City of Emigration Canyon

Jurisdictional Annex to the
Salt Lake County Hazard Mitigation Plan

Month XXXX | Draft X.X

EMIGRATION CANYON

Salt Lake County Emergency Management EM

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To participate in this multi-jurisdictional hazard mitigation plan (MJHMP) update for Salt Lake County (SLCo), the governing body of the city of Emigration Canyon passed a formal resolution, a copy of which is maintained at the local government offices.

Planning Process Contact Information

Table 1 provides information on the point of contact during the updating of the MJHMP.

Table 1: Contact Information for the City of Emigration Canyon

Name	Contact Information
Joe Smolka	**Phone: 801-560-3543 email:** smolka@ecmetro.org
Brian Buckhout	**Phone:** 925-315-1671 **email:** bbuckhout@unifiedfire.org

The city of Emigration Canyon has a fully integrated approach to hazard mitigation planning and program implementation. During the 2024 update process, the MJHMP participation roles in Table 2 were recorded.

Table 2: Participant List for the City of Emigration Canyon

Name	Title	Jurisdiction
Brian Buckhout	Municipal Emergency Planner	Unified Fire Authority
Brian Hartsell	Associate General Manager	Municipal Services District
Joe Smolka	Mayor	Emigration Canyon

Jurisdiction Profile

Date of Incorporation

Emigration Canyon became a metro township in January 2017.On May 1, 2024, it was converted to a city.

Location and Description

The city of Emigration Canyon is located east of Salt Lake City in the Wasatch Range. The city is approximately 18.22 square miles in area and is approximately 6,500 feet above sea level. Emigration Canyon is known for its historical significance, especially its role in the Mormon migration of the 19th century.

Population

The 2022 American Community Survey 5-Year Estimate from the U.S. Census Bureau records the population of the city of Emigration Canyon as 1,465 people.

Demographics

Most of the 1,465 people are between the ages of 65 and 74, with a median age of 50;1. 737 are males (50.3%) and 728 are females (49.7%). English is the primary language in 84% of homes,, with 6.4% Spanish, and 9.6% other languages.

Brief History

Emigration Canyon has a rich historical significance, due primarily to its role along a critical route during the westward migration of Mormon pioneers in the mid-19th century. The canyon was used by Mormon pioneers led by Brigham Young as they journeyed toward the Salt Lake Valley, making it an integral part of their trek. Eventually, Emigration Canyon developed into a community that reflects its historical roots while evolving with modern amenities and attractions. It is known for its scenic beauty and historical landmarks.

Climate

The city of Emigration Canyon experiences a continental climate (Dsa Köppen classification) characterized by dry, hot summers and cold winters. Average high temperatures are approximately 85°F in the summer and approximately 40°F in the winter. Rain each year is approximately 18 inches, and snowfall averages 67 inches.

Public Services

The city of Emigration Canyon offers a wide range of public services through the Greater Salt Lake Municipal Services District (MSD). The MSD oversees services including public works which encompasses the construction and maintenance of roads, snow removal, and street lighting. The MSD also handles planning and zoning, business licensing, inspections, emergency planning, and other municipal services.

Governing Body

The governing body of the city of Emigration Canyon consists of a Mayor and a five-member Council, who have the power to create and enforce laws including the authority to levy taxes.

Development Trends

Emigration Canyon has observed notable development trends. The adoption of the first General Plan in 2022 provided a strategic guide for planning and development, emphasizing key areas such as land use, transportation, economic growth, environmental resilience, and infrastructure enhancement.

The area has experienced a steady increase in population, with a mix of full-time and part-time residents, with an average residency length of approximately 18 years. Economic development in Emigration Canyon is closely linked to the Salt Lake City area, with job growth reflecting this connection. Notably, rental costs have declined between 2010 and 2017, a pattern that is expected to persist.

Jurisdiction-Specific Hazards and Risk

The Calculated Priority Risk Index (CPRI) is a comprehensive assessment tool for evaluating and prioritizing risks in a given context. It considers various factors, such as probability, impact, and urgency, to determine the level of risk associated with events or situations. The results for each hazard, including its risk factor (RF) value, are shown in Table 3. The results are based on the criteria in

Table 4 and the equation that follows it. The CPRI helps organizations and individuals make informed decisions about risk management and mitigation strategies. It provides a systematic approach to identifying and addressing potential issues, allowing for a more efficient allocation of resources and proactive risk prevention. With the CPRI, stakeholders can prioritize their focus on the most critical risks, leading to more effective risk management and, ultimately, better outcomes.

Table 3: Calculated Priority Risk Index Values for the City of Emigration Canyon

Type of Hazard Event	Probability of Future Events	Spatial Extent	Severity of Life/ Property Impact	Warning Time	Duration	Response Capacity	Risk Factor Value
Avalanche	4	1	2	4	2	1	2.6
Drought	4	4	2	1	4	1	2.8
Earthquake	3	4	4	4	3	2	3.4
Extreme Heat	4	4	3	1	3	1	3
Extreme Cold	3	4	2	1	3	1	2.4
Flooding	4	3	3	3	3	1	3.1
Landslide/ Slope Failure	2	1	2	4	1	2	2
Radon	4	4	2	1	4	2	2.9
Heavy Rain	4	3	2	3	1	1	2.6
High Wind	4	3	3	3	2	1	3
Lightning	4	2	2	4	1	1	2.6
Severe Winter Weather	4	3	2	2	2	1	2.6
Tornado	2	2	3	4	1	2	2.4
Wildfire	4	3	3	4	3	1	3.2
Dam Failure	2	2	3	2	2	3	2.4
Civil Disturbance	2	1	2	4	2	2	2.1

Type of Hazard Event	Probability of Future Events	Spatial Extent	Severity of Life/ Property Impact	Warning Time	Duration	Response Capacity	Risk Factor Value
Cyberattack	2	3	3	4	3	2	2.7
Hazardous Materials Incident (Transportation & Fixed Facility)	3	1	2	4	1	1	2.2
Public Health Epidemic/ Pandemic	3	4	3	1	4	1	2.8
Terrorism	2	1	3	4	2	1	2.3

Table 4: Criteria for the Calculated Priority Risk Index

Risk Index Factor	Degree of Risk Level		Criteria	Factor Weight for Degree of Risk Level
Probability of Future Events	1	Unlikely	Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than every 100 years.	30%
	2	Occasional	1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.	
	3	Likely	11 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.	
	4	Highly Likely	91 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.	
Spatial Extent	1	Limited	Less than 10% of the planning area could be impacted.	10%
	2	Small	10%–25% of the planning area could be impacted	
	3	Significant	25%–50% of the planning area could be impacted.	
	4	Extensive	50%–100% of the planning area could be impacted.	
Severity of Life/Property Impact	1	Negligible	Less than 5% of the affected area's critical and non-critical facilities and structures are damaged/ destroyed. Only minor property damage and minimal disruption of life. Temporary shutdown of critical facilities.	30%
	2	Limited	More than 5% and less than 25% percent of property in the affected area is damaged/	

Risk Index Factor	Degree of Risk Level		Criteria	Factor Weight for Degree of Risk Level
			destroyed. Complete shutdown of critical facilities for more than one day but less than one week.	
	3	Critical	More than 25% and less than 50% of property in the affected area was damaged/ destroyed. Complete shutdown of critical facilities for over a week but less than one month.	
	4	Catastrophic	Over 50% of critical and non-critical facilities and infrastructures in the affected area are damaged/ destroyed. Complete shutdown of critical facilities for more than one month.	
Warning Time	1	Self-defined	More than 24 hours	10%
	2	Self-defined	12 to 24 hours.	
	3	Self-defined	6 to 12 hours.	
	4	Self-defined	Less than 6 hours.	
Duration	1	Brief	Up to 6 hours.	10%
	2	Intermediate	Up to one day.	
	3	Extended	Up to one week.	
	4	Prolonged	More than one week.	
Response Capacity	1	High	Significant resources and capability to respond to this kind of event; staff are trained, experienced, and ready.	10%
	2	Medium	Some resources and capability to respond to this kind of staff; some staff may be trained, experienced, and ready while others may need additional support.	
	3	Low	Limited resources and capability to respond to this kind of event; additional staff or staff training needed.	
	4	None	No resources and capability to respond this kind of event; additional outside support would be required.	

RISK FACTOR (RF) EQUATION

RF Value = [(Probability x 0.30) + (Spatial Extent x 0.10) + (Severity of Life/Property Impact x 0.30) + (Warning Time x 0.10) + (Duration x 0.10) + (Response Capacity x 0.10)]

Hazards with an RF value greater than or equal to 2.5 are considered high risk. Those with RF values of 2.0 to 2.4 are considered moderate risk hazards, and those with an RF value less than 2.0 are considered low risk. The highest possible RF value is 4.

Hazard Event History

Examining hazard event histories provides valuable insights to inform decision-making and help prioritize resources for risk prevention and response efforts. Table 5 lists the hazard events impacting the city of Emigration Canyon planning area since the 2019 plan update, as recorded in the Storm Events Database from the National Centers for Environmental Information.

Table 5: History of Hazard Events in the City of Emigration Canyon

Type of Hazard Event	FEMA Disaster #	Date(s)	Damage or Impacts	Description
Avalanche		February 2023	Smaller, animal-triggered slides.	
Drought		2023	Emigration Creek is getting drier.	Emigration Improvement District dug more wells to keep up with residential demands and there hasn't been enough water to sustain needs.
Earthquake	DR-4548-UT	March 18, 2020	M 5.7 earthquake that caused extensive damage throughout the county including downed trees, buildings, and debris on roads. Damage was primarily centered in Magna, but shaking was felt throughout the county.	The state received a major disaster declaration on July 9, 2020.
Extreme Heat		2020–2024	Increased temperatures in the summer months	Contributes to drought conditions
Extreme Cold			Code blue days in Emigration Canyon	Shelters throughout the county expanded capacity for unsheltered groups
Flooding	DR-4752-UT	04/13/2023	Snowpack melt from warm weather caused flooding. Local emergency was declared.	A few homes were damaged along with roadways.
Landslide/ Slope Failure	DR-4752-UT	04/13/2023	Warm weather and snowpack melt caused flooding and a number of landslides.	A few homes were damaged along with roadways. Local emergency was declared.
Radon			Medium household radon levels.	There are medium household radon levels in Emigration Canyon.
Heavy Rain	DR-4752-UT	04/13/2023	Flooding at Emigration Creek in June 2023.	Led to landslides from record snowpack and higher temperatures.

Type of Hazard Event	FEMA Disaster #	Date(s)	Damage or Impacts	Description
High Wind	4578-DR-UT	09/07/2020	High winds throughout the county	100+ mph winds caused extensive property and road damage.
Lightning				
Severe Winter Weather		2023 and 2024	Heavy snow loads from record snowpack caused roofs to collapse.	Property damage, downed trees, and access to essential services disrupted.
Tornado		August 11, 1999	Tornado in Salt Lake City that impacted access to Emigration Canyon.	Emigration Canyon was impacted as far as access to the city.
Wildfire		2019	Wildfire at the top of the canyon.	Helicopters with buckets and a tanker used.
Dam Failure			No dams within city boundaries but do have three high hazard dams surrounding the city.	There is concern that flooding from the dam near the entrance of Emigration Canyon could affect the road and other services to the city.
Civil Disturbance		May 2020	Civil disturbance, protests in Salt Lake City. No direct impacts, but this occurred in neighboring city.	
Cyberattack				
Hazardous Materials Incident (Transporta-tion & Fixed Facility)				
Public Health Epidemic/ Pandemic		2020–2023	COVID-19 pandemic	Impacted local residents and businesses as far as the local economy and ability to access resources.
Terrorism				

National Flood Insurance Program Summary

The city of Emigration Canyon participates in the National Flood Insurance Program (NFIP). Table 6 displays statistics related to the NFIP. The city of Emigration Canyon does not participate in the Community Rating System (CRS).

Table 6: National Flood Insurance Program Status for the City of Emigration Canyon[1]

Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Adopted Date	Date Joined NFIP	Tribal
12/18/1985	12/18/1985	09/25/2009	2009	06/03/2020	No

Table 7: National Flood Insurance Overview for the City of Emigration Canyon

Community ID	Number of Losses	Total Net Payment	Active Policies	Total Coverage
490268	0	$0.00	1	$350,000

The city of Emigration Canyon has designated the Director of Planning and Development Services as the Floodplain Administrator. The duties of the Floodplain Administrator are supported by the Greater Salt Lake Municipal Services District (MSD). The current Flood Damage Prevention and Control Ordinance was adopted on 9/28/2021. The current Flood Insurance Rate Map (FIRM) became effective 9/25/2009. In addition to the FIRM, Emigration Canyon acquired separate flood mapping data, which is considered the best available data and is currently used in the permitting process. It is in the process of being incorporated into the FEMA flood maps. The MSD is responsible for issuing floodplain permits in MSD Member Communities, including Emigration Canyon. The permits include a description of all work, including the kind and type of construction, proposed intent, and location. Substantial damage/substantial improvement structures are identified through the permitting process. Structures that are determined to be substantially damaged or substantial improvements are required to come into compliance with current codes. The MSD Building Department provides guidance on how to build in accordance with existing building codes.

Jurisdiction-Specific Vulnerabilities and Impacts

Table 8 provides information on the vulnerable assets in the city of Emigration Canyon, including its critical facilities, highlighting the city's vulnerability to identified hazards. By understanding the risks associated with these assets, local authorities can develop proactive strategies to mitigate vulnerabilities and ensure the safety and functionality of these important assets during hazard events. These data are invaluable for decision-making and prioritizing resources for emergency response and preparedness efforts, ultimately contributing to more effective risk management and greater resilience in the community.

The primary assets in Emigration Canyon are the 1,465 residents and their homes. One fire station is located within Emigration Canyon, but the remaining critical facilities and infrastructure are located in neighboring jurisdictions. Emigration Canyon Road is the primary transportation route, connecting to Salt Lake City at the mouth of the canyon on the west, and at the upper end connects to State Route 65 near Little Dell Reservoir. This route also provides connectivity to I-80. Several markers for historic sites and monuments are located in Emigration Canyon, such as Donner Hill and Last Campsite, acknowledging pioneers who traveled through the canyon.

[1] FIRM = Flood Insurance Rate Map, FHBM = Flood Hazard Boundary Map

Table 8: Jurisdiction-Specific Vulnerabilities and Impacts in the City of Emigration Canyon

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
Avalanche	People	*Vulnerability:* There are no avalanche paths mapped in Emigration Canyon, so the risk to the population is not well defined. Residents may be at risk under certain snow accumulation conditions. Residents living near canyon slopes or in isolated mountainous areas are also exposed to avalanche threats. *Impacts:* Avalanches can lead to injury or death for those caught in their path. In Emigration Canyon, outdoor enthusiasts face the highest risk from avalanches, particularly during the winter months when snowpack accumulates along steep terrain. Limited awareness of avalanche risks, inadequate safety gear, and lack of routine monitoring of weather and snow conditions increase susceptibility.
	Structures	*Vulnerability:* Homes and cabins situated near avalanche paths or steep inclines, especially at the base of canyon walls, face a heightened risk of damage or burial from snow slides. *Impacts:* Structures without reinforced foundations or roofs designed to withstand heavy snow loads are particularly vulnerable to damage. Poor vegetation cover, slope instability, and building orientation all contribute to structural risk in Emigration Canyon.
	Economic Assets	*Vulnerability:* Property values and local businesses are at risk from avalanches. *Impacts:* Homes located along slopes may suffer significant property damage, potentially lowering home values and affecting insurability. Local tourism businesses that support winter recreation may be disrupted by avalanche-related closures or safety concerns. Canyon roads and utility infrastructure, including electrical lines and access routes, may be blocked or damaged by snow movement, disrupting services and local economies.
	Natural, Historic, and Cultural Resources	*Vulnerability:* Vegetation and wildlife habitat are at risk from avalanches. *Impacts:* Avalanches can damage alpine habitats and affect wildlife corridors. Forested slopes may lose tree cover, increasing erosion. If historic trailheads, cabins, or interpretive signs lie in potential slide areas, they risk damage or total loss.
	Critical Facilities and Infrastructure	*Vulnerability:* Roads, power, and water systems are vulnerable to avalanches. *Impacts:* Transportation through the canyon, including Emigration Canyon Road, may be shut down during high-risk periods, impacting residents, emergency services, and visitors. Power lines and water delivery systems near slopes may be disrupted by snow slides or debris flow triggered by avalanches.
	Community Activities	*Vulnerability:* Recreation opportunities are vulnerable to avalanches. *Impacts:* Community and recreational use of canyon trails, ski runs, and winter events may be limited or postponed during avalanche season. These interruptions impact local participation and outdoor tourism.
Drought	People	*Vulnerability:* Drought occurs over large regions, and all Emigration Canyon residents are vulnerable.

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
		Impacts: During dry periods, Emigration Canyon residents, especially those on private wells, may experience water scarcity. Older adults, young children, and those with limited income may have difficulty coping with restrictions, rising water costs, and lack of water-efficient appliances or irrigation options.
	Structures	*Vulnerability:* All Emigration Canyon structures are vulnerable to drought. *Impacts:* Extended drought conditions can cause soil shrinkage, which may shift foundations and damage aging infrastructure. Landscape watering limits may result in browning lawns or dead vegetation around homes and public buildings, affecting aesthetics and fire risk.
	Economic Assets	*Vulnerability:* Local businesses and recreation amenities are at risk from drought. *Impacts:* Rising water costs and scarcity can challenge residents and local service providers. Recreational businesses may be impacted by fire closures or degraded trail conditions. Infrastructure maintenance costs can also rise due to erosion and fire-related damage during dry seasons.
	Natural, Historic, and Cultural Resources	*Vulnerability:* Ecosystems and historical sites are vulnerable to drought. *Impacts:* Local plant communities, already adapted to a semi-arid climate, may face die-off or a shift in species distribution under prolonged drought, impacting the local ecosystem. Historic structures or public buildings may face increased maintenance costs due to water restrictions affecting cooling and vegetation.
	Critical Facilities and Infrastructure	*Vulnerability:* Fire response and water systems are vulnerable to drought. *Impacts:* Drought may limit available water for emergency response, including firefighting efforts. Systems that rely on surface or shallow groundwater sources may experience drops in output. Aging infrastructure is especially susceptible to damage due to dry soil conditions.
	Community Activities	*Vulnerability:* Recreation activities are vulnerable to drought. *Impacts:* Recreational activities like gardening, picnics, and local trail use may be affected by poor air quality, fire risk, and reduced access to water. Drought awareness campaigns may be needed to promote conservation and mitigate risk.
Earthquake	People	*Vulnerability:* All Emigration Canyon's residents are at risk due to its proximity to the Wasatch Fault. *Impacts:* Those living in older homes not designed for seismic resistance, especially households with children, seniors, or individuals with limited mobility, may have difficulty responding quickly during a quake. A lack of preparedness supplies or knowledge about earthquake response further increases vulnerability.

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
	Structures	*Vulnerability:* All structures in Emigration Canyon are at risk from earthquakes. *Impacts:* Homes and buildings constructed prior to modern seismic standards are most likely to sustain damage. Structures on soft soils or near fault traces are at greater risk of foundational cracking or collapse.
	Economic Assets	*Vulnerability:* Businesses, property loss, and devaluation are vulnerable to earthquakes. *Impacts:* Damage to homes, roadways, and hillside retaining walls can result in high repair costs and long-term recovery expenses. Businesses that depend on pass-through traffic or trail-based tourism may see economic disruptions if access routes are compromised. Any disruption in utility service can further strain economic activity in the canyon.
	Natural, Historic, and Cultural Resources	*Vulnerability:* Natural habitats and historical markers are vulnerable to earthquakes. *Impacts:* Rockslides or soil movement triggered by seismic activity can degrade natural habitats and water quality. Historic cabins or interpretive features not designed to endure ground shaking are particularly vulnerable.
	Critical Facilities and Infrastructure	*Vulnerability:* Transportation and utility systems are vulnerable to earthquakes. *Impacts:* Emigration Canyon's limited transportation routes, including its main road, are at risk of rockfall or collapse in the event of an earthquake. Utility systems, including water lines and electrical infrastructure, may be damaged by ground movement or slope failure, delaying recovery.
	Community Activities	*Vulnerability:* All city events and activities are vulnerable to earthquakes. *Impacts:* Community meetings, trail gatherings, and outdoor recreation could be interrupted by earthquakes and their aftermath. Public safety communications and mutual aid access are essential in such scenarios due to the canyon's relative isolation.
Extreme Heat	People	*Vulnerability:* All residents are potentially vulnerable to extreme heat. Adults over 65, individuals with pre-existing health conditions, young children, outdoor workers, and low-income households are at greater risk. *Impacts:* Extreme heat can cause illness such as dehydration, heat exhaustion, and heat stroke. Older, younger, and health-compromised individuals have higher risk because they struggle to regulate body temperature. Socioeconomically disadvantaged individuals may lack access to cooling resources, while outdoor workers are at higher risk of heat-related illnesses due to physical labor without adequate hydration and rest. Extreme heat can hinder students' learning.
	Structures	*Vulnerability:* All structures are potentially at risk from extreme heat. *Impacts:* Residential buildings with inadequate insulation and ventilation and commercial buildings lacking reflective roofing and proper shading may be vulnerable. Materials like metal and glass can

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
		amplify heat retention, while areas with limited green space typically experience higher temperatures.
	Economic Assets	*Vulnerability:* Agriculture and recreation businesses are vulnerable to extreme heat. *Impacts:* Agricultural operations can have reduced yields and higher water demand due to heat stress. The outdoor recreation industry may see decreased participation during heat waves, affecting local businesses that rely on visitors. In addition, the energy infrastructure could face strain from increased cooling demands, leading to outages.
	Natural, Historic, and Cultural Resources	*Vulnerability:* Plants, wildlife, recreation amenities, and historic markers are vulnerable to extreme heat. *Impacts:* Local plant species and wildlife habitats can suffer from extreme heat conditions, leading to reduced biodiversity. Historic buildings may degrade due to high temperatures, causing materials to deteriorate and paint to peel. In addition, parks and recreational areas may experience overuse and risk of their preservation, as residents seek relief from the heat.
	Critical Facilities and Infrastructure	*Vulnerability:* Transportation and power systems are vulnerable to extreme heat. *Impacts:* Homes and businesses can suffer from the strain on cooling resources. Power grids may be strained by higher demands for electricity for cooling, leading to potential outages. Transportation systems are at risk of damage, such as buckling roads and warped train tracks.
	Community Activities	*Vulnerability:* Outdoor events and recreation are vulnerable to extreme heat. *Impacts:* Activities like outdoor sports, fairs, and agricultural practices are vulnerable to extreme heat. These events can pose risks, particularly for participants such as youth athletes and elderly residents who may suffer from heat-related illnesses. In addition, high temperatures can stress crops, impacting local farming.
Extreme Cold	People	*Vulnerability:* All residents are vulnerable to extreme cold, but some groups may have more severe risks. *Impacts:* Extreme cold can lead to hypothermia or frostbite. The elderly face increased risks due to health issues and mobility challenges, while children may be susceptible if they lack proper winter clothing. Individuals experiencing homelessness or financial hardship often lack access to heated shelters and resources for protection against the cold. Those with pre-existing health conditions may experience worsened symptoms at low temperatures.
	Structures	*Vulnerability:* All residential homes, commercial buildings, and unheated spaces like sheds may be vulnerable to extreme cold. *Impacts:* Homes with poor insulation or inadequately sealed windows and doors are prone to significant heat loss. Older buildings lacking modern energy efficiency standards may also suffer from freezing pipes and structural damage. Public infrastructure, such as bridges and roads, also can be impacted.
	Economic Assets	*Vulnerability:* Agriculture, infrastructure, and energy-related businesses are at risk from extreme cold.

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
		Impacts: Agricultural operations, such as greenhouses and livestock farms, may experience crop and livestock losses, impacting revenue. Icy roads can disrupt transportation networks, affecting logistics and supply chains, while power lines risk outages from ice accumulation, impacting local businesses. Energy-intensive facilities may face higher operational costs due to increased heating needs.
	Natural, Historic, and Cultural Resources	*Vulnerability:* Plants, wildlife, and historic and cultural sites are vulnerable to extreme cold. *Impacts:* Due to prolonged cold, local vegetation and wildlife habitats may suffer from plant stress and reduced food availability. Historic structures, especially those not built for severe weather, can deteriorate due to below-freezing temperatures and ice. Culturally significant sites, including monuments and public art, also may be damaged, while infrastructure such as water pipes and roadways may be compromised during extreme cold events, leading to service disruptions and safety hazards.
	Critical Facilities and Infrastructure	*Vulnerability:* Water systems and roads are vulnerable to extreme cold. *Impacts:* Water treatment plants can face frozen pipes and equipment failures. Icy conditions may increase accident risks on transportation infrastructure, and power generation facilities may struggle to meet heating demands. Residential and commercial buildings lacking proper insulation are also at risk of heating system failures, endangering occupants.
	Community Activities	*Vulnerability:* Outdoor recreation activities are vulnerable to extreme cold. *Impacts:* Youth sports, festivals, and outdoor markets are vulnerable to extreme cold. Harsh temperatures can deter participation, impacting community engagement. At-risk groups, such as the elderly and young children, face health risks like frostbite and hypothermia, further limiting outdoor involvement. In addition, poorly insulated buildings or inadequate heating in community centers can make gatherings uncomfortable.
Flooding (and Heavy Rain)	People	*Vulnerability:* Flooding primarily affects residents in low-lying areas near rivers and streams, especially during heavy rainfall or snowmelt. Homes along Emigration Creek are at risk. *Impacts:* Flooding can lead to injury or death for individuals swept away in fast moving water. Residents may be displaced from their homes. Individuals without reliable transportation may struggle to evacuate quickly, while low-income families often lack resources for flood-prevention measures. The elderly and those with disabilities may face mobility challenges, increasing their risk during emergencies. Overall, factors such as geographic location, economic status, and physical ability contribute to the community's varying levels of vulnerability to flooding.
	Structures	*Vulnerability:* Homes and other structures near Emigration Creek are vulnerable. High runoff and heavy rain may affect other areas as well, near smaller canyon mouths or in low-lying areas. *Impacts:* Residential properties in floodplains and commercial buildings without proper drainage systems or flood-resistant designs

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
		face significant risks during heavy rain or snowmelt. Older structures may be more susceptible due to outdated construction standards. Overall, a combination of location and construction features contributes to their vulnerability to flooding.
	Economic Assets	*Vulnerability:* Businesses near waterways are at risk from flooding, and property values may be affected. *Impacts:* Emigration Canyon does not have many large commercial properties, retail centers, or warehouses near rivers or low-lying areas, but the town relies on businesses in neighboring jurisdictions that may be at risk. Residential developments in flood-prone zones can also suffer damage, impacting property values. Public infrastructure, such as roads and utilities, may experience disruptions, leading to costly repairs. Agricultural land can be affected by excess water, reducing crop yields.
	Natural, Historic, and Cultural Resources	*Vulnerability:* Natural habitats and historic markers are vulnerable to flooding. *Impacts:* Natural areas like wetlands and streams are at risk of habitat destruction, while historic sites and landmarks may sustain structural damage. Cultural resources, such as parks and public spaces, can become unusable, affecting community events. Factors contributing to their vulnerability include inadequate flood management, urban development that alters water flow, and the increasing frequency of extreme weather events due to climate change.
	Critical Facilities and Infrastructure	*Vulnerability:* Transportation networks, including Emigration Canyon Road, and water systems are vulnerable to flooding. *Impacts:* Transportation networks are vulnerable to flooding due to their proximity to rivers and low-lying areas, which can overflow during heavy rain or snowmelt. Flooding could damage Emigration Canyon Road, which is the primary route to and from Emigration Canyon. Flooding can disrupt emergency services, block transportation routes, and isolate communities. In addition, inadequate drainage systems and urban development encroaching on floodplains increase these risks.
	Community Activities	*Vulnerability:* Community activities are vulnerable to flooding. *Impacts:* Due to the area's geography and infrastructure, outdoor events, sports, and farmers' markets are vulnerable to flooding. Parks and open spaces can quickly become inundated during heavy rainfall or rapid snowmelt. Residential neighborhoods near rivers, roads, and bridges are at risk of flash floods, which can disrupt transportation and emergency services.
Landslide/ Slope Failure	People	*Vulnerability:* Most of Emigration Canyon has moderate landslide susceptibility. Residents living along the steep inclines of Emigration Canyon are particularly susceptible to landslides and slope failures. *Impacts:* Residents can be injured or displaced from homes due to landslides. The area's geological makeup, combined with factors like heavy rainfall and rapid snowmelt, can destabilize slopes. Older homes, especially those constructed without modern engineering standards, may lack adequate protection against such events. Limited awareness about early warning signs and insufficient emergency preparedness further heighten the risk for these communities.

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
	Structures	*Vulnerability:* Nearly all structures in Emigration Canyon are vulnerable to landslides. *Impacts:* Buildings situated on or near the canyon's slopes, including homes and essential infrastructure, face significant threats from potential landslides. The combination of loose soil, inadequate drainage, and historical construction practices without modern slope stabilization techniques increases vulnerability. Roads and bridges, vital for daily commutes and emergency responses, are also at risk, especially during periods of intense precipitation.
	Economic Assets	*Vulnerability:* Property values and business losses are vulnerable to landslides. *Impacts:* Properties perched on hillsides may experience devaluation due to the looming threat of slope instability. Damage to infrastructure, such as roads and utility lines, can disrupt daily life and incur substantial repair costs. Local businesses might suffer from accessibility issues, leading to economic downturns in the community.
	Natural, Historic, and Cultural Resources	*Vulnerability:* Waterways, habitats, and historic sites are vulnerable to landslides. *Impacts:* The natural beauty of Emigration Canyon, characterized by its diverse ecosystems, can be compromised by landslides that alter habitats and watercourses. Historic sites, reflecting the area's rich heritage, may be endangered by soil movements that threaten their structural integrity. Cultural landmarks and community gathering spots could also be affected, impacting the social fabric of the region.
	Critical Facilities and Infrastructure	*Vulnerability:* Water supply systems, power systems, and roads are vulnerable to landslides. *Impacts:* Essential services, including water supply systems and power lines, are vulnerable to disruptions caused by slope failures. The canyon's topography can hinder repair efforts, prolonging outages and affecting residents' quality of life. Emergency response times may be delayed if access routes are compromised, emphasizing the need for proactive infrastructure planning.
	Community Activities	Recreational pursuits, such as hiking and mountain biking, are integral to life in Emigration Canyon. However, trails and outdoor facilities located on unstable slopes pose risks to enthusiasts. Community events held in areas prone to landslides may face cancellations or relocations, affecting local traditions and economies.
Radon	People	*Vulnerability:* Residents of Emigration Canyon, particularly those in older homes, may be exposed to elevated radon levels due to the area's geological characteristics. According to utahradon.org, 39% of homes near Emigration Canyon have dangerous radon levels. *Impacts:* Families with young children and elderly members are especially at risk, as prolonged exposure to radon can lead to serious health issues. Awareness and regular testing are crucial to mitigate these risks.
	Structures	*Vulnerability:* All structures in the area may have elevated levels of radon. *Impacts:* Homes with basements or built on certain soil types prevalent in the canyon are more susceptible to radon infiltration. Cracks in

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
		foundations and inadequate ventilation can exacerbate the problem, allowing radon gas to accumulate indoors. Implementing mitigation systems can significantly reduce exposure levels.
	Economic Assets	*Vulnerability:* Property values are vulnerable to radon levels. *Impacts:* Properties with high radon levels may face decreased market value and potential challenges during real estate transactions. The cost of installing mitigation systems, while necessary for health, can be a financial burden for homeowners. Moreover, public awareness of radon risks can influence property desirability in the area.
	Natural, Historic, and Cultural Resources	*Vulnerability:* Water systems and historic structures are vulnerable to radon. *Impacts:* Radon, emanating from the natural decay of uranium in the soil, can affect underground water sources and soil quality. Historic buildings, often constructed without modern ventilation systems, may trap radon, posing health risks to occupants and visitors. Preserving these structures requires careful consideration of radon mitigation strategies.
	Critical Facilities and Infrastructure	*Vulnerability:* Public buildings, including one fire station, are vulnerable to radon. *Impacts:* Public buildings such as schools, daycare centers, and healthcare facilities in Emigration Canyon are limited. Residents may be exposed to radon in these facilities in neighboring jurisdictions. Emigration Canyon must ensure regular radon testing and implement necessary mitigation measures in public buildings. Protecting vulnerable populations, such as children and the elderly, is paramount. Infrastructure planning should incorporate radon-resistant construction techniques.
	Community Activities	*Vulnerability:* Community activities are vulnerable to radon, though radon risk is more commonly associated with long-term exposures. *Impacts:* Indoor community events, especially those held in basements or ground-level rooms, may inadvertently expose participants to higher radon levels. Ensuring that public buildings are tested and, if necessary, equipped with radon mitigation systems is essential for community health and safety.
High Wind	People	*Vulnerability:* The unique topography of Emigration Canyon can channel and intensify wind speeds, posing risks to all residents. *Impacts:* High winds can cause injury or death to individuals who do not have proper shelter. Blowing debris, broken windows, and collapsing roofs or structures can injure residents, especially the elderly, children, and individuals with mobility challenges. Sudden gusts can lead to injuries from flying debris or falling branches. Outdoor workers and recreational enthusiasts should be particularly cautious during high wind events.
	Structures	*Vulnerability:* Buildings with older construction or those not designed to withstand strong winds are vulnerable to damage from high winds. *Impacts:* Roofs, windows, and siding can be compromised, leading to costly repairs. Outbuildings, sheds, and other auxiliary structures may be at higher risk due to their lighter construction.

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
	Economic Assets	*Vulnerability:* All businesses are vulnerable to high winds. *Impacts:* High winds can disrupt power lines and communication networks, affecting businesses and daily life. Agricultural operations may suffer losses due to damaged crops or infrastructure. Repair and maintenance costs following wind events can strain local economies.
	Natural, Historic, and Cultural Resources	*Vulnerability:* Trees, ecosystems, and landmarks are vulnerable to high winds. *Impacts:* Strong winds can uproot trees and damage natural landscapes, affecting local ecosystems. Historic landmarks and cultural sites may suffer structural damage, threatening their preservation. Community parks and outdoor art installations are also susceptible to wind-related harm.
	Critical Facilities and Infrastructure	*Vulnerability:* Roads, power systems, and fire station response are vulnerable to high winds. *Impacts:* Essential services, including emergency response centers and utilities, must be fortified against high wind events. Power outages and blocked roads can impede emergency services, highlighting the need for resilient infrastructure planning.
	Community Activities	*Vulnerability:* Outdoor events and recreation activities are vulnerable to high winds. *Impacts:* Outdoor events, such as festivals and markets, are at risk during high wind conditions. Temporary structures like tents and stages can become hazardous if not properly secured. Event organizers should have contingency plans to ensure public safety.
Lightning	People	*Vulnerability:* Lightning can strike anywhere in the city, and all populations are potentially at risk. *Impacts:* Lightning can cause injury or death to those in close proximity to a strike. Outdoor enthusiasts, including hikers and campers, are at heightened risk of lightning strikes, especially during sudden summer storms. Children and the elderly may be less able to seek shelter promptly. Education on lightning safety and awareness of weather forecasts are vital for all residents and visitors.
	Structures	*Vulnerability:* Homes and communication facilities are vulnerable to lightning. *Impacts:* Tall structures, such as communication towers and buildings with metal components, are more likely to attract lightning. Homes without proper grounding systems are at risk of electrical surges, which can damage appliances and pose fire hazards.
	Economic Assets	*Vulnerability:* Businesses and electrical systems are vulnerable to lightning. *Impacts:* Lightning can cause significant damage to electrical systems, leading to costly repairs and business interruptions. Agricultural operations may experience losses due to fires ignited by lightning strikes. Insurance claims following such events can impact local economies.
	Natural, Historic, and	*Vulnerability:* Vegetation, wildlife, historic markers, and wildfire risk are vulnerable to lightning.

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
	Cultural Resources	*Impacts:* Lightning-induced fires can devastate natural landscapes and wildlife habitats. Historic buildings, often constructed with flammable materials, are particularly vulnerable. Protecting these resources requires proactive measures, such as installing lightning rods and fire suppression systems.
	Critical Facilities and Infrastructure	*Vulnerability:* Power distribution, water systems, and the fire station are vulnerable to lightning. *Impacts:* Power stations, water treatment plants, and emergency services facilities must be equipped with lightning protection systems to ensure continuity of operations during storms. Disruptions to these services can have cascading effects on community well-being.
	Community Activities	*Vulnerability:* Outdoor events are vulnerable to lightning. *Impacts:* Outdoor gatherings, including sports events and festivals, should have lightning safety protocols in place. Organizers must monitor weather conditions and have plans to evacuate or shelter attendees if necessary.
Severe Winter Weather	People	*Vulnerability:* All residents are vulnerable to severe winter weather. Emigration Canyon often receives higher snow accumulations than communities in the valley due to its elevation and topography near the Wasatch Mountains. *Impacts:* Residents, especially the elderly and those with mobility issues, face challenges during heavy snowfall and icy conditions. Limited access to medical care and essential services can exacerbate health risks. Preparedness plans, including emergency supplies and heating alternatives, are crucial.
	Structures	*Vulnerability:* All buildings are vulnerable, and older structures may be more susceptible to damage from severe winter weather. *Impacts:* Buildings with flat or aging roofs are susceptible to collapse under heavy snow loads. Frozen pipes and inadequate insulation can lead to property damage and increased heating costs. Regular maintenance and weatherproofing are essential to mitigate these risks.
	Economic Assets	*Vulnerability:* Businesses and supply chains are vulnerable to severe winter weather. *Impacts:* Severe winter storms can disrupt transportation, affecting local businesses and supply chains. Snow removal and infrastructure repairs impose financial burdens on municipalities. Tourism, a vital part of the local economy, may decline during prolonged adverse weather conditions.
	Natural, Historic, and Cultural Resources	*Vulnerability:* Trees, habitats, and historic markers are vulnerable to severe winter weather. *Impacts:* Heavy snowfall can damage trees and natural habitats, impacting local ecosystems. Historic structures may suffer from moisture infiltration and freeze–thaw cycles, leading to deterioration. Preservation efforts must account for winter weather impacts.
	Critical Facilities and Infrastructure	*Vulnerability:* Roads, utilities, and emergency response systems are vulnerable to severe winter weather. *Impacts:* Emigration Canyon Road, which provides the main access to and from the community, may become impassable during heavy snow or other severe winter weather. Utilities such as power and water

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
		supply systems are at risk of disruptions from damaged lines. Communications signals may be impeded.
	Community Activities	*Vulnerability:* All community activities are vulnerable to severe winter weather. *Impacts:* Mobility around town can be limited during severe winter weather. Community activities may be delayed or canceled due to travel difficulties.
Tornado	People	*Vulnerability:* Tornadoes are rare in the area, and the terrain contributes to low likelihood of tornado. However, even a weak tornado or microburst could affect residents. *Impacts:* In Emigration Canyon, individuals living in manufactured or lightweight housing are particularly susceptible to tornado-related damage, as these structures offer limited protection against strong winds. Older adults, people with disabilities, and families with young children may encounter difficulties reaching safe shelter in time. Residents who are new to the area or unfamiliar with Utah's weather patterns may not recognize warning signs or have access to timely alerts. Additionally, individuals with limited financial resources may reside in areas without designated safe rooms or sufficient emergency planning in place, increasing their vulnerability during such events.
	Structures	*Vulnerability:* Weaker or older structures are vulnerable to tornado damage. *Impacts:* Structures in Emigration Canyon that are not built to modern wind-resistant standards—especially older homes and those with flat or lightweight roofs—face increased risk during tornadoes. Mobile homes, given their lighter construction and less secure anchoring, are especially prone to severe damage. Commercial properties built decades ago without structural reinforcements may also be impacted, particularly large-span buildings with wide roof areas that can lift under pressure. The steep terrain may offer some natural protection in places, but wind funneling through canyons can amplify localized impacts.
	Economic Assets	*Vulnerability:* Businesses and property values are vulnerable to tornadoes. *Impacts:* Damage to Emigration Canyon's homes, small businesses, and local infrastructure such as overhead power lines or communication systems can result in economic setbacks. Tornadoes that knock down trees or power poles may disrupt utility services and road access, impacting both emergency response and daily operations. Property values could be affected in areas where storm damage occurs repeatedly or where protective infrastructure is lacking.
	Natural, Historic, and Cultural Resources	*Vulnerability:* Vegetation, habitats, and historic markers are vulnerable to tornadoes. *Impacts:* Emigration Canyon's forested areas and natural drainage systems may be affected by high winds, leading to tree falls, habitat disturbance, and increased erosion. Emigration Canyon's historic cabins and heritage sites, often built with traditional materials, may not be resilient to tornadic winds. Parks, trailheads, and other cultural

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
		gathering places are also at risk of structural and environmental damage.
	Critical Facilities and Infrastructure	*Vulnerability:* Water, electricity, communication systems, and the fire station are vulnerable to tornado damage. *Impacts:* Essential systems in and around Emigration Canyon—including water infrastructure, electrical lines, and emergency communications—are vulnerable to outages or failures during a tornado. Facilities not constructed or retrofitted to withstand high winds, especially those on exposed ridgelines or near open spaces, may experience structural damage. Disruption to these systems can isolate residents, delay emergency services, and strain local resources during recovery efforts.
	Community Activities	*Vulnerability:* Community events are vulnerable to tornadoes. *Impacts:* Community activities that take place in open-air environments can be disrupted or may pose safety risks if a tornado occurs. Temporary structures like tents and event canopies are especially prone to wind damage. Additionally, buildings with large windows or aging roofs used for public meetings or educational purposes may not provide sufficient shelter during severe weather.
Wildfire	People	*Vulnerability:* All of Emigration Canyon is at moderate to high risk of wildfire. *Impacts:* Wildfire can injure or kill residents who are unable to get away from spreading flames. Residents may be temporarily displaced by evacuations or permanently if homes are destroyed by fire. Residents near the wildland–urban interface (WUI), individuals with physical disabilities or health issues who may struggle to evacuate, and low-income families lacking resources for fire safety measures may be vulnerable. Older adults might have reduced mobility, making them more dependent on others for assistance.
	Structures	*Vulnerability:* All structures in Emigration Canyon are vulnerable to wildfire. *Impacts:* Residential homes, especially those made of wood or in heavily vegetated areas may be vulnerable. Properties near the WUI are at higher risk due to surrounding flammable vegetation. Inadequate defensible space, such as insufficient clearing of dry grass and shrubs, increases susceptibility. Roofs made of combustible materials and buildings that lack fire-resistant features are particularly at risk during wildfire events.
	Economic Assets	*Vulnerability:* Businesses and property values are vulnerable to wildfire. *Impacts:* Residential properties near wildland areas are at high risk, especially if they lack defensible space and fire-resistant landscaping. Commercial assets, such as retail centers close to forested regions, can suffer damage from flames and smoke, affecting the local economy. Agricultural lands are also susceptible, as wildfires can destroy crops and livestock, leading to financial losses. Vital infrastructure, such as power lines and water pipelines, can be disrupted, causing further economic repercussions. These vulnerabilities are heightened by dry conditions and high winds, which can facilitate the spread of fires.

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
	Natural, Historic, and Cultural Resources	*Vulnerability:* Vegetation, wildlife, and historic sites are vulnerable to wildfire. *Impacts:* Natural resources like forests and grasslands are at risk because dry vegetation and accumulated brush can easily ignite. Historic sites made of wood and cultural landmarks can also be affected, particularly when located near wildland areas. The increasing frequency of drought and extreme heat, exacerbated by climate change, heightens these vulnerabilities. In addition, urban development encroaching on wildland areas increases the risk to these essential resources.
	Critical Facilities and Infrastructure	*Vulnerability:* Utility and gas lines, as well as fire response capabilities, are vulnerable to wildfire. *Impacts:* Utilities like power lines and gas pipelines are also at risk, as sparks or falling trees can ignite fires. Residential neighborhoods adjacent to natural landscapes are particularly susceptible to embers, making them vulnerable during dry conditions and high winds. A wildfire could quickly exceed the capability of the single fire station and support from neighboring jurisdictions would be required.
	Community Activities	*Vulnerability:* Community events and day-to-day activities are vulnerable to wildfire. *Impacts:* Outdoor events like festivals and sports, especially during hot, windy conditions, may be at risk. Recreational activities, such as hiking and camping near wooded areas, are also at risk from open flames or sparks. In addition, landscaping with dry grasses and shrubs increases susceptibility during fire season, putting local infrastructure and neighborhoods at risk.
Dam Failure	People	*Vulnerability:* Dam failure risk in Emigration Canyon is low. No significant or high hazard dams are within the city, and mapped inundation boundaries from dam failure do not intersect the town. However, dam failure could affect Emigration Canyon Road to the west of the Emigration Canyon border, which would affect resident access. *Impacts:* Residents may face risks in the event of a dam breach in neighboring communities. They may be cut off from services. Families with limited mobility may find it challenging to navigate via alternate routes. Populations with fewer resources may also lack access to transportation, alerts, or temporary shelter, further increasing their exposure to harm during a sudden flood event.
	Structures	*Vulnerability:* No Emigration Canyon structures were identified within potential inundation zones. *Impacts:* Emigration Canyon could experience indirect impacts of damage to structures downstream of the canyon. Resident workplaces or county facilities that serve the city could be affected.
	Economic Assets	*Vulnerability:* Businesses are vulnerable to dam failure. Impacts: Many residents travel to neighboring jurisdictions for services, shopping, work, etc.; structures located in or near potential inundation zones are particularly at risk. Bridges crossing Emigration Creek and any emergency access routes along narrow canyon roads could be severely impacted or impassable. Aging water control infrastructure or inadequate emergency notification systems can

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
		worsen the situation, delaying protective actions and threatening both life and property.
	Natural, Historic, and Cultural Resources	Flooding triggered by a dam failure could harm riparian zones, disturb wildlife habitats, and degrade water quality in Emigration Creek and downstream areas. Historic cabins and early settlement sites along the canyon may be damaged or lost. Recreational and cultural assets such as trailheads, parks, and community gathering spots could also be impacted, diminishing both ecological and cultural values.
	Critical Facilities and Infrastructure	*Vulnerability:* Transportation, water systems, and utility lines are vulnerable to dam failure. *Impacts:* While Emigration Canyon does not host large-scale critical infrastructure, essential utilities such as private wells, septic systems, and community roads remain vulnerable. A dam breach could compromise water quality and disrupt emergency access routes, particularly on Emigration Canyon Road. Other utility lines that run through the entrance of the canyon could be damaged or disrupted. Recovery may be difficult due to the canyon's geographic isolation and reliance on a small number of entry and exit points.
	Community Activities	*Vulnerability:* Activities near mouth of Emigration Canyon are vulnerable to dam failure. *Impacts:* Outdoor recreation in and around Emigration Creek could be disrupted or made hazardous by flooding. Sudden water surges from a structural failure could threaten anyone in or near affected zones. In addition, road closures following such an event would limit access to key community spaces and delay rescue or recovery operations.
Civil Disturbance	People	Low-income individuals may lack the resources for safety, while the elderly or disabled may struggle to navigate emergencies. Young people, particularly teenagers, may be drawn into unrest, influenced by social dynamics. In addition, marginalized individuals may feel targeted or compelled to participate. A lack of community cohesion and trust in authorities can further heighten tensions.
	Structures	Government buildings, commercial properties, and infrastructure, such as bridges and transportation hubs may be vulnerable. Government buildings may be targeted for their symbolic authority, while retail stores can attract crowds during protests. Residential neighborhoods also can be affected, especially in areas with heightened tensions. The vulnerability of these structures stems from their visibility and importance to the community, combined with factors such as location and ongoing social issues.
	Economic Assets	Retail establishments, especially shopping centers, are at risk as they often become focal points for protests. Transportation systems can be disrupted by blockades, hindering access to services. Financial institutions may face vandalism or theft, while critical service providers could experience strain during unrest. Several economic assets are vulnerable to civil disturbances, primarily due to their visibility and reliance on foot traffic.
	Natural, Historic, and	Parks and open spaces may suffer from vandalism or destruction during uncontrolled events. Historic sites can become targets, as they symbolize authority or cultural significance. Cultural resources such as community centers and places of worship also may be affected, as

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
	Cultural Resources	they play a vital role in community identity. Their vulnerability lies in the potential for damage during protests.
	Critical Facilities and Infrastructure	Governmental facilities may be at risk, since they often symbolize authority and serve as community hubs, making them targets during unrest. Utility infrastructure, such as water and power facilities, is also at risk of disruption. Its visibility and essential services contribute to its vulnerability during civil disturbances.
	Community Activities	Public demonstrations, parades, and local government meetings are particularly vulnerable to civil disturbances. These events often attract large crowds and can become tense, especially around contentious social or political issues. Factors such as the local demographic, economic conditions, and recent events can heighten these vulnerabilities, making it easier for conflicts to arise during passionate public gatherings.
Cyberattack	People	Older adults often lack familiarity with technology and online security, making them easy targets for phishing scams. Individuals engaging in online banking or shopping without strong security measures also face heightened risks. Families with children may be less vigilant about internet safety, allowing cybercriminals to exploit personal information. In addition, small business owners without robust cybersecurity practices are prime targets for attacks that can disrupt operations.
	Structures	Critical infrastructure, such as power plants, water treatment facilities, and transportation systems, often lack robust cybersecurity measures. Commercial businesses, especially financial institutions and healthcare providers, also are at risk due to weaker data protection and employee training. Educational institutions may be vulnerable because of limited funding for cybersecurity and outdated software. Obsolete technology and insufficient training enhance the susceptibility of these structures to cyber threats.
	Economic Assets	Financial institutions, such as banks and credit unions, are at risk of data theft and service disruption. Small and medium-sized businesses often lack robust cybersecurity measures, making them attractive targets. In addition, local government agencies and critical infrastructure, such as water treatment facilities, might have outdated security protocols, posing threats to public safety. The rise of remote work further exacerbates vulnerabilities, as employees accessing networks from home can unintentionally expose systems to risks. Overall, the combination of outdated technology and insufficient cybersecurity practices increases the vulnerability of an area's economic assets.
	Natural, Historic, and Cultural Resources	Natural resources like water management systems and wildlife databases can be compromised, disrupting ecosystems. Historic sites and museums that digitize collections are at risk of losing valuable artifacts and data. In addition, cultural organizations managing events may face threats if their systems lack adequate security. The limited resources of smaller organizations further increase this vulnerability.
	Critical Facilities and Infrastructure	Energy and utility services, such as electricity and water systems, which often rely on outdated technology, may be vulnerable. Transportation infrastructure, such as traffic management and public transit, is also at risk due to networked systems. Facilities that use

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
		electronic records and connected medical devices face vulnerabilities that can compromise patient safety.
	Community Activities	Online registration for events, local government services, and educational programs that rely on digital tools may be targeted due to inadequate security measures, outdated software, and insufficient staff training.
Hazardous Materials Incident (Transporta-tion & Fixed Facility)	People	Individuals with pre-existing health conditions, such as respiratory issues, and the elderly are at higher risk due to their compromised health. Children also are more susceptible. Those living near industrial areas or transport routes for hazardous materials face increased exposure risk, while low-income families may lack resources and information to effectively prepare for incidents.
	Structures	Industrial facilities, such as manufacturing plants and warehouses, often store hazardous chemicals which may leak. Residential buildings are at risk, particularly if located along transportation routes for hazardous materials. Older buildings may lack modern safety features, increasing their vulnerability.
	Economic Assets	Industrial facilities, transportation infrastructure, and nearby commercial properties may be affected. Industrial facilities handling chemicals are at risk of spills or leaks, while roads and railways used for transporting hazardous materials can lead to accidents and contamination. In addition, nearby commercial and residential areas face potential health risks and economic losses.
	Natural, Historic, and Cultural Resources	Waterways and habitats are vulnerable to hazardous materials incidents, which can disrupt ecosystems. Historic sites and structures may suffer damage from toxic exposure, leading to degradation over time. In addition, cultural landmarks risk losing their significance due to contamination events. The proximity of these resources to industrial areas or transport routes exacerbates their risk.
	Critical Facilities and Infrastructure	Chemical manufacturing plants, waste treatment facilities, and transportation networks, such as highways and railroads may be at risk. Their vulnerability stems from factors such as proximity to residential areas, aging infrastructure, and inadequate safety measures. Natural hazards, such as flooding and earthquakes, can further increase risks by damaging containment systems.
	Community Activities	Local markets and outdoor gatherings are vulnerable to hazardous materials incidents if they are near industrial zones and transport corridors. This risk is heightened by inadequate emergency preparedness, lack of public awareness, and the potential for spills during transport. Large crowds at events can complicate evacuation efforts, increasing the risks for participants and nearby residents.
Public Health Epidemic/ Pandemic	People	Individuals with pre-existing health conditions like asthma and heart disease and adults over 65 may be vulnerable. Low-income families may struggle to access healthcare and vaccinations, increasing their risk. Marginalized communities with limited access to information and those living in high-density conditions also are at greater risk due to the rapid spread of diseases and the challenges in implementing preventive measures.

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
	Structures	Several structures are vulnerable to public health epidemics or pandemics, particularly due to their ability to facilitate the spread of disease. High-density residential areas, such as apartment complexes, are at risk, as close living quarters can lead to faster transmission. Public gathering spaces, such as community centers, also pose significant threats because large groups are in confined spaces. , Workplaces with high foot traffic, such as retail stores, contribute to vulnerability.
	Economic Assets	Small businesses in retail, hospitality, and food service are particularly vulnerable to public health epidemics or pandemics. These sectors face risks from fluctuating consumer demand and potential operational restrictions. The tourism industry also is affected, as travelers may avoid high-risk areas. Healthcare facilities can become overwhelmed, straining resources and impacting operations. In addition, local supply chains may experience disruptions, leading to shortages and inflation. Overall, the direct effects of illness, along with prolonged shutdowns and consumer hesitance, leave these economic assets exposed to significant downturns.
	Natural, Historic, and Cultural Resources	Natural resources like wildlife and ecosystems can be disrupted by increased human activity, raising the risk of zoonotic diseases. Historic sites may deteriorate due to reduced visitor access and funding, while cultural resources, such as community events, face cancellations, impacting social connections.
	Critical Facilities and Infrastructure	Public health epidemic or pandemic incidents can affect nursing homes, public transportation systems, and food supply chains. Vulnerable populations in nursing homes are at higher risk. Public transportation can facilitate the spread of disease, thereby increasing transmission potential. These facilities often lack adequate resources, including medical supplies and testing capabilities, making them more susceptible to the impacts of a health crisis.
	Community Activities	Large gatherings like festivals and sporting events can facilitate the rapid spread of diseases due to close contact. Public transportation also is at risk, as it serves many people in confined spaces. Childcare facilities are particularly susceptible, given that children can easily transmit infections. In addition, food-related events, such as farmers' markets, can pose risks if hygiene practices are not followed. The interconnectedness of community members and varying adherence to health guidelines further exacerbate these vulnerabilities.
Terrorism	People	Young children and newcomers may lack awareness of potential threats, while the elderly and individuals with disabilities may struggle to respond quickly in emergencies. Marginalized communities often face bias, making them more susceptible to targeting. In addition, those with lower socioeconomic status may lack access to security measures and emergency preparedness resources.
	Structures	Government buildings, transportation hubs, commercial centers, and public spaces are particularly vulnerable to terrorism incidents. Government buildings are symbolic targets, while transportation hubs and commercial centers are attractive due to their potential for high casualties and crowd presence. Public spaces also are at risk due to their open nature and lack of security. Their vulnerability is heightened

Hazard	Vulnerable Assets	Description of Vulnerability and Impacts
		by inadequate security measures, high occupancy rates, and their locations in densely populated areas, which can amplify the impact of incidents.
	Economic Assets	Infrastructure, commercial establishments, and community facilities may be vulnerable. Critical infrastructure, such as transportation networks and power grids, could disrupt the economy if targeted. Commercial establishments, especially those with high foot traffic, and community facilities are at risk, as they can provoke widespread concern and disruption. Their accessibility and interconnectivity increase vulnerability, meaning that damage to one asset can have a broader economic impact and hinder recovery efforts.
	Natural, Historic, and Cultural Resources	Natural resources like water supplies and parks could be targeted for their significance to the community. Historic sites and cultural resources, such as museums or community centers, also are at risk due to their accessibility and importance to local identity. Their vulnerability is often heightened by inadequate security measures.
	Critical Facilities and Infrastructure	Public transportation systems and utility services like water and power plants may be affected. Their vulnerability arises from high accessibility and the potential impact of an attack, as crowded transportation and public spaces can lead to mass casualties and panic. Attacking utility services could disrupt the town's essential functions, creating chaos.
	Community Activities	Festivals, parades, and sporting events are particularly vulnerable to terrorism incidents. These events attract large crowds, making it easier for perpetrators to inflict harm and instill fear. In addition, community centers and places of worship serve as social hubs, increasing their risk. Factors such as limited security measures and open access to public spaces, contribute to this vulnerability.

Jurisdiction-Specific Impacts Changes in Vulnerability

Hazard events can impact communities, infrastructures, and ecosystems. The severity of these impacts can be influenced by climate change, population patterns, and land use developments. Understanding these factors is crucial for the city of Emigration Canyon to develop a resilient community and minimize the impacts of hazards. Table 9 displays the unique changes within the community and the related effects on each identified hazard affecting the city of Emigration Canyon.

Table 9: Jurisdiction-Specific Changes in Vulnerability in the City of Emigration Canyon

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
Avalanche	Avalanches pose a direct threat to outdoor enthusiasts, leading to injuries or fatalities. Property damage can occur at ski resorts and along transportation routes, disrupting emergency response and logistics. The local economy may suffer, especially businesses reliant on winter tourism, and there can be a psychological toll on the community, along with increased insurance costs.	Higher temperatures can lead to more rain, destabilizing snowpack and increasing the risk of wet avalanches. In addition, changes in snowfall can cause denser snow layering on slopes, making them more prone to sliding.	Avalanches can influence population patterns by deterring people from moving to or remaining in high-risk areas, leading to decreased density in these locations. The threat of avalanches prompts many to seek safer environments in urban or lower-risk regions. In addition, when avalanches occur, they can disrupt infrastructure, causing residents to relocate.	Burying power lines has reduced the risk of power outages due to avalanches.	Decreased
Drought	Drought can cause water scarcity, impacting agriculture and reducing crop yields. Recreational activities may decline, harming tourism, while the risk of wildfires increases, threatening safety and property. In addition, lower water levels can lead to water quality issues and public health concerns.	Climate change affects drought incidents by altering precipitation patterns and increasing temperatures. Warmer weather can lead to longer dry periods and more severe droughts, while changes in rainfall can reduce snowpack in nearby mountains, crucial for summer water supply. Higher temperatures also increase evaporation rates, further straining local water resources.	Drought can significantly influence population patterns by impacting economic opportunities and the quality of life. Water scarcity often leads to reduced agricultural productivity, prompting residents to migrate to areas with more stable job prospects. Increased water costs can make living less affordable, driving some residents away. Conversely, efforts to address drought, such	Development since the previous hazard mitigation plan has not changed drought risk.	Increased

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
			as sustainable development or improved water management, may attract newcomers, resulting in changes in the community's demographic composition over time.		
Earthquake	The impacts of earthquakes can be substantial. Immediate damage to infrastructure may disrupt essential services such as water, electricity, and transportation, complicating recovery efforts. Homes and businesses might sustain significant structural damage, posing safety risks. In addition, psychological effects, such as increased anxiety, can affect the community. Economically, repairs can lead to high costs, potential declines in property values, and disruptions to local businesses, ultimately impacting job availability and the overall economy.	Rising temperatures can lead to glacial melting, which affects pressure on tectonic plates and may trigger seismic activity through isostatic rebound. In addition, increased rainfall and flooding can erode soils, weakening structural integrity and heightening vulnerability during earthquakes. Although the direct links between climate change and earthquakes are still under investigation, environmental effects may impact the region's seismic risk.	Earthquakes can significantly alter population patterns by prompting residents to leave for safer areas after a seismic event. This migration can lead to changes in population density and attract new residents and businesses during the rebuilding process. The perception of the area as a safe place to live may shift, impacting long-term demographics, as some residents return to rebuild while others relocate permanently.	Burying power lines in Emigration Canyon has reduced the risk of losing power during an earthquake.	Stayed the same
Extreme Heat	Extreme heat can significantly affect public health, increasing the risk	Climate change significantly impacts extreme heat by	By causing residents to relocate due to damaged homes or safety	Development has not affected extreme heat	Increased

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
	of heat-related illnesses, especially among vulnerable populations. It also strains energy resources due to the higher demand for air-conditioning, potentially leading to power outages. In addition, extreme temperatures worsen air quality by raising ozone levels, which poses respiratory risks. Urban infrastructure may also suffer damage, leading to increased maintenance costs and safety concerns.	increasing the frequency and intensity of heat waves. Rising global temperatures lead to longer and hotter summers, affecting residents and local infrastructure while heightening health risks, especially for vulnerable populations. Urban heat islands from reduced vegetation and extensive pavement further amplify these effects.	concerns. Some may move to areas perceived as safer or seek better job opportunities elsewhere. The economic impact and infrastructure damage can also make certain neighborhoods less desirable, leading to shifts in demographics and the socioeconomic landscape as new residents with different backgrounds move in.	risk in Emigration Canyon.	
Extreme Cold	Extreme cold can lead to health risks such as frostbite and hypothermia, especially among vulnerable populations. Transportation may be disrupted due to icy conditions, affecting commutes and emergency services. Infrastructure is at risk, with water pipes potentially freezing and bursting, resulting in costly repairs. In addition, energy demands surge as residents rely on heating, straining the electrical grid and increasing utility costs. Cold temperatures can	By increasing the intensity of winter storms. Higher atmospheric temperatures allow for more moisture, resulting in heavier snowfall and potentially lower temperatures during these events. In addition, fluctuations in weather patterns may disrupt seasonal cycles, leading to unpredictable periods of extreme cold mixed with warmer spells.	By driving some residents to relocate to warmer areas. Harsh winters can hinder economic activities and deter new residents and businesses, influencing housing demand and the attractiveness of certain neighborhoods. This may disproportionately affect lower-income families, leading to changes in demographics and socioeconomic stratification in the community.	Development has not affected extreme cold risk in Emigration Canyon.	Increased

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
	also impact local agriculture and wildlife.				
Flooding	Damaging infrastructure, such as roads and utilities, disrupts transportation and essential services. Homes and businesses may experience costly water damage, causing potential displacement. Environmental effects include erosion and contamination of local waterways, impacting wildlife and recreation. Economically, flooding can cause lost income for businesses, increased insurance costs, and declining property values. Public health may also be compromised due to waterborne diseases and stress-related issues.	Higher temperatures increase the frequency and intensity of extreme weather events and alter precipitation patterns. They lead to more intense rainstorms and accelerated snowmelt from nearby mountains, raising water levels in rivers and streams. This combination raises the risk of flooding, especially in areas with inadequate drainage and urban development in flood-prone zones, heightening the potential for damage to homes and infrastructure.	Flooding can significantly alter population patterns by displacing residents from affected areas, leading them to seek shelter elsewhere. This may cause a population decline where flooding occurs, as individuals might hesitate to return due to ongoing risks or property damage. As neighborhoods become less desirable, people may migrate to safer areas, changing demographic trends and putting pressure on housing in those regions. Over time, these shifts can influence urban planning and development, as local governments address flooding risks and changing population needs.	By making some areas unsuitable for construction due to flood risks, planners may prioritize higher ground and impose stricter zoning laws, such as requiring elevated structures. This results in a more resilient urban landscape but may also limit growth and raise property values in safer areas.	Decreased
Landslide/ Slope Failure	The town's steep terrain is vulnerable, especially during heavy rainfall or rapid snowmelt. Properties on slopes may suffer damage, resulting in	Climate change increases the risk of landslides through heavier rainfall and temperature fluctuations. Intense rain saturates	Landslides and slope failures can impact population patterns by making some areas unsafe, leading to displacement and lower	Burying power lines in Emigration Canyon has reduced the risk of losing power during a landslide.	Increased

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
	displacement and economic losses. Transportation networks can be disrupted, complicating emergency responses. In addition, landslides can harm local ecosystems by displacing vegetation.	soil, destabilizing slopes, while freeze–thaw cycles weaken the ground. Changes in vegetation can also reduce stability, leading to a higher potential for landslides.	property values. This prompts residents to move to safer regions, thereby increasing density in more stable areas. Concerns about future landslides may also deter newcomers from high-risk zones, shaping long-term demographic trends.		
Radon	Radon poses significant health risks, particularly lung cancer, as it can enter homes through foundation cracks. Many residents may not test for radon, making them unaware of dangerous levels. Increased awareness and public health initiatives are vital for protection, especially with regard to population growth. Incorporating radon-resistant construction in new developments is also essential for safety.	Climate change can affect radon levels by altering soil temperatures and moisture conditions. Higher temperatures may increase radon emissions from the ground, while heavy rainfall can change groundwater and soil saturation, impacting radon migration into buildings.	Radon exposure can influence population patterns as increased health awareness may drive families to move away from areas with high radon levels. This shift could particularly affect vulnerable groups, changing demographics and demand in the housing market. Homes with lower radon levels may become more sought after, and public health campaigns can encourage community action, making previously undesirable areas more attractive once mitigation measures are implemented.	Development has not changed risk to radon.	Decreased
Heavy Rain	Heavy rain can cause flash floods, particularly in low-	Climate change increases the frequency	Heavy rain can shift population patterns by	Development has not affected the risk of heavy	Increased

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
	lying areas, disrupting traffic and emergency services. It may also lead to soil erosion, infrastructure damage, and increased landslide risk in hilly regions. In addition, heavy rainfall can overwhelm waterways, resulting in water quality issues from runoff, impacting public safety, local businesses, and agriculture.	and intensity of heavy rain, as higher temperatures allow the atmosphere to hold more moisture. This leads to stronger storms, flash flooding, and overwhelmed drainage systems.	pushing residents out of flood-prone areas and attracting them to safer neighborhoods. Frequent flooding may lead to evacuations and economic disruptions, prompting relocations. Over time, ongoing heavy rains can affect housing demand and community stability, altering the town's population distribution.	rain in Emigration Canyon.	
High Wind	High winds can cause property damage to roofs and windows, topple trees and power lines, and lead to power outages. They pose hazards for pedestrians and drivers and can worsen air quality by stirring up dust and pollutants, affecting residents' health.	Climate change affects high winds by altering atmospheric patterns and increasing extreme weather events. Rising temperatures may lead to more substantial, unpredictable winds and more frequent thunderstorms, posing risks to infrastructure and air quality.	High winds can alter population patterns by making certain areas less desirable. Frequent damage may drive residents to safer neighborhoods, deter newcomers, and slow growth in affected regions.	Burying power lines in Emigration Canyon has reduced the risk of losing power during a high wind event.	Increased
Lightning	Lightning can have several impacts, primarily posing risks to public safety with the potential for injuries or fatalities. It can spark wildfires in nearby areas, threatening property and the environment. In addition, lightning strikes	Climate change increases temperatures and alters precipitation, leading to more intense thunderstorms and frequent lightning strikes. Urbanization can enhance this effect,	Lightning can influence population patterns by causing property damage and wildfires, leading some residents to relocate. Areas with higher lightning activity may deter new residents, while safer locations	Development has not affected the risk of lightning in Emigration Canyon.	Increased

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
	can damage infrastructure, leading to electrical surges that cause power outages and service disruptions. This phenomenon also affects outdoor activities and tourism, while the economic burden includes increased insurance claims and repair costs.	posing risks to public safety and infrastructure.	could increase migration as people seek protection from severe weather.		
Severe Winter Weather	Heavy snow or blizzards can disrupt transportation, hinder emergency services, and cause infrastructure damage, such as roof collapses. These conditions can lead to increased municipal costs for snow removal and have a substantial economic impact on businesses, particularly in retail and tourism. Power outages may also occur, affecting heating during cold months.	Climate change impacts heavy snow and blizzards by altering precipitation patterns. Higher temperatures can lead to more rain than snow, affecting snowpack levels—additionally, increased storm intensity results in heavier, more unpredictable snowfall.	Increased population equals an increased number of people needing to get to work and quicker snow removal. Heavy snow or blizzards can impact population patterns by influencing where people live and work. Transportation disruptions may lead residents to seek housing closer to jobs, increasing density in some areas while depopulating others. Families might also avoid regions with frequent heavy snowfall, shifting demand to milder areas. Over time, these trends can alter community demographics and economic activity,	Burying power lines in Emigration Canyon has reduced the risk of losing power during a heavy snow event.	Increased

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
			prompting adjustments in town planning and resource allocation.		
Tornado	Tornadoes can cause serious damage to property and infrastructure, leading to injuries and economic challenges. Urban areas are especially vulnerable, complicating emergency responses and disrupting essential services. The psychological impact can affect community well-being, potentially leading to changes in demographics and land use as residents seek safer locations.	Climate change may increase the frequency and intensity of tornadoes. Higher temperatures lead to more moisture in the air, creating conditions for severe thunderstorms. Changes in wind patterns and precipitation can also heighten tornado risks, resulting in more destructive storms and greater threats to infrastructure and communities.	Tornadoes can influence population patterns by prompting residents to move to safer areas after damage occurs. This can decrease density in affected neighborhoods while increasing the demand for housing in safer regions. New residents may also move in for recovery opportunities, altering demographics. Over time, repeated tornado threats might push long-term residents to areas with better disaster preparedness, reshaping the town's population distribution.	Development has not affected the risk of tornadoes in Emigration Canyon.	Increased
Wildfire	Wildfires pose serious risks, including habitat damage, degraded air quality, and health issues for vulnerable populations. They can also lead to economic losses, property damage, and increased erosion that affects water quality.	By raising temperatures and creating drier conditions, prolonged droughts lead to more dry vegetation, which serves as fuel for fires. Erratic seasons extend the growing period, while more lightning strikes can ignite wildfires. These factors heighten	Displaced individuals often seek safer areas, shifting demographics, while declining property values might deter newcomers. Conversely, some may be drawn to rebuilding efforts, impacting long-term growth and community dynamics.	Burying power lines in Emigration Canyon has reduced the risk of losing power during a wildfire.	Increased

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
		the threat to ecosystems and community safety.			
Dam Failure	Dam failure could lead to severe flooding, damaging homes and infrastructure, isolating communities, and hindering emergency responses. This may cause loss of life, especially among vulnerable groups, and trigger economic losses for local businesses and property values. Long-term effects could affect community stability and public health, while floodwaters may contaminate local waterways and disrupt ecosystems.	Climate change raises the risk of dam failure by causing heavier rainfall and rapid snowmelt. These changes can overwhelm dams and compromise their integrity, highlighting the need for urgent safety assessments and upgrades to protect communities downstream.	Dam failure tornadoes can impact population patterns by displacing residents and altering demographics. Evacuations can lead to an influx in safer areas, while destruction may deter new residents and contribute to population decline. Fear of future disasters may also prompt remaining individuals to relocate, changing the community's composition and affecting population density and economic activity.	Development has not affected the risk of dam failure in Emigration Canyon.	Increased
Civil Disturbance	Civil disturbances can cause economic losses for businesses, create social divisions, and increase tensions among community groups. They may overwhelm law enforcement, leading to fear and mistrust among residents. Essential services could be disrupted, affecting quality of life, while long-term impacts may include	Climate change can increase civil disturbances by intensifying environmental stresses and social tensions. Rising temperatures may lead to droughts, wildfires, and poor air quality, particularly affecting vulnerable communities. Resource scarcity, especially water, can spark	By encouraging residents to move for safety, leading to outflows and new arrivals. These events can reveal social issues, impacting community dynamics, employment, and property values, ultimately reshaping demographics, and social cohesion.	Development has not affected the risk of civil disturbance in Emigration Canyon.	Increased

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
	changes in community dynamics and public policy.	conflicts and protests. In addition, an influx of migrants from harder-hit areas may strain local resources, further escalating tensions. This cycle of unrest is driven by the impacts of climate change on the environment and community dynamics.			
Cyberattack	Cyberattacks can disrupt critical infrastructure like power and water services, complicating emergency responses. Businesses may face financial losses from downtime and data breaches, eroding consumer trust. The public sector's essential services, including law enforcement and public health, could be compromised, leading to fear and reduced community confidence.	Possible attack on the industry, which is seen as producing large amounts of greenhouse gases and burning fossil fuels. Climate change can heighten cyberattack risk by increasing vulnerabilities during extreme weather. Disruptions like power outages offer cybercriminals opportunities, but focusing on emergency responses can weaken cybersecurity measures. As organizations adopt new technologies to cope with climate impacts, they may unintentionally introduce additional vulnerabilities.	Cyberattacks can change population patterns by eroding trust in essential services. Compromised systems may cause residents to leave due to safety concerns, while high-profile incidents can deter businesses, leading to job losses. This perception of vulnerability may also make the town less appealing to newcomers, resulting in demographic shifts and affecting local development.	Development has not affected the risk of cyberattacks in Emigration Canyon.	Increased

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
Hazardous Materials Incident (Transportation & Fixed Facility)	Hazardous materials incidents can severely impact public health, the environment, and the economy. Health risks include serious illnesses from exposure, while environmental damage may lead to soil and water contamination. Economically, incidents can cause property damage, lower property values, and disrupt businesses. The community also faces stress from evacuations and anxiety over safety.	Climate change elevates the risk of hazardous materials incidents by increasing extreme weather events like heavy rain and wildfires. These events can breach storage tanks and heighten material volatility. Vulnerable infrastructure can lead to more spills or accidents, while climate shifts may also introduce new challenges for managing hazardous substances and public health.	By causing evacuations and temporary declines in density. In the long run, unsafe areas may deter new residents, affecting growth and diversity. In addition, negative perceptions can lower property values and economic prospects, leading families to relocate, which impacts local demographics.	Widened roads in Emigration Canyon have reduced the risk of transportation accidents involving hazardous materials.	Increased
Public Health Epidemic/ Pandemic	Epidemics and pandemics can disrupt healthcare by overwhelming facilities and leading to resource shortages, diminishing care for all patients. Economic impacts may include business closures and job losses, particularly in hospitality and retail. The strain on public health services can affect routine care, while mental health issues may arise due to isolation and uncertainty. Shifts to remote learning can hinder student	By increasing the spread of vector-borne diseases and raising the risk of waterborne illnesses due to flooding or drought. Worsening air quality can also exacerbate respiratory conditions like asthma, especially in vulnerable populations.	By prompting migration for safety and better healthcare. Vulnerable groups may move to areas with improved services, while economic instability can drive people to seek new employment opportunities. In addition, restrictions like quarantine measures can limit movement and social interactions, reshaping the community's demographics and	Development has not affected the risk of epidemics/pandemics in Emigration Canyon.	Increased

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
	development, and vulnerable populations face heightened risks. Erosion of public trust in health authorities might reduce compliance with guidelines.		impacting local economies.		
Terrorism	Terrorism incidents can have significant impacts, including loss of life and emotional trauma for the community. Economically, they disrupt local businesses and tourism while creating fear and anxiety that affect social cohesion. Emergency services might be overwhelmed, requiring additional support, and increased security measures can alter daily life and raise concerns about civil liberties. Damage to critical infrastructure necessitates long-term repairs, and such incidents may deepen social divisions and prompt changes in security policies, highlighting the need for effective preparedness and response strategies.	Terroristic activity is sometimes centered around climate change. Climate change impacts terrorism incidents by creating conditions of resource scarcity and social unrest. Increased competition for essential resources, such as water, can fuel tensions, making communities more vulnerable to extremist ideologies. Extreme weather events may disrupt social order and infrastructure, offering terrorist groups opportunities to exploit crises. In addition, climate-driven population displacement can heighten tensions in receiving areas, raising the risk of domestic terrorism. Law enforcement's focus on climate-related	Terrorism incidents can alter population patterns by instilling fear and prompting residents to relocate to perceived safer areas, resulting in demographic shifts and potential declines in property values. Some neighborhoods may see an outflow of residents, while others could experience an influx of people seeking refuge from violence. In addition, increased security measures may deter businesses and residents from certain locations, leading to long-term changes in population density and urban development patterns.	Development has not affected the risk of terrorism in Emigration Canyon.	Increased

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
		challenges can also limit its capacity to address terrorism threats. Ultimately, while climate change may not directly cause terrorism, its effects can create an environment conducive to extremist activities.			

Additional Public Involvement

The city of Emigration Canyon provided several opportunities for public participation. Figure 1 displays examples of public outreach.

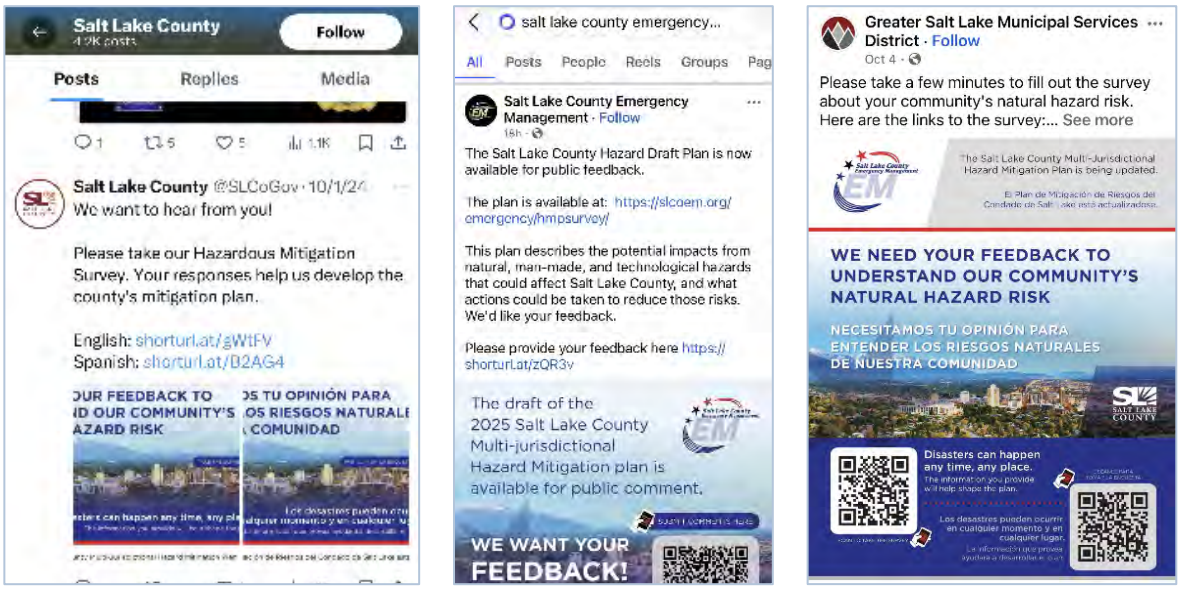

Figure 1: Social Media Posts for the Mitigation Survey and Draft Plan Review

Plan Integration

Incorporating the underlying principles of the Hazard Mitigation Plan and its recommendations into other plans is a highly effective and low-cost way to expand their influence. All plan participants will use existing methods and programs to implement hazard mitigation actions where possible. As previously stated, mitigation is most successful when it is incorporated into the day-to-day functions and priorities of government and public service. This plan builds on the momentum developed through previous and related planning efforts and mitigation programs, and it recommends implementing actions where possible through these other program mechanisms. These existing mechanisms include the following:

- Regularity Capabilities
- Administrative Capabilities
- Fiscal Capabilities

Respective planning stakeholders will conduct implementation and incorporation into existing planning mechanisms and will be done through the routine actions of:

- Monitoring other planning/program agendas
- Attending other planning/program meetings
- Participating in other planning processes; and

- Monitoring community budget meetings for other community program opportunities.

The successful implementation of this plan will require constant and vigilant review of existing plans and programs for coordination and multi-objective opportunities that promote a safe, sustainable community. Regular efforts should be made to monitor the progress of mitigation actions implemented through other planning mechanisms. Where appropriate, priority actions should be incorporated into planning updates. Table 10 lists existing planning mechanisms in which the Hazard Mitigation Plan has been integrated. Table 11 lists the opportunities for integrating elements of this plan into other plans.

Table 10: Previous Plan Integration by the City of Emigration Canyon

Plan	Description
Continuity of Operations (COOP) Plan	Describes operations for the city if a major event or disaster were to occur that disrupted daily operations
Community Wildfire Protection Plan	Provides information on wildfire mitigation and response efforts

Table 11: Opportunities for Integration with Future Plans of the City of Emigration Canyon

Plan	Description
General Plan	Overview of resident/municipal concerns, priorities, and long-term goals
Comprehensive Emergency Management Plan	Overall framework for preparedness, mitigation, response to and recovery from disaster.

Capability Assessment

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or could help carry out hazard mitigation activities.

Planning and Regulatory Capabilities

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards.

Table 12: Assessment of the Planning Capabilities of the City of Emigration Canyon[2]

Plan	Does it address hazards? (Y/N)	How can it be used to implement mitigation actions?	When was the last update? When is the next update?
General Plan	Y	Long-term goals and resident concerns can be incorporated into mitigation actions and funding sources.	2022.

[2] CEMP = Comprehensive Emergency Management Plan, CWPP = Community Wildfire Protection Plan, MSD = Municipal Services District.

Plan	Does it address hazards? (Y/N)	How can it be used to implement mitigation actions?	When was the last update? When is the next update?
Capital Improvement Plan (CIP)	N – this was identified as a need in the 2022 General Plan	As Emigration Canyon develops into a city, a plan would help them start outlining projects and priorities for leadership in coordination with MSD. The CIP can inform the funding sources.	To be accomplished in the MSD 2024 Strategic Plan
Climate Change Adaptation Plan	N	N/A	N/A
Community Wildfire Protection Plan	Y	CWPP outlines mitigation efforts that would be applicable to wildfire.	2021
Economic Development Plan	Y – in General Plan	Highlights economic development to inform funding for mitigation actions.	2022
Land Use Plan	Y – in General Plan	Highlights land use to inform mitigation actions.	2022
Local Emergency Operations Plan	Y	Emigration Canyon adopted the MSD CEMP.	2024
Stormwater Management Plan	Y – MSD's plan	Stormwater management can inform flooding/heavy rain mitigation actions.	2020
Transportation Plan	Y – in General Plan	Can inform mitigation strategies and funding sources related to transportation.	2022
Substantial Damage Plan	N	N/A	N/A
Other? (Describe)			

Table 13: Assessment of the Regulations and Ordinances of the City of Emigration Canyon

Regulation/ Ordinance	Does it effectively reduce hazard impacts?	Is it adequately administered and enforced?	When was the last update? When is the next update?
Building Code	Yes, building codes ensure that structures are built to standard and brought up to code when remodeling occurs. Emigration Canyon has several commercial buildings and many residential homes. The city adopted the state's building codes, including the International Building Code (IBC 2021) and International Residential Code (IRC 2021), with amendments such as	Y	2022

Regulation/ Ordinance	Does it effectively reduce hazard impacts?	Is it adequately administered and enforced?	When was the last update? When is the next update?
	Appendix C, Group U, and Appendix K of the IBC.		
Flood Insurance Rate Maps	Y	Y	2023
Floodplain Ordinance	Y	Y	2021
Subdivision Ordinance	Y	Y	2018
Zoning Ordinance	Y	Y	2018
Natural Hazard-Specific Ordinance (Stormwater, Steep Slope, Wildfire)	Y – defensible space/building materials for wildfire	Y	2023
Acquisition of Land for Open Space and Public Recreation Use	Y	Y	2018
Prohibition of Building in At-Risk Areas	Y	Y	2018
Other? (Describe)			

Administrative and Technical Capabilities

Administrative and technical capabilities include staff and their skills. They also include tools that can help carry out mitigation actions.

Table 14: Assessment of the Administrative Capabilities of the City of Emigration Canyon[3]

Administrative Capability	In Place? (Y/N)	Is staffing adequate?	Are staff trained on hazards and mitigation?	Is coordination between agencies and staff effective?
Chief Building Official	Y	No, need more building inspectors.	Yes, but could always use more training.	Yes
Civil Engineer	Y – through MSD	Yes	Yes, but could always use more training.	Yes
Community Planner	Y – through MSD	Yes	Yes, but could always use more training.	Yes
Emergency Manager	Y – designated by MSD	No	Very minimal – a dedicated Emergency Manager is needed as it is currently the mayor who is the	Yes

[3] MSD =Municipal Services District, SLCo = Salt Lake County, UFA = Unified Fire Authority.

Administrative Capability	In Place? (Y/N)	Is staffing adequate?	Are staff trained on hazards and mitigation?	Is coordination between agencies and staff effective?
			appointed Emergency Manager.	
Floodplain Administrator	Y – through SLCo	Yes	Yes, but could always use more training.	Yes
Geographic Information System (GIS) Coordinator	Y – through MSD	Yes	Yes, but could always use more training.	Yes
Planning Commission	Y	Yes	Yes, but could always use more training.	Yes
Fire Safe Council	N – UFA contracted for fire service	N/A	N/A	N/A
CERT (Community Emergency Response Team)	N	N/A	N/A	N/A
Active VOAD (Voluntary Agencies Active in Disasters)	Y	Yes	Yes, but could always use more training.	Yes
Other? (Please describe.)				

Table 15: Technical Capabilities of the City of Emigration Canyon[4]

Technical Capability	In Place? (Y/N)	How has it been used to assess/mitigate risk in the past?	How can it be used to assess/mitigate risk in the future?
Mitigation Grant Writing	Y – through MSD	Used for funding to support mitigation projects in Emigration Canyon	Can be used to fund future mitigation projects
Hazard Data and Information	Y – through MSD	Used to identify hazards that the city is vulnerable to	Can inform mitigation strategies
GIS	Y – through MSD	Can be used to prioritize areas of concern as far as hazards	Can be used for mitigation project tracking and planning efforts
Mutual Aid Agreements	Y	Agreements in place to support mitigation actions	Outlines funding sources and organizations

[4] MSD =Municipal Services District.

Technical Capability	In Place? (Y/N)	How has it been used to assess/mitigate risk in the past?	How can it be used to assess/mitigate risk in the future?
			responsible for mitigation actions
Other? (Please describe.)			

Financial Capabilities

Financial capabilities are the resources to fund mitigation actions. Talking about funding and financial capabilities is important to determine what kinds of projects are feasible, given their cost. Mitigation actions like outreach programs are lower cost and often use staff time and existing budgets. Other actions, such as earthquake retrofits, could require substantial funding from local, state, and federal partners. Partnerships, including those willing to donate land, supplies, in-kind matches, and cash, can be included.

Table 16: Assessment of the Financial Capabilities of the City of Emigration Canyon

Funding Resource	In Place? (Y/N)	Has it been used in the past and for what types of activities?	Could it be used to fund future mitigation actions?	Can it be used as the local cost match for a federal grant?
Capital Improvement Project Funding	Y	Slope stabilization	Yes	Yes
General Funds	Y	Operating expenses	Yes	Yes
Hazard Mitigation Grant Program (HMGP/404)	Y	No, could be used.	Yes	No
Building Resilient Infrastructure & Communities (BRIC)	Y	No, could be used.	Yes	No
Flood Mitigation Assistance (FMA)	Y	No, could be used.	Yes	No
Public Assistance Mitigation (PA Mitigation/406)	Y	No, could be used.	Yes	No
Community Development Block Grant (CDBG)	Y	No, could be used.	Yes	No
Natural Resources Conservation Services (NRCS) Programs	N	No, could be used.	Yes	No

Funding Resource	In Place? (Y/N)	Has it been used in the past and for what types of activities?	Could it be used to fund future mitigation actions?	Can it be used as the local cost match for a federal grant?
U.S. Army Corps (USACE) Programs	N	No, could be used.	Yes	No
Property, Sales, Income, or Special Purpose Taxes	Y	Operating costs	Yes	Yes
Stormwater Utility Fee	Y	Stormwater management	Yes	Yes
Fees for Water, Sewer, Gas, or Electric Services	Y	Maintenance	Yes	Yes
Impact Fees from New Development and Redevelopment	Y	Road overlays, fire management	Yes	Yes
General Obligation or Special Purpose Bonds	Y	No, could be used.	Yes	Yes
Federal-funded Programs (Please describe)	N	No, could be used.	Yes	No
Private Sector or Nonprofit Programs	N	No, could be used.	Yes	Yes
Other?				

Education and Outreach Capabilities

Education and outreach capabilities are programs and methods that could communicate about and encourage risk reduction. These programs may be run by a participant or a community-based partner. Partners, especially those who work with underserved communities, can help identify additional education and outreach capabilities.

Table 17: Assessment of the Education and Outreach Capabilities of the City of Emigration Canyon[5]

Education and Outreach Capability	In Place? (Y/N)	Does it currently incorporate hazard mitigation?	Could it be used to support mitigation in the future?
Community Newsletter(s)	Y	Community council newsletter.	Yes

[5] EM = Emergency Management, MSD = Municipal Services District, PIO = Public Information Officer, SLCo EM = Salt Lake County Emergency Management, UFA = Unified Fire Authority, UPD = Unified Police Department, VOAD = Voluntary Agencies Active in Disasters.

Education and Outreach Capability	In Place? (Y/N)	Does it currently incorporate hazard mitigation?	Could it be used to support mitigation in the future?
Hazard Awareness Campaigns (such as Firewise, Storm Ready, Severe Weather Awareness Week, School Programs)	Y	Through UFA and UPD's outreach. SLCo EM has monthly valley EM meeting to get all Emergency Managers together.	Yes
Public Meetings/Events (Please describe.)	Y	Community council meetings.	Yes
Emergency Management Listserv	Y – through MSD/UFA	PIO for SLCo EM assists.	Yes
Local News	Y	Work with SLCo EM PIO to get feedback on outreach strategies.	Yes
Distributing Hard Copies of Notices (e.g., public libraries, door-to-door outreach)	Y	Posted on website, local buildings.	Yes
Insurance Disclosures/ Outreach	N	Could be used	Yes
Organizations that Represent, Advocate for, or Interact with Underserved and Vulnerable Communities (Please describe.)	Y	Through VOAD and community council.	Yes
Social Media (Please describe.)	Y	Facebook, Instagram, and X	Yes
Other? (Please describe.)			

Opportunities to Expand and/or Improve Capabilities

Actions that can expand and improve existing authorities, plans, policies, and resources for mitigation include budgeting for mitigation actions, passing policies and procedures for mitigation actions, adopting and implementing stricter mitigation regulations, approving mitigation updates, and making additions to existing plans as new needs are recognized. Table 18 lists the opportunities for the city of Emigration Canyon.

Table 18: Opportunities to Expand and/or Improve the Capabilities of the City of Emigration Canyon

Capability	Opportunity to Expand and/or Improve
Planning and Regulation	The city can adopt a new regulation incorporating higher standards for developing critical infrastructure in high-risk areas in order to reduce landslide risk.
Administrative and Technical	The city can expand its Geographic Information System (GIS) capabilities, particularly for tracking hazard risks like pandemics. In addition to response and recovery, data collected can be utilized when demonstrating benefits and historic costs during a mitigation grant application.

Capability	Opportunity to Expand and/or Improve
Financial	The city can pursue new grant programs, such as the Flood Mitigation Assistance grant program.
Education and Outreach	The city can expand its outreach to the public on how to mitigate risk, such as programs for radon and tree maintenance which reduces the risks of wind damage. Empowering the public with tools to implement mitigation projects through new hazard-specific public outreach programs will increase the odds of mitigation being successfully accomplished.

Mitigation Strategy

Mitigation strategies provide proactive measures that are designed to minimize the impacts of hazards on the city of Emigration Canyon. Table 19 shows mitigation action alternatives, and Table 20 shows the status of previous mitigation activities. Table 21 is the 2025 mitigation action plan for the city of Emigration Canyon.

Table 19: Mitigation Action Alternatives for the City of Emigration Canyon

Action	Type of Action	Selected for inclusion in the plan?	If not selected, why not?
Continue slope stability program.	Structure and Infrastructure Projects	Yes	
Continue replacing power lines with insulated power lines that reduce risk of fire, reduce power line exposure by routing lines underground.	Structure and Infrastructure Projects	No	This action is performed by local utilities.
Continue fire fuel debris removal community awareness program.	Local Plans and Regulations	Yes	
Increase water storage for fire suppression.	Structure and Infrastructure Projects	Yes	

Table 20: Status of Prior Mitigation Actions of the City of Emigration Canyon

Action	Hazard(s)	Agency Lead	Support Agency(ies)	Status Update
Conduct a slope stabilization Study.	Landslides, Avalanche, Earthquake	Emigration Canyon	Municipal Services District	Completed. Work is ongoing to stabilize slopes – two slopes have been completed so far.
Bury powerlines to mitigate power outages and mitigate wildfires.	All hazards	Emigration Canyon	Utilities	Ongoing – some power lines were put underground in 2019.

Table 21: 2025 Mitigation Action Plan for the City of Emigration Canyon[6]

#	Action	Hazard(s)	Lead Agency	Potential Partners	Benefits (Losses Avoided)	Cost Estimate	Funding Source(s)	Time-frame	Priority	Comments
1	Enhance security at critical infrastructure locations to prevent potential for terrorist acts.	Terrorism, Civil Disturbance	SLCo EM	Emigration Canyon, UPD, UFA, MSD, SLCo IT, SLCo Public Works, SLCo Clerk's Office, SLCo Sheriff's Office	Increased security protocols (both in technology and policy) for staff/first responders, clear expectations/understanding for Emigration Canyon and the public.	Medium	SLCo EM general funds, Emigration Canyon general funds, UPD general funds, SLCo Sheriff's Office general funds, UFA general funds, MSD general funds, HSGP grant	Short-term	Medium	
2	Develop and implement public education programs on disaster awareness and mitigation.	Avalanche, Civil Disturbance, Dam Failure, Drought, Earthquake, Extreme Heat, Extreme Cold, Flooding, Hazardous Materials Incident, Heavy Rain, High Wind, Landslide/ Slope Failure, Lightning, Public Health Epidemic/Pandemic, Radon, Severe Winter Weather, Terrorism, Tornado, Wildfire	SLCo EM	Emigration Canyon, UFA, UPD, SLCo Sheriff's Office, SLCo Public Works, MSD, NWS	Increased understanding of local resources, improved relationships with the public and stakeholders. Outlined plans/SOPs for programs. For example, share posts on how to identify avalanche conditions and what to do to reduce risk (avalanche), how to elevate utilities and structures in high-risk flood zones and dam inundation areas (flooding, heavy rain, dam failure), and structural and non-structural retrofit measures for homes (earthquake).	Low	Emigration Canyon general funds, MSD general funds, BRIC grant, HSGP grant	Short-term	Medium	
3	Integrate WebEOC, Crisis Track, GIS, and other technological enhancements throughout Emigration Canyon.	Avalanche, Civil Disturbance, Dam Failure, Drought, Earthquake, Extreme Heat, Extreme Cold, Flooding, Hazardous Materials Incident, Heavy Rain, High Wind, Landslide/ Slope Failure, Lightning, Public Health Epidemic/Pandemic, Radon, Severe Winter Weather, Terrorism, Tornado, Wildfire	MSD	Emigration Canyon, SLCo EM, UFA, UPD, SLCo Public Works, SLCo Health Department	Common operating platform for stakeholders, increased situational awareness, improved response time.	Low	SLCo EM general funds, UFA general funds, Emigration Canyon general funds, MSD general funds, EMPG grant	Medium-term	Medium	Emigration Canyon already has this software; training and documentation need improvement.
4	Enhance and continue to promote the implementation of CERT and SAFE Hubs.	Avalanche, Civil Disturbance, Dam Failure, Drought, Earthquake, Extreme Heat, Extreme Cold, Flooding, Hazardous Materials Incident, Heavy Rain, High Wind, Landslide/ Slope Failure, Lightning, Public Health Epidemic/Pandemic,	SLCo EM	Emigration Canyon	Increased awareness of local resources.	Low	SLCo EM general funds, EMPG grant, Emigration Canyon general funds, MSD general funds	Short-term	Medium	SAFE Hubs (previously S.A.F.E. Neighborhoods) are rebranding, with a new public awareness campaign and information for all partners.

[6] ATF = Bureau of Alcohol, Tobacco, Firearms and Explosives, BRIC = Building Resilient Infrastructure and Communities, CWPP = Community Wildfire Protection Plan, DHS = Department of Homeland Security, EM = Emergency Management, EMPG = Emergency Management Performance Grant, FBI = Federal Bureau of Investigation, FMA = Flood Mitigation Assistance, HMA = Hazard Mitigation Assistance, HMGP = Hazard Mitigation Grant Program, HSGP = Homeland Security Grants Program, IT = Information Technology, LEPC = Local Emergency Planning Committee, MSD = Municipal Services District, NRCS = Natural Resources Conservation Service, NWS = National Weather Service, PDM = Pre-Disaster Mitigation, SHSP = State Homeland Security Program, SIAC = Statewide Information & Analysis Center, SLCo = Salt Lake County, SLCo EM = Salt Lake County Emergency Management, SLCo IT = Salt Lake County Information Technology, SOP = Standard Operating Procedure, UCA = Utah Communications Authority, UDEM = Utah Division of Emergency Management, UDEQ = Utah Department of Environmental Quality, UDOT = Utah Department of Transportation, UFA = Unified Fire Authority, UPD = Unified Police Department.

#	Action	Hazard(s)	Lead Agency	Potential Partners	Benefits (Losses Avoided)	Cost Estimate	Funding Source(s)	Time-frame	Priority	Comments
		Radon, Severe Winter Weather, Terrorism, Tornado, Wildfire								
5	Establish an access and functional needs registry and ensure those with access and functional needs are included in plans.	Avalanche, Civil Disturbance, Dam Failure, Drought, Earthquake, Extreme Heat, Extreme Cold, Flooding, Hazardous Materials Incident, Heavy Rain, High Wind, Landslide/ Slope Failure, Lightning, Public Health Epidemic/Pandemic, Radon, Severe Winter Weather, Terrorism, Tornado, Wildfire	SLCo EM	Emigration Canyon, MSD, UFA, UPD, SLCo Sheriff's Office	Increased situational awareness for the public and stakeholders, and greater understanding of resources available for those with access and functional needs.	Low	SLCo EM general funds, Emigration Canyon general funds MSD general funds, State of Utah general funds, HSGP grant	Short-term	High	The state of Utah's Access and Functional Needs Registry will dissolve in 2025. The county needs a way to account for those with access and functional needs, including incorporation into plans and SOPs.
6	Procure generators and transfer switches for public facilities and critical facilities.	Extreme Heat, Extreme Cold, Heavy Rain, High Wind, Tornado, Severe Winter Weather	SLCo EM	MSD, Emigration Canyon, local utilities	Backup generators available at cooling centers and Code Blue centers. An accurate inventory of what the county can provide to other agencies or jurisdictions as needed.	Medium	SLCo EM general funds, MSD general funds, Emigration Canyon general funds, HMA grant	Long-term	Medium	
7	Increase the size of culverts and bridges in areas that have been identified as past or potential flooding concerns.	Flooding, Heavy Rain	SLCo Flood Control Engineering	MSD, Emigration Canyon	Allows for larger runoff during spring melt season, reduce the amount of debris buildup.	High	PDM, HMGP grant, NRCS, MSD capital improvement budget, Emigration Canyon general funds	Long-term	Medium	
8	Procure FMA grants.	Flooding, Heavy Rain	UDEM	Emigration Canyon, SLCo Flood Control Engineering, MSD, SLCo EM	Improved understanding of grants available and how funds can be used for mitigation efforts.	Low	FMA grants	Medium-term	Medium	
9	Be a part of the enhanced emergency notification communications system for the county.	Avalanche, Civil Disturbance, Dam Failure, Drought, Earthquake, Extreme Heat, Extreme Cold, Flooding, Hazardous Materials Incident, Heavy Rain, High Wind, Landslide/ Slope Failure, Lightning, Public Health Epidemic/Pandemic, Radon, Severe Winter Weather, Terrorism, Tornado, Wildfire	SLCo EM	MSD, UFA, UPD, Emigration Canyon, UDOT	Early notification of impending wildfire to decrease loss of life. Improved relationships with the public and stakeholders. Faster delivery of information with templates/plans ready to go.	Medium	SLCo EM general funds, MSD general funds, Emigration Canyon general funds, HSGP grant,	Short-term	Medium	
10	Promote the Firewise initiative and regularly review/update the Community Wildfire Protection Plan (CWPP) for at-risk communities.	Wildfire	SLCo Fire Warden	SLCo EM, UFA, MSD, Emigration Canyon	Increased awareness of the plan (for the public and stakeholders), improved eligibility for grants and other funding sources, regular review of CWPP.	Low	SLCo EM general funds, MSD general funds, Emigration Canyon general funds, Community Wildfire Assistance grant, Fire Prevention and Safety grant	Short-term	Medium	

#	Action	Hazard(s)	Lead Agency	Potential Partners	Benefits (Losses Avoided)	Cost Estimate	Funding Source(s)	Time-frame	Priority	Comments
11	Conduct a public awareness campaign on Tier 2 reporting software for chemical reporting.	Hazardous materials incident	SLCo EM	UFA, UPD, SLCo Health Department, Emigration Canyon, SLCo Sheriff's Office, MSD, LEPC	Improved understanding of Tier 2 reporting and how local agencies/jurisdictions can find and submit information. A common operating platform for hazardous materials reporting.	Low	SLCo EM general funds, LEPC, Emigration Canyon general funds, MSD general funds, State of Utah general funds	Long-term	Medium	
12	Enact citywide regulations and codes for development to reduce landslide and slope failure damage to critical infrastructure and buildings.	Landslide and slope failure	MSD	SLCo EM, UFA, SLCo Office of Regional Development	Reduced likelihood of landslides and damage to critical infrastructure/buildings. Future development will be up to code and follow policies to avoid repetitive loss properties.	Medium	MSD general funds, Emigration Canyon general funds	Long-term	Medium	
13	Leverage WebEOC and GIS to track the spread of contagious diseases.	Public Health Epidemic/Pandemic	SLCo Health Department	SLCo EM, UFA, MSD, UPD, SLCo Sheriff's Office, Emigration Canyon	Use of GIS and WebEOC software to maintain situational awareness and track illnesses in the county.	Low	SLCo EM general funds, Emigration Canyon general funds, MSD general funds, SLCo Health Department general funds, UDEQ general funds	Short-term	Medium	Emigration Canyon already has this software; training and documentation need improvement.
14	Create public awareness campaigns and public education programs on radon risks and provide home testing for radon.	Radon	SLCo Health Department	SLCo Aging and Adult Services, SLCo EM, MSD, Emigration Canyon	Fewer radon-caused cancer deaths. Increased engagement/ understanding with the public on what SLCo can do or help with.	Low	SLCo EM general funds, SLCo Health Department general funds, HMGP grant, Emigration Canyon general funds, MSD general funds	Short-term	Low	
15	Develop road resurfacing project, including permeable pavement for areas with rain-based flooding.	Severe Weather – Heavy Rain, Flooding	MSD	UDOT, SLCo Flood Control Engineering, Emigration Canyon	Reduced discharge of pollutants in runoff, reduced maintenance time/costs on roads, improved traction on roads.	High	SLCo general funds, UDOT general funds, HMGP grant, MSD capital improvement budget, Emigration Canyon general funds	Long-term	Low	
16	Create a public education program to inform property owners about tree	Severe Weather – High Wind	SLCo Health Department	SLCo Aging and Adult Services, SLCo Public Works, UFA,	Reduced damage during high wind event to critical infrastructure. Fewer personal injuries (people driving on roads or walking in	Low	SLCo Flood Control Engineering general funds,	Short-term	Low	

#	Action	Hazard(s)	Lead Agency	Potential Partners	Benefits (Losses Avoided)	Cost Estimate	Funding Source(s)	Time-frame	Priority	Comments
	maintenance and high-strength windows.			Emigration Canyon, MSD	neighborhood). Improved relationships with stakeholders and the public.		SLCo EM general funds, UFA general funds, SLCo Health Department general funds, Emigration Canyon general funds, MSD general funds			
17	Develop a severe winter weather mitigation program to ensure access to primary roadways and evacuation routes.	Severe Winter Weather – Heavy Snow, Blizzard	SLCo Public Works & Municipal Services	SLCo EM, UDOT, Emigration Canyon, MSD	Emergency services, like police, fire, and paramedics, are able to use roads to provide their services.	Medium	MSD general funds, Emigration Canyon general funds, UDOT general funds	Short-term	High	A severe winter storm with heavy snowfall requires our operators and equipment to be used to clear roads and streets for the public and emergency vehicles to use. The primary efforts will be to keep the roads open by clearing snow.
18	Conduct a public awareness campaign about lightning safety.	Severe Weather – Lightning	SLCo EM	SLCo Parks and Recreation, UFA, SLCo Public Works & Municipal Services, Emigration Canyon, MSD, NWS	Lightning strike awareness for the public.	Low	SLCo EM general funds, MSD general funds, Emigration Canyon general funds	Short-term	Low	
19	Improve outreach for “see something, say something” QR code to deter terrorist acts.	Terrorism (including a cyberattack)	SLCo EM	SLCo Sheriff’s Office, UPD, UFA, MSD, Emigration Canyon, SLCo IT	Increased awareness by residents and local agencies about local intelligence resources and ways in which they can report suspicious activity. Increased QR code use/outreach at special events in Emigration Canyon.	Low	SLCo EM general funds, Emigration Canyon general funds	Short-term	Medium	
20	Be a part of the countywide intelligence group/ division to monitor and analyze threats before an incident occurs.	Terrorism (including cyberattacks)	SLCo EM	Emigration Canyon, SLCo Sheriff’s Office, SIAC, DHS, ATF, FBI	Central group to collect and analyze information, development of SOPs for intelligence, greater collaboration.	Low	SHSP grant, SLCo EM general funds, Emigration Canyon general funds, MSD general funds	Short-term	Medium	This will be a core group of stakeholders that meet on a regular basis to share and collaborate on intelligence data.
21	Code Enforcement – Review critical infrastructure facilities to ensure that building materials are up to code and are tornado-resistant.	Tornado, High Wind	MSD	Emigration Canyon, SLCo Public Works & Municipal Services, SLCo EM, UFA	Critical infrastructure facilities that are operational/functional in the event of a disaster. Increased life safety.	Medium	SLCo EM general funds, MSD general funds, Emigration Canyon general funds, UFA general funds	Short-term	Low	
22	Enhance interoperable radio communications systems throughout Emigration Canyon.	Avalanche, Civil Disturbance, Dam Failure, Drought, Earthquake, Extreme Heat, Extreme Cold, Flooding, Hazardous Materials	SLCo Fleet Services	SLCo EM, MSD, Emigration Canyon, UFA Communications Division, UCA	Improved communication between different agencies, a common operating platform.	Medium	SLCo EM general funds, Emigration Canyon general	Short-term	Medium	

#	Action	Hazard(s)	Lead Agency	Potential Partners	Benefits (Losses Avoided)	Cost Estimate	Funding Source(s)	Time-frame	Priority	Comments
		Incident, Heavy Rain, High Wind, Landslide/ Slope Failure, Lightning, Public Health Epidemic/Pandemic, Radon, Severe Winter Weather, Terrorism, Tornado, Wildfire					funds, MSD general funds, HSGP grant			
23	Be a part of the countywide single source of information sharing/gathering for intelligence.	Civil Disturbance, Terrorism	SLCo EM	Emigration Canyon, SLCo Sheriff's Office, SIAC, MSD, UPD	Improved coordination between local agencies/jurisdictions	Medium	HSGP grant. Emigration Canyon general funds, MSD general funds	Short-term	Medium	Have one common operating platform to be used by all agencies in SLCo to collect suspicious activity reports. Develop a public awareness campaign to educate the public on how and what to report.
24	Install xeriscaping at government-owned buildings.	Drought	MSD	Water companies/ districts, local utilities, Emigration Canyon, State of Utah	Reduced cost of landscape irrigation, decreased water use	High	State of Utah general funds, Emigration Canyon general funds, MSD general funds	Short-term	Low	
25	Improve communication to the public and stakeholders on resources available when Code Blue is in effect during severe winter weather.	Severe Winter Weather, Extreme Cold	SLCo EM	SLCo Health Department, NWS, MSD, Emigration Canyon, SLCo Office of Homelessness and Criminal Justice Reform	Reduced damage to critical infrastructure, homeless individuals have access to warming resources, reduced pressure on local homeless resource providers with standard protocols to follow during Code Blue.	Low	SLCo EM general funds, SLCo Health Department general funds, State of Utah general funds, MSD general funds, Emigration Canyon general funds	Short-term	Low	
26	Bury power lines to mitigate power outages and wildfires	Wildfire, Severe Winter Weather, High Wind	Emigration Canyon	MSD	Reduced potential damage to critical energy infrastructure.	High	Emigration Canyon capital improvement fund, HMA grant	Long-term	Medium	

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