

Hazard Mitigation Plan (2014)

For questions or information about this plan, please contact:

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RESOLUTION NUMBER 15-14

A RESOLUTION OF THE DRAPER CITY COUNCIL ADOPTING
THE SALT LAKE COUNTY MULTI-JURISDICTIONAL MULTI-HAZARD
MITIGATION PLAN

WHEREAS, the Disaster Mitigation Act of 2000, Public Law 106-390, was enacted to establish a national disaster hazard mitigation program to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters, and to assist state, local and Indian tribal governments in implementing effective hazard mitigation measures designed to ensure the continuation of critical services and facilities after a natural disaster; and

WHEREAS, the Disaster Mitigation Act requires such governments to develop hazard mitigation plans to identify the natural hazards that could impact their jurisdictions, identify actions and activities to mitigate the effects of those hazards, and establish a coordinated process to implement such plans; and

WHEREAS, Draper City has been and continues to be committed to reducing the loss of life and property, alleviating human suffering and economic disruption, and controlling disaster assistance costs resulting from natural hazards and accelerating the County's recovery after the occurrence of any such hazard; and

WHEREAS, such Salt Lake County Multi-Jurisdictional Multi-Hazard Mitigation Plan, has been approved by the Federal Emergency Management Agency ("FEMA") subject to adoption by Draper City and other participating entities;

NOW, THEREFORE, be it resolved by the City Council of Draper City, State of Utah as follows:

Section 1. The Salt Lake County Multi-Jurisdictional Multi-Hazard Mitigation Plan. The Salt Lake County Multi-Jurisdictional Multi-Hazard Mitigation Plan is hereby adopted. Annex "D" of the plan is attached hereto as Exhibit "A". The full plan is on file with the Draper City Recorder.

Section 2. Severability. If any section, part or provision of this Resolution is held invalid or unenforceable, such invalidity or unenforceability shall not affect any other portion of this Resolution, and all sections, parts and provisions of this Resolution shall be severable.

Section 3. Effective Date. This resolution shall become effective immediately upon passage by the City Council.

PASSED AND ADOPTED BY THE CITY COUNCIL OF DRAPER CITY, STATE OF UTAH, THIS 3rd DAY OF MARCH, 2015.

DRAPER CITY

BY: _____

T. Tubbs
Draper City Mayor

ATTEST:

D. Connor
Draper City Recorder





ANNEX D: CITY OF DRAPER

1 Introduction

1.1 Background

Draper City is strategically located in the southeast corner of the Salt Lake Valley, with the Wasatch Mountain Range on the east and the Traverse Mountain Range on the south. The city is 18 miles south of Salt Lake City and 28 miles north of Provo. The Salt Lake International Airport is 21 miles north of the city. Draper is located 20 minutes from world-class skiing at Alta, Snowbird, Brighton and Solitude and 30 minutes to Park City and Deer Valley ski areas.

The city owns more than 3,200 acres of open space in Corner Canyon and SunCrest. This pristine mountain land is located in the foothills and canyons of Draper and on top of the Traverse Ridge Mountain Range. Draper City has more than 90+ miles of cycling, hiking and equestrian trails, with easy access trails from residential neighborhoods. At the Point of the Mountain in Draper you can experience hang gliding or paragliding at one of the top sites in the country.

The city is known for high-quality, single family neighborhoods and a robust economy. The city has more than 14,000 households. The population of Draper according to the US Census in 2013 is 45,285. Draper is the 10th largest city in the state in land area, encompassing 30.3 square miles.

1.2 Purpose

Draper City is a community that preserves its unique identity and heritage, and provides protection and services for its citizens.

When the Mayor and City Council make decisions, they base these decisions on the following values:

- **Unity** - Neighbors work together to build a strong community.
- **Respect** - Citizens have tolerance, understanding and sensitivity to one another's differences.
- **Quality of Life** - Citizens of all ages feel safe, have places to gather, and enjoy traditions, events, and culture.
- **Environment** - Draper is clean, pleasant, pastoral, has a small-town feeling and sense of identity.
- **Pride** - Citizens are proud to call Draper home and are involved in community well being.

1.3 Authority and Reference

Draper City's form of government is Council / Manager. Draper has a part-time Mayor and five part-time City Council members. The City Manager is full-time and works under the direction of the Mayor and Council. In the state of Utah, Draper is currently classified as a third class city.

2 Community Profile

2.1 Geography, Environment & Climate

Draper is located in the southeast quadrant of Salt Lake County and in the northwest quadrant of Utah County. Draper covers 30.3 square miles.

Adjacent to Draper City on its east are the Wasatch Mountains and the base of those mountains is within the boundaries of Draper. Adjacent to Draper City on its west is the Jordan River, which is the city boundary line between Draper and Riverton / South Jordan. Included within Draper is the Traverse Ridge Mountain area, which separates Salt Lake and Utah counties. Draper is characterized by a mixture of land uses. Draper has commercial, industrial, residential, agricultural, vacant land and 4,500 acres of open space areas within its boundaries. The open space area is used for recreational purposes by residents of Draper and the surrounding communities and has many multi-use trails and areas within.

Draper has an average annual temperature of 53.7°F and receives 15.69 inches of rain.

Figure 1 displays a Draper City map. Figure 2 displays a map showing the location of Draper City within Salt Lake County.

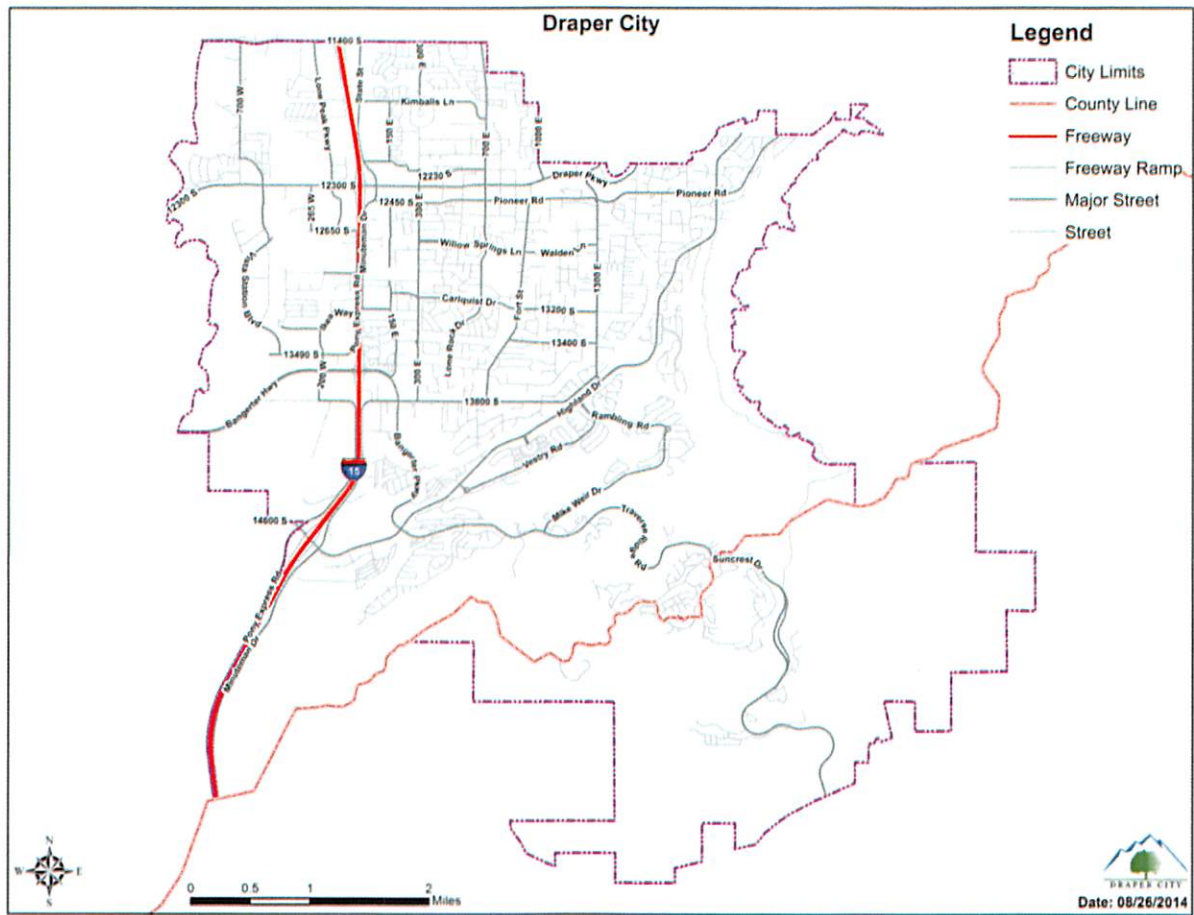


Figure 1. The City of Draper

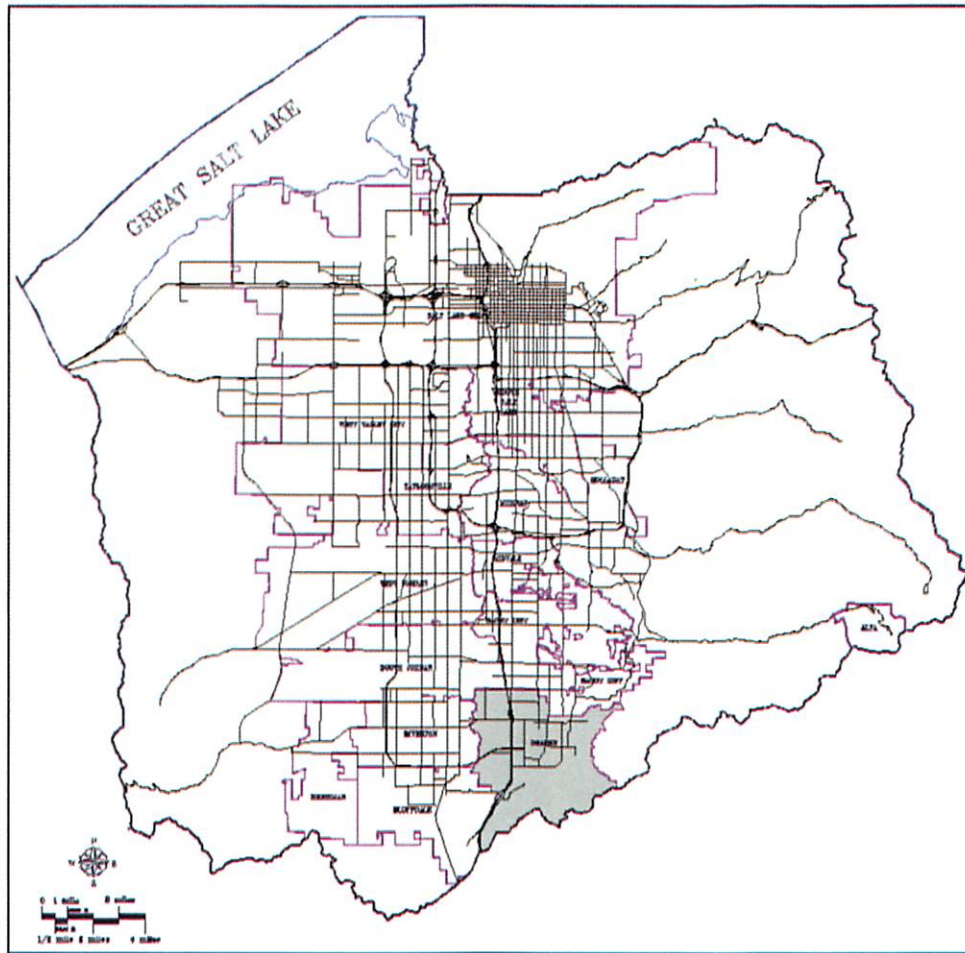


Figure 2. The City of Draper's Location within Salt Lake County

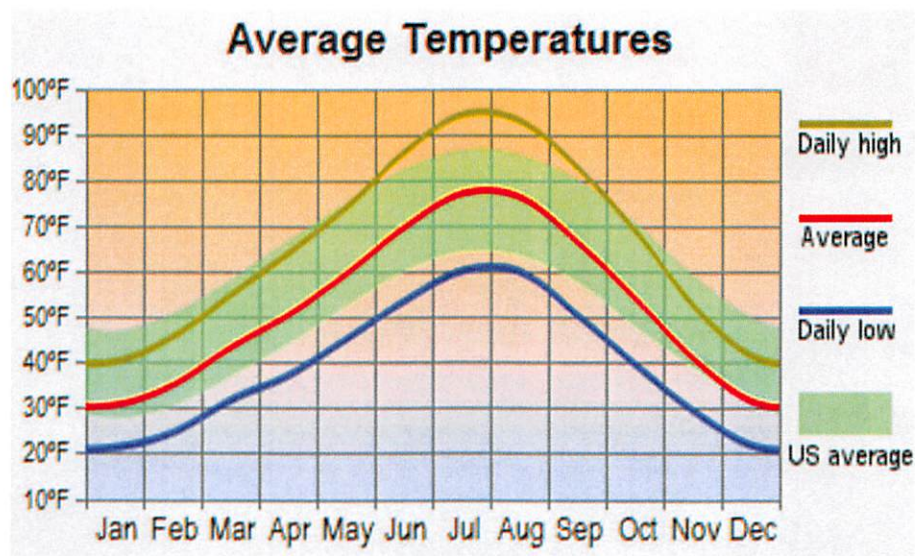


Figure 3. The City of Draper's Average Temperatures

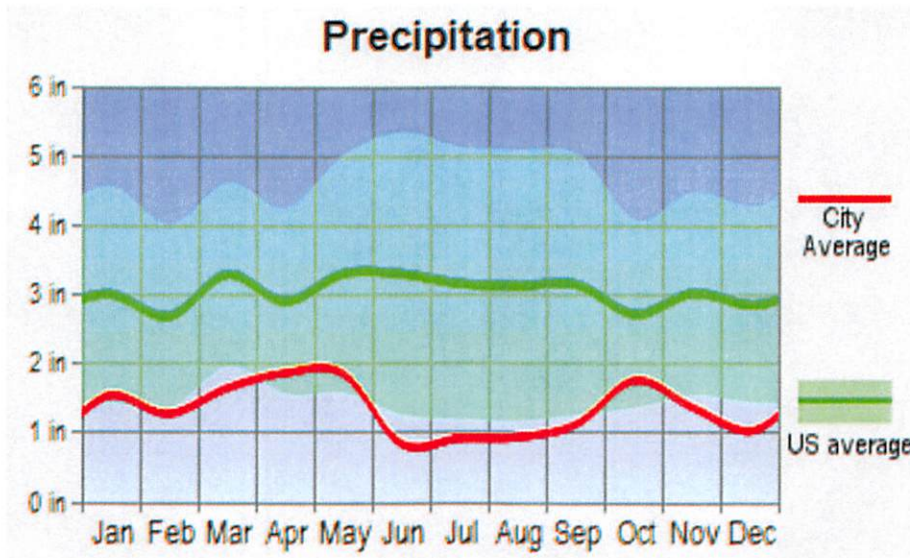


Figure 4. The City of Draper's Average Precipitation

2.2 Community Facts and History

When incorporated in 1978 as a City, Draper was a small farming community of 4,500 residents situated on two square miles, but the area had been settled much earlier by Mormon pioneers under the direction of Brigham Young.

In the fall of 1849, under the direction of Mormon Pioneer leader Brigham Young, Ebenezer Brown, the son of Scottish immigrants brought his cattle to graze the tall grass fed by mountain streams in the unsettled area known as South Willow Creek. The following spring, Ebenezer brought his wife Phoebe and their large family. Together they raised and fattened cattle to sell to immigrants heading to the gold fields of California. That same year the Browns invited Phoebe's brother, William Draper III, his wife Elizabeth, a midwife / doctor, and their seven children to join in farming the area.

The area grew rapidly and by the end of 1852, 20 families called South Willow Creek home. In 1854, the first post office was established. The town was named Draperville in honor of William Draper III, who was also the first presiding elder of the small Mormon congregation in town.

2.3 Population and Demographics

In 2013, the total population for the City of Draper was estimated at 45,285 by the U.S. Census. Draper City's Mean Household Income is \$108,276 and Median Household Income is \$89,935. Draper City has more than 14,000 households. The median age is 30.7 years.

2.4 Economy

Draper is home to the main customer service center and campus of eBay, the tech call center of PGP Corporation, the call center of Musician's Friend, and the headquarters of 1-800 Contacts. Draper is also home to Utah's first Ikea store located in the intermountain west, which opened in spring 2007. The Church of Jesus Christ of Latter-day Saints (Mormons) constructed a temple in Draper that was dedicated on March 20, 2009.

Draper City has a reputation as a great place to live. Draper has maintained a small town community spirit, which is exemplified by such community events as the annual Draper Days celebration. Draper's unique growth opportunities and outdoor recreational venues, continues to attract new residents, developers, businesses, and industries to the City.

The breakdown of the Draper residential employment sector is as follows:

| | |
|--|--------|
| Management, business, finance | 22.00% |
| Engineering, computers, science | 8.11% |
| Community, social services | 1.47% |
| Legal | 2.15% |
| Education, library | 6.09% |
| Arts, design, media, sports, entertainment | 1.87% |
| Healthcare practitioners and technology | 5.41% |
| Healthcare support | 1.88% |
| Firefighters, law enforcement | 1.50% |
| Food preparation, serving | 3.12% |
| Building maintenance | 0.93% |
| Personal care | 2.95% |
| Sales, office, administrative support | 30.79% |
| Construction, extraction, maintenance/repair | 5.12% |
| Production, transportation, material moving | 6.63% |

Table 1. Draper Residential Employment Sector

2.5 Land Use and Development

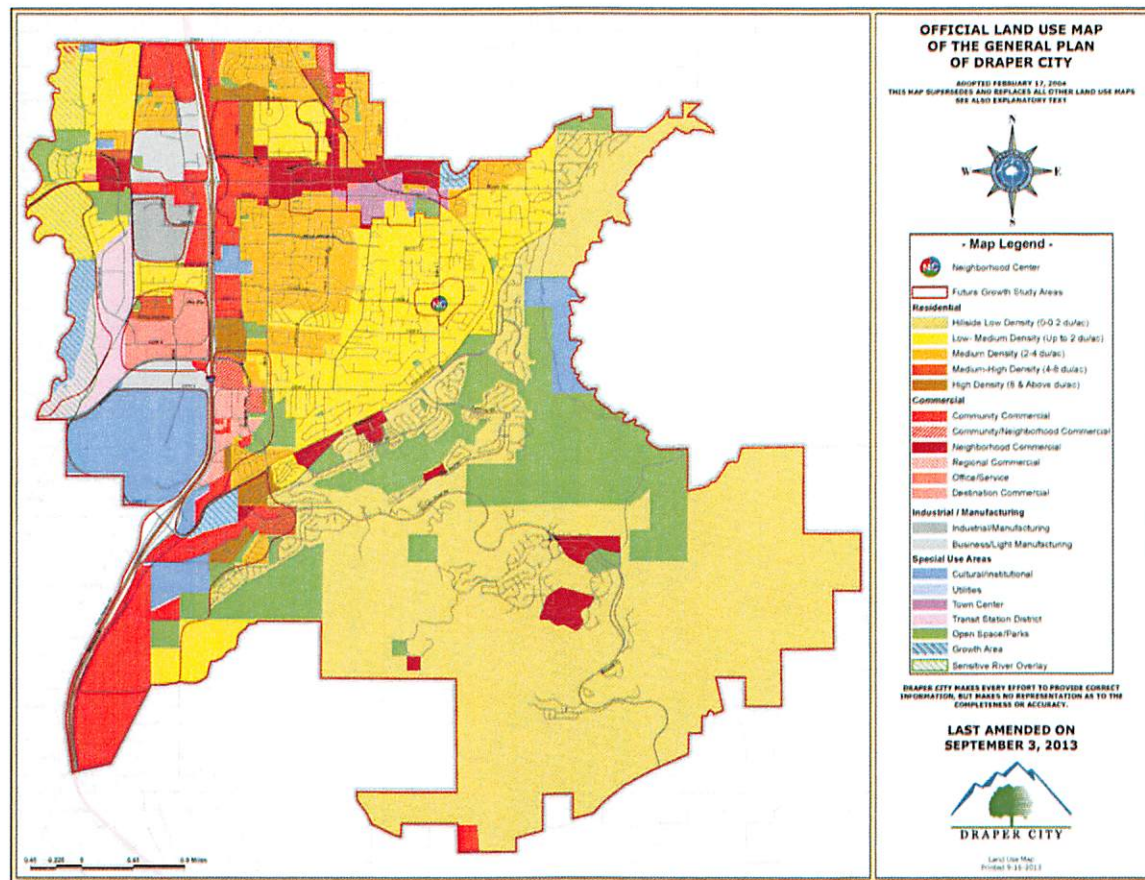


Figure 4. Draper City Land Use Map

2.6 Growth and Development Trends

The growth surge that Draper has experienced from 1990 to the present is the largest in volume and geographic extent the city has ever experienced. This growth period occurred when the city quickly changed from a rural, agricultural town into a full-fledged suburban city. During this time the city has experienced strong surges of relatively unrestrained growth.

In 1980 the population of the city was 5,670, the total amount of housing was 1,383 and the size of the city was 22.8 square miles. By the end of 2000 the population of the city grew to 25,297 (a 445% increase), the total housing number grew to 7,418 (a 535% increase) and the size of the city became 30.3 square miles (a 24% change). Of the 535% increase in housing units in the city, 5,414 (73%) were single-family dwellings and 2,004 (27%) were multi-family and townhouse dwellings. The average increase in the number of dwelling units during this most recent growth period has been 8.2% per year.

In terms of the geographic location of this growth, 75% of the new housing units have been built in the southeastern part of the city. Increasingly the new housing is being built in the fringe areas as

properties near central city are nearing build-out. A very large portion of this growth has been focused on a series of medium to large master planned developments spread across the southern parts of the city.

The growth in business facilities (office, warehousing, retail, and manufacturing) has been concentrated in areas both east and west of the I-15 freeway and along 123rd south corridor. This growth has included redevelopment, greater diversity in users and building types, more expensive construction and both the import of new businesses as well as the growth of existing businesses. The current projections for growth suggest a future population of 55,000 in 2020.

The strongest future business growth areas are expected to be in the vicinity of the major north/south corridors (along the I-15 Freeway corridor from Sandy to the Point of the Mountain) and the major east/west corridors (114th South, 118th South State, and 123rd South and the Bangerter Highway), and the Town Center area. The mix of businesses will probably continue to diversify and the demand for more services to fulfill the needs of both the local population and business communities will increase.

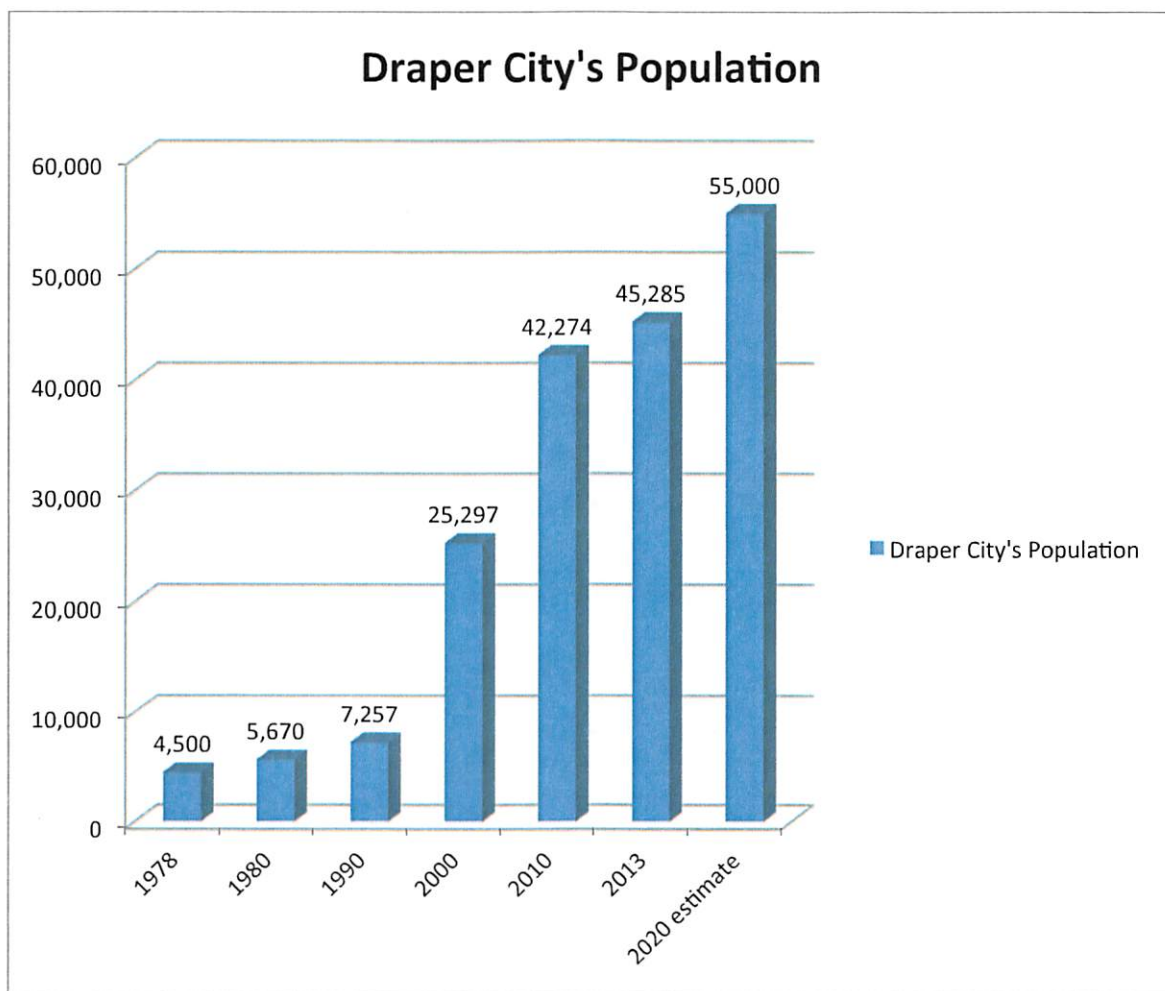


Figure 5. Population Growth Draper City\

2.7 Data Sources and Limitations

Draper City utilized the following sources to provide data for this report:

Draper City GIS

Draper City Community Development

Draper City General Plan

Salt Lake County

State of Utah

US Census Bureau

National Weather Service

3 Planning Process

3.1 Update Process and Participation Summary

Draper City plans to make updates to this Hazard Mitigation Plan and defines the processes by which continued public participation will be guaranteed in the sections below.

3.2 The Planning Team

Members of the Draper City Mitigation Planning Team are listed in the table below.

| | |
|------------------|---|
| Garth Smith | Draper City HR Director / Emergency Manager |
| David Dobbins | Draper City Manager |
| Russell Fox | Assistant City Manager |
| Keith Morey | Community Development Director |
| Keith Collier | Chief Building Official |
| Maridene Hancock | Public Information Officer |
| Karen Burnett | GIS Manager |
| Glade Robbins | Public Works Director |
| Brad Watson | Public Works - Streets |
| Nolan Wootton | WaterPro |

Members of the Salt Lake County Mitigation Planning Team are listed in the table below.

| | |
|------------------|--|
| Kate Smith | Salt Lake County Emergency Management, Mitigation Planner |
| Cathy Bodily | Salt Lake County Emergency Management, Grant applicant and Planner |
| Roger Kehr | Salt Lake County Emergency Management, Mitigation Planner |
| Steve Sautter | Salt Lake County Emergency Management, Public Outreach |
| Matt Morrison | Salt Lake County Emergency Management, Planner |
| Bret Fossum | Salt Lake County Emergency Management, Mitigation Planner |
| Val Greensides | Unified Fire Authority, administrative support |
| Joan Welch | Unified Fire Authority, administrative support |
| Clint Mecham | Unified Fire Authority |
| Aaron Nelson | Unified Fire Authority |
| Dirk Andersen | Taylorsville City |
| Mike Barrett | Salt Lake County Emergency Services |
| Brent Beardall | Salt Lake County Flood Control |
| Leon Berrett | Salt Lake County |
| Dawn Black | Cottonwood Heights |
| David Chisholm | Holladay City |
| Eldon Farnsworth | South Salt Lake City |

| | |
|------------------|--|
| Bob Fitzgerald | West Valley City |
| Sheril Garn | Riverton City |
| Tina Giles | Herriman City |
| Jeff Graviet | Salt Lake County Emergency Services |
| Jon Harris | Murray City |
| Matt Jarman | South Jordan City |
| Connie Jones | Bluffdale City |
| Scott Jones | Salt Lake Community College |
| Jeff King | Jordan Valley Water Conservancy District |
| Ken Kraudy | Sandy City |
| Bart LeCheminant | Draper City |
| Dustin Lewis | South Jordan City |
| Cory Lyman | Salt Lake City |
| Kade Moncur | Salt Lake County Flood Control |
| Reed Scharman | West Jordan City |
| Lisa Schwartz | Taylorsville City/Midvale City |
| Marty Shaub | University of Utah |
| Garth Smith | Draper City |
| Jared Smith | Sandy City |
| Justin Stoker | Salt Lake City Flood Control |
| Claire Woodman | Town of Alta |

Please refer to Salt Lake County for further details regarding specific meeting dates of the County's Mitigation Planning Team.

3.3 Meetings and Documentation

Members of the Draper City Mitigation Planning Team and the members of the Draper City Emergency Preparedness Committee were in attendance and discussed the Mitigation Plan at the following meetings:

September 3, 2014 – Public Meeting – Draper City Emergency Preparedness Committee

September 11, 2014 – Mitigation Meeting with Salt Lake County and key representatives from Draper City, WaterPro, Draper City Police Department and Unified Fire Authority.

October 1, 2014 – Public Meeting – Draper City Emergency Preparedness Committee

3.4 Public and Stakeholder Participation

Members of the community are invited to attend the Draper City Emergency Preparedness meetings that are held monthly. There are several members of the public who attend these meetings and participate in the discussion. Draper City also has a District Representative

Committee made up of representatives from each of the nine regions / areas in the city of Draper. These representatives are in contact with the area reps and neighborhood block captains in their particular district.

The Mitigation Plan will be presented at a public meeting of the Draper City Council in the next few months. Members of the public will be invited to comment and make suggestions /additions to the Mitigation Plan.

Draper City will also post information about the Mitigation Plan on the city's website as well as in the Draper City newsletter "*Draper Forward.*" This publication is mailed to every household in Draper six times per year.

3.5 Multi-Jurisdictional Planning

Draper City has been in contact with Salt Lake County and representatives from the county attended the meeting that was held on September 11, 2014 with key members of Draper City's. The City's designated Emergency Manager has attended the monthly Salt Lake County Emergency Manager's meetings where information has been dispersed regarding the Mitigation Planning Process. Some of the information from Salt Lake County's plan has been included in this plan.

4 Hazard Identification, Analysis & Summary

4.1 Historical Hazard Events

The following are recent hazard events that have impacted Draper City:

- Corner Canyon Fire, August 8, 2008
- Debris Flow, July 21, 2009
- Flood and Debris Flow, August 19 2010
- Spring Flooding along Willow Creek and throughout City 2011
- Bell Canyon Fire, August 15, 2011
- Orson Smith Trailhead Fire, June 12, 2014

4.2 Hazard Analysis

A disaster can occur at anytime within Draper City. Rather than attempt to prepare for every potential disaster, the intent of Draper City is to identify the most likely situations and concentrate efforts and resources on the education, preparation, and mitigation for emergencies and disasters with a higher likelihood of occurrence. Numerous natural hazards exist in Draper City and surrounding communities. Active fault zones pose the threat of earthquakes, while steep mountains adjacent to the city create a potential for landslides, debris flows, rock falls, and snow avalanches. The natural hazards identified for Draper City in this section are as follows:

- Avalanche
- Dam Failure
- Drought
- Earthquake
- Flood
- Infestation
- Landslide and Problem Soils
- Pandemic
- Radon
- Severe weather
- Wildfire

4.2.1 Avalanche

The likelihood of avalanches impacting Draper City is limited. The area on the east side of the City is adjacent to the Wasatch Mountains, but there has been no historical avalanche activity in that area of the City.

4.2.2 Dam Failure

The Draper Irrigation Company has a storage reservoir located at the mouth of Corner Canyon, which is classified as a dam by the State of Utah. The impacts of the failure of this storage reservoir could have impacts on residential areas within the City. Any dam failures in other areas of Utah would have little impact on Draper, except for the potential impact on water supplies.

4.2.3 Drought

Draper City has large swings in temperature and in precipitation amounts during any year and is susceptible to drought. The City encourages landscaping that is friendly to the desert climate of Utah and when drought conditions occur the City would restrict the use of water for outdoor landscaping. Table 2 below shows average temperatures and precipitation amount for Draper City by month.

| Month | Temp. (min) | Temp. (max) | Temp. (avg) | Precipitation |
|-----------|-------------|-------------|-------------|---------------|
| January | -2°F | 58°F | 29°F | 1.3" |
| February | 5°F | 66°F | 35°F | 1.1" |
| March | 15°F | 74°F | 43°F | 1.9" |
| April | 21°F | 90°F | 50°F | 2.1" |
| May | 30°F | 93°F | 61°F | 1.3" |
| June | 39°F | 100°F | 70°F | 1.4" |
| July | 54°F | 105°F | 82°F | 0.2" |
| August | 46°F | 103°F | 78°F | 0.5" |
| September | 35°F | 96°F | 66°F | 1.2" |

| | | | | |
|----------|------|------|------|------|
| October | 27°F | 86°F | 52°F | 1.4" |
| November | 4°F | 75°F | 42°F | 0.9" |
| December | 0°F | 59°F | 29°F | 1.4" |

Table 2. Draper City Average Temperature Table

4.2.4 Earthquake (Seismic Hazard)

Perhaps the most feared incident in Draper is the potential for a large earthquake. Reports indicate that thousands of deaths, billions of dollars of damage to private property, extended loss of utility services, overwhelmed medical facilities, and other catastrophic incidents will occur if a major earthquake occurs in the Salt Lake and/or Utah Valley.

Of significant concern, many high priority public and private buildings and many critical infrastructure facilities are located within or across the major fault zones in the region. These facilities include very large waterlines, large irrigation canals, utilities, railroads and major transportation routes. However, potential damage is not limited to fault zone areas. Fine-grained, lake-bottom sediments are common in western Draper and are susceptible to liquefaction-induced ground failure during a large earthquake. Each incident may require a unique response from Draper City and in the instance of a major earthquake outside assistance will be necessary.

Utah's earthquake hazard is greatest within the Intermountain Seismic Belt (ISB), which extends 800 miles from Montana to Nevada and Arizona, and trends from north to south through the center of Utah (The Wasatch Fault, UGS PIS 40). The ISB contains the Wasatch fault; one of the longest and most active normal faults in the world, with a potential for earthquake with a magnitude up to 7.5. The largest earthquakes in Utah occur in the ISB, where at least 35 earthquakes of magnitude 5.0 or greater have occurred since 1850. (UNHH 2008)

4.2.5 Flooding

Although located in a semi-arid region, Draper City is subject to thunderstorms and snowmelt flooding. Significant flooding occurred in the Salt Lake Valley in 1983 and to a lesser extent in 1984, and again in 2011 resulted in the construction of some sediment basins, installation of stream-bank protection, and the cleaning of stream channels to reduce flood hazards. Flood plains along the Jordan River and its tributaries have been rated for expected flood heights by the Federal Emergency Management Agency (FEMA) and areas susceptible to flooding have been delineated on the Federal Insurance Rate Maps (FIRM). These maps are updated as development occurs and channel obstructions, culvert modifications, and other changes alter potential flood heights and velocities.

The development ordinances of the city require geotechnical studies to identify areas of shallow ground water, artesian wells, and other water hazards. During high snow and rain fall years, the

groundwater table can move closer to the surface. Flooding can also result from leakage of unlined irrigation canals, flood irrigation practices, and septic tank drain fields.

Several streams run through the City of Draper and converge with the Jordan River that runs along the western border. Thirty-seven (37) structures are vulnerable to the 1% annual chance event and there is additional development planned in the 1% annual chance floodplain.

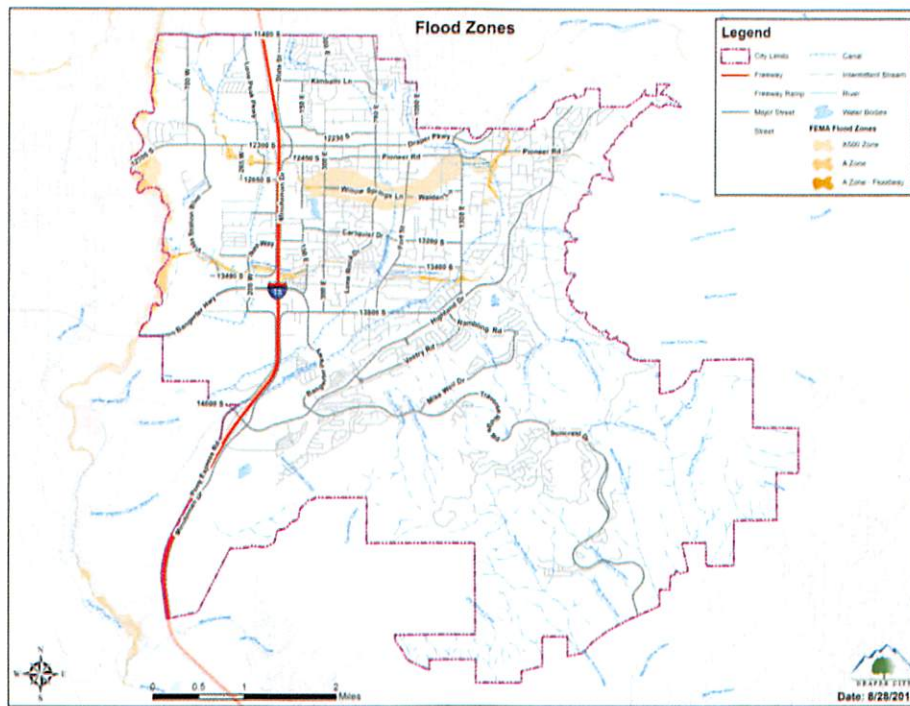


Figure 6. The City of Draper's Flood Zones

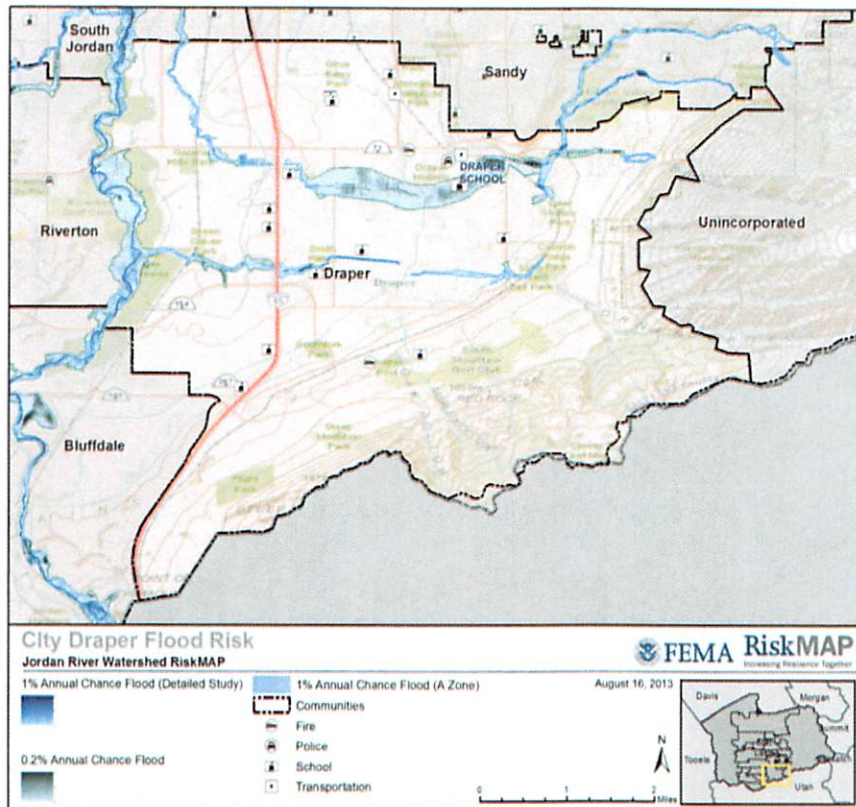


Figure 7. FEMA Risk Map: Draper City Flood Risk

4.2.5.1 Jordan Watershed

Salt Lake County created a Flood Risk Report for each city in the county in 2014. This report includes the flood risk assessment results of the Jordan Watershed Risk MAP Project. The Jordan River runs along the west border of Draper City. A flood risk is defined as an accumulation of water over normally dry areas. Floods become hazards to people and property by inundating developed areas. Flood losses range from damage to landscaping and debris generation to building damage and injury or death.

| Structure Occupancy Type | 1% Annual Chance Structure Exposure | 1% Annual Chance Building and Contents Loss | 0.2% Chance Structure Exposure | 0.2% Chance Building and Contents Loss |
|--------------------------|-------------------------------------|---|--------------------------------|--|
| Commercial | - | - | 23 | \$ 260,858 |
| Residential | 37 | \$ 541,815 | 447 | \$ 7,912,175 |
| Total | 37 | \$ 541,815 | 470 | \$ 8,173,033 |

Table 3. City of Draper – Estimated Flood Loss Information

4.2.5.2 Areas of Risk and Mitigation Interest

The following Areas of Mitigation Interest were identified by the City of Draper and through FEMA's GIS flood exposure analysis:

- The Bear Canyon neighborhood encroaches into the natural floodplain. During high flows, certain parts of the neighborhood experience flooding along historic flow paths.
- In 2011, houses along Springdale Way near the foothills experienced mudflows, flooding, and debris flow from small drainages coming off the foothills.
- Along Corner Canyon Creek, downstream of I-15, there is planned commercial development in the SFHA. The City is considering flood detention and an irrigation facility as well as a culvert or channelization for Corner Canyon Creek at 1100 East.
- The Draper School is vulnerable to the 0.2% annual chance flood.

Draper does not have any repetitive loss properties identified under the National Flood Insurance Program (NFIP).

The City's Community Development Director oversees enforcement of floodplain management requirements adopted by the City, including regulating new construction in Special Flood Hazard Areas (SFHAs); floodplain identification and mapping, including any local requests for map updates; description of community assistance and monitoring activities.

4.2.6 Infestation

The probability of the infestation of insects or rodents in Draper is negligible. There may be individual property owners that may be impacted, but the likelihood of a citywide infestation is very low.

4.2.7 Landslide and Problem Soils (Geologic Hazard)

Numerous geologic hazards exist in Draper and throughout the Salt Lake Valley that could result in an emergency situation or disaster. Steep mountains adjacent to the city create a potential for landslides, debris flows, rock falls, and snow avalanches. Earthquake hazards are likely to include ground shaking, ground rupture, tectonic deformation, liquefaction, seismically induced slope failures and phenomena related to ground-water effects. Wildfires can remove necessary vegetation, which can result in unstable soils for extended periods of time. The most proactive approach to minimizing geologic hazard is to avoid development in inappropriate areas. The potential for geologic events can be partially mitigated through proper placement of development. Each incident may require a unique response from Draper City, and in the instance of a major mudslide or debris flow, outside assistance will be necessary.

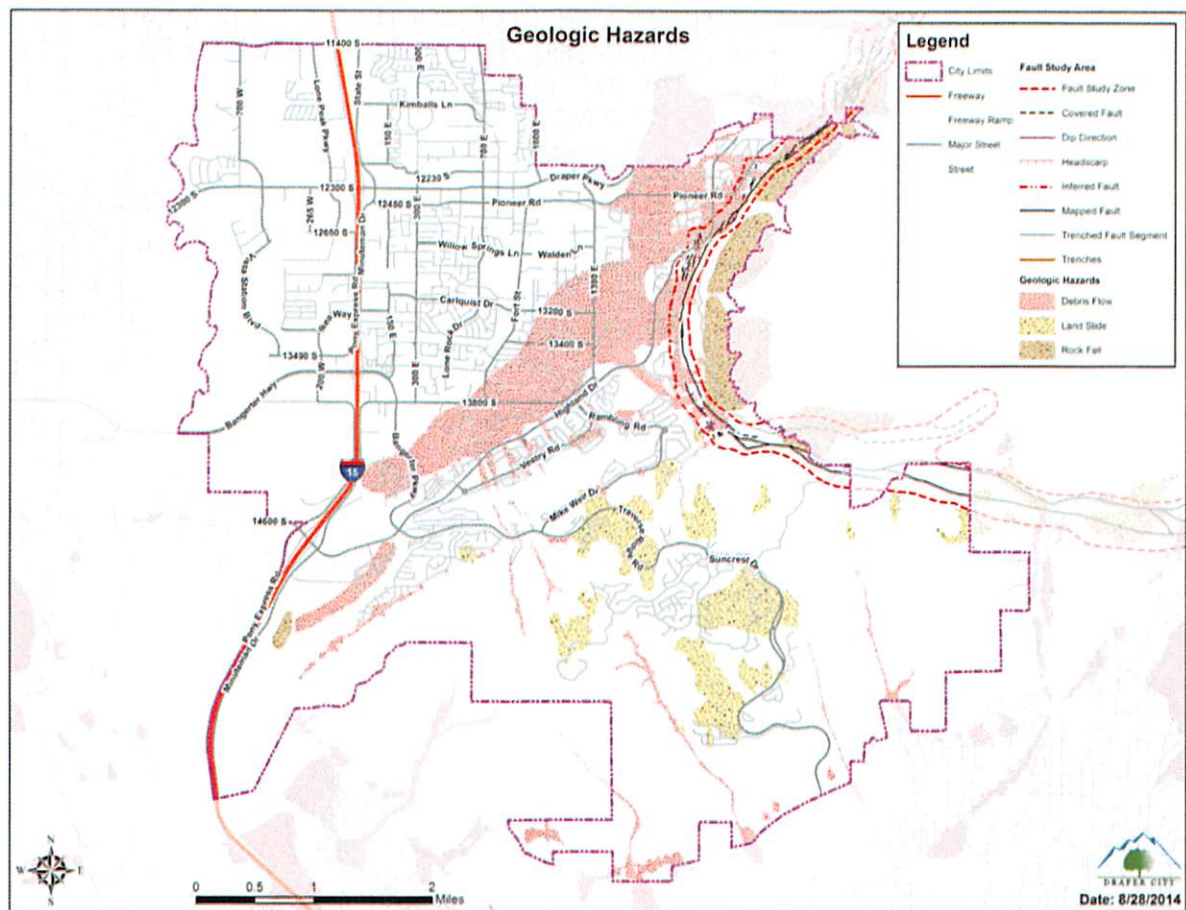


Figure 8. The City of Draper's Geologic Hazards

4.2.8 Pandemic (Public Health Emergencies)

On a regular basis, potentially catastrophic public health issues are raised in the mainstream media and the possibility of a national pandemic, local epidemic such as the Hantavirus, or a wide array of other health-related matters is real. Planning for these events is well beyond the ability of Draper City, but if an outbreak were to occur, the City will be expected to provide accurate information in an immediate fashion. In the event of a public health emergency, the City Manager will determine the appropriate measure of municipal response. The City Manager may choose to activate the EOC and use all means necessary to inform residents and business owners.

In partnership with local and state public health officials, other federal agencies, medical and public health professional associations, infectious disease experts from academia and clinical practice, and international and public service organizations, Draper City will incorporate all reasonable strategies to educate its residents and prepare for a measured response in the instance of a public health emergency.

4.2.9 Radon

Radon is a radioactive gas that has no smell, taste, or color. It comes from the natural decay of uranium that is found in nearly all rock and soil. When geologic conditions are favorable, the potential increases for high indoor levels of radon.

Outdoor radon levels never reach dangerous concentrations because air movement scatters radon into the atmosphere. Radon is a hazard in buildings because the gas collects in enclosed spaces. Radon decays into radioactive particles that can be trapped in the lungs when inhaled. These particles release small bursts of energy that damage lung tissue and may lead to lung cancer. Radon is the second leading cause of lung cancer in the United States.

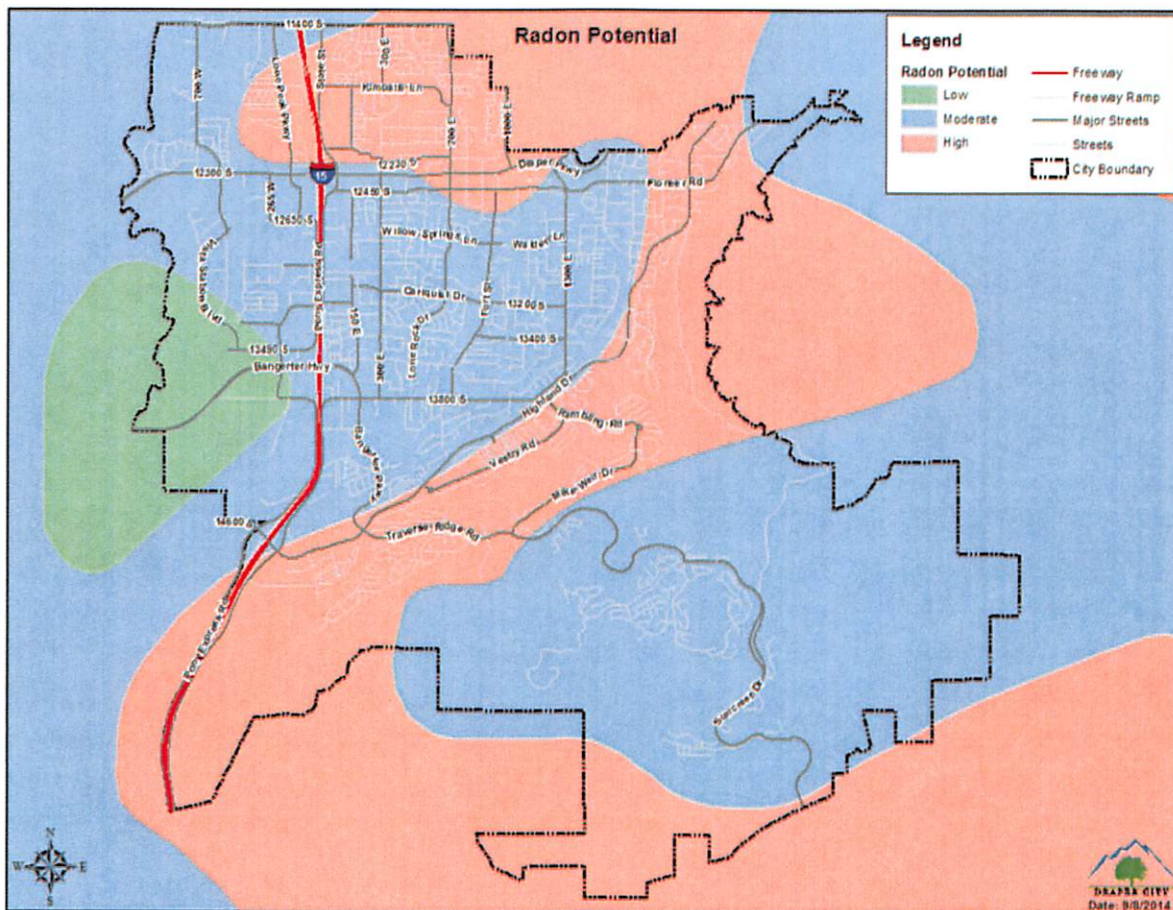


Figure 9. The City of Draper’s Radon Potential

4.2.10 Severe Weather

The potential for severe weather is a reality in Draper City and the surrounding region. These weather events are not isolated to any climatic season, but rather can occur at any time during the year. During the spring and summer months, heavy rains can fall upon soils in a desert climate that may not readily percolate creating surface runoff, mudslides, debris flow, flooding, and other water-related damage. During the winter months, heavy snowfall is possible, especially in higher

elevations of the community. While Draper City is typically self reliant in weather-related events, severe weather may require assistance from outside agencies.

Winter weather systems and snowstorms over northern Utah can have a dramatic effect on regional commerce, transportation, and daily activity and are a major forecast challenge for local meteorologists. This challenge is heightened in Draper City because of the wide variety of local climatic features, such as significant elevation changes, atypical wind patterns, and mountainous slopes located immediately adjacent to city boundaries. These local features can impact the severity of winter storms. For example, the Salt Lake City International Airport receives an average annual snowfall of 65 inches, while just a few miles away, the Alta ski area receives more than 500 inches of snow annually. Snowfall is also influenced by the Great Salt Lake, which can produce localized snow bands or lake effect accumulations several times each winter.

Draper City will continue to identify new methods to minimize the impact of winter storms, but it is not possible to prepare for all winter storm events.

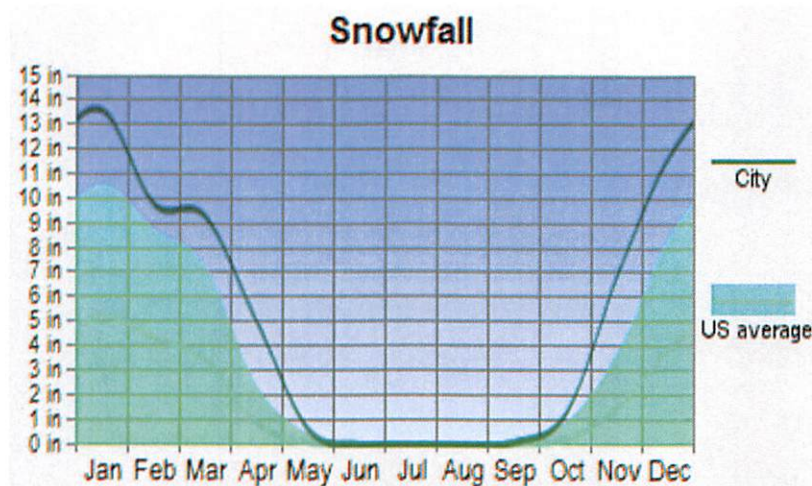


Figure 10. The City of Draper's Average Snowfall

Although infrequent, Draper City is subject to severe damage resulting from tornadoes and extremely high winds often called microburst winds. As recent as August 11, 1999, a category F2 tornado touched down in the downtown Salt Lake City area, killing one person and injuring at least 100 people. The tornado caused widespread power outages as well as large-scale debris mainly from downed tree limbs. The community needs to be prepared and ready to respond to wind-related weather.

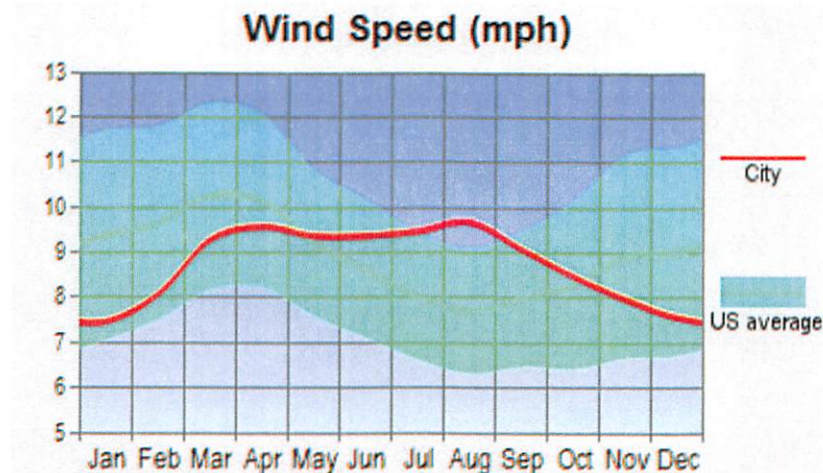


Figure 11. The City of Draper's Average Wind Speed

4.2.11 Wildfire (Fire Hazard)

Perhaps the most likely hazard in Draper City is the potential for damage and loss of life and property through fire events. Fires can occur within the urban fabric of the community or as wildfires in the hillside areas of the community and mountainous areas adjacent to the city. Each incident may require a unique response from Draper City.

The potential for structure and wildfires is increased by lightning events. When severe electrical storms are anticipated, the City Manager may request a heightened level of observation by city personnel.

Utah's fire season typically occurs during the warmer and drier months between May and October. Although traditionally a majority of wildfires have been caused naturally, mostly by lightning, as development encroaches on the hillsides and lower slopes of the Wasatch Mountains, wildfires caused by humans will likely increase. Education and careful preparation is necessary to protect life and personal property in vulnerable areas. Draper City will work with the Unified Fire Authority to complete a fire policy referred to as a Wildland Interface Zone. Other programs such as the Firewise Communities program will be used to educate residents about the dangers of wildfire and help them prepare for these types of disasters.

4.3 Hazard Assessment

Salt Lake County and Draper City have conducted an all-hazards assessment of potential vulnerabilities within Draper City. This assessment assisted with prioritization and outlined a direction for planning efforts. Salt Lake County and Draper City recognizes the pre-disaster mitigation plan developed by the Wasatch Front Regional Council. This pre-disaster mitigation plan serves to reduce the region's vulnerability to natural hazards. The pre-disaster mitigation plan is intended to promote sound public policy and protect or reduce the vulnerability of the citizens, critical facilities, infrastructure, private property, and the natural environment within the region.

The hazard analysis Table 4 provides information to understand risks and their corresponding likelihood and consequences in Draper City.

| Hazard | Location (Geographic Area Affected) | Magnitude, Strength (Maximum Probable Extent) | Probability of Future Events | Overall Significance |
|-------------------|---|---|---------------------------------|-------------------------|
| Avalanche | Limited | Weak | Unlikely | Low |
| Dam Failure | Limited | Weak | Unlikely | Low |
| Drought | Extensive | Moderate | Occasional | Moderate |
| Earthquake | Extensive | 6.0-7.0+ Extreme | Occasional | High |
| Flood | Limited | Moderate | Occasional | Low |
| Infestation | Negligible | Weak | Unlikely | Low |
| Landslide | Significant | Severe | Occasional | Moderate |
| Pandemic | Extensive | Weak | Unlikely | Low |
| Problem Soils | Limited | Weak | Occasional | Moderate |
| Radon | Extensive | Weak | Occasional | Moderate |
| Severe Weather | Extensive | Moderate | Occasional | High |
| Wildfire | Significant | Severe | Likely | High |

Table 4. Draper City Hazard Analysis Table

Definitions for Classifications

Location (Geographic Area Affected)

- **Negligible:** Less than 10 percent of planning area or isolated single-point occurrences
- **Limited:** 10 to 25 percent of the planning area or limited single-point occurrences
- **Significant:** 25 to 75 percent of planning area or frequent single-point occurrences
- **Extensive:** 75 to 100 percent of planning area or consistent single-point occurrences

Maximum Probable Extent (Magnitude/Strength based on historic events or future probability)

- **Weak:** Limited classification on scientific scale, slow speed of onset or short duration of event, resulting in little to no damage
- **Moderate:** Moderate classification on scientific scale, moderate speed of onset or moderate duration of event, resulting in some damage and loss of services for days
- **Severe:** Severe classification on scientific scale, fast speed of onset or long duration of event, resulting in devastating damage and loss of services for weeks or months
- **Extreme:** Extreme classification on scientific scale, immediate onset or extended duration of event, resulting in catastrophic damage and uninhabitable conditions

Examples

| Hazard | Scale/Index | Weak | Moderate | Severe | Extreme |
|------------|-------------------------------|---------------|----------------|----------------|-----------------|
| Drought | Palmer Drought Severity Index | -1.99 to 1.99 | -2.00 to -2.99 | -3.00 to -3.99 | -4.00 and below |
| Earthquake | Modified Mercalli Scale | I to IV | V to VII | VIII | IX to XII |
| | Richter Magnitude | 2,3 | 4,5 | 6 | 7,8 |
| Tornado | Fujita Tornado Damage Scale | F0 | F1, F2 | F3 | F4, F5 |

Probability of Future Events

- **Unlikely:** Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than every 100 years.
- **Occasional:** 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- **Likely:** 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years
- **Highly Likely:** 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

Overall Significance

- **Low:** Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for hazards with a minimal or unknown record of occurrences or for hazards with minimal mitigation potential.
- **Moderate:** The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.
- **High:** The criteria consistently fall in the high classifications and the event is likely/highly likely to occur with severe strength over a significant to extensive portion of the planning area.

5 Vulnerability Assessment

This vulnerability assessment analyzes the population, property, and other assets at risk to hazards.

5.1 Assets at Risk

This section considers Draper's assets at risk, including values at risk, critical facilities and infrastructure, economic assets, and growth and development trends.

Values at Risk

Table D.4. shows the 2014 assessed property data from the State of Utah for Draper City and includes data for the portions of Draper in Salt Lake County and Utah County.

| Draper City | Real Property Value | Personal Property Value | Central Assessed Value | Total |
|------------------------------------|------------------------|-------------------------|------------------------|------------------------|
| Salt Lake County Portion of Draper | \$3,572,233,860 | \$188,886,397 | \$105,049,650 | \$3,866,169,907 |
| Utah County Portion of Draper | \$159,186,324 | \$11,864 | \$581,581 | \$159,779,769 |
| TOTAL VALUE | \$3,731,420,184 | \$188,898,261 | \$105,631,231 | \$4,025,949,676 |

Table 4. Assessed Property Value Data for Draper City

Assets directly owned and controlled by the Draper City include a range of properties and equipment from each department. The value of the City's total capital assets in 2013 was \$399,932,080.

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. Essential facilities are those that if damaged would have devastating impacts on disaster response and recovery. High potential loss facilities are those that would have a high loss or impact on the community. Transportation and lifeline facilities are the third category.

Essential Facilities

Figure D.12 shows essential facilities that are located within Draper.

| Name of Facility | Address | City |
|---|---------------------------|--------|
| Lone Peak Hospital | 11925 S. State Street | Draper |
| Draper City Hall | 1020 E. Pioneer Road | Draper |
| Draper City Hall (EOC and Police Dept.) | 1020 E. Pioneer Road | Draper |
| Utah State Prison | 14425 Bitterbrush Lane | Draper |
| Northern Utah Interagency Fire Center | 14324 S. Pony Express Dr. | Draper |
| Unified Fire Authority Station | 760 E. 12300 S. | Draper |

| | | |
|-------------------------------------|-----------------------------------|--------|
| Unified Fire Authority Station | 14324 Fire House Rd. | Draper |
| Unified Fire Authority Station | 14903 S. Deer Ridge Dr. | Draper |
| Utah National Guard | 12953 Minuteman Dr. | Draper |
| Draper City Public Works | 72 E. Sigovah Ct. | Draper |
| Water Pro Inc. | 12421 S. 800 E. | Draper |
| South Valley Sewer District | 874 E. Pioneer Road | Draper |
| Draper Rehabilitation & Care Center | 12702 S. Fort Street | Draper |
| Juan Diego Catholic High School | 300 E. 11800 S. | Draper |
| Corner Canyon High School | 12943 S. 700 E. | Draper |
| Draper Park Middle School | 13133 S. 1300 E. | Draper |
| Granger Medical Clinic | 11724 S. State Street | Draper |
| After Hours Medical | 1126 Draper Parkway | Draper |
| Workcare | 12422 S. 450 E. | Draper |
| IHC Medical Facility | 12473 S. Minuteman Dr. | Draper |
| Draper Senior Center | 1148 Pioneer Rd. | Draper |
| Draper City Animal Control | 12375 S. 550 W. Galena Park Blvd. | Draper |
| Draper Library | 1136 Pioneer Rd. | Draper |

Figure 12. Essential Facilities Draper City

High Potential Loss Facilities

High potential loss facilities as identified by FEMA HAZUS-MH are located throughout Draper. Draper works closely other government entities and private property owners in monitoring and assessing facilities that fall into this category that are not owned by the City.

Transportation and Lifeline Facilities

Transportation and lifeline facilities are located within the boundaries of Draper. I-15 is the major freeway thoroughfare through Draper that runs north to south through the State of Utah. There are major freight and a passenger rail lines that goes through the City near its west boundary that are used by the Union Pacific Railroad and the Utah Transit Authority. There are two major high-pressure gas lines operated by Questar that are located on the west and east sides of the City. The Salt Lake Aqueduct and Point of the Mountain Aqueduct also go through the City and are operated by the Metropolitan Water District.

5.2 Regulatory Mitigation Capabilities

Table 5 lists regulatory mitigation capabilities, including planning and land management tools, typically used by local jurisdictions to implement hazard mitigation activities and indicates those that are in place in Draper.

| Regulatory Tool | Yes/No | Comments |
|--|--------|----------------------------|
| General plan | Yes | Adopted 2005, as amended |
| Zoning ordinance | Yes | Adopted 2002, as amended |
| Subdivision ordinance | Yes | Adopted 2002, as amended |
| Site plan review requirements | Yes | Adopted 2002, as amended |
| Floodplain ordinance | Yes | Adopted 2005, Updated 2009 |
| Other special purpose ordinance (stormwater, water conservation, wildfire) | Yes | Adopted 1993, as amended |

| | | |
|--|-----|------------------------------|
| Building code | Yes | Adopted 1978, as amended |
| Fire department ISO rating | Yes | 4.9 Valley area – 9 Mountain |
| Erosion or sediment control program | Yes | Adopted 1998, as amended |
| Stormwater management program | Yes | Adopted 1993, as amended |
| Capital improvements plan | Yes | Adopted 2007, as amended |
| Economic development plan | Yes | Adopted 2005, as amended |
| Local emergency operations plan | Yes | Adopted 2012, as amended |
| Flood Insurance Study or other engineering study for streams | Yes | Adopted 2005, Updated 2009 |

Table 5. Draper City's Regulatory Mitigation Capabilities

6 Mitigation Strategy

6.1 Action Plan Progress from the 2009 Wasatch Front Salt Lake County Plan

Draper City has made progress in mitigating the hazards identified in the 2009 Wasatch Front Salt Lake County Mitigation Plan that impact the area within its jurisdiction. Improvement has been made in reducing the potential hazard associated with drought and wildland fires in the Traverse Mountain/SunCrest area, through the education of residents of fire danger, enactment of ordinances restricting open fires and fireworks and working towards implementing a FireWise Program for the area as outlined as a mitigation action in this plan. Steps have also been taken to reduce the potential damage of flooding and/or landslides to residential neighborhoods which are located at the base of the Wasatch Mountain Range on the east side of the City, through the placement of cement embankments.

2009 Mitigation Strategies Progress and Summary

The 2009 Wasatch Front Salt Lake County Plan, which Draper City was a participating city, identified the following hazards. The information below outlines what the goals, objectives and status of the 2009 Wasatch Front Salt Lake County Plan, as of the date of this updated mitigation plan for Draper City. The following summary highlights the Draper City's efforts to implement those goals where applicable and practical as part of the County's overall mitigation planning efforts.

For actions not completed or implemented by the Draper City, a short description is provided as to why it was not relevant or if it is included as part of the updated plan.

| Category | Goal / Objective | Action | Status |
|-------------|---|--|----------------------|
| All Hazards | 1 – Improve and maintain communications capabilities for emergency operations 1.1 – Improve communication capabilities | 1 – Conduct an inventory and assessment of communications equipment and systems and identify needs | Completed / On going |

| Category | Goal / Objective | Action | Status |
|-----------------|---|--|----------------------|
| All Hazards | 1 – Improve and maintain communications capabilities for emergency operations 1.1 – Improve communication capabilities | 2 – Conduct Training and awareness activities on communication equipment, tools, and systems | Completed / On going |
| All Hazards | 1 – Improve and maintain communications capabilities for emergency operations 1.1 – Improve communication capabilities | 3 – Establish agreements to share communications equipment between agencies involved in emergency operations | Completed / On going |
| All Hazards | 1 – Improve and maintain communications capabilities for emergency operations 1.1 – Improve communication capabilities | 4 – Establish notification capabilities and procedures for emergency personnel | Completed / On going |
| All Hazards | 1 – Improve and maintain communications capabilities for emergency operations 1.2 – Maintain communications capabilities for critical facilities | 1 – Evaluate vulnerability of critical communications systems | In progress |
| All Hazards | 1 – Improve and maintain communications capabilities for emergency operations 1.2 – Maintain communications capabilities for critical facilities | 2 – Establish redundancy for dispatch centers and other critical communications | Completed / On going |
| All Hazards | 1 – Improve and maintain communications capabilities for emergency operations 1.3 – Conduct communications Strategic Planning | 1 – Establish a coordinating group to address long-term communication needs and implementation strategies | In progress |

| Category | Goal / Objective | Action | Status |
|-----------------|--|--|----------------------|
| All Hazards | 1 – Improve and maintain communications capabilities for emergency operations 1.3 – Conduct communications Strategic Planning | 2 – Acquire, upgrade, and/or integrate communications equipment and systems as determined by coordinating group | Not completed |
| All Hazards | 2 – Improve awareness and analysis of hazards 2.1 – Improved Quality and Access to digital geographic (GIS) hazards data | 1 – Establish a coordinating group to address geographic data issues | Not applicable |
| All Hazards | 2 – Improve awareness and analysis of hazards 2.1 – Improved Quality and Access to digital geographic (GIS) hazards data | 2 – Examine current data availability and sharing capabilities, evaluate needs, and identify shortcomings | Completed / On going |
| All Hazards | 2 – Improve awareness and analysis of hazards 2.1 – Improved Quality and Access to digital geographic (GIS) hazards data | 3 – Update and expand data on hazards, critical facilities, and critical infrastructure according to assessed needs | Completed / On going |
| All Hazards | 2 – Improve awareness and analysis of hazards 2.1 – Improved Quality and Access to digital geographic (GIS) hazards data | 4 – Provide centralized access to geographic data to emergency planners and responders | In progress |
| All Hazards | 2 – Improve awareness and analysis of hazards 2.2 – Improve and expand hazard monitoring capabilities | 1 – Integrate existing hazard monitoring networks in emergency operations centers. Utilize sensors such as weather stations, stream gages, seismograph stations, road conditions, etc. | Not completed |
| All Hazards | 2 – Improve awareness and analysis of hazards 2.2 – Improve and expand hazard monitoring capabilities | 2 – Identify and implement additional hazard monitoring capabilities. | Not completed |

| Category | Goal / Objective | Action | Status |
|-------------|---|--|----------------------|
| All Hazards | 3 – Ensure critical facilities can sustain operations for emergency response and recovery 3.1 – Prevent damage to critical facilities and infrastructure | 1 – Utilize GIS to identify facilities and infrastructure at risk | Completed / On going |
| All Hazards | 3 – Ensure critical facilities can sustain operations for emergency response and recovery 3.1 – Prevent damage to critical facilities and infrastructure | 2 – Assess critical facilities for hazard exposure, structural weaknesses, power, communications and equipment resources and redundancy, and adequate emergency procedures | Completed / On going |
| All Hazards | 3 – Ensure critical facilities can sustain operations for emergency response and recovery 3.1 – Prevent damage to critical facilities and infrastructure | 3 – Implement improvements to address identified in assessment | Completed / On going |
| All Hazards | 4 – Improve response capabilities through mutual-aid agreements 4.1 – Utilize mutual-aid agreements in accordance with National Incident Management System (NIMS) requirements | 1 – Compile inventory of mutual-aid agreements and memoranda of understanding (MOU) and identify deficiencies | In progress |
| All Hazards | 4 – Improve response capabilities through mutual-aid agreements 4.1 – Utilize mutual-aid agreements in accordance with National Incident Management System (NIMS) requirements | 2 – Pursue and implement needed mutual-aid agreements | In progress |
| All Hazards | 5 – Increase citizen safety through improved hazard awareness 5.1 – establish a comprehensive public education program | 1 – Provide education regarding all natural hazards through live trainings, as well as web-based, print and broadcast media | Completed / On going |

| Category | Goal / Objective | Action | Status |
|-------------|---|---|----------------------|
| All Hazards | 5 – Increase citizen safety through improved hazard awareness 5.1 – Establish a comprehensive public education program | 2 – Incorporate information about cascading effects of hazards in education programs | Not completed |
| All Hazards | 5 – Increase citizen safety through improved hazard awareness 5.1 – Establish a comprehensive public education program | 3 – Develop education programs to target specific groups including homeowners, developers, schools and people with special needs | Not completed |
| All Hazards | 5 – Increase citizen safety through improved hazard awareness 5.1 – Establish a comprehensive public education program | 4 – Utilize maps and similar products on County EM website and other media to educate public on areas at risk to hazards | In progress |
| All Hazards | 5 – Increase citizen safety through improved hazard awareness 5.1 – Establish a comprehensive public education program | 5 – Coordinate with existing public education programs such as the American Red Cross, Utah Living with Fire, be Ready Utah, the National Weather Service, etc. | Completed / On going |
| All Hazards | 6 – Improve public safety through preventative regulations 6.1 – Minimize hazard impacts through the adoption of appropriate prevention measures | 1 – Establish and enforce appropriate planning, zoning, and building code ordinances | Completed / On going |
| All Hazards | 6 – Improve public safety through preventative regulations 6.1 – Minimize hazard impacts through the adoption of appropriate prevention measures | 2 – Ensure current hazard ordinances are available for viewing online | Completed / On going |
| Dam Failure | 1 – Include dam failure inundation in future County and City planning efforts 1.1 – Review current State dam safety information on all identified high hazard dams in the County | 1 – Include dam inundation maps in current County, City and Special Service District Emergency Operations Plans | Not completed |

| Category | Goal / Objective | Action | Status |
|-------------|---|---|----------------------|
| Dam Failure | 1 – Include dam failure inundation in future County and City planning efforts 1.1 – Review current State dam safety information on all identified high hazard dams in the County | 2 – Utilize inundation maps to identify potential evacuation areas and routes | Not completed |
| Drought | 1 – Reduce and prevent hardships associated with water shortages 1.1 – Limit unnecessary consumption of water throughout the County | 1 – Continue to encourage water conservation utilizing and promoting outreach material from all water districts in the County | Completed / On going |
| Drought | 1 – Reduce and prevent hardships associated with water shortages 1.1 – Limit unnecessary consumption of water throughout the County | 2 – Emergency Managers will coordinate with local water districts/public utilities to support ongoing conservation efforts | Not completed |
| Drought | 1 – Reduce and prevent hardships associated with water shortages 1.1 – Limit unnecessary consumption of water throughout the County | 3 – Investigate feasibility of implementing an incentive program to encourage the use of low-flow appliances and fixtures in homes and businesses | Completed |
| Drought | 1 – Reduce and prevent hardships associated with water shortages 1.1 – Limit unnecessary consumption of water throughout the County | 4 – Implement water-saving devices and practices in public facilities | Not completed |
| Drought | 1 – Reduce and prevent hardships associated with water shortages 1.1 – Limit unnecessary consumption of water throughout the County | 5 – Repair, maintain and improve water distribution infrastructure to prevent loss from leakage, breaks, etc. | Completed / On going |
| Drought | 1 – Reduce and prevent hardships associated with water shortages 1.1 – Limit unnecessary consumption of water throughout the County | 6 – Coordinate public safety water use, such as hydrant testing | In progress |

| Category | Goal / Objective | Action | Status |
|-----------------|--|--|----------------------|
| Drought | 1 – Reduce and prevent hardships associated with water shortages 1.1 – Limit unnecessary consumption of water throughout the County | 7 – Provide information on landscaping alternatives for persons subject to green area requirements | Completed / On going |
| Drought | 1 – Reduce and prevent hardships associated with water shortages 1.2 – Address agricultural water shortages in the County | 1 – Set up livestock water rotation in areas of agricultural use | Not applicable |
| Drought | 1 – Reduce and prevent hardships associated with water shortages 1.3 – Encourage development of secondary water systems | 1 – Coordinate with water districts to plan for, develop and/or expand secondary water | Not Completed |
| Earthquake | 1 – Reduce earthquakes losses to infrastructure 1.1 – Encourage retrofit and rehabilitation of highly susceptible infrastructure | 1 – Identify structures at risk to earthquake damage | Completed / On going |
| Earthquake | 1 – Reduce earthquakes losses to infrastructure 1.1 – Encourage retrofit and rehabilitation of highly susceptible infrastructure | 2 – Research feasibility of an incentive program for retrofitting privately-owned buildings, particularly unreinforced masonry | Not completed |
| Earthquake | 1 – Reduce earthquakes losses to infrastructure 1.1 – Encourage retrofit and rehabilitation of highly susceptible infrastructure | 3 – Complete seismic rehabilitation/retrofitting projects of public buildings at risk | In progress |
| Earthquake | 1 – Reduce earthquakes losses to infrastructure 1.2 – Improve public education regarding earthquake risks to unreinforced masonry buildings | 1 – Provide educational materials to unreinforced masonry home and business owners | Completed / On going |

| Category | Goal / Objective | Action | Status |
|------------|---|--|----------------------|
| Earthquake | 1 – Reduce earthquakes losses to infrastructure 1.3 – Improve Seismic Hazard understanding and seismic resistance of CUWCD Red Butte Dam in Salt Lake County. | 1 – Procure Engineering Consultant to perform the nonstructural design and geotechnical assessment and review. | Completed / On going |
| Flooding | 1 – Protection of life and property before, during and after a flooding event 1.1 – Provide 100% availability of the National Flood Insurance Program | 1 – Assist Cities with NFIP application | Not applicable |
| Flooding | 1 – Protection of life and property before, during and after a flooding event 1.1 – Provide 100% availability of the National Flood Insurance Program | 2 – Encourage Communities to actively participate in NFIP | Not applicable |
| Flooding | 1 – Protection of life and property before, during and after a flooding event 1.2 – Encourage appropriate flood control measures, particularly in new developments | 1 – Determine potential flood impacts and identify areas in need of additional flood control structures | Completed / On going |
| Flooding | 1 – Protection of life and property before, during and after a flooding event 1.2 – Encourage appropriate flood control measures, particularly in new developments | 2 – Address identified problems through construction of debris basins, flood retention ponds, energy dissipaters or other flood control structures | Completed / On going |

| Category | Goal / Objective | Action | Status |
|----------------|---|--|----------------------|
| Flooding | 1 – Protection of life and property before, during and after a flooding event 1.3 – Provide maintenance, repairs and improvements to drainage structures, storm water systems and flood control structures | 1 – Establish maintenance and repair programs to remove debris, improve resistance and otherwise maintain effectiveness of storm water and flood control systems | Completed / On going |
| Flooding | 2 – Reduce threat of unstable or inadequate flood control structures 2.1 – Reduce potential for failure of flood control structures | 1 – Identify and assess structures for deficiencies | Completed / On going |
| Flooding | 2 – Reduce threat of unstable or inadequate flood control structures 2.1 – Reduce potential for failure of flood control structures | 2 – Modify structures as needed to address deficiencies | On going |
| Severe Weather | 1 – Reduce threat of loss of life or property due to extreme weather events 1.1 – Maintain status as a StormReady Community | 1 – Maintain Hazardous Weather Operations Plan according to StormReady requirements | Not completed |
| Severe Weather | 1 – Reduce threat of loss of life or property due to extreme weather events 1.1 – Maintain status as a StormReady Community | 2 – Maintain Contact with NWS prior to re-application in 2010 | Not applicable |
| Severe Weather | 1 – Reduce threat of loss of life or property due to extreme weather events 1.2 – Increase awareness of information services provided by NWS | 1 – Meet with NWS representative on an annual basis to receive information on new services and alerts available | Not completed |
| Severe Weather | 1 – Reduce threat of loss of life or property due to extreme weather events 1.2 – Increase awareness of information services provided by NWS | 2 – Assist NWS in making other agencies and departments aware of available resources | Not Completed |

| Category | Goal / Objective | Action | Status |
|----------------|---|--|----------------------|
| Severe Weather | 1 – Reduce threat of loss of life or property due to extreme weather events 1.3 – Encourage safe practices in avalanche prone areas | 1 – Assist Forest Service Utah Avalanche Forecast Center and other organizations in promoting avalanche hazard awareness for backcountry users | Not Applicable |
| Severe Weather | 1 – Reduce threat of loss of life or property due to extreme weather events 1.4 – Examine the vulnerability of patrons at large event venues to extreme weather events | 1 – Work with NWS to develop large event venue weather safety and evacuation procedures | Not Completed |
| Slope Failure | 1 – Reduce or eliminate the threat of slope failure damage 1.1 – Reduce the threat of slope failures following wildfires | 1 – Develop protocol for working with State and Federal agencies in reducing the impact of post-fire debris flow hazard | In Progress |
| Slope Failure | 1 – Reduce or eliminate the threat of slope failure damage 1.2 – Monitor historic landslide areas | 1 – Coordinate with the Utah Geological Survey and other agencies to understand current slope failure threats/potential | Completed / On going |
| Slope Failure | 1 – Reduce or eliminate the threat of slope failure damage 1.3 – Address landslide hazards in new subdivisions | 1 – Utilize recommendations provided by the State Geological Hazards Working Group to address land-use and planning for new developments | Completed / On going |
| Wildland Fire | 1 – Community education on wildfire hazard 1.1 – Reduce risk from wildfire through education programs | 1 – Increase public awareness through “Firewise” program | In progress |
| Wildland Fire | 1 – Community education on wildfire hazard 1.1 – Reduce risk from wildfire through education programs | 2 – Educate homeowners on the need to create defensible space near structures in WUI | In progress |

| Category | Goal / Objective | Action | Status |
|---------------|--|---|----------------------|
| Wildland Fire | 2 – Improve safety from wildfire hazards through planning, protective actions and improved fire response capabilities 2.1 – Assist homeowners with creating defensible space near structures in WUI areas | 1 – Designate and promote county-wide annual initiative for clearing fuels | Not applicable |
| Wildland Fire | 2 – Improve safety from wildfire hazards through planning, protective actions and improved fire response capabilities 2.1 – Assist homeowners with creating defensible space near structures in WUI areas | 2 – Provide waste removal, such as chipping of green waste by public works, following designated fuel clearing day/week | Not completed |
| Wildland Fire | 2 – Improve safety from wildfire hazards through planning, protective actions and improved fire response capabilities 2.2 – Improve evacuation capabilities for WUI areas | 1 – Work with experts and communities to develop or update evacuation plans | Completed / On going |
| Wildland Fire | 2 – Improve safety from wildfire hazards through planning, protective actions and improved fire response capabilities 2.2 – Improve evacuation capabilities for WUI areas | 2 – Evaluate transportation network and address needed improvements to facilitate evacuation and emergency response | On going |
| Wildland Fire | 2 – Improve safety from wildfire hazards through planning, protective actions and improved fire response capabilities 2.3 – Improve addressing system in WUI areas to facilitate emergency response | 1 – Identify all facilities, businesses, and residences, particularly in the canyons, and assign addresses according to current county addressing standards | Not applicable |

| Category | Goal / Objective | Action | Status |
|---------------|--|--|----------------------|
| Wildland Fire | 2 – Improve safety from wildfire hazards through planning, protective actions and improved fire response capabilities 2.3 – Improve addressing system in WUI areas to facilitate emergency response | 2 – Incorporate improved addresses in fire-dispatch and other databases | Not applicable |
| Wildland Fire | 2 – Improve safety from wildfire hazards through planning, protective actions and improved fire response capabilities 2.4 – Complete wildfire protection projects | 1 – Reduce fuels around publically owned structures | Completed / On going |
| Wildland Fire | 2 – Improve safety from wildfire hazards through planning, protective actions and improved fire response capabilities 2.4 – Complete wildfire protection projects | 2 – Implement fire breaks and other protective measures | Not completed |
| Wildland Fire | 2 – Improve safety from wildfire hazards through planning, protective actions and improved fire response capabilities 2.4 – Complete wildfire protection projects | 3 – Assess existing water flow capabilities, both public and private, and address deficiencies | Completed / On going |
| Wildland Fire | 2 – Improve safety from wildfire hazards through planning, protective actions and improved fire response capabilities 2.4 – Complete wildfire protection projects | 4 – Assist communities in developing Community Wildfire Protection Plans or similar plans | In progress |
| Wildland Fire | 2 – Improve safety from wildfire hazards through planning, protective actions and improved fire response capabilities 2.5 – Encourage proper development practices in the WUI | 1 – Adopt the Utah Wildland-Urban Interface Code | Not completed |

| Category | Goal / Objective | Action | Status |
|---------------|--|---|---------------|
| Wildland Fire | 2 – Improve safety from wildfire hazards through planning, protective actions and improved fire response capabilities 2.5 – Encourage proper development practices in the WUI | 2 – Define wildland-urban interface and develop digital maps of the WUI | Not completed |

6.2 Mitigation Actions

The planning team for Draper City identified and prioritized the following mitigation actions based on the risk assessment. The potential natural hazards identified by Draper City are avalanche, dam failure, drought, earthquake, flood, infestation, landslide, problem soils, pandemic, radon, severe weather and wildfire. These potential natural hazards are addressed by these mitigation actions. Additional mitigation actions may be added in the future as needed. Background information and information on how each action will be implemented and administered, such as ideas for implementation, responsible office, potential funding, estimated cost, and timeline are also included.

| Hazard | Mitigation 1 | Mitigation 2 | Mitigation 3 | Mitigation 4 | Mitigation 5 | Mitigation 6 |
|----------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Avalanche | | | X | | X | X |
| Dam Failure | | | | X | | X |
| Drought | X | | | | | X |
| Earthquake | | | X | X | | X |
| Flood | | X | X | X | X | X |
| Infestation | | | | X | | X |
| Landslide | | | X | | X | X |
| Pandemic | | | | X | | X |
| Problem Soils | | | X | | | X |
| Radon | | | X | | | X |
| Severe Weather | | | | X | X | X |
| Wildfire | X | | | | X | X |

1. Establish Firewise Community Program for SunCrest

Issue/Background: The SunCrest residential community area located on Traverse Ridge, which divides Utah and Salt Lake County and is a Wildland Interface Zone, has a high potential for wildland fires. The City has worked with the community, Unified Fire Authority and the State of

Utah in putting a program in place to educate residents and measures to reduce wild land fires in the area. Potential natural hazards covered by this mitigation action are wildfires and drought.

Other Alternatives: No action

Responsible Office: Draper City Emergency Preparedness, Draper City Public Works, Unified Fire Authority and State of Utah

Priority (High, Medium, Low): High

Cost Estimate: \$200,000 to \$250,000

Potential Funding: \$216,000 Grant from the State of Utah

Benefits (avoided Losses): This will prevent the loss of human life and economic and property losses.

Schedule: Now and Long term

Other Alternatives: No action

2. Continue to Enforce Master Drainage Plan Requirements

Issue/Background: The Draper City requires drainage plans as part of the approval process for all specific plans and large development projects as determined by the City's Public Works Director and City Engineer. The master drainage plan should consider cumulative regional drainage and flooding mitigation. The intent of a master drainage plan is to ensure that the overall rate of runoff from a project does not exceed pre-development levels. If necessary, this objective shall be achieved by incorporating run-off control measures to minimize peak flows and/or assistance in financing or otherwise implementing comprehensive drainage plans. Potential natural hazard covered by this mitigation action is flooding.

Other Alternatives: No action

Responsible Office: Draper City Engineering Division and Draper City Public Works Department

Priority (High, Medium, Low): Medium

Cost Estimate: Developer-based funding under specific plan requirements

Potential Funding: Developer-based funding under specific plan requirements

Benefits (avoided Losses): This will prevent the loss of human life and economic and property losses.

Schedule: Now and long term

3. Continue to Enforce Building Codes, Development Codes and Zoning Ordinance

Issue/Background: The Draper City requires that construction complies with the adopted building codes and the zoning and development ordinances adopted by the City. The City has experienced tremendous growth during since incorporation in 1978 and will continue to grow in future years. Potential natural hazards covered by this mitigation action are avalanche, earthquake, flood, landslide, problem soils and radon.

Other Alternatives: No action

Responsible Office: Draper City Building Inspection Division, Draper City Community Development Department and Draper City Engineering Division.

Priority (High, Medium, Low): Medium

Cost Estimate: Developer-based funding under specific plan requirements

Potential Funding: Developer-based funding under specific plan requirements

Benefits (avoided Losses): This will prevent the loss of human life and economic and property losses.

Schedule: Now and long term

4. Continue Utah Shakeout Activities to Promote Earthquake Awareness

Issue/Background: Draper City participates in the Utah Shakeout activities annually. This event promotes earthquake awareness of the residents, businesses and City employees. This annual event allows the City to practice setting up its Emergency Operation Center and its process of communicating with neighborhoods and businesses throughout the City for other hazard events such as a dam failure, infestation, pandemic, floods and severe weather conditions. Potential natural hazards covered by this mitigation action are earthquakes, a dam failure, infestation, pandemic, floods and severe weather conditions.

Other Alternatives: No action

Responsible Office: Emergency Manager, Police Department and the City's Emergency Preparedness Committee

Priority (High, Medium, Low): High

Cost Estimate: \$5,000 to \$10,000 annually

Potential Funding: City budget

Benefits (avoided Losses): This will help to prevent the loss of human life and property losses when a major earthquake event occurs.

Schedule: Now and long term

5. Purchase Hazard Mitigation Public Notification Boards

Issue/Background: Consider purchase additional mobile self-contained changeable message signs to pre-alert motorists to avoid "real time" traffic, weather, fire or other hazard events. Potential natural hazards covered by this mitigation action are severe weather conditions, wildfires, flooding, avalanche and landslides.

Other Alternatives: Rely on contract service providers who may not be able to respond with adequate resources in a timely fashion.

Responsible Office: Draper City Public Works Department and Police Department

Priority (High, Medium, Low): Low

Cost Estimate: 1 signs @ \$35,000 each = \$35,000

Potential Funding: Departmental operational budgets or grant funding

Benefits (Avoided Losses): The City currently has one mobile sign that has been beneficial in notifying the public of potential hazards. These mobile signs provide the ability for City forces to aid emergency response crews by dispatching mobile sign units to be stationed at critical locations to alert motorists and citizens of potential hazard areas. Purchasing an additional sign will allow for better routing of nonessential vehicle traffic that may impede the delivery of critical health and safety services and ultimately result in quicker overall response delivery times.

Schedule: Fiscal year 2015/2016

6. Educate Residents and Businesses through the Draper City Website and Twitter

Issue/Background: Draper City's website is an excellent tool to educate and notify residents, businesses and the general public of potential natural hazards and how to mitigate them. The City's twitter account is also a tool that can be used to inform residents, businesses and the general public of hazard events in progress. The City will update its website as needed with documents, maps and information regarding potential natural hazards that could impact Draper City. Potential natural hazards covered by this mitigation action are avalanche, dam failure, drought, earthquake, flood, infestation, landslide, problem soils, pandemic, radon, severe weather conditions and wildfires.

Other Alternatives: No action

Responsible Office: Public Relation Officer, Emergency Manager, Draper City Building Inspection Division and Draper City Community Development Department

Priority (High, Medium, Low): High

Cost Estimate: \$5,000 annually

Potential Funding: City budget

Benefits (avoided Losses): This will prevent the loss of human life and economic and property losses.

Schedule: Now and Long term

7 Plan Implementation & Maintenance

7.1 Implementation

Mitigation is most successful when it is incorporated into the day-to-day functions and priorities of government and development. Draper City will utilize the information in the Hazards Mitigation Plan to prepare for future events and plan accordingly.

7.2 Maintenance Schedule

Periodic monitoring and updates of this Plan are required to ensure that the goals and objectives for the city are kept current and that local mitigation strategies are being carried out. This Plan has been designed to be user-friendly in terms of maintenance and implementation. This portion of the Plan outlines the procedures for completing revisions and updates. The Plan will also be revised to reflect lessons learned or to address specific hazard incidents arising out of a disaster as needed.

Annual Review Procedures

Draper City will be responsible to annually review the mitigation strategies described in this Plan, as required by the Utah Division of Emergency Management (UDEM), or as situations dictate such as following a disaster declaration. The process will include the city organizing a Hazards Mitigation Planning committee comprised of individuals from organizations responsible to implement the described mitigation strategies. Progress toward the completion of the strategies will be assessed and revised as warranted. The city emergency manager will regularly monitor the Plan and is responsible to make revisions and updates.

Five-Year Plan Review

The entire Mitigation Plan including any background studies and analysis shall be revised and updated as needed every five years by Draper City to determine if there have been any significant changes in the city that would affect the Plan. Increased development, increased exposure to certain hazards, the development of new mitigation capabilities or techniques and changes to Federal or State legislation are examples of changes that may affect the condition of the Plan.

7.3 Hazard Mitigation Plan Amendments

Draper City will amend and update its Hazard Mitigation Plan as needed.

7.4 Maintenance Evaluation Process

It will be the responsibility of the designated Emergency Manager, City Manager, Mayor and City Council Members to ensure these actions are carried out no later than the target dates unless reasonable circumstances prevent their implementation (i.e. lack of funding availability).

7.4.1 Funding Sources

Although all mitigation techniques will likely save money by avoiding losses, many projects are costly to implement. Draper City shall continue to seek outside funding assistance for mitigation projects in both the pre-disaster and post-disaster environment, subject to budget constraints and available funding sources.

Federal Programs

The following federal grant programs have been identified as funding sources which specifically target hazard mitigation projects:

Title: Pre-Disaster Mitigation Program

Agency: Federal Emergency Management Agency

Through the Disaster Mitigation Act of 2000, Congress approved the creation of a national program to provide a funding mechanism that is not dependent on a Presidential Disaster Declaration. The Pre-Disaster Mitigation (PDM) program provides funding to states and communities for cost-effective hazard mitigation activities that complement a comprehensive mitigation program and reduce injuries, loss of life, and damage and destruction of property.

The funding is based upon a 75% Federal share and 25% non-Federal share. The non-Federal match can be fully in-kind or cash, or a combination. Special accommodations will be made for “small and impoverished communities”, who will be eligible for 90% Federal share/10% non-Federal. FEMA provides PDM grants to states that, in turn, can provide sub-grants to local governments for accomplishing the following eligible mitigation activities:

- State and local Natural Hazard Pre-Disaster Mitigation Planning
- Technical assistance (e.g. risk assessments, project development)
- Mitigation Projects
- Acquisition or relocation of vulnerable properties
- Hazard retrofits
- Minor structural hazard control or protection projects
- Community outreach and education (up to 10% of State allocation)

Title: Flood Mitigation Assistance Program

Agency: Federal Emergency Management Agency

FEMA’s Flood Mitigation Assistance program (FMA) provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage

to buildings, manufactured homes and other structures insurable under the National Flood Insurance Program (NFIP). FMA was created as part of the National Flood Insurance Reform Act of 1994 (42 USC 4101) with the goal of reducing or eliminating claims under the NFIP.

FMA is a pre-disaster grant program, and is available to states on an annual basis. This funding is available for mitigation planning and implementation of mitigation measures only, and is based upon a 75% Federal share/25% non-Federal share. States administer the FMA program and are responsible for selecting projects for funding from the applications submitted by all communities within the state. The state then forwards selected applications to FEMA for an eligibility determination. Although individuals cannot apply directly for FMA funds, their local government may submit an application on their behalf.

Title: Hazard Mitigation Grant Program

Agency: Federal Emergency Management Agency

The Hazard Mitigation Grant Program (HMGP) was created in November 1988 through Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. The HMGP assists states and local communities in implementing long-term mitigation measures following a Presidential disaster declaration.

To meet these objectives, FEMA can fund up to 75% of the eligible costs of each project. The state or local cost-share match does not need to be cash; in-kind services or materials may also be used. With the passage of the Hazard Mitigation and Relocation Assistance Act of 1993, federal funding under the HMGP is now based on 15% of the federal funds spent on the Public and Individual Assistance programs (minus administrative expenses) for each disaster.

The HMGP can be used to fund projects to protect either public or private property, so long as the projects in question fit within the state and local governments overall mitigation strategy for the disaster area, and comply with program guidelines. Examples of projects that may be funded include the acquisition or relocation of structures from hazard-prone areas, the retrofitting of existing structures to protect them from future damages; and the development of state or local standards designed to protect buildings from future damages.

Eligibility for funding under the HMGP is limited to state and local governments, certain private nonprofit organizations or institutions that serve a public function, Indian tribes and authorized tribal organizations. These organizations must apply for HMPG project funding on behalf of their citizens. In turn, applicants must work through their state, since the state is responsible for setting priorities for funding and administering the program.

Title: Public Assistance (Infrastructure) Program, Section 406

Agency: Federal Emergency Management Agency

FEMA's Public Assistance Program, through Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, provides funding to local governments following a Presidential Disaster Declaration for mitigation measures in conjunction with the repair of damaged public facilities and infrastructure.

The mitigation measures must be related to eligible disaster related damages and must directly reduce the potential for future, similar disaster damages to the eligible facility. These opportunities usually present themselves during the repair/replacement efforts.

Proposed projects must be approved by FEMA prior to funding. They will be evaluated for cost effectiveness, technical feasibility and compliance with statutory, regulatory and executive order requirements. In addition, the evaluation must ensure that the mitigation measures do not negatively impact a facility's operation or risk from another hazard.

Public facilities are operated by state and local governments, Indian tribes or authorized tribal organizations and include:

- Roads, bridges & culverts
- Draining & irrigation channels
- Schools, city halls & other buildings
- Water, power & sanitary systems
- Airports & parks

Private nonprofit organizations are groups that own or operate facilities that provide services otherwise performed by a government agency and include, but are not limited to the following:

- Universities and other schools
- Hospitals & clinics
- Volunteer fire & ambulance
- Power cooperatives & other utilities
- Custodial care & retirement facilities
- Museums & community centers

Title: Small Business Administration (SBA) Disaster Assistance Program**Agency: U.S. SBA**

The SBA Disaster Assistance Program provides low-interest loans to businesses following a Presidential disaster declaration. The loans target businesses to repair or replace uninsured disaster damages to property owned by the business, including real estate, machinery and equipment, inventory and supplies. Businesses of any size are eligible, along with non-profit organizations.

SBA loans can be utilized by their recipients to incorporate mitigation techniques into the repair and restoration of their business.

Title: Community Development Block Grants**Agency: US Department of Housing and Urban Development**

The Community Development Block Grant (CDBG) program provides grants to local governments for community and economic development projects that primarily benefit low- and moderate-income people. The CDBG program also provides grants for post-disaster hazard mitigation and recovery following a Presidential disaster declaration.

Funds can be used for activities such as acquisition, rehabilitation or reconstruction of damaged properties and facilities and for the redevelopment of disaster areas.

State Programs

Local

Local governments depend upon local property taxes as their primary source of revenue. These taxes are typically used to finance services that must be available and delivered on a routine and regular basis to the general public. If local budgets allow, these funds are used to match Federal or State grant programs when required for large-scale projects.

Non-Governmental

Another potential source of revenue for implementing local mitigation projects are monetary contributions from non-governmental organizations, such as private sector companies, churches, charities, community relief funds, the American Red Cross, hospitals, land trusts and other non-profit organizations.

Paramount to having a Plan deemed to be valid is its implementation. There is currently no new fiscal note attached to the implementation of this Plan.

7.5 Continued Public Involvement

Throughout the planning process, public involvement has been and will be critical to the development of the Hazard Mitigation Plan and its updates. The Plan will be available on the Draper City website to provide opportunities for public participation and comment. The Plan will also be available for review at the offices of Draper City.

Participation

All citizens of the region are encouraged to participate in the planning process, especially those who may reside within identified hazard areas. Adequate and timely notification to all area residents will be given as outlined above to all hearings, forums, and meetings.

Access to Information

Citizens, public jurisdictions, agencies and other interested parties will have the opportunity to receive information and submit comments on any aspect of the Natural Hazards Pre-Disaster Mitigation Plan.

Technical Assistance

Residents as well as local jurisdictions may request assistance in accessing the program and interpretation of mitigation projects.

Public Hearings and Meetings Concerning the Plan

Hearings and meeting concerning the plan will be conveniently timed for people who might benefit most from mitigation programs. Hearings and meeting will be accessible to people with

disabilities (accommodations must be requested in advance according to previously established policy).

Hearings and meeting will be adequately publicized. Hearings and meetings may be held for a number of purposes or functions including to: Identify and profile hazards, develop mitigation strategies, and review plan goals, performance and future plans.

Future Revisions

Future revisions of the Hazard Mitigation Plan shall include:

Expanded vulnerability assessments to include flood and dam failure inundation.

Continue the search for more specific mitigation actions.

An analysis of progress of the Plan as it is revised and the progress made in reaching mitigation goals and implementation of the plan.

Expanded look into how the identified natural hazards will affect certain populations including the young and elderly.

Implementation and maintenance of the plan is critical to the overall success of hazard mitigation planning.

Integration of data, information, and mitigation goals and action plans:

Draper will integrate mitigation strategies into its building codes, the planning commission, and the actions of the City Council and other relevant agencies by education by the Emergency Manager during daily, weekly, and monthly city and public meetings.

8 Hazard Mitigation Plan Adoption

It is the intent of Draper City that this Hazard Mitigation Plan will be adopted by resolution once approved by the State of Utah and FEMA, which approval should be within five years of the previous Hazard Mitigation Plan's approval date. This process will be documented through the Draper City Recorder's office.