MILLCREEK, UTAH
RESOLUTION NO. 25-28

A RESOLUTION OF THE MILLCREEK COUNCIL ADOPTING THE SALT LAKE COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, INCLUDING THE MILLCREEK CITY ANNEX

WHEREAS, the Millcreek Council ("Council") met in regular meeting on July 14, 2025, to consider, among other things, the adoption of the Salt Lake County Multi-Jurisdictional Hazard Mitigation Plan, including the Millcreek City Annex; and

WHEREAS, under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the National Flood Insurance Act, and related federal regulations, local jurisdictions are required to adopt a current hazard mitigation plan to maintain eligibility for certain Federal Emergency Management Agency (FEMA) funding programs; and

WHEREAS, Salt Lake County, in coordination with Millcreek and other participating jurisdictions, has prepared the Salt Lake County Multi-Jurisdictional Hazard Mitigation Plan, including the Millcreek City Annex dated 2025 ("Plan"), to identify and implement strategies to reduce long-term risks from natural hazards to people and property; and

WHEREAS, the Plan has been submitted to the Utah Division of Emergency Management (DEM) and FEMA for review and approval, with guidance from FEMA encouraging jurisdictions to adopt the Plan now to avoid delays once final approval is issued; and

WHEREAS, adoption of this Plan demonstrates Millcreek's commitment to hazard mitigation planning and ensures continued eligibility for FEMA hazard mitigation funding opportunities; and

WHEREAS, after careful consideration, the Council has determined that it is in the best interest of the health, safety, and welfare of the inhabitants of Millcreek to the Salt Lake County Multi-Jurisdictional Hazard Mitigation Plan, including the Millcreek City Annex.

NOW, THEREFORE, BE IT RESOLVED by the Council that The Salt Lake County Multi-Jurisdictional Hazard Mitigation Plan, including the Millcreek City Annex dated 2025, is hereby adopted. Millcreek adopts the plan, inclusive of any non-substantive minor additions or corrections that result from the state and FEMA review process.

This Resolution, assigned No. 25-28, shall take effect immediately upon passage.

PASSED AND APPROVED by the Council this 14th day of July, 2025.

MILLCREEK

_____

Jeff Silvestrini, Mayor

ATTEST:

_____

Elyse Sullivan, City Recorder

Roll Call Vote:		
Silvestrini	Yes	No
Catten	Yes	No
DeSirant	Yes	No
Jackson	Yes	No
Uipi	Yes	No

City of Millcreek

Jurisdictional Annex to the
Salt Lake County Hazard Mitigation Plan

Month XXXX | Draft X.X

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City of Millcreek Annex

To participate in this multi-jurisdictional hazard mitigation plan (MJHMP) update for Salt Lake County (SLCo), the governing body of the city of Millcreek 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 Millcreek

Name	Contact Information
Chris Catalano	**Phone: 801-214-2715; email:** CCatalano@millcreekUT.gov

The city of Millcreek 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 Millcreek

Name	Title	Jurisdiction
Chris Catalano	Emergency Manager	Millcreek City

Contact List

Table 3 lists plan contacts and stakeholders for the City of Millcreek update.

Table 3: Contact and Stakeholder List for the City of Millcreek

Name	Title	Jurisdiction/ Agency	Email	Phone	Stake-holder Type[1]	Should they receive meeting invites?	Should they complete a survey?	Should they review the draft plan?
John Miller	Director of Public Works	City of Millcreek	Jmiller@millcreejut.gov		1	N	Y	Y
Cheri Jackson	Council Member	City of Millcreek	Cjackson@millcreekUT.gov		5	N	Y	Y
Michael Lasko	Community Member	City of Millcreek	Mlasko@jub.com		5	N	Y	Y
Tim Bachman	CERT Coordinator	City of Millcreek	Timothybachman@gmail.com		5	N	Y	Y
		Salt Lake City Public Utilities	SLCDPUEngagement@SLCgov.com	801-483-6700	3	Y	Y	Y
		Jordan Valley Water Conservancy District		801-256-4481	3	Y	Y	Y
		Holliday Water Company		801-277-2893	3	Y	Y	Y
		Murray City Water		801-270-2440	3	Y	Y	Y

[1] 1 – Local and regional agencies involved in hazard mitigation activities; 2 – Agencies that have the authority to regulate development; 3 – Neighboring communities; 4 – Representatives of businesses, academia, and other private organizations; 5 – Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations.

Existing Plans and Resources

Table 4 lists the plans and resources available to the city.

Table 4: Existing Plans and Resources for the City of Millcreek

Plan, Study, Report, or Technical Information	Is it available online?	If online, add the link here.	Is it on SharePoint? Or where can we access it?	Comments
Millcreek Emergency Operations Plan	Yes	https://www.millcreekut.gov/178/Emergency-Management	SharePoint	
General Plan	Yes	https://millcreekut.gov/DocumentCenter/View/3193/Millcreek-Together-General-Plan---Sep-2022		

Jurisdiction Profile

Date of Incorporation

December 28, 2016

Location and Description

The City of Millcreek is a residential community adjacent to Salt Lake City. The city is 12.7 square miles in area and is approximately 4,285 feet above sea level. Situated along the Mill Creek Canyon in the Uinta–Wasatch–Cache National Forest, Millcreek offers an abundance of outdoor recreational activities including miles of hiking trails.

Population

The 2022 American Community Survey 5-Year Estimate from the U.S. Census Bureau records the population of the city of Millcreek as 63,380 people.

Demographics

Most of the 63,520 people are between the ages of 25-34, with a median age of 37.1; 32,003 are females (50.4%) and 31,517 are males (49.6%). English is the primary language in 78.6% of homes,, with 9.7% Spanish, and 11.7% other languages.

Brief History

Pioneers began settling the Canyon Rim and East Mill Creek areas in the Salt Lake Valley in the mid-1800s. By the 20th century, residential and commercial development began in Millcreek. Manufacturing operations and summer homes of the affluent from Salt Lake City also emerged along Mill Creek, particularly what is now known as Evergreen Avenue. Millcreek underwent a wave of growth and transformation during this time. Between the 1930s and 1960s, suburban expansion accelerated, exacerbated by Millcreek's proximity to Salt Lake City, the Wasatch Mountains, and key transportation routes. Millcreek became an attractive location for new starter home subdivisions with many veterans taking advantage of the location after World War II and the Korean War. Development continued throughout the 20th century and into the 21st with a focus on infill projects and smaller subdivisions. The area near I-15 became an industrial and commercial hub that benefitted from its access to major highways and railroads. Salt Lake County experienced rapid growth from 2010 onward, prompting Millcreek residents to push for incorporation to better manage the expansion. In 2015, voters approved the creation of a municipal government and Millcreek was incorporated.

Climate

The City of Millcreek experiences a semi-arid climate with hot, dry summers and snowy winters. Millcreek's climate is impacted by the surrounding terrain, which affects both the temperature of the city and the precipitation patterns due to the proximity to the Wasatch Mountains. Summer temperatures can surpass 90°F, and winter temperatures range from 30°F to 40°F. The city of Millcreek experiences significant precipitation, with snowfall ranging from 40 to 50 inches and rainfall ranging from 20 to 30 inches each year.

Public Services

The city of Millcreek offers a variety of public services to enhance the quality of life for its residents. These services include essential utility services, such as power (Rocky Mountain Power), gas (Dominion Energy), water (Salt Lake City Public Utilities and the Jordan Valley Water Conservancy District), sewer (Mt. Olympus Improvement District), and solid waste management (Wasatch Front Waste & Recycling). The Public Works Department focuses on improving infrastructure, such as roads, sidewalks, and stormwater systems; handling snow removal; issuing permits, and ensuring that construction sites comply with city codes. The city of Millcreek also provides various community services, including parks, trails, recreation, and open space maintenance, along with resources for residents to report concerns and request inspections.

Governing Body

The governing body for the City of Millcreek consists of a Mayor and a four-member city council. The city council serves as the city government performing executive functions of different natures. Members of this governing body are elected by the people.

Development Trends

The City of Millcreek adopted its first General Plan as of 2019, a major step forward in guiding the development of the city. Through conversations with the Millcreek community, seven vision themes for future development were identified: unique neighborhoods, vibrant gathering places, a thriving economy, great connections, health and environment, the outdoor lifestyle, and enhanced culture.

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 5. The results are based on the criteria in Table 6 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 5: Calculated Priority Risk Index Values for the City of Millcreek

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 (Transporta-tion & 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 6: 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 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 7 lists the hazard events impacting the city of Millcreek since the 2019 plan update, as recorded in the Storm Events Database from the National Centers for Environmental Information.

Table 7: History of Hazard Events in the City of Millcreek

Type of Hazard Event	FEMA Disaster #	Date(s)	Damage or Impacts	Description
Avalanche		N/A	N/A	N/A
Drought		N/A	N/A	N/A
Earthquake		03/18/2020	Minor property damage and temporary power outages.	A 5.7 magnitude earthquake struck near the city of Magna on March 18, 2020. Millcreek, along with the rest of the Salt Lake Valley, experienced strong shaking, which caused property damage and temporary power outages.
Extreme Heat		N/A	N/A	N/A
Extreme Cold		N/A	N/A	N/A
Flooding				Floods have periodically impacted Millcreek, particularly during heavy spring runoff seasons. Although not causing extensive destruction, these events have stressed infrastructure and prompted local emergency responses in Millcreek and Neffs Canyon.
Landslide/ Slope Failure		N/A	N/A	N/A
Radon		N/A	N/A	N/A
Heavy Rain		N/A	N/A	N/A
High Wind		09/07/2020	Widespread damage to trees, power lines, and homes. Power outages, some lasting several days, affected hundreds of thousands of residents.	A severe windstorm hit Millcreek, on September 7–8, 2020. The storm brought hurricane-force winds exceeding 100 mph.
Lightning		N/A	N/A	N/A

Type of Hazard Event	FEMA Disaster #	Date(s)	Damage or Impacts	Description
Severe Winter Weather		N/A	N/A	N/A
Tornado		N/A	N/A	N/A
Wildfire		October 14, 2020	Neffs Canyon Fire burned 80 acres close to Millcreek.	Millcreek's proximity to the Wasatch Mountains places it at risk of wildfires, which have become increasingly frequent in Utah due to rising temperatures and dry conditions. Although there have been no reports of major wildfires in Millcreek itself in the past decade, nearby fires like the one in Neffs Canyon have posed risks to air quality and required readiness for potential evacuations.
Dam Failure		N/A	N/A	N/A
Civil Disturbance		N/A	N/A	N/A
Cyberattack		N/A	N/A	N/A
Hazardous Materials Incident (Transporta-tion & Fixed Facility)		June 18, 2024	HazMat spill in Millcreek caused road/TRAX line shutdowns and an evacuation.	UFA responded when a 55-gallon barrel behind a building was producing white smoke.
Public Health Epidemic/ Pandemic	DR-4525	2020-2023	The local economy was affected by the lack of patrons in local businesses and social distancing measures that were needed to stop the spread of the virus.	The global pandemic of COVID-19 heavily impacted Millcreek, with public health measures, emergency planning, and community services being tested and strained during this period. Public health advisories, lockdowns, and social distancing measures were enacted to mitigate the virus's spread.
Terrorism		N/A	N/A	N/A

National Flood Insurance Program Summary

The city of Millcreek participates in the National Flood Insurance Program (NFIP). Table 8 displays statistics related to the NFIP. The city of Millcreek will continue to adopt and enforce floodplain management requirements, including regulating new construction of Special Flood Hazard Areas, making substantial improvement and/or damage determinations, or determining the permits required of owners to bring a substantially improved or damaged structure back into compliance. The city of Millcreek does not participate in the Community Rating System (CRS).

Table 8: National Flood Insurance Program Status for the City of Millcreek[2]

Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Adopted Date	Date Joined NFIP	Tribal
08/30/1977	12/18/1985	11/19/2021	2021	02/16/18	No

Table 9: National Flood Insurance Policies for the City of Millcreek

Community ID	Number of Losses	Total Net Payment	Active Policies	Total Coverage
490231	3	$20,627.98	131	$39,395,000

Jurisdiction-Specific Vulnerabilities

Table 10 provides information on the vulnerable assets in the city of Millcreek, 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.

Table 10: Jurisdiction-Specific Vulnerabilities of the City of Millcreek

Hazard	Vulnerable Asset	What makes this group/asset vulnerable to this hazard? Have there ever been issues with recovery after an event?
Avalanche	People	Risk to Millcreek due to avalanche is low. Avalanche risk is primarily in the canyons. Slope and other conditions that generate avalanche are not present in Millcreek. Residents who recreate in the canyons could be affected by avalanche.
	Structures	Risk of impacts on structures from avalanche is low but there are impacts on Millcreek if an avalanche were to occur in Millcreek Canyon, Neffs Canyon, or Big Cottonwood Canyon.
	Economic Assets	If homeowners or business owners do not have an insurance policy to cover damage, it would significantly affect their ability to make repairs or rebuild.
	Natural, Historic, and Cultural Resources	An avalanche could impact local vegetation and wildlife. In addition, there are historic buildings in Millcreek that would have extensive damage from avalanche impact.
	Critical Facilities and Infrastructure	Critical facilities and infrastructure are at risk due to their proximity to the canyons outside Millcreek. Interstate 215 is near the canyons. An avalanche could hinder access to Millcreek by emergency services.
	Community Activities	Outdoor activities would be impacted, especially recreation in the nearby canyons. If access is cut off or if it is dangerous to get to them, there may be less visitation, which would impact the local economy.

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

Hazard	Vulnerable Asset	What makes this group/asset vulnerable to this hazard? Have there ever been issues with recovery after an event?
Drought	People	Drought can impact outdoor recreation, especially the canyons surrounding Millcreek. People who work or recreate outside may need to take frequent breaks if they are in the sun and have limited water access.
	Structures	Depending on the building material, it may be more difficult to cool structures if water is limited or during the warm summer months.
	Economic Assets	Local business owners would be impacted if they cannot get the water they need for cleaning, irrigation, growing food, etc. This could cause businesses to close or reduce their hours in the middle of the day when it is the warmest.
	Natural, Historic, and Cultural Resources	Drought can cause soil erosion and alter wildlife patterns. In addition, local vegetation might not be able to grow. Any public parks may be at reduced watering levels to conserve the resource.
	Critical Facilities and Infrastructure	Critical infrastructure that requires a significant amount of water to run or cool will be impacted, especially if water is rationed. It may be challenging for St. Marks Hospital or other healthcare facilities to provide service to patients.
	Community Activities	Outdoor recreation in the canyons, at parks, or at golf courses would face significant challenges if there's a lack of water. They would not be able to irrigate those recreation areas, especially if there are restrictions placed on the amount of water used.
Earthquake	People	Residents are vulnerable to earthquakes due to proximity to fault lines, making the area susceptible to ground shaking and secondary hazards like landslides and fires from gas line ruptures. The most vulnerable populations include the elderly, disabled, and low-income residents who may lack resources to adequately prepare or respond during an emergency. Buildings and homes built before modern seismic codes are particularly vulnerable. Structures not retrofitted to withstand seismic events risk significant damage or collapse during an earthquake.
	Structures	Older buildings and homes built before modern seismic codes are particularly vulnerable. Structures not retrofitted to withstand seismic events risk significant damage or collapse during an earthquake.
	Economic Assets	Earthquakes can disrupt businesses, damage commercial properties, and cause a loss of revenue for the city. Damage to infrastructure, such as roads and utility lines, could hinder economic recovery by delaying repairs and disrupting daily operations.
	Natural, Historic, and Cultural Resources	Historic buildings and landmarks are at risk of damage or destruction, threatening the loss of heritage and cultural identity. These structures often require specialized efforts for preservation and restoration following a disaster.
	Critical Facilities and Infrastructure	Vital services, including power, water, and transportation networks, are vulnerable to earthquake damage. A major event could disrupt these services, hindering emergency response efforts and recovery operations.

Hazard	Vulnerable Asset	What makes this group/asset vulnerable to this hazard? Have there ever been issues with recovery after an event?
	Community Activities	Earthquakes disrupt community routines, halting gatherings, events, and local services. Key community spaces like schools, parks, and local businesses would face closure or restricted access, impacting social cohesion and recovery efforts.
Extreme Heat	People	Extreme heat poses significant health risks to residents, particularly vulnerable groups like the elderly, young children, individuals with chronic illnesses, and those without access to cooling resources. High temperatures can cause heat-related illnesses, such as heat exhaustion and heatstroke, which can be fatal if not properly managed.
	Structures	Buildings, especially older ones, may lack modern insulation and air-conditioning systems, making them vulnerable to internal heat buildup. Prolonged exposure to extreme heat can also cause wear and tear on roofs and damage materials like asphalt.
	Economic Assets	High temperatures can impact outdoor workers, reducing productivity and increasing the risk of heat-related injuries. Prolonged heat waves can strain businesses, particularly those dependent on outdoor operations, and lead to increased energy costs for cooling. This places a financial strain on households and commercial establishments.
	Natural, Historic, and Cultural Resources	Outdoor cultural sites and activities are vulnerable to heat waves, which can deter tourism and participation. Historical buildings may suffer degradation due to constant exposure to heat, which can accelerate wear on materials and increase the cost of preservation.
	Critical Facilities and Infrastructure	Infrastructure, such as power lines and road surfaces, is at risk during extreme heat. High temperatures can lead to increased power consumption, risking power outages. The heat can also damage asphalt and rail lines, disrupting transportation.
	Community Activities	Extreme heat can curtail community events, as gatherings and festivals held outdoors might have to be rescheduled or canceled due to the health risks posed by high temperatures. This can lead to economic and social impacts, disrupting the community's normal activities and affecting revenue.
Extreme Cold	People	People are vulnerable to hypothermia and frostbite, especially the elderly, young children, and homeless populations without adequate shelter or heating.
	Structures	There is a risk of burst pipes and structural damage from ice buildup, and there might be a strain on heating systems.
	Economic Assets	Increased heating costs, reduced outdoor productivity, and temporary closures for outdoor businesses.
	Natural, Historic, and Cultural Resources	Historic buildings and outdoor cultural sites can suffer from ice damage or lack of heating infrastructure. Cold can damage ecosystems and wildlife, causing plant die-offs or impacting animal populations.
	Critical Facilities and Infrastructure	Water pipes and transportation networks are at high risk due to freezing conditions, disrupting water supply and transport.
	Community Activities	Outdoor events and gatherings are halted, impacting social functions and community cohesion.

Hazard	Vulnerable Asset	What makes this group/asset vulnerable to this hazard? Have there ever been issues with recovery after an event?
Flooding	People	Risk of injury, displacement, and loss of homes, particularly in low-lying areas and creek-side communities.
	Structures	Water damage to homes and buildings, especially those in flood-prone zones without proper elevation or floodproofing.
	Economic Assets	Commercial properties face flood damage, causing business closures and revenue loss.
	Natural, Historic, and Cultural Resources	Historic sites are at risk of water damage to their structures and contents. Floodwaters can erode soil, degrade water quality, and damage ecosystems, affecting wildlife habitats.
	Critical Facilities and Infrastructure	Roads, bridges, and water treatment facilities are vulnerable to flooding, which can cause long-term disruptions.
	Community Activities	Community centers and public spaces can become unusable, disrupting normal activities and events.
Landslide/ Slope Failure	People	A landslide could cause injuries or fatalities, potentially overwhelming local medical facilities.
	Structures	Structures could sustain damage or collapse if a landslide/slope failure were to occur. The ability for residents or local business owners to rebuild depends on whether they have insurance or other funds.
	Economic Assets	The local economy would be affected by road closures from the landslide, especially if this occurs near I-215. Emergency response would be impacted.
	Natural, Historic, and Cultural Resources	Historic buildings are at risk, especially if they do not have an insurance policy or the funds to make repairs. Local vegetation and wildlife are at risk. Landslides can cause soil erosion.
	Critical Facilities and Infrastructure	Critical infrastructure and facilities are at risk, especially if essential services like police or fire cannot access the area in a timely manner.
	Community Activities	Outdoor recreation would be affected, especially if people recreate in the canyons close to Millcreek.
Radon	People	Radon can impact the health of the local population, including cancer and respiratory problems.
	Structures	54% of homes,, in Millcreek have high radon test levels, according to https://utahradon.org/. Radon awareness and mitigation efforts could reduce the harmful effects of radon. If a business owner or homeowner does not have the money to complete radon mitigation, they are at risk of radon exposure.
	Economic Assets	If the area is known to have high radon levels, it may prevent tourists or locals from visiting the city.
	Natural, Historic, and Cultural Resources	Historic buildings are at risk if they are not properly maintained or do not have the funding to complete mitigation work. Local vegetation and wildlife could be impacted.

Hazard	Vulnerable Asset	What makes this group/asset vulnerable to this hazard? Have there ever been issues with recovery after an event?
	Critical Facilities and Infrastructure	Critical facilities would be impacted if inspectors or employees cannot go into certain areas of a building with high radon levels.
	Community Activities	Indoor community activities would be affected if mitigation does not occur, which then impacts the local economy. If people do not feel safe to go into a building, they will stay home or go elsewhere.
Heavy Rain	People	Danger of flash flooding, especially for residents near drainage systems and waterways.
	Structures	Heavy rain can lead to water infiltration and damage to roofs, basements, and poorly sealed buildings.
	Economic Assets	Impacts outdoor workers and businesses, delaying projects and disrupting operations.
	Natural, Historic, and Cultural Resources	Intense rainfall can lead to soil erosion and water pollution, harming local ecosystems. Water damage can affect archives, historical structures, and outdoor cultural sites.
	Critical Facilities and Infrastructure	Roads and drainage systems can be overwhelmed, causing transport disruptions and potential road washouts.
	Community Activities	Rain can cancel or delay outdoor events and activities, impacting social and economic life.
High Wind	People	At risk from flying debris and structural collapses, especially those in mobile homes and older buildings.
	Structures	Strong winds can damage trees, destabilize soils, and disrupt animal habitats. High winds can damage roofs, windows, and siding, particularly in buildings not designed to withstand strong gusts.
	Economic Assets	Outdoor businesses and agriculture suffer losses from wind damage to crops, signs, and outdoor infrastructure.
	Natural, Historic, and Cultural Resources	Historic buildings and monuments are susceptible to wind damage if not properly maintained. Major loss of old trees.
	Critical Facilities and Infrastructure	Power lines, utility poles, and communications towers are at high risk, leading to widespread outages.
	Community Activities	Outdoor events are often canceled, and public safety measures must be enacted quickly.
Lightning	People	Risk of direct lightning strikes, especially for those in open spaces or participating in outdoor activities.
	Structures	Unprotected structures face fire risks and electrical damage from lightning strikes.
	Economic Assets	Outdoor businesses face operational delays and potential fire hazards from lightning-induced fires.

Hazard	Vulnerable Asset	What makes this group/asset vulnerable to this hazard? Have there ever been issues with recovery after an event?
	Natural, Historic, and Cultural Resources	Lightning strikes can start wildfires, which threaten forests and wildlife habitats.
	Critical Facilities and Infrastructure	Power outages and damage to communications infrastructure are common risks.
	Community Activities	Sporting events, festivals, and outdoor gatherings may be disrupted or canceled for safety.
Severe Winter Weather	People	Increased risk of injuries due to slips and falls and health impacts from prolonged exposure to cold.
	Structures	Roofs, particularly flat or poorly maintained ones, are vulnerable to collapse under heavy snow.
	Economic Assets	Snow disrupts transportation and delivery services, affecting businesses that rely on shipping and commuting.
	Natural, Historic, and Cultural Resources	Snow and ice can damage historic roofs and outdoor cultural sites not built for heavy winter weather. Heavy snow accumulation can impact plant life and displace animals, altering local ecosystems.
	Critical Facilities and Infrastructure	Roads and power lines are particularly vulnerable to snow buildup, causing transport delays and outages. Essential services like police or fire could be slow to respond.
	Community Activities	Community centers may serve as warming stations, but other activities can be halted due to travel difficulties.
Tornado	People	High risk of injury or death from flying debris and collapsing buildings, especially for residents in mobile homes or weak structures.
	Structures	Tornadoes can cause extensive damage to homes, commercial buildings, and public facilities.
	Economic Assets	Significant property damage disrupts businesses, causing revenue loss and long-term rebuilding.
	Natural, Historic, and Cultural Resources	Tornadoes can uproot trees and destroy wildlife habitats, impacting local biodiversity. Tornadoes can destroy historic structures and monuments that are not reinforced.
	Critical Facilities and Infrastructure	Power lines, communication towers, and water lines are at high risk of being damaged or destroyed.
	Community Activities	Public gatherings and services are halted during and after a tornado event.
Wildfire	People	Residents in the wildland-urban interface are at direct risk of fire, smoke inhalation, and evacuation.
	Structures	Homes without defensible space are highly susceptible to fire damage.
	Economic Assets	Businesses in fire zones may suffer structural damage or closure due to poor air quality.

Hazard	Vulnerable Asset	What makes this group/asset vulnerable to this hazard? Have there ever been issues with recovery after an event?
	Natural, Historic, and Cultural Resources	Wildfires devastate forests, displacing wildlife and altering natural landscapes. Fire can destroy historic landmarks and artifacts, especially those in rural or wildland areas.
	Critical Facilities and Infrastructure	Utility lines and roads can be affected by fires, disrupting essential services.
	Community Activities	Outdoor events may be canceled due to safety concerns and poor air quality.
Dam Failure	People	Immediate danger to life due to sudden flooding, particularly for those living downstream of dams.
	Structures	Homes and businesses downstream face destruction from rapid flooding.
	Economic Assets	Flooded commercial properties can lead to prolonged business interruptions and costly rebuilding.
	Natural, Historic, and Cultural Resources	Dam failure results in catastrophic flooding, disrupting ecosystems and potentially destroying habitats.
	Critical Facilities and Infrastructure	Roads, bridges, and utilities in the path of floodwaters might face complete failure.
	Community Activities	Community evacuation and loss of local resources disrupt normal activities and social services.
Civil Disturbance	People	Risk of injury from violent confrontations, particularly in areas of concentrated protests or riots.
	Structures	Businesses and public buildings face damage from vandalism, looting, and arson.
	Economic Assets	Widespread property damage impacts local businesses and financial stability.
	Natural, Historic, and Cultural Resources	Public monuments and government buildings can be damaged during disturbances. Parks and public natural areas might have minimal direct impact, but they might be closed or restricted during unrest.
	Critical Facilities and Infrastructure	Key transport routes and government facilities may be targeted or blocked.
	Community Activities	Public services and events may be halted or rescheduled due to security concerns.
Cyberattack	People	Personal information and financial data are at risk, affecting public trust and security.
	Structures	Building security systems can be hacked into, compromising critical infrastructure and local businesses.
	Economic Assets	Businesses are exposed to financial losses and data breaches, impacting operations and trust.

Hazard	Vulnerable Asset	What makes this group/asset vulnerable to this hazard? Have there ever been issues with recovery after an event?
	Natural, Historic, and Cultural Resources	Digital archives and records can be compromised or lost in a cyberattack.
	Critical Facilities and Infrastructure	Power grids, water systems, and communications networks face risks of hacking and disruption.
	Community Activities	Disrupted services and loss of public trust impact community services and governmental functions.
Hazardous Materials Incident (Transporta-tion & Fixed Facility)	People	Direct exposure risks include respiratory issues and chemical burns, with vulnerable populations being the most at risk.
	Structures	Contamination can damage or render structures unusable without extensive cleanup.
	Economic Assets	Businesses in affected areas face closures and costly decontamination processes.
	Natural, Historic, and Cultural Resources	Sites in contamination zones are at risk of long-term damage. Hazardous spills can contaminate soil and water sources, harming plants, animals, and entire ecosystems.
	Critical Facilities and Infrastructure	Water supplies and transportation routes can be impacted, leading to service shutdowns.
	Community Activities	Disruption of public services and events is common due to safety and evacuation measures.
Public Health Epidemic/ Pandemic	People	Health risks are widespread, particularly for elderly and immunocompromised individuals.
	Structures	Limited direct impact, but public buildings may require modifications for infection control. This can include social distancing, turning people away if they have a fever, or limiting the number of people in a building.
	Economic Assets	Extended closures and reduced operations lead to economic losses for businesses and public services.
	Natural, Historic, and Cultural Resources	Historical or cultural resources could be affected by reduced tourism. People may choose to stay home or avoid public areas, which impacts revenue.
	Critical Facilities and Infrastructure	Healthcare systems and public services are strained, affecting service availability.
	Community Activities	Events are postponed or moved online, reducing social interactions and community engagement.
Terrorism	People	Threat to public safety and psychological impacts on communities.
	Structures	Key targets include government buildings, public spaces, and transportation hubs.
	Economic Assets	Major financial impacts from property damage, heightened security measures, and loss of consumer confidence.

Hazard	Vulnerable Asset	What makes this group/asset vulnerable to this hazard? Have there ever been issues with recovery after an event?
	Natural, Historic, and Cultural Resources	Certain types of attacks, like those involving explosives or chemicals, could have damaging effects on local environments. Terrorist attacks could target significant historical landmarks, causing irreversible loss of cultural heritage.
	Critical Facilities and Infrastructure	Essential services and public utilities are common targets, affecting large populations.
	Community Activities	Public fear and security concerns lead to event cancellations and changes in social behavior.

Jurisdiction-Specific Impacts and Changes in Development

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 Millcreek to develop a resilient community and minimize the impacts of hazards. Table 11 displays the impacts each identified hazard has had on the city of Millcreek.

Table 11: Jurisdiction-Specific Impacts of Hazards on the City of Millcreek

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.	Areas at high risk may face restrictions on new construction and require costly safety measures, which can deter development and shift growth to safer locations. Increased awareness of avalanche hazards may lead local governments to implement stricter zoning laws, affecting recreation and tourism in mountainous regions.	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,	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 as sustainable development	Drought can significantly impact land use and development by reducing water availability, leading to shifts in agricultural practices. Farmers may switch to drought-resistant crops or repurpose land for more profitable ventures, prompting urban development as people seek water-secure areas. This increased demand may drive local governments to adjust zoning laws and promote	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
		further straining local water resources.	or improved water management, may attract newcomers, resulting in changes in the community's demographic composition over time.	sustainable practices in new projects. As a result, prolonged drought conditions can reshape the area's landscape and influence future development trends.	
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 that can lower property values. Local businesses can be disrupted, 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.	Earthquakes can alter land use and development by leading to changes in zoning and building codes. After an earthquake, damaged areas might be rezoned for different uses, and development may accelerate in certain neighborhoods.	Stayed the same

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
Extreme Heat	Extreme heat can significantly affect public health, increasing the risk 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 also may suffer damage, leading to increased maintenance costs and safety concerns.	Climate change significantly impacts extreme heat by 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.	Residents may relocate due to damaged homes or safety 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.	Rising temperatures may lead urban planners to adopt heat mitigation strategies, such as increasing green spaces and using reflective materials. Zoning regulations might shift to promote mixed-use developments that enhance walkability and reduce vehicle reliance during peak heat. As concerns about heat-related health risks grow, there may be greater demand for improvements like shaded sidewalks and cooling centers, influencing future development toward resilience and sustainability.	Increased
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	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	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,	Extreme cold can impact land use and development by shifting priorities toward indoor facilities like shopping centers and community spaces, as outdoor activities are curtailed. Developers may focus on energy-efficient designs to cope with harsh winter conditions,	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
	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 also impact local agriculture and wildlife.	in weather patterns may disrupt seasonal cycles, leading to unpredictable periods of extreme cold mixed with warmer spells.	leading to changes in demographics and socioeconomic stratification in the community.	which can lead to increased construction costs and adjusted project timelines.	
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 also may 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

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
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 displacement and economic losses. Transportation networks can be disrupted, complicating emergency responses. In addition, landslides can harm local ecosystems by displacing vegetation.	Climate change increases the risk of landslides through heavier rainfall and temperature fluctuations. Intense rain saturates soil, destabilizing slopes, while freeze–thaw cycles weaken the ground. Changes in vegetation can also reduce stability, leading to a higher potential for landslides.	Landslides and slope failures can impact population patterns by making some areas unsafe, leading to displacement and lower property values. This prompts residents to move to safer regions, thereby increasing density in more stable areas. Concerns about future landslides also may deter newcomers from high-risk zones, shaping long-term demographic trends.	Landslides and slope failures can impact land use and development by rendering certain areas unsafe for construction. This often results in stricter zoning laws, pushing developers to focus on more stable regions. Consequently, property values may decline in affected areas, and infrastructure investments shift to increase safety, ultimately guiding growth toward safer locations.	Increased
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	Radon can impact land use and development by necessitating site assessments and mitigation, which can increase costs. Developers might prioritize areas with lower radon risks and adopt designs that reduce gas infiltration. This awareness may prompt stricter building codes and zoning regulations, influencing where new projects are located and shaping community planning.	Decreased

Type of Hazard Event	Description of Potential Impacts	Effects of Climate Change	Changes in Population Patterns	Changes in Land Use and Development	Overall Vulnerability
			measures are implemented.		
Heavy Rain	Heavy rain can cause flash floods, particularly in low-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.	Climate change increases the frequency and intensity of heavy rain, as higher temperatures allow the atmosphere to hold more moisture. This leads to stronger storms, flash flooding, and inundated drainage systems.	Heavy rain can shift population patterns by 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 city's population distribution.	Need for adequate stormwater systems in new areas. Heavy rain can impact land use and development by altering zoning regulations to address flood risks. Previously safe areas might be deemed unsuitable for development, pushing growth to higher ground. There may also be a shift toward green infrastructure and improved drainage systems, ultimately transforming the urban landscape to enhance flood resilience.	Increased
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	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.	Buildings need to meet building code standards to withstand expected wind events. High winds can affect land use and development by necessitating stronger building codes and wind-resistant designs, which may raise construction costs. Areas prone to wind damage might see	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
		risks to infrastructure and air quality.		decreased property values, leading to reduced investment. In addition, high winds can cause erosion and harm vegetation, prompting city planners to prioritize open spaces and green infrastructure, ultimately altering development strategies.	
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 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.	Climate change increases temperatures and alters precipitation, leading to more intense thunderstorms and frequent lightning strikes. Urbanization can enhance this effect, posing risks to public safety and infrastructure.	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 could increase migration as people seek protection from severe weather.	Lightning can impact land use and development by increasing risks that require careful planning. Higher insurance costs may deter developers, while infrastructure must include safety measures, such as lightning rods. As climate change causes more intense storms, urban planners may adapt zoning and building codes to enhance resilience, thereby influencing the town's growth.	Increased
Severe Winter Weather	Heavy snow or blizzards can disrupt transportation, hinder emergency services, and cause infrastructure damage, such as roof collapses.	Climate change impacts heavy snow and blizzards by altering precipitation patterns. Higher temperatures can lead	Increased population equals an increased number of people needing to get to work and quicker snow removal.	Need to maintain the capacity to plow current and future town roads. Heavy snow and blizzards can influence land use and	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
	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 also may occur, affecting heating during cold months.	to more rain than snow, affecting snowpack levels—additionally, increased storm intensity results in heavier, more unpredictable snowfall.	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, prompting adjustments in city planning and resource allocation.	development by necessitating infrastructure improvements, such as enhanced snow removal and drainage. Planners may prioritize areas more affected by snow for development, while frequent blizzards could deter growth in certain neighborhoods, pushing developers to seek safer locations. Over time, these changes can alter population density and reshape the urban landscape.	
Tornado	Tornadoes can cause serious damage to property and infrastructure, leading to injuries and economic challenges. Urban areas are especially vulnerable, complicating emergency response and disrupting essential services. The psychological impact can affect community well-being, potentially leading to changes in demographics and land	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	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	Tornadoes can significantly alter land use and development by leading to stricter construction codes and zoning laws for resilience. Communities may invest in tornado shelters, relocate critical facilities away from high-risk areas, and create open spaces for emergency response, all while promoting economic development	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
	use as residents seek safer locations.	infrastructure and communities.	areas with better disaster preparedness, reshaping the city's population distribution.	through sustainable practices.	
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 the threat to ecosystems and community safety.	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.	Recovery efforts often focus on resilient infrastructure and green spaces, leading to stricter building codes and encouraging development in safer areas. As wildfires increase with climate change, adapting land use is vital for community resilience.	Increased
Dam Failure	Dam failure could lead to severe flooding, homes and infrastructure damage, which isolates communities, and hinders emergency response. This may cause loss of life, especially among vulnerable groups, and trigger economic losses for local businesses and property values. Long-term effects involve community stability and public health, while floodwaters may contaminate local	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 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.	Dam failure can reshape land use and development by making areas prone to flooding unsuitable for growth. This may lead planners to focus on safer regions and implement stricter zoning laws to enhance resilience. The emphasis on sustainable practices and flood mitigation can ultimately transform the urban landscape, prioritizing disaster preparedness in future developments.	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
	waterways and disrupt ecosystems.				
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 changes in community dynamics and public policy.	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 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.	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.	By shifting community priorities toward safety and stability. Developers may hesitate to invest in troubled areas, leading to a focus on public spaces and community centers. Residents might also push for zoning changes favoring low-density housing and community-oriented efforts, prompting a reevaluation of land use strategies.	Increased
Cyberattack	Cyberattacks can disrupt critical infrastructure like power and water services, complicating emergency responses. Businesses may face financial losses from downtime and data	Possible attack on the industry, which is seen as producing large amounts of greenhouse gases and burning fossil fuels.	Cyberattacks can change population patterns by eroding trust in essential services. Compromised systems may cause residents to leave due to safety concerns, while	Cyberattacks can impact land use and development by undermining confidence in public infrastructure. If essential systems are compromised, investors	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
	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.	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.	high-profile incidents can deter businesses, leading to job losses. This perception of vulnerability may also make the city less appealing to newcomers, resulting in demographic shifts and affecting local development.	may be discouraged, slowing economic activity. Local governments might also redirect funds to increase cybersecurity rather than new infrastructure, altering development timelines and urban planning priorities. This can significantly reshape the town's growth and land use.	
Hazardous Materials Incident (Transporta-tion & 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	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	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.	Contaminated areas may be designated as hazardous sites, limiting their residential or commercial use and decreasing property values. This can drive developers to seek safer locations, altering growth patterns. Over time, such incidents may lead to new zoning regulations focused on public safety and environmental protection.	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
	stress from evacuations and anxiety over safety.	introduce new challenges for managing hazardous substances and public health.			
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 development, and vulnerable populations face heightened risks. Erosion of public trust in health authorities might reduce compliance with guidelines.	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 impacting local economies.	By increasing the demand for healthcare facilities like hospitals and clinics. Communities may prioritize green spaces for well-being, leading to adjustments in zoning regulations and potentially fostering higher-density housing near essential services for better access during health crises.	Increased
Terrorism	Terrorism incidents can have significant impacts, including loss of life and emotional trauma for the community. Economically, they disrupt local businesses and tourism	Terroristic activity is sometimes centered around climate change. Climate change impacts terrorism incidents by creating	Terrorism incidents can alter population patterns by instilling fear and prompting residents to relocate to perceived safer areas, resulting in demographic shifts and	Terrorism incidents can lead to significant changes in land use and development by shifting perceptions of safety. Following an attack, areas deemed high 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
	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.	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 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.	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.	may see a decline in investment as businesses and residents seek safer locations. This could prompt urban planners to focus on enhancing security features in public and commercial spaces, potentially revising zoning regulations to create buffer zones around critical infrastructure. In addition, fear of future attacks may drive suburbanization, creating more security-conscious communities.	

Additional Public Involvement

The City of Millcreek provided several opportunities for public involvement. Figure 1: Social Media Post for Draft Plan Review. Figure 1 and Figure 2 are examples of public outreach. The city of Millcreek provided several opportunities for public participation. Figure 1 and Figure 2 are examples of public outreach

Figure 1: Social Media Post for the Survey

Figure 2: Social Media Post for the 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 12 lists existing planning mechanisms in which the Hazard Mitigation Plan has been integrated. Table 13 lists the opportunities for integrating elements of this plan into other plans

Table 12: Integration of Previous Plans by the City of Millcreek

Plan	Description
Emergency Operations Plan	Outlines Millcreek's actions when a disaster or emergency occurs.

Table 13: Opportunities for Integration with Future Plans of the City of Millcreek

Plan	Description
Comprehensive Emergency Management Plan	Framework for preparedness, response, recovery, and mitigation in the city.
General Plan	Can support emergency response efforts
Stormwater Pollution Prevention Plan	Merge flood mitigation and public health efforts into the plan
Development Plan	Merge mitigation efforts with fiscal responsibility

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 14: Assessment of the Planning Capabilities of the City of Millcreek

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	Yes	Provides overarching policy guidance for development in hazard-prone areas.	2019, next significant update in 2029.

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	Yes	Allocates resources to critical infrastructure projects that enhance resilience.	Unknown
Climate Change Adaptation Plan	No	Unknown	Unknown
Community Wildfire Protection Plan	Yes	Unknown	Unknown
Economic Development Plan	Yes	Prioritizes economic activities in low-risk areas, reducing vulnerability.	2019
Land Use Plan	Yes	Directs growth away from hazard-prone areas.	Unknown
Local Emergency Operations Plan	Yes	Facilitates structured response and recovery actions during disasters.	2024. Reviewed annually.
Stormwater Management Plan	Yes	Guides stormwater infrastructure improvements to prevent flooding.	2020. Next update in 2025.
Transportation Plan	Yes	Integrates resilient infrastructure considerations in road planning.	2019
Substantial Damage Plan	Unknown	Unknown	Unknown
Other? (Describe)			

Table 15: Assessment of the Regulations and Ordinances of the City of Millcreek

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	Yes	2021
Flood Insurance Rate Maps	Yes	Yes	2022
Floodplain Ordinance	Yes	Yes	2021
Subdivision Ordinance	Yes	Yes	2023
Zoning Ordinance	Yes	Yes	2023
Natural Hazard-Specific Ordinance (Stormwater, Steep Slope, Wildfire)	Yes	Yes	2019
Acquisition of Land for Open Space and Public Recreation Use	Yes	Yes	2018
Prohibition of Building in At-Risk Areas	Yes	Yes	Yes
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 16: Assessment of the Administrative Capabilities of the City of Millcreek

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	Yes	Yes	Yes	Yes
Civil Engineer	Yes	Yes	Yes	Yes
Community Planner	Yes	Yes	Yes	Yes
Emergency Manager	Yes	Yes	Yes	Yes
Floodplain Administrator			Yes	Yes
Geographic Information System (GIS) Coordinator	Yes	Yes	Yes	Yes
Planning Commission	Yes	Yes	Yes	Yes
Fire Safe Council	N, served by UFA	N	N/A	N/A
CERT (Community Emergency Response Team)	Yes	No	Yes	Yes
Active VOAD (Voluntary Agencies Active in Disasters)	Yes	Yes	Yes	Yes
Other? (Please describe.)				

Table 17: Assessment of the Technical Capabilities of the City of Millcreek

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	Yes	Completion of mitigation actions, communication of hazards to the public	Implementation of mitigation actions
Hazard Data and Information	No	Yes	Grant applications, justification for mitigation work, mitigation project tracking, and hazard analysis
GIS	Yes	Yes	Grant applications, justification for mitigation work, mitigation project tracking, and hazard analysis
Mutual Aid Agreements	Yes	Volunteer management and coordination with other agencies	Identify gaps

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?
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 18: Assessment of the Financial Capabilities of the City of Millcreek

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	Yes	Infrastructure improvements	Infrastructure and resilience projects	Yes
General Funds	Yes	Operating expenses	Smaller mitigation activities	Yes
Hazard Mitigation Grant Program (HMGP/404)	Yes	No	Yes	No
Building Resilient Infrastructure & Communities (BRIC)	Yes	No, but have applied in the past	Yes	No
Flood Mitigation Assistance (FMA)	Yes	No, but should be receiving an award soon	Yes	No
Public Assistance Mitigation (PA Mitigation/406)	Yes	No	Yes	No
Community Development Block Grant (CDBG)	Yes	Yes, but traditionally has been used for public works projects	Yes	No
Natural Resources Conservation Services (NRCS) Programs	Yes, but have not applied	No	Yes	No
U.S. Army Corps (USACE) Programs	Yes, but have not applied	No	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?
Property, Sales, Income, or Special Purpose Taxes	Yes	No, but could be in the future	Yes	Yes
Stormwater Utility Fee	Yes	Runoff control, water protection	Yes	Yes
Fees for Water, Sewer, Gas, or Electric Services	Yes	Flood mitigation, critical infrastructure protection	Yes	Yes
Impact Fees from New Development and Redevelopment	Yes	Stormwater management	Yes	Yes
General Obligation or Special Purpose Bonds	Yes	Yes	Yes	Yes
Federal-funded Programs (Please describe)	Yes	Could be used	Yes	No
Private Sector or Nonprofit Programs	Yes	Yes	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 19: Assessment of the Education and Outreach Capabilities of the City of Millcreek

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)	Yes	Yes	Yes
Hazard Awareness Campaigns (such as Firewise, Storm Ready, Severe Weather Awareness Week, School Programs)	Yes	Yes	Yes
Public Meetings/Events (Please describe.)	Yes. Fire mitigation events, disaster prep seminars.	Yes	Yes
Emergency Management Listserv	No	No	Yes
Local News	Yes	Yes	Yes

Education and Outreach Capability	In Place? (Y/N)	Does it currently incorporate hazard mitigation?	Could it be used to support mitigation in the future?
Distributing Hard Copies of Notices (e.g., public libraries, door-to-door outreach)	Yes	Yes	Yes
Insurance Disclosures/ Outreach	No	Unknown	Yes
Organizations that Represent, Advocate for, or Interact with Underserved and Vulnerable Communities (Please describe.)	Yes	Yes	Yes
Social Media (Please describe.)	Yes	Yes	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 20 lists the opportunities for the city of Millcreek.

Table 20: Opportunities to Expand and/or Improve the Capabilities of the City of Millcreek

Capability	Opportunity to Expand and/or Improve
Planning and Regulation	To address the unknowns in planning and regulatory capabilities, a comprehensive assessment of existing authorities, policies, programs, and resources is essential. This involves evaluating the effectiveness of current plans, such as the General Plan, Capital Improvement Plan, Community Wildfire Protection Plan, and Economic Development Plan, in addressing hazard mitigation. Identifying gaps and areas for improvement will help ensure that these plans are effectively used to implement mitigation actions. In addition, reviewing and updating regulations and ordinances, such as building codes, floodplain ordinances, subdivision ordinances, and zoning ordinances, will enhance their capacity to reduce hazard impacts. By addressing these unknowns, the community can strengthen its planning and regulatory framework, ensuring better preparedness and effective hazard mitigation. Regular evaluations and updates will maintain the relevance and effectiveness of these capabilities.
Administrative and Technical	A thorough assessment of current staffing levels and their effectiveness in various roles, such as Chief Building Official, Civil Engineer, Community Planner, Emergency Manager, Floodplain Administrator, and GIS Coordinator is essential. In addition, providing ongoing training on hazards and mitigation for all relevant staff members will enhance their expertise and ability to implement effective mitigation strategies. Improving coordination between agencies and staff can be achieved by establishing regular interagency meetings, communication channels, and collaborative projects. Evaluating the use of technical capabilities, such as mitigation grant writing, hazard data and information, GIS, and mutual aid agreements will help identify gaps and optimize these tools for future risk assessment and mitigation efforts. By addressing these unknowns, the community can significantly enhance its administrative and technical capabilities, ensuring

Capability	Opportunity to Expand and/or Improve
	better preparedness and effective mitigation actions. Regular reviews and updates will maintain the relevance and effectiveness of these capabilities.
Financial	To address the unknowns in financial capabilities, it is essential to conduct a comprehensive assessment of existing funding resources and their past use. This will provide clarity regarding the resources used for specific activities and their potential to fund future mitigation actions. For instance, evaluating the use of Capital Improvement Project Funding and General Funds will help determine their effectiveness and how they can be leveraged for future efforts. In addition, exploring opportunities to apply for grant programs, such as the Hazard Mitigation Grant Program (HMGP/404), Building Resilient Infrastructure & Communities (BRIC), Flood Mitigation Assistance (FMA), Public Assistance Mitigation (PA Mitigation/406), and Community Development Block Grant (CDBG), can significantly enhance financial capabilities. Engaging with state and federal partners and private sector and nonprofit organizations can open doors to additional funding resources. Evaluating revenue-generating options like property, sales, income, or special purpose taxes, and fees for water, sewer, gas, or electric services is crucial for planning and allocating budgets effectively. By addressing these unknowns, the community can strengthen its financial capabilities and ensure that a wide range of mitigation actions are feasible, ultimately enhancing overall resilience to hazards.
Education and Outreach	A thorough assessment of current resources is essential. Evaluating the incorporation of hazard mitigation into existing programs, such as community newsletters, hazard awareness campaigns, public meetings, and emergency management listservs, will help identify gaps and areas for improvement. Collaborating with local news outlets and using various methods for distributing information, such as hard copies and social media platforms like Facebook, Instagram, and X, can enhance outreach efforts. In addition, partnerships with insurance companies and organizations representing underserved communities can ensure that hazard mitigation messages reach a broader audience. By addressing these unknowns, the community can enhance its education and outreach capabilities, effectively communicating risk reduction strategies and improving overall preparedness.

Mitigation Strategy

Mitigation strategies provide proactive measures that are designed to minimize the impacts of hazards on the city of Millcreek. Table 21 shows mitigation action alternatives, and Table 22 shows the status of previous mitigation activities. Table 23 is the 2025 mitigation action plan for the city of Millcreek.

Table 21: Mitigation Action Alternatives for the City of Millcreek

Action	Type of Action	Selected for inclusion in the plan?	If not selected, why not?
Community Wildfire Protection Plan	Local Plans and Regulations	Yes	N/A
Strengthen Building Codes	Local Plans and Regulations	Yes	N/A
Utility Undergrounding	Structure and Infrastructure Projects	Yes	N/A

Action	Type of Action	Selected for inclusion in the plan?	If not selected, why not?
Floodwalls and Detention Basins	Structure and Infrastructure Projects	Yes	N/A
Community Tree Planting Program	Natural Systems Protection	Yes	N/A
Erosion Control in Landslide-Prone Areas	Natural Systems Protection	Yes	N/A
Community Outreach on Flood/Wildfire Risks	Education and Awareness Programs	Yes	N/A
Emergency Preparedness Workshop	Education and Awareness Programs	Yes	N/A

Table 22: Status of Prior Mitigation Actions of the City of Millcreek[3]

Action	Hazard(s)	Agency Lead	Support Agency(ies)	Status Update
Install debris basin and/or storm drain/ culvert.	Flood (Riverine), Landslide/ Slope Failure	US Forest Service	SLCo, Millcreek City Emergency Management, SLCo Public Works and Millcreek City Public Works	Undergoing HMGP grant process for improved mitigation.
Hazardous materials removal.	Hazardous Materials Release, Public Health (Pandemic/ Epidemic)	Millcreek	SLCo Health Department, UFA	The mayor, city manager, emergency manager, and public works will be required to maintain situation awareness and coordinate with the Emergency Communications Center.
Reinforce masonry and chimneys.	All hazards	Millcreek	City	65% of building stock is unreinforced masonry. Of this stock, 80% is residential.
Install generators at assisted living centers.	Extreme Cold and Extreme Heat	Millcreek	SLCO EM	Extreme high and low temperatures adversely impact the aging population. Millcreek has the second highest elderly in the county, with over 55 care and assisted living centers. No known generators installed.

[3] SLCo = Salt Lake County, SLCo EM = Salt Lake County Emergency Management, UFA = Unified Fire Authority, WUI = Wildland–Urban Interface.

Action	Hazard(s)	Agency Lead	Support Agency(ies)	Status Update
Generators and hookup installation for publicly owned and critical facilities.	All hazards	Millcreek	SLCo, Millcreek City Emergency Management. SLCo Public Works, Millcreek Public Works	Millcreek City Hall has backup power.
Conduct a Hazardous Materials Flow Study.	Hazardous Materials	Millcreek	Millcreek City Emergency Management	No study conducted.
Draft a WUI Plan with fire mitigation goal development including defensible space.	Wildfire	Millcreek	Millcreek City Emergency Management, SLCo EM	The eastern border of the community is considered a WUI and managed by the U.S. Forest Service, in coordination with UFA. Wooded stream channels also are a concern. Other areas of concern are Grandeur Park, Mount Olympus, Mill Creek, Parley's Creek, Big Cottonwood Creek, and Big Cottonwood Park.

Table 23: 2025 Mitigation Action Plan for the City of Millcreek[4]

#	Action	Hazard(s)	Lead Agency	Potential Partners	Benefits (Losses Avoided)	Cost Estimate	Funding Source(s)	Timeframe	Priority	Comments
1	Update the Community Wildfire Protection Plan.	Wildfire, Drought, Lightning, and Extreme Heat	UFA	Millcreek Emergency Management, U.S. Forest Service, SLCo EM, UDEM	Reduces wildfire spread and protects property, involves the public in mitigation and preparedness activities on their property.	Medium	HMGP, WUIPPM grant, CWDG grant, SLCo EM, Millcreek City	Medium-term	High	
2	Improve Millcreek's building codes to ensure that new structures are earthquake and wind-resistant.	Earthquake, High Winds, Tornado, Flooding, Dam Failure, and Avalanche	Millcreek City Building Department	SLCo EM, UFA, UDEM	Enhances building safety, minimizes damage and recovery costs.	Low	Millcreek City, UFA, SLCo EM, BRIC grant	Short-term	High	Unreinforced masonry buildings are a concern.
3	Coordinate with private utility companies for Utility undergrounding.	High Wind, Heavy Rain, Severe Winter Weather, Landslide/ Slope Failure, Wildfireire, Flooding, Tornado, Lightning, and Dam Failure	Rocky Mountain Power	Millcreek City Public Works, Salt Lake County Public Works, SLCo EM	Reduces power outages and infrastructure damage	High	Millcreek City, Private Utility Funding, SLCo EM, BRIC grant	Long-term	Medium	Collaboration with utility companies needed.
4	Create floodwalls and detention basins in areas identified to be at risk of flooding.	Flood, Landslide/ Slope Failure, Heavy Rain, Severe Winter Weather, and Dam Failure	Millcreek City Public Works	Salt Lake County Public Works, SLCo EM	Reduces flood risk and mitigates landslide impacts.	High	HMGP grant, Millcreek City, SLCo Public Works	Long-term	High	Targeting Neffs Canyon area.
5	Develop a community tree planting program.	Flood, Drought, Extreme Heat, and Landslide/ Slope Failure	Millcreek City Emergency Management	U.S. Forest Service, SLCo Parks and Recreation, SLCo EM, Millcreek City Planning and Zoning, UFA, Millcreek Public Works, SLCo Public Works	Improves stormwater management and increases shade coverage.	Low	Millcreek City, SLCo Public Works, SLCo Parks and Recreation, UFA, USDA's Community Forestry Partnership grant	Short-term	Medium	
6	Implement erosion control in landslide-prone areas, such as Canyon Rim area.	Landslide/ Slope Failure, Drought, Dam Failure, Wildfire, and Flooding	Millcreek City Public Works	Salt Lake County Public Works, UDEM, UFA	Reduces landslide risk in vulnerable areas.	Medium	Millcreek City, SLCo EM, BRIC grant, HMGP grant	Short-term		Focus on the Canyon Rim area.
7	Community outreach about flood, earthquake, and wildfire risks in community council and city meetings.	Flood, Wildfire, Drought, Extreme Heat, Heavy Rain, Severe Winter Weather, Lightning, Landslide/ Slope Failure, and Dam Failure	Millcreek City Emergency Management	SLCo EM, UFA, Millcreek Communications	Increases community preparedness, especially in vulnerable areas.	Low	Millcreek City, SLCo EM, HMGP grant, BRIC grant	Short-term	High	Targeted to high-risk residents.

[4] BRIC = Building Resilient Infrastructure and Communities, CWDG = Community Wildfire Defense Grant, SLCo = Salt Lake County, SLCo EM = Salt Lake County Emergency Management, UDEM = Utah Division of Emergency Management, UFA = Unified Fire Authority, UPD = Unified Police Department, USDA = United States Department of Agriculture, WUIPPM = Wildland–Urban Interface Prevention, Preparedness and Mitigation (Fund).

#	Action	Hazard(s)	Lead Agency	Potential Partners	Benefits (Losses Avoided)	Cost Estimate	Funding Source(s)	Timeframe	Priority	Comments
8	Provide emergency preparedness workshops annually for hazards impacting Millcreek City. Include educational information for vulnerable populations, particularly the elderly.	Avalanche, Dam Failure, Drought, Earthquake, Extreme Heat, Extreme Cold, Flooding, Heavy Rain, High Wind, Landslide/ Slope Failure, Lightning, Radon, Severe Winter Weather, Tornado, Wildfire, Civil Disturbance, Hazardous Materials, Terrorism/Cyberterrorism, Public Health Epidemic/Pandemic	Millcreek City Emergency Management	UPD, UFA, St. Marks Hospital, SLCo EM, UDEM, SLCo Public Works	Improves preparedness and minimizes displacement.	Low	Millcreek City, EMPG grant, SLCo EM, BRIC grant	Short-term	High	Includes focus on the elderly. Consider providing annually.

Mitigation Action Prioritization

The plan must describe the criteria used for prioritizing the implementation of the actions. The criteria must include an emphasis on the extent to which benefits are maximized, in relation to the associated costs of the action. Consider "STAPLEE" criteria help communities prioritize the actions:

Table 24: Mitigation Action Prioritization – STAPLEE

Action	Social	Technical	Administrative	Political	Legal	Economic	Environ-mental	Priority
1	4	4	3	4	4	3	4	High
2	4	4	4	4	4	3	4	High
3	3	4	4	4	3	3	4	Medium
4	3	4	4	4	4	3	3	High
5	4	3	3	4	4	4	4	Medium
6	3	3	4	3	4	4	3	Medium
7	4	3	3	4	4	4	4	High
8	4	4	4	4	4	4	4	High