Appendix F show seismic ground motion hazards in the city.

Property

Several critical facilities would be exposed to higher seismic ground motion hazards, including:

- Sparks Police Department – In an area with potential peak ground acceleration of greater than 64 percent gravity, with 2% chance of being exceeded in 50 years. This level of peak ground acceleration would be experienced as violent shaking with the potential to cause heavy damage.
- Sparks Fire Department Station 3 and the University of Nevada Farm – In areas with potential peak ground acceleration of greater than 64 percent gravity (with a 2% chance of being exceeded in 50 years) or 48 to 64 percent gravity (with a 10% chance of being exceeded in 50 years). At the high end, peak ground acceleration would be experienced as violent shaking with the potential to cause heavy damage. At the low end, peak ground acceleration would be experienced as severe shaking with the potential to cause moderate to heavy damage.
- Sierra Regional Center (Hospital), Lincoln Park Elementary School, and Sparks Fire Department Station 1 – In an area with potential peak ground acceleration of 48 to 64 percent gravity (with a 10% chance of being exceeded in 50 years). This level of peak ground acceleration would be experienced as severe shaking with the potential to cause moderate to heavy damage.

Recent Development Trends

- **Economic:** Many companies are constructing new facilities and hiring employees in the Reno-Sparks metropolitan area, which results in exposure of additional people and structures to earthquake hazards and increases the potential for economic disruption following an earthquake. (Increased Vulnerability)

Earthquake

- **Land Use:** Increased development in the city exposes more properties and structures to damage caused by earthquakes. The City has established Policy RC18 in its comprehensive plan to "protect the public from the impacts of earthquakes and landslides/debris flow areas through compliance with building codes and federal standards" (City of Sparks 2016). (Increased Vulnerability, but actions taken to decrease vulnerability)

Future Land Use
New development in the city will be required to comply with local building codes and federal standards. While future development will result in additional people and structures exposed to earthquake hazards, compliance with building codes would reduce local vulnerability.

See Appendix F1 in the Basic Plan for full Risk Exposure Tables and Appendix F2 in the Basic Plan for maps.

3.3.5 Flooding

Flooding

Probability	Magnitude	Frequency	Onset	Duration
4.00	3.00	3.00	3.00	3.00

Average	Rank
3.25	5

Location
The geographic location of flooding is concentrated in the floodway and floodplain of the Truckee River and its tributaries, including Evans Creek and Steamboat Creek. The Truckee River runs through southern Sparks, south of the railroad tracks and I-80. Historically, areas of the city prone to riverine flooding include:

- About 75% of Sparks's industrial area south of the railroad tracks;
- Recreational and residential areas north of the river, south of Prater Way, and east of McCarran Boulevard;
- Areas between Greg and Mill Streets west of McCarran Boulevard; and
- Bridges over the Truckee River and tributaries, which are closed during major floods (with observed stage readings over 20.5 feet at the Vista gauge).

The 100-year and 500-year floodplains within the planning area are shown on Figure F-2 in Appendix F in the Basic Plan.

Flash flooding is usually associated with development and urbanization, as well as inadequate storm drainage systems. Localized flooding of roadways and low-lying areas with poor drainage may occur after heavy precipitation or severe storms. Areas in Sparks that are prone to flooding include the intersections of Rock Boulevard and Prospect Avenue, Pyramid Way and Greenbrae Drive, Tyler Way and Pyramid Way, and the Rock Boulevard underpass of I-80. These intersections are located in older residential areas north of the city's industrial area. New development in the foothills in the eastern part of the city also is more vulnerable to flash flooding.

Flooding

Past Occurrences/History

In January 2017, northern Nevada experienced significant flooding from a storm that dropped between 3 and 6.5 inches of rain in the region and snow in the mountains. The combination of heavy rain and mountain snow led to flood conditions in the valleys of the Reno-Sparks area. Other recent major floods in the region that affected Sparks include:

- December 24, 2005 to January 3, 2006
- December 16, 1996 to January 6, 1997
- February 11 to February 20, 1986.

These flooding events are profiled in detail in Appendix B in the Basic Plan.

Extent and Probability

Severe flooding may result in serious injuries and deaths, as well as damage to public facilities and private property. Extent of flooding can be determined by the height of river flows in comparison to flood stages determined by U.S. Geological Survey stream gauges located throughout the area. It can also be measured by past flooding damage.

Sparks may experience limited, localized flooding on an annual basis. Major riverine flooding has occurred approximately once a decade. (Regional Water Planning Commission 2003)

Future Probability Trend – Based on potential increase in high-intensity precipitation events and increased urban development in the Spanish Valley, Sparks may be impacted by an **increase** in the probability of future floods and flash flooding.

Vulnerability

Riverine or flash flooding in the city often results in the washout or flooding of roadways and infrastructure in waterways, such as bridges or culverts. The city of Sparks has concentrated industrial, commercial, and recreational land uses within mapped floodplains along the Truckee River, and most of the city's critical facilities are located outside of these floodplains. Flash flooding can affect smaller creeks and streams and areas near burn scars, and critical facilities outside of mapped floodplains may be affected.

Major flooding can impact the community by displacing residents and business owners; damaging and disrupting infrastructure, including roads and bridges, water treatment facilities, and wastewater treatment facilities; and causing health risks due to contaminated public water supplies and private wells. Major floods can disrupt, and have in the past disrupted, business activities, transportation, and recreation in the southern part of the city for a period of days or weeks.

Property

- Four critical facilities, including three dams and one fire station, are located within the 100-year floodplain
- One school, the University of Nevada Farm facility, is located within the 500-year floodplain

Flooding

Existing Mitigation Case Study
The City of Sparks works with land owners and developers to construct flood improvements for new development in northern Sparks in order to mitigate downstream flooding. These improvements include completion of the North Truckee Drain realignment in 2018 and construction of the Kiley South flood detention facility and associated flood channel improvements.

Recent Development Trends

- **Economic:** New residential and commercial development within the closed basins of Lemon Valley and Cold Springs Valley that are near lakes (like Swan Lake) that are fed from snowpack and do not have rivers to drain into will put surrounding communities at an increased risk. (Increased Vulnerability)
- **Land Use:** Recent development in the Spanish Springs Valley has increased impervious surface in the Truckee River watershed and contributed to increased flooding risk downstream of new developments. (Increased Vulnerability)

Future Land Use
Future growth is planned for northern and eastern Sparks. Residential, commercial, and other types of land use will increase impervious surface in these areas and increase the city's flood risk. New development in the foothills east of the city's downtown will be more vulnerable to flash flooding.

See Appendix F1 in the Basic Plan for a full Risk Exposure Table and Appendix F2 in the Basic Plan for maps.

3.3.6 Severe Storms (Winter Storm)

Severe Storms (Winter Storm)

	Probability	Magnitude	Frequency	Onset	Duration	Average	Rank
Winter Storm	4.00	2.00	4.00	3.00	3.00	3.25	5

Location
Any area of the city may be affected by winter storms. High elevations of the western portion of Washoe County experience the effects of winter storms, often snow storms, with greater frequency than low elevations. Winter storms plunge southward from arctic regions and drop heavy amounts of snow and ice. The severity of winter storms is generally minor. However, a heavy accumulation of ice can create hazardous conditions. A large winter storm event can also cause exceptionally high rainfall that persists for days, resulting in heavy flooding. Extreme cold temperatures often accompany severe winter storms in Washoe County.

Severe Storms (Winter Storm)

Past Occurrences/History

Winter Storm

Sparks's annual average snowfall is 6 inches, with snowfalls generally occurring in November through March according to data from 1981–2010 climate normal (U.S. Climate Data, n.d.). The same source shows 8.26 inches average annual precipitation; monthly averages of 0.87 inches and higher occur in the same months. The City of Reno Public Works Department notes that Reno experiences 13 storms annually.

The 2018 State of Nevada Enhanced HMP lists the following severe winter storms occurring in Washoe County over the past 15 years:

- **December 29, 2004 – January 10, 2005**: Severe winter storm in Northern Nevada, prompting FEMA to designate 16 counties for federal funding to alleviate the cost for emergency protective measures.
- **February 25, 2011**: Winter storm with up 18 inches of snow and 50-mile-per-hour winds, causing multiple car accidents, two injuries, and roughly $250,000 in damages.
- **January 13–14, 2013**: Prolonged winter temperatures led to Governor Sandoval declaring a state of emergency, and subzero temperatures were responsible for deaths across the state, including in Reno, Nevada.
- **November 9–10, 2015**: Severe winter storm resulted in downed power lines due to heavy, wet snow, and over 35,000 customers were without power in Washoe County.
- **January 30–31, 2016**: Snow totals of 4 to 8 inches around Reno/Sparks area. Whiteout conditions occurred due to heavy lake-effect snow off Pyramid Lake.

Extent and Probability

Typical severe storm events are handled at the city or county level, can disrupt service for a period of days to weeks, and can have economic impacts on a statewide scale. Considering a worst-case scenario, a severe storm event could require federal level support, could impact critical facilities and disrupt services for more than 20 days, and could have nationwide economic impacts.

Future Probability Trend – The future probability of severe storms is **high**, and the potential impact from future climate conditions could increase the risk of severe storm events. However, since severe storms occur each year, Sparks has a number of mechanisms in place to promote safety, as described in the Vulnerability section below.

Vulnerability

Vulnerabilities from winter storms include those related to power outages and impairments to transportation. Because nearly all social and economic activity is dependent on transportation, snow can have a serious impact. Road closures and hazardous conditions can delay or prevent emergency vehicles from responding to calls. Vehicle accidents rise among those who try to drive. Power outages can result from physical damage to electrical infrastructure as a result of ice or snow, downed trees, or debris, or from increases in demand beyond the capacity of the electrical system.

Power outages may disrupt businesses, especially facilities without back-up generators, potentially increasing the economic impact of severe storm events. Members of the community who are isolated or have disabilities may be more vulnerable, especially those that may be trapped in their homes from power failures, heavy snow and ice, and debris from falling trees and power lines.

Severe Storms (Winter Storm)

Snow storms can also adversely impact employees without certain benefits, as closures may result in unpaid time away from work.

The City mitigates some vulnerability through planning. Per the 2014–2015 City of Sparks Snow and Ice Control Plan—accessed via the City of Sparks website—the City of Sparks roadway network consists of 665 lane miles and is divided into six snow routes, with priority given to arterial and collector streets along with school zones and bus routes. Crews (including a supervisor, seven truck drivers, one heavy equipment operator, and one mechanic) have been identified to work alternative shifts to maintain coverage during an emergency. Contracts are in place for support if snow exceeds 6 inches. At 10 inches, the City Manager can declare a Snow Emergency through the Inter-local Agreement for Emergency Snow Removal Plan, which gives local jurisdictions, including the City of Sparks, the ability to coordinate resources in the event of a snow emergency. When weather conditions severely impede vehicular traffic in the Truckee Meadows, the County and City Managers can jointly declare a snow emergency. The three agencies can then pool resources to ensure the continuation of emergency and public safety agency operations on designated snow routes.

Recent Development Trends

- **Economic:** Increased regional economic development increases the potential for disruptions during and after severe storm events. (Increased Vulnerability)
- **Land Use:** The County's upward trend in development increases the overall strain on responding to winter storm impacts at various locations. (Increased Vulnerability)
- **Future Land Use:** The city's increasing population trends put more individuals and assets at risk from severe storms. (Increased Vulnerability)

3.3.7 Criminal Acts and Terrorism

Criminal Acts and Terrorism

Probability	Magnitude	Frequency	Onset	Duration	Average	Rank
3.00	3.00	2.00	5.00	2.00	3.25	5

Location

Any populated area can be impacted by acts of violence. These areas include, but are not limited to, shopping centers, business centers, financial districts, clinics/hospitals, schools, and government offices and buildings. The Nugget Casino or a crowd-drawing event like the Best in the West Nugget Rib Cook-off are examples of potential locations.

Past Occurrences/History

- October 21, 2013: A 12-year old student opened fire with a semi-automatic handgun at Sparks Middle School, injuring two students and killing a teacher.

Extent and Probability

It is difficult to estimate the extent or probability of acts of violence. Nonetheless, it can be deduced that active threat could affect all populated areas in Washoe County; government facilities and schools may be most likely targeted for acts of violence and acts of terrorism.

Criminal Acts and Terrorism

Future Probability Trend – Future weather conditions have no direct connections to acts of violence and terrorism. However, increased development and urbanization have the potential to **increase** the probability of a future active threat.

Vulnerability

County structures, schools, government buildings, or other public gathering places or public events would likely be top targets for acts of terrorism. Many acts of violence also occur in public gathering places. Acts of violence could have an impact on the community in the following ways: loss of human life; damage to buildings and structures; temporary displacement during the threat and/or investigation; stress on medical, emergency response, and security services; decrease in economic activity and hospitality business after the event; psychological and emotional trauma; and an increased need for emergency services and funding.

Recent Development Trends

- **Economic:** Criminal Acts pose no new risk to economic interests. Regional employers and governments, including Reno-Tahoe International Airport; University of Nevada, Reno; and the Reno-Sparks Indian Colony have held training workshops to enable employees to respond to active assailant incidents. (Decreased Vulnerability)
- **Land Use:** Criminal Acts pose no new risk to land use. (Unchanged Vulnerability)

Future Land Use

Because criminal acts tend to target areas of higher population, as Sparks grows, its vulnerability will increase. (Increased Vulnerability).

3.4 Vulnerability Assessment

3.4.1 Asset Inventory

Local assets that may be affected by hazards include residents, properties, and utilities and infrastructure. GIS data from federal, state, and local databases was used to inform the vulnerability assessment and identify critical infrastructure. Section 4.4.2 of the Basic Plan and Appendix F1 in the Basic Plan discuss the sources and types of data used in the HMP. Data collection for the vulnerability assessment was complicated by the fact that the region has never comprehensively identified critical infrastructure; therefore, the list of critical infrastructure in the city of Sparks may be incomplete. Similarly, valuation information has not been compiled by the region, so valuation data was not available to be included in the vulnerability assessment. Washoe County and its partners are committed to continuing to refine and build on the list of critical infrastructure over the next five years to improve the data provided in the next plan update.

3.4.2 Repetitive Loss Properties

No repetitive loss properties currently exist in the city of Sparks.

3.4.3 Exposure Assessment

Table 3-4 summarizes the exposure of critical facilities in the city of Sparks to hazards that can be mapped.

Table 3-4 Exposure Assessment

Type	Name	Address	Jurisdiction	Flood Zone	Seismic Ground Motion Hazards		Landslide Susceptibility	Wildland Fire Hazard Potential
					with 2 Percent Probability	with 10 Percent Probability		
Dam	Sun Valley Detention Dam	N/A	Sparks	--	48-64	32-48	low	1
Dam	Spanish Springs Stormwater Detention Facility	N/A	Sparks	100-year Flood Zone	48-64	32-48	low	1
Dam	Sidehill Detention Basin	N/A	Sparks	--	48-64	32-48	low	1
Dam	D'andrea Ranch Hole #6 Pond	N/A	Sparks	--	48-64	32-48	low	1
Dam	Wetlands at Kiley Ranch	N/A	Sparks	--	48-64	32-48	low	1
Dam	North Spanish Springs Flood Sediment Basin	N/A	Sparks	100-year Flood Zone	48-64	32-48	low	1
Dam	North Spanish Springs Flood Detention Facility	N/A	Sparks	100-year Flood Zone	48-64	32-48	low	1
Dam	D'andrea Detention Basin #1	N/A	Sparks	--	48-64	32-48	low	1
Dam	D'andrea Detention Basin #3	N/A	Sparks	--	48-64	32-48	low	1
Fire Station	Sparks Fire Department Station 2	2900 North Truckee Lane	Sparks	--	48-64	32-48	low	1
Fire Station	City Of Reno Fire Department Station 17	500 Rockwell Boulevard	Sparks	--	48-64	32-48	low	1
Fire Station	Sparks Fire Department Station 3	1750 East Greg Street	Sparks	100-year Flood Zone	64+	48-64	low	1
Fire Station	Wadsworth Volunteer Fire Department 225	400 Stampmill Road	Sparks	--	48-64	32-48	sus-mod	1
Fire Station	Sparks Fire Department Station 4	1450 Disc Drive	Sparks	--	48-64	32-48	low	1
Fire Station	Sparks Fire Department Station 5	6490 Vista Boulevard	Sparks	--	48-64	32-48	low	1
Fire Station	Sparks Fire Department Station 1	1605 Victorian Avenue	Sparks	--	48-64	48-64	low	1

Table 3-4 Exposure Assessment

Type	Name	Address	Jurisdiction	Flood Zone	Seismic Ground Motion Hazards		Landslide Susceptibility	Wildland Fire Hazard Potential
					with 2 Percent Probability	with 10 Percent Probability		
Fire Station	Hungry Valley Volunteer Fire Department	Eagle Canyon Drive	Sparks	--	48-64	32-48	low	1
Police Station	Sparks Police Department	1701 East Prater Way	Sparks	--	64+	32-48	low	1

Key:
-- = Critical facility is not in a mapped flood zone
N/A = Information not available

3.5 Land Use and Development Trends

FEMA	**D1.** Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))

Sparks's population continues to grow as economic development and more moderate housing prices compared to California draw new residents to the region. Since the 1990s, Sparks has been expanding to the north into the Spanish Springs Valley, where most new housing is being constructed. This relatively new development may be vulnerable to key hazards outlined in the HMP, particularly wildland fires.

The vulnerability subsection of each hazard profile in Section 3.3 outlines recent development trends to illustrate ways in which vulnerability may have changed over the past five years. Vulnerability changes have been measured for economic interests and land use trends. Each measure has been identified as having an increased, decreased, or unchanged vulnerability. Table 3-5 provides a snapshot of how vulnerability has changed since development of the 2015 HMP.

Table 3-5 Recent Development Trends

Hazard	Economic	Land Use
Severe Storms (Windstorm)	-	+
Flooding	+	+
Wildland Fire	+	+
Earthquake	+	+/-
Criminal Acts and Terrorism	-	=
Energy Emergency	-	+
Hazardous Materials Incident and Transport of Radiological Waste	=	-

+ Increased vulnerability
- Decreased vulnerability
+/- Increased vulnerability, but actions taken to decrease vulnerability
= Unchanged vulnerability

4. CAPABILITY ASSESSMENT

FEMA	**C1.** Does the plan document [the City of Spark's] existing authorities, policies, programs, and resources, and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))

4.1 Human and Technical Resources

Table 4-1 describes the City's human and technical capabilities to engage in and improve mitigation planning and program implementation.

Table 4-1 Human and Technical Resources Integrated with Hazard Mitigation

Resource	Department	Tasks and Activities Integrated into Mitigation Planning
City Manager	City Manager's Office	Ensure that the mitigation program is incorporated into the City's daily business
Emergency Manager	City Manager's Office	Oversee the mitigation program and encourage integration of mitigation planning into all City activities
Housing Specialist	Housing Program	Administer funds for rehabilitation of existing homes and construction of low-income housing
Parks & Recreation Director	Parks & Recreation Department	Manage, maintain, and improve the City's parks and open space areas
City Engineer	Engineering Division	Inspects development projects to ensure compliance with design standards, oversees floodplain management, and provides engineering support for City-owned facilities
Assistant Community Services Director	Planning and Zoning Division	Integrate risk reduction into land use plans and zoning and encourage integration of mitigation into private development plans
Grants Management and Acquisition Team	Management Services Department	Manage grant applications and project budgets for City programs
GIS Manager	Community Services Department	Integrate hazard data into mapping capabilities of the City
Fire Chief	Fire Department	Review new development for compliance with fire codes and work with private property owners to integrate mitigation
Other		
Planners and engineers	Community Services Department	Integrate risk assessments and mitigation tactics into ongoing City projects
Construction professionals	Public Works Department	Manage structural mitigation activities for City facilities, parks, streets, and sewer infrastructure
Hazardous Materials Planning	Washoe County Local Emergency Planning Committee	Develop capacity for local jurisdictions to prepare for and respond to hazardous materials incidents

4.2 Financial Resources

The City maintains many fiscal and financial resources to support its mitigation program. Table 4-2 identifies specific resources accessible for use.

Table 4-2 Accessible Financial Resources

Financial Resource	Accessible?
Community Development Block Grants	Yes
Capital Improvement Project Funding	Yes
Insurance	Yes, liability self-insurance
User fees for utility services	Yes, for sanitary sewer services
Incur debt	Yes
State-sponsored grant programs	Yes

Table 4-3 identifies current and potential local sources of funding to implement identified mitigation actions contained within the HMP. In addition, funding is also available from the State of Nevada and potentially through Washoe County.

Table 4-3 Financial Resources Integrated with Hazard Mitigation

Funding Source	Fund Administrator	Description
City of Sparks		
General Fund	City Manager's Office	Funding available for mitigation efforts supporting government-wide projects and activities.
Impact Fee Service Area 1 Fund	City Manager's Office	Funding available for construction of sanitary sewers, flood control, parks, and public facilities in Service Area 1.
Stabilization Fund	City Manager's Office	Reserve fund to stabilize the operation of the City in the event of a natural disaster.
Department Funding and Capital Projects Funds	Specific Departments	Funding available for the mitigation efforts of a specific department.
Federal		
Pre-Disaster Mitigation Program	Nevada Division of Emergency Management	Provides funding to develop hazard mitigation plans and implement mitigation actions contained within.
Hazard Mitigation Grant Program	Nevada Division of Emergency Management	Post-disaster funds for hazard reduction projects in jurisdictions impacted by recent disasters.
Flood Mitigation Assistance Program	Nevada Division of Emergency Management	Provides funds for flood mitigation on buildings that carry flood insurance and have been damaged by flooding.
Community Development Block Grant Program	U.S. Department of Housing and Urban Development/Governor's Office of Economic Development	Funds projects that benefit low- and moderate-income communities, prevent or eliminate slums or blight, or meet urgent community development needs posing a serious and immediate threat to community health or welfare.
Emergency Management Performance Grants Program	FEMA/Nevada Division of Emergency Management	Provides funding to states for local or tribal planning, operations, acquisition of equipment, training, exercises, and construction and renovation projects.

Table 4-3 Financial Resources Integrated with Hazard Mitigation

Funding Source	Fund Administrator	Description
Flood Mitigation Assistance	Nevada Division of Emergency Management	Provides funding to support development of the flooding hazard portion of state and local mitigation plans and up to 100% of the cost of eligible mitigation activities. This funding is only available to communities participating in the National Flood Insurance Program.
Earthquake State Assistance Program	National Earthquake Hazards Reduction Program/ Nevada Resiliency Advisory Committee/ Nevada Division of Emergency Management	Funds activities including seismic mitigation plans; seismic safety inspections of critical structures and lifelines; updates of building codes, zoning codes, and ordinances; and earthquake awareness and education.
State Fire Assistance Program	U.S. Forest Service/ Nevada Division of Forestry	Provides funding opportunities for local wildland-urban interface planning, prevention, and mitigation projects, including fuels reduction work, education and prevention projects, community planning, and alternative uses of fuels.
Risk Mapping, Assessing, and Planning	FEMA	Provides funding and technical support for hazard studies, flood mapping products, risk assessment tools, mitigation and planning, and outreach and support.
State		
Emergency Assistance Account	Nevada Division of Emergency Management	Provides support to state agencies and local jurisdictions during declared emergencies at the state or local level.
Disaster Relief Account	Interim Finance Committee	Special account intended to stabilize the operation of the state government following a disaster. Used to match federal funding for declared disasters.
Wildfire Emergency and Mitigation Funds	Nevada Division of Forestry/ Nevada Division of Emergency Management	Administers funding from FEMA, Bureau of Land Management, and U.S. Forest Service for certain types of wildland fire emergency and mitigation funding.
Earthquake Mitigation Funds	Nevada Resiliency Advisory Committee/ Nevada Division of Emergency Management	Allocates FEMA money for earthquake mitigation efforts.
Conservation Reserve Program	USDA Farm Service Agency and Natural Resource Conservation Service	Retires eligible cropland from agricultural production and plants the land with permanent grass cover to reduce wind erosion and dust hazards.
University of Nevada, Reno partnership with the U.S. Geological Survey (USGS) National Landslide Hazards Program	USGS/University of Nevada, Reno	Conducts studies of landslide hazards
Western States Fire Managers Grants	U.S. Forest Service/ Nevada Division of Forestry	Provides funding for fuel reduction, restoration of fire adapted ecosystems, prevention education, and community wildland fire protection planning.
Landscape Scale Restoration Grants	U.S. Forest Service/ Nevada Division of Forestry	Provides funding for projects that cross property ownership, management and/or jurisdictional boundaries and involve

Table 4-3 Financial Resources Integrated with Hazard Mitigation

Funding Source	Fund Administrator	Description
		collaborative efforts among multiple stakeholders to address issues identified in Nevada's Forest Action Plan.
Hazardous Fuels-Community Protection Grants	U.S. Forest Service/ Nevada Division of Forestry	Provides funding for priority fuels management projects identified in a Community Wildfire Protection Plan that are adjacent to a recent, current, or planned project on U.S. Forest Service lands.
Regional Conservation Partnership Program	U.S. Forest Service/ Nevada Division of Forestry	Provides grant funds for wildland fire restoration and other sagebrush ecosystem improvements, including weed and pre-emergent treatments; riparian improvements; prescribed, targeted, or deferred grazing; and brush management.
Nevada State General Fund	Nevada State Legislature	Nevada State General Fund money is used to pay the labor costs of state employees working to support statewide and local hazard mitigation activities and as non-federal cost share for federally funded projects.
Other		
Community Planning Assistance Teams	American Planners Association Foundation	Provides pro bono technical assistance for planning frameworks or community vision plans for communities needing extra assistance. Local governments are responsible for travel costs.

4.3 Legal and Regulatory Resources

Table 4-4 describes the legal and regulatory capabilities, including plans, policies, and programs that have integrated hazard mitigation principles into their operations.

Table 4-4 Legal and Regulatory Resources Integrated with Hazard Mitigation

Capability Type	Capability	Description	Key Accomplishments (2015-2019)	Hazard Mitigated
Plans	Sparks Comprehensive Plan (2016)	Guides provision of all City services, infrastructure needs and future development through 2030.	▪ Plan update completed in 2016	All
	Capital Improvement Plan	Describes and provides budget and schedule information for the City's planned capital improvement projects.	▪ Continued plan implementation	All
	Regional Emergency Operations Plan	Outlines roles and responsibilities of City government in mitigating potential hazards.	▪ Plan updated to incorporate new changes in risk	All
	Parks and Recreation Comprehensive Plan	Guides construction, maintenance (including fire prevention), and operation of the city's parks and open spaces.	▪ Continued plan implementation	Wildland Fire Flooding

Table 4-4 Legal and Regulatory Resources Integrated with Hazard Mitigation

Capability Type	Capability	Description	Key Accomplishments (2015-2019)	Hazard Mitigated
Policies	Floodplain Management Ordinance	Regulates development within floodplains to promote public health and safety.	▪ Continued policy implementation	Flooding
	Special Purpose Ordinance (development on slopes, hilltops and ridges)	Establishes requirements for conditional use permit applications.	▪ Continued policy implementation	Flooding Severe Storms Earthquake Landslide
	Subdivision Ordinance	Includes design standards for subdivisions and roads, including standards for drainage	▪ Continued policy implementation	Flooding Severe Storms
	Zoning Code	Regulates development on hills and slopes and in the vicinity of the Truckee River. Requires applicants to identify if a proposed development is located within the 100-year flood zone.	▪ Continued policy implementation	Landslide Earthquake Flooding Severe Storms
	International Fire Code	Adopts the International Fire Code, 2018 edition, as the City's Fire Code.	▪ Continued policy implementation	Wildland Fire
Programs	Mutual Aid Agreements	Standing agreements to provide support to partners in times of need.	▪ Increased capacity and capability through partnership	All

4.4 National Flood Insurance Program Participation

FEMA	**C2.** Does the Plan address [the City of Spark's] participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3))

The City participates in the National Flood Insurance Program (NFIP). In 2019, the NFIP provided the following information on flooding losses:

Total Losses	Closed Losses	Open Losses	Losses Closed without Payment	Total Payments
225	186	0	39	$17,948,910.82

No repetitive loss properties are located within the city of Sparks.

4.5 Integration of Mitigation into Existing Planning Mechanisms

Integration of the principles of mitigation into the City's daily operations and ongoing planning activities is a priority of the City's mitigation program. These activities will support:

- Raising awareness of the importance of hazard mitigation for the whole community;
- Facilitating an understanding that hazard mitigation is not just an "emergency services" function and building ownership of mitigation activities across the organization;
- Reduction in duplication or contradiction across City plans; and
- Maximization of planning resources through linked or integrated planning efforts.

The City is encouraged to integrate mitigation actions into planning mechanisms including:

- Budget decision-making;
- Building and zoning ordinances and decision-making;
- Emergency planning mechanisms; and
- Economic developing planning and decision-making.

4.5.1 Existing Plans

FEMA	**C6.** Does the Plan describe a process by which [the City of Sparks] will incorporate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))

The following existing plans provide ongoing opportunity for integration of hazard mitigation and department leadership will work with plan owners and stakeholders when these plans are updated to consider hazard mitigation data and principles and ensure plans align with the HMP.

The **Ignite Sparks Comprehensive Plan** guides provision of all City services, infrastructure needs, and development through the planning horizon of 2030 (City of Sparks 2016). The plan establishes goals and policies as part of a policy framework addressing elements including managing growth, connectivity, community facilities and services, community character, housing and affordability, resiliency and sustainability, and economic vitality. The plan includes the following goals and policies related to hazard mitigation:

- Policy H4: Enforce property maintenance ordinances in residential areas.
- Goal RC2: Assess, prepare for and mitigate the impacts of environmental changes, including extended droughts and extreme weather events.
- Goal RC4: Evaluate and prepare for natural disasters and mass-casualty events.
- Policy RC1: Reduce per capita potable water use through conservation, water reclamation and reuse and other water resource stewardship programs.
- Policy RC3: Maintain the Truckee River corridor as a trail and open space system and require new development to accommodate public trail and river access.
- Policy RC6: Implement "Best Management Practices," including but not limited to Low Impact Development Practices, to control urban stormwater runoff.

- Policy RC7: Prevent and mitigate the degradation or destruction of wetlands.
- Policy RC8: Plan for and adapt to increased drought, severe weather and other potential impacts of climate variability on the water supply.
- Policy RC13: Support regional efforts to develop and implement a strategy to diversify the energy sources, especially solar energy, available to Sparks residents and businesses.
- Policy RC15: Reduce the threats flooding poses to public safety and property.
- Policy RC16: Evaluate and mitigate the impacts on surrounding areas of new development within floodplains.
- Policy RC18: Protec the public from the impacts of earthquakes and landslide/debris flow areas through compliance with building codes and federal standards.
- Policy RC19: Protect the urban-wildland interface from wildfire hazards and require developments to reduce intrusion into fire-prone areas by clustering or other design methods.
- Policy RC22: Maintain development restrictions and standards in the Sparks Municipal Code as necessary to conform to policies in the Truckee Meadows Regional Plan pertaining to Development Constraints Areas and for slopes with gradients over 30%.

It is anticipated that future updates of the Comprehensive Plan will reflect mitigation strategies and actions recommended in the current HMP.

The 5-Year **Capital Improvement Plan** outlines the City's planned capital improvement projects, providing project descriptions, budget information, and schedules. The City will integrate hazard mitigation strategies into the capital improvement planning process by taking hazard risks and vulnerabilities into consideration when siting and designing capital projects, updating the CIP to include high priority infrastructure projects identified in the HMP, and developing new infrastructure projects to address emerging hazards during the 5-year hazard mitigation planning period.

The **Comprehensive Parks and Recreation Plan** guides construction, operation, and maintenance of the city's parks and open space areas. One recommendation in the plan related to hazard mitigation is to focus maintenance activities in natural areas, including Wedekind Regional Park and the greenbelts, on noxious weed abatement, fire prevention, and similar activities. Future updates of the plan could include additional hazard mitigation strategies, such as:

- Managing fuels through targeted grazing or other methods of fuel reduction (Mitigation Actions WF-9, WF-10);
- Completing drainage ditch improvements (Mitigation Actions FL-9, FL-14); and
- Implementing the current Truckee Meadows Water Authority Conservation Plan, including transitioning to less water-intensive landscaping (Mitigation Action DT-2).

5. MITIGATION STRATEGY

FEMA	**C4.** Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for the [City of Sparks] being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))

5.1 Review of 2015 Hazard Mitigation Actions

As part of the mitigation strategy update, all mitigation actions identified in the 2015 plan were evaluated to determine what the status of the action was and whether any ongoing or incomplete actions should be included as actions in the 2020 plan update. The MPT worked through each previous action during MPT Meeting #4 to document steps taken to fulfill the action.

See Appendix A in the Basic Plan for an overview of the status of all actions from the 2015 plan update.

5.2 2020-2025 Mitigation Implementation Plan

FEMA	**C5.** Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by [the City of Sparks]? (Requirement §201.6(c)(3)(iii))

The mitigation implementation plan lays the groundwork for how the mitigation plan will be incorporated into existing planning mechanisms and how the mitigation actions will be prioritized, implemented, and administered by the City. The implementation plan includes both short-term strategies that focus on planning and assessment activities, and long-term strategies that will result in ongoing capability or structural projects to reduce vulnerability to hazards.

See Appendix A in the Basic Plan for Mitigation Action Worksheet instructions and completed Mitigation Action Worksheets for each action listed in Table 5-1.

Table 5-1 2020-2025 Mitigation Implementation Plan

Action No.	Mitigation Action	Action Status	Type of Action	Goals Supported (Objectives)	Lead Department	Supporting Departments	Timeline	Hazards Addressed	Anticipated Cost	Funding Available?	Funding Source	STAPLEE Score	Mitigation Effectiveness Score	TOTAL SCORE
MH-5	Build an additional fire/rescue station (Station 6) so response times are equal to 4 minutes of travel time. (City of Sparks)	New	Infrastructure/Capital Project	2 (2.1), 5 (5.1)	Sparks Fire Department	• Sparks City Council • Sparks Planning and Zoning • Sparks Engineering Services • Sparks Purchasing • Sparks Public Works	1 – 3 years	All Hazards	• Station – $4–5 million • Apparatus – $1 million • Personnel (ongoing) – $1.35 million per year	No	Grant Existing Budget	18	6	24
MH-9	Implement and/or utilize Community Emergency Response Teams, as well as the Citizens Homeland Security Council, to shift burden from sworn officers, where appropriate. (All Partners)	Existing (2015 action)	Preparedness and Response	2 (2.1), 6 (6.3)	All Jurisdictions – • Emergency Managers • Police Departments	-	Immediate	All Hazards	Minimal, administrative staff already budgeted for	Yes	Existing Budget	18	4	22
MH-15	Address needed tech-nological updates and repairs for the City of Sparks Mobile Com-mand Center, includ-ing providing new radios, repairing the telescoping pole for the camera, and providing other up-dated equipment. (City of Sparks)	Existing	Infrastructure/Capital Project	2 (2.1), 3 (3.1)	Sparks Police Department	-	1 – 3 years	All Hazards	$100,000	No	Grant Existing Budget	17	6	23
MH-16	Develop an evacua-tion plan for northern Sparks, including evacuation routes, available emergency services, a communi-cations strategy, animal evacuation support, and numer-ous other support functions. (City of Sparks)	New	• Education and Awareness • Preparedness and Response	1 (1.1), 6 (6.3)	Sparks Community Services	• Sparks Police Department • Sparks Fire Department • Washoe County Emergency Management and Homeland Security	1 – 3 years	All Hazards	No/minimal cost	No	Existing Budget	18	2	20
WF-8	Develop standardized policies and regula-tions across Washoe County governing open burning. (City of Sparks)	New	Plans and Regulations	5 (5.3), 6 (6.1)	Sparks Fire Department	• Washoe County Air Quality • Regional Fire Districts	Less than 1 year	Wildland Fire	Staff time	No	Existing Budget	15	2	17
WF-9	Manage fuels through targeted grazing on an as-needed basis. (City of Sparks)	New	Natural Systems Protection	5 (5.3)	Sparks Fire Department	• Sparks Purchasing • Sparks Public Works	1 – 3 years	Wildland Fire	$50,000/year	No	Grant	16	10	26

Table 5-1 2020-2025 Mitigation Implementation Plan

Action No.	Mitigation Action	Action Status	Type of Action	Goals Supported (Objectives)	Lead Department	Supporting Departments	Timeline	Hazards Addressed	Anticipated Cost	Funding Available?	Funding Source	STAPLEE Score	Mitigation Effectiveness Score	TOTAL SCORE
WF-10	Partner with Nevada Division of Forestry (NDF) crews on fuel reduction on an as-needed basis. (City of Sparks)	New	Natural Systems Protection	5 (5.3)	Sparks Fire Department	Sparks Public Works	1 – 3 years	Wildland Fire	$5,000/year	No	Grant	17	10	27
WF-11	Place containers around the City of Sparks for residents to dump wood and brush from their yards. (City of Sparks)	New	Preparedness and Response	5 (5.3), 6 (6.3)	Sparks Fire Department	Sparks Public Works	1 – 3 years	Wildland Fire	$150,000/year	No	Grant	18	6	24
WF-12	Partner with NDF to develop educational materials and multi-media blasts. (City of Sparks)	New	Preparedness and Response	5 (5.3), 6 (6.3)	Sparks Fire Department	• Sparks Public Information/ Community Relations • NDF	1 – 3 years	Wildland Fire	$25,000	No	Grant	19	6	25
WF-13	Adopt 2018 wildland fire code County-wide. (All Partners)	New	Plans and Regulations	5 (5.2), 6 (6.2)	Regional Fire Protection Districts	-	Immediate	Wildland Fire	No/minimal cost	Yes	Existing Budget	20	2	22
WF-16	Review and update (as needed) evacuation plans for communities in wildland fire-prone areas and hold evacuation drills at least once every two years. (All Partners)	Existing (2015 action)	• Plans and Regulations • Preparedness and Response	5 (5.3), 6 (6.3)	Regional Fire Protection Districts	Washoe County Emergency Management and Homeland Security	Immediate	Wildland Fire	$10,000/plan. $50,000/year	Yes	Existing Budget	19	6	25
FL-1	Update flood maps to incorporate recently completed flood mitigation projects along the Truckee River in Sparks. (Washoe County, City of Reno, City of Sparks, Truckee River Flood Management Authority [TRFMA])	New	Preparedness and Response	5 (5.4)	• Washoe County Emergency Management and Homeland Security • Reno Fire Department • Sparks Fire Department	TRFMA	< 1 year	Flooding	< $10,000	No	Existing Budget Grant	17	2	19
FL-7	Install larger drainage pipes to reduce flooding in and around Baring Blvd. (City of Sparks)	Existing	Infrastructure/ Capital Project	5 (5.5)	Sparks Public Works	• Sparks Engineering Services • Sparks Purchasing • Sparks City Council • Sparks Public Safety	3 – 5 years	Flooding	$50,000/drainage pipe	No	Grant	17	8	25

Table 5-1 2020-2025 Mitigation Implementation Plan

Action No.	Mitigation Action	Action Status	Type of Action	Goals Supported (Objectives)	Lead Department	Supporting Departments	Timeline	Hazards Addressed	Anticipated Cost	Funding Available?	Funding Source	STAPLEE Score	Mitigation Effectiveness Score	TOTAL SCORE
FL-8	Increase flow capacity at bottle neck sections of the Truckee River in the city of Sparks. (City of Sparks)	Existing	Infrastructure/ Capital Project	5 (5.7)	Sparks Public Works	• Sparks Engineering Services • Sparks Purchasing • Sparks City Council • Sparks Public Safety	3 – 5 years	Flooding	$2,500,000	No	Grant	15	8	23
FL-9	Complete drainage ditch improvements. (Washoe County, City of Reno, City of Sparks, Reno Sparks Indian Colony [RSIC], Pyramid Lake Paiute Tribe [PLPT])	Existing (2015 action)	Infrastructure/Capital Project	5 (5.5)	All Jurisdictions – Public Works	-	1 – 3 years	Flooding	Unknown	No	Grant Existing Budget	19	8	27
FL-14	Complete improve-ments to address undersized drainage ditches and systems County-wide. (Washoe County, City of Reno, City of Sparks, RSIC, PLPT)	Existing (2015 action)	Infrastructure/Capital Improvement	5 (5.5)	All Jurisdictions – • Public Works • Engineering	-	3 – 5 years	Flooding	$20/linear foot of drainage ditch	No	Grant Existing Budget	17	8	25
FL-17	Create a master Emergency Action Plan for dams in the city of Sparks to create consistency and eliminate the confusion caused by plans in different formats. (City of Sparks)	New	• Plans and Regulations • Preparedness and Response	5 (5.6)	• Sparks Community Services • Sparks Engineering Services	-	1 – 3 years	Flooding	$100,000	Anticipated	Existing Budget	15	2	17
FL-18	Construct a storm drain pump station and force main and gravity main improve-ments at the intersec-tion of Vista Blvd. and Prater Way to address flash flooding at this intersection. (City of Sparks)	New	• Infrastructure/Capital Project • Preparedness and Response	1 (1.2), 5 (5.5)	• Sparks Community Services • Sparks Engineering Services	-	1 – 3 years	Flooding	$150,000	Yes	Existing Budget	17	10	27

Table 5-1 2020-2025 Mitigation Implementation Plan

Action No.	Mitigation Action	Action Status	Type of Action	Goals Supported (Objectives)	Lead Department	Supporting Departments	Timeline	Hazards Addressed	Anticipated Cost	Funding Available?	Funding Source	STAPLEE Score	Mitigation Effectiveness Score	TOTAL SCORE
FL-19	Complete a feasibility study, including a geotechnical investi-gation, hydraulic model, and outfall recommendations, to investigate detaining stormwater behind the Spanish Springs Dam to meter discharge to the North Truckee Drain during floods and winter storms. (City of Sparks)	New	• Plans and Regulations • Infrastructure/Capital Project	5 (5.5)	• Sparks Community Services • Sparks Engineering Services	-	1 – 3 years	Flooding	$150,000	Anticipated	Existing Budget	17	2	19
EQ-7	Conduct study to determine City of Sparks facilities in need of reinforcement to withstand earth-quakes. (City of Sparks)	New	Infrastructure/Capital Project	5 (5.9)	Sparks Engineering Services	• Sparks Purchasing • Independent Contractors	3 – 5 years	Earthquake	$100,000	No	Grant	17	2	19
EQ-8	Reinforce City of Sparks facilities not meeting seismic standards based on seismic study. (City of Sparks)	New	Infrastructure/Capital	5 (5.9)	Sparks Engineering Services	• Sparks Purchasing • Independent Contractors	3 – 5 years	Earthquake	Unknown	No	Grant	17	10	27
EQ-9	Complete seismic strength evaluations of critical facilities in all jurisdictions, including schools, community colleges, public infra-structure, and other critical facilities, to identify vulnerabilities for mitigation to meet current seismic stand-ards. Mothball or demolish life-threaten-ing buildings, particu-larly unreinforced masonry buildings. (Washoe County, City of Reno, City of Sparks, RSIC, PLPT)	Existing (2015 action)	• Infrastructure/Capital Project • Preparedness and Response	5 (5.9)	All Jurisdictions – • Public Works • Engineering • School Districts	-	1 – 3 years	Earthquake	Unknown	Anticipated	Grant Existing Budget	15	10	25
EQ-10	Assess, repair, and/or replace infrastructure that may fail during earthquakes (e.g., Keystone Ave. Bridge). (Washoe County, City of Reno, City of Sparks, RSIC, PLPT)	Existing (2015 action)	Infrastructure/Capital Project	1 (1.2), 5 (5.9)	All Jurisdictions – • Public Works • Engineering	-	1 – 3 years	Earthquake	Unknown	No	Grant Existing Budget	16	10	26

Table 5-1 2020-2025 Mitigation Implementation Plan

Action No.	Mitigation Action	Action Status	Type of Action	Goals Supported (Objectives)	Lead Department	Supporting Departments	Timeline	Hazards Addressed	Anticipated Cost	Funding Available?	Funding Source	STAPLEE Score	Mitigation Effectiveness Score	TOTAL SCORE
EE-2	Replace wooden power poles in high risk areas with poles made of steel or an alternative material. (Washoe County, City of Reno, City of Sparks)	New	Infrastructure/Capital Project	3 (3.3), 4 (4.1)	NV Energy	• Washoe County Community Services Department • Reno Community Development • Sparks Community Services	1 – 3 years	Energy Emergency Earthquake Flooding Severe Storms Wildland Fire	$3,000/pole	No	Grant	17	8	25
EE-3	Replace transmission and distribution cables with alternative cables able to withstand fallen branches and snow loading. (Washoe County, City of Reno, City of Sparks)	New	Infrastructure/Capital Project	4 (4.1)	NV Energy	• Washoe County Community Services Department • Reno Community Development • Sparks Community Services	1 – 3 years	Energy Emergency Earthquake Flooding Severe Storms Wildland Fire	$1,000/1,000 Linear Feet	No	Grant	16	8	24
EE-5	Install back-up generators for critical infrastructure and facilities along with other measures to improve reliability (e.g., alarms, meters, remote controls, and switchgear upgrades). (All Partners)	Existing (2015 action)	Preparedness and Response	3 (3.3), 4 (4.1)	All Jurisdictions – Emergency Management	Public Works	3 – 5 years	Energy Emergency	$100,000 per design and installation	No	Grant	18	8	26
CA-1	Implement measures to prepare for a potential active shooter incident, including new security measures, training and exercises, improved partnerships with law enforcement agencies, and policy changes (ex. Prohibiting open carry). (All Partners)	New	• Infrastructure/Capital Project • Education and Awareness • Preparedness and Response	5 (5.10)	• Law Enforcement Agencies • Facility Managers	• Local Elected Officials • Federal Agencies	1 – 3 years	Criminal Acts and Terrorism	$50,000/year. $120,000/officer	Anticipated	Existing Budget Grant	16	6	22
CA-3	Install crash-worthy type barriers, barricades, and bollards in downtown Sparks to help reduce the risk of errant or intentional vehicle attacks through large crowds at special events. (City of Sparks)	New	Infrastructure/Capital Project	5 (5.11)	• Sparks Community Services • Sparks Engineering Services	• Sparks Police Department • Sparks Fire Department	1 – 3 years	Criminal Acts and Terrorism	$2,100,000	Anticipated	Existing Budget	16	10	26

Table 5-1 2020-2025 Mitigation Implementation Plan

Action No.	Mitigation Action	Action Status	Type of Action	Goals Supported (Objectives)	Lead Department	Supporting Departments	Timeline	Hazards Addressed	Anticipated Cost	Funding Available?	Funding Source	STAPLEE Score	Mitigation Effectiveness Score	TOTAL SCORE
DT-2	Implement current Truckee Meadows Water Authority Conservation Plan including encouraging transition to less water-intensive land-scaping on both public and private properties. (All Partners)	Existing (2015 action)	Education and Awareness	6 (6.3)	All Jurisdictions – • Water Utilities • Planning Departments	All Jurisdictions – Emergency Management	< 1 year	Drought	$50,000/year	No	Grant Existing Budget	17	4	21

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LIST OF TABLES AND FIGURES

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ACRONYMS

HMP	Hazard Mitigation Plan
I-80	Interstate 80
MMI	Modified Mercalli Intensity
MPT	Mitigation Planning Team
PG&E	Pacific Gas and Electric Company
Southern Pacific	Southern Pacific Railway Company
WUI	wildland-urban interface