Part VI
Summit County
Profiles and Mitigation

Background

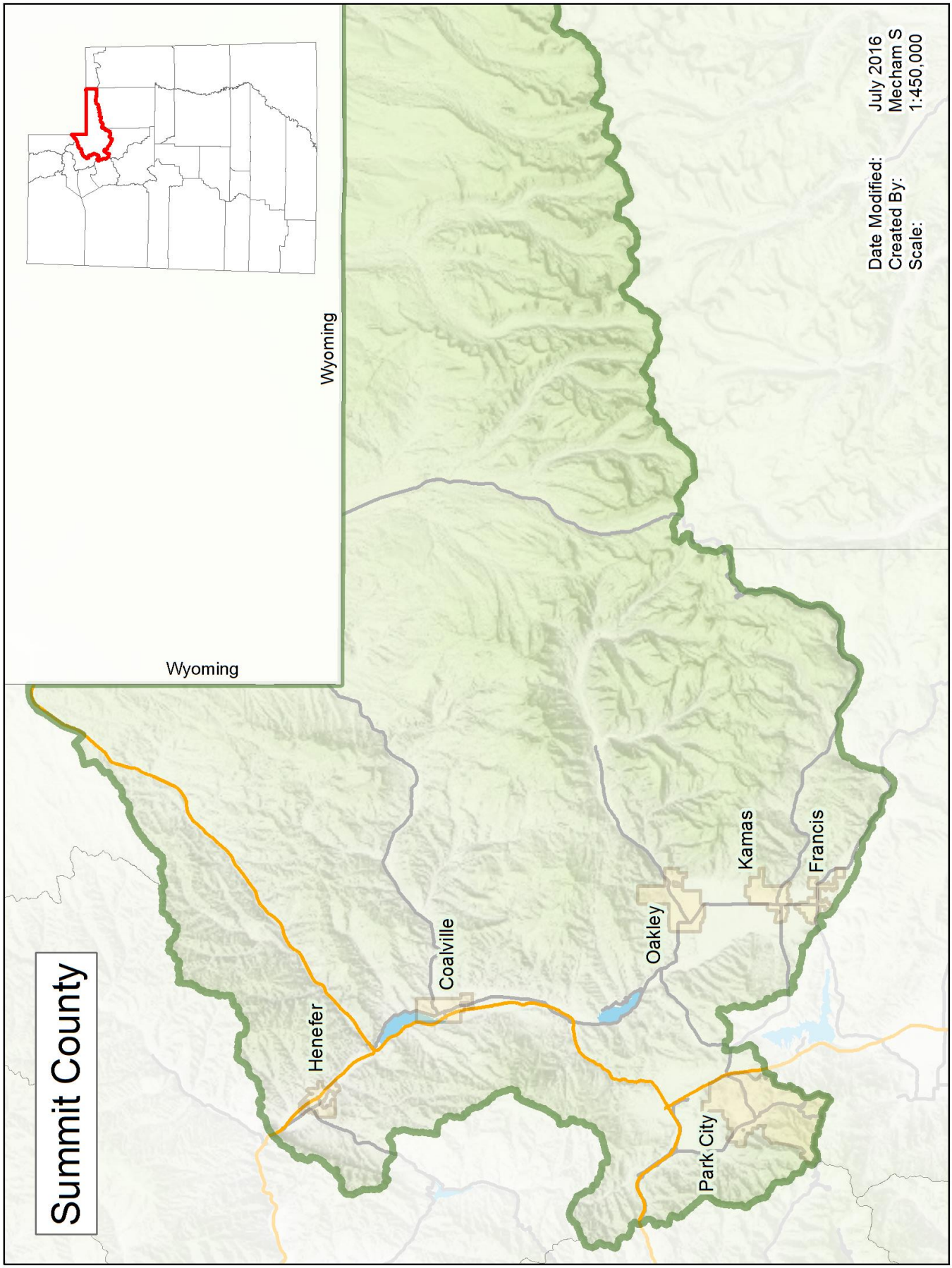
Area: 1,849 square miles; *county seat:* Coalville; *origin of county name*: the county includes high mountain summits that form the divides of the Weber, Bear, and Green River drainage areas; *points of interest*: Park City area ski resorts, Park City Historic District, Rockport State Park, Echo Reservoir, High Uinta Wilderness Area; *economy*: skiing, tourism, lumbering, livestock.

Summit County was created in 1854 from Green River and Great Salt Lake counties. The Uinta Mountains dominate the eastern portion of the county, and the western section is a high back valley of the Wasatch Mountains.

The first white men to visit the area were fur trappers and traders in the 1820s and 1830s. Until the arrival of the Mormons in 1847, Summit County was hunting grounds for Northern Shoshone Indians. In 1846 Lansford W. Hastings, a California promoter, announced a new cutoff on the California Trail that would eliminate several hundred miles and many days of travel. The cutoff turned southwest from Fort Bridger, Wyoming, and entered Utah and the northeastern corner of Summit County through Echo Canyon. It followed the Weber River to Salt Lake Valley, went around the south shore of the Great Salt Lake, and then west into Nevada. The first group to take this new cutoff was the Donner-Reed party in 1846. Blazing a road through the Wasatch Mountains cost them many days, and when they reached the Sierra they ran into early snow, with well-known tragic results. Many lost their lives. A year later, the pioneering Mormons adopted part of the Hastings Cutoff, but when they reached the Weber River they turned southwest to Emigration Canyon. This became the main trail for the immigration of the Mormons to Utah. In 1869 the Union Pacific Railroad, builder of the eastern portion of the transcontinental railroad, followed the Hastings Cutoff, and today part of Interstate 80 follows the Hastings and Mormon trails and the Union Pacific route through northern Summit County.

The first settlers in Summit County arrived at Parley's Park in 1850. Wanship was settled in 1854, followed by Coalville, Hoytsville, and Henefer in 1859. When coal was discovered near Coalville, the Mormons established a mission there. During the 1860s, wagons hauled tons of coal from Coalville to the Salt Lake Valley settlements. In 1873 the Utah Eastern Railroad built a line from Echo Junction to Coalville to haul coal. This line eventually became part of the Union Pacific Railroad.

The discovery of silver, lead, and zinc in the Wasatch Mountains in the 1870s soon overshadowed the settlement and economic activities of the rest of the county. Park City, a mining town founded in 1872, continued to expand into the twentieth century. Many individuals made fortunes from the Park City mines. Mansions on South Temple in Salt Lake City reflect some of this wealth. Mining continued until the 1950s, at which time it no longer was profitable. For several decades Park City was on the verge of becoming a ghost town, but the area's rugged terrain and deep snow led to its rebirth as a winter sports center. Skiing currently is a major economic activity in western Summit County, while the rest of the county is still noted for its farming and ranching. Other recreational opportunities, including boating, fishing, and tourism add to the county's diversified economy.
(Source: Utah Historical Encyclopedia, Craig Fuller, author)


Summit County
Wyoming
Wyoming
Henefer
Coalville
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Francis
Park City
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Population

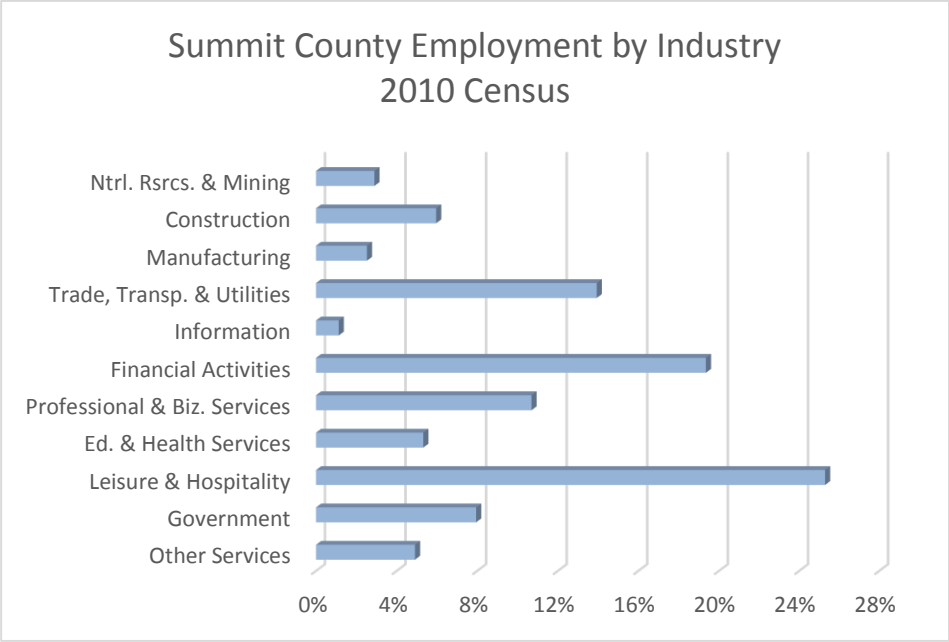
The following table shows historic, current, and projected population data:

	Census			Short Range Projection			Long Range Projection	
	1990	2000	2010	2020	2030	2040	2050	2060
Mountainland Region	291,606	417,321	579,448	746,796	934,540	1,150,420	1,381,418	1,602,441
Summit County	15,693	30,034	36,473	45,491	56,890	71,433	88,334	107,671
Utah County	265,764	371,873	519,307	668,564	833,101	1,019,828	1,216,695	1,398,074
Wasatch County	10,149	15,414	23,668	32,741	44,549	59,159	76,389	96,696

**2012 Baseline Projections, Governor's Office of Planning and Budget. Produced using results from the 2010 Census as the base. See http://gomb.utah.gov/*

Economy

Summit County has been the recipient of many new businesses, much residential and commercial development, and a thriving ski and tourism economy that defines its character and atmosphere. Summit County's local economy is largely driven by the activities of Park City and the Snyderville Basin. Eastern Summit County and its cities also face numerous growth and development pressures, although not exhibiting anywhere near the level of investment that is pushing the western half of the county. With numerous venues of the 2002 Winter Olympics within the Mountainland Region, economic growth should continue in the future.



Summit County	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Employment:						
Average civilian labor force	N/A	21,218	21,547	22,097	22,594	23,128
Average employment	N/A	19,923	20,480	21,178	21,820	22,376
Income:						
Average wages and salaries ($)	36,162	37,063	38,078	38,656	40,378	N/A
Per capita personal income ($)	70,248	78,581	91,982	94,077	96,766	N/A
Taxes:						
Gross Taxable Sales ($ thousands)	1,189,659	1,324,336	1,360,925	1,469,760	1,570,920	N/A
Construction (permit-authorized):						
Dwelling unit permits (number)	N/A	95	119	184	221	247
Change in nonresidential construction	N/A	-42%	+157%	-75%	+445%	-24%
Value of total construction	N/A	-12%	+36%	-22%	+134%	-22%
Miscellaneous:						
Payment in Lieu of Taxes Act ($ thousands)	2,185	2,543	2,710	3,063	2,262	N/A

**Adapted from US BLS, Utah DWS, Utah State Tax Commission, Utah Bureau of Economic and Business Research*

Social Characteristics	Estimate	Percent	U.S.
Average household size	2.79	(X)	2.58
Average family size	3.22	(X)	3.14
Population 25 years and over	23,628		
High school graduate or higher	(X)	93.3	86.30%
Bachelor's degree or higher	(X)	50.1	29.30%
Disability status	1,977	5.2	12.3%
Foreign born	4,005	10.6	13.10%
Speak a language other than English at home (population 5 years and over)	4,502	12.7	20.9%
Household population	37,672	(X)	(X)
Economic Characteristics	**Estimate**	**Percent**	**U.S.**
In labor force (population 16 years and over)	20,911	72.5	63.90%
Mean travel time to work in minutes (workers 16 years and over)	24.6	(X)	25.7
Median household income	89,886	(X)	53,482
Median family income	100,271	(X)	86,963
Per capita income	45,461	(X)	28,555
Individuals below poverty level	(X)	6.8	14.80%
Housing Characteristics	**Estimate**	**Percent**	**U.S.**
Total housing units	26,545		
Occupied housing units	12,990	48.9	88.60%
Owner-occupied housing units	9,897	76.2	65.1%
Renter-occupied housing units	3,093	23.8	34.90%
Vacant Housing Units	13,555	51.1	11.40%
Median value (dollars)	496,800	(X)	175,700
Median of selected monthly owner costs			
With a mortgage (dollars)	2,196	(X)	1,522
Without a mortgage (dollars)	528	(X)	457
Demographic Characteristics	**Estimate**	**Percent**	**U.S.**
Male	18,724	51.5	49.20%
Female	17,600	48.5	50.80%

Median age (years)	37.1	(X)	37.2
Under 5 years	2,486	6.8	6.50%
18 years and over	26,254	72.3	76.00%
65 years and over	2,768	7.6	13.00%
One race	35,727	98.4	97.1%
White	32,890	90.5	72.4%
Black or African American	154	0.4	12.60%
American Indian and Alaska Native	122	0.3	0.90%
Asian	446	1.2	4.80%
Native Hawaiian and Other Pacific Islander	38	0.1	0.20%
Some other race	2,077	5.7	6.20%
Hispanic or Latino (of any race)	4,190	11.5	16.30%

Source: 2010 American Community Survey 5-year estimates

Hazards Compared

Hazard Matrix

Probability	Negligible	Limited	Critical	Catastrophic
Highly Likely		Winter Weather, Avalanche		
Likely	Hail	Flood, Drought, Lightning, Wind	Fire	
Possible		Landslide		
Unlikely		Tornado	Dam Failure	Earthquake

Severity

Probability Calculations for Summit County

Hazard	Number of Events	Years in Record	Recurrence Interval (years)	Hazard Frequency and Probability/Year	Source
Avalanche (Injuries or damages)	44	19	0.45	2.32	NOAA
Drought (Moderate, PDSI<-2)	N/A	N/A	5.20	0.19	Utah State Water Plan
Earthquakes 3.0 and greater	4	52	13.25	0.08	University of Utah Dept of Seismology
Floods	12	65	5.50	0.18	Various
Hail	9	60	6.78	0.15	NOAA
Landslides causing damage	2	51	26.00	0.04	SHELDUS
Lightning (fatalities and injuries)	4	19	5.00	0.21	NOAA
Wildfires (over 300 acres)	5	54	11.00	0.09	Utah Division of Forestry Fire and State Lands and BLM
Wildfires (over 50 acres)	16	54	3.44	0.30	
Urban Interface Fires	Unknown	Unknown	Unknown	Unknown	
Wind (with injuries or $ damages)	30	60	2.03	0.50	NOAA (High Wind and Thunderstorm Wind with bodily harm or $ damages)
Winter Weather (with injuries or $ damages)	46	19	0.43	2.42	NOAA (Blizzards/Snow/Winter Weather/Cold/Wind Chill with bodily harm or $ damages)
Tornadoes (all)	0	65	#DIV/0!	0.00	NOAA
Volcanoes	700	5,000,000	7142.86	Negligible	

Recurrence interval: (number of years in record +1)/number of events.

Frequency: Number of events/Number of years in record.

Flooding

Overview

Although Utah is considered a dry desert state, flooding does occur. Most floods have occurred either from snow melt or severe thunderstorms. Often times flooding is increased by soils that are more impervious due to either wildfire or drying out. Floods occur on a regular basis in Summit County. Most of the communities within the county are built around or near a stream or river such as the Provo or Weber. Each of these communities share a similar susceptibility to flooding.

Flood Profile

Frequency	Flooding happens within Summit County on almost a regular basis.
Severity	Moderate
Location	Primarily along streams, rivers and bodies of water.
Seasonal Pattern	Spring time due to snow melt. Isolated events throughout the year due to severe weather (microburst).
Duration	A few hours to a few weeks depending upon conditions
Speed of Onset	Sudden to 12 hours
Probability of Future Occurrences	High - for delineated floodplains there is a 1% chance of flooding in any given year.

Development Trends

As development occurs on the mountainous terrain and along the shores of reservoirs, or along river and stream corridors more homes will be in danger of floods. Communities need to make developers and homeowners aware of the danger as well as contribute to mitigation actions. Cities should review every development that it is in compliance with NFIP guidelines.
The following table identifies the communities in Utah County with their NFIP Status.

Communities Participating in NFIP

CID	Community Name	Current Effective Map Date	Actions taken
490135	Coalville	(NSFHA)	No special flood hazard area
490199	Francis	3/16/2006	Current, maps available online
490136	Henefer	3/16/2006	Current, maps available online
490137	Kamas	3/16/2006	Current, maps available online
490138	Oakley	3/16/2006	Current, maps available online
490134	Summit County	3/16/2006	Current, maps available online
490139	Park City	7/16/1987	No special flood hazard area

Source: FEMA Utah State Department of Homeland Security

The primary goal for non-participating communities is to become a participating member.

Assessing Vulnerability: Addressing Repetitive Loss Properties

There are no repetitive loss properties in Summit County (FEMA, 2016).

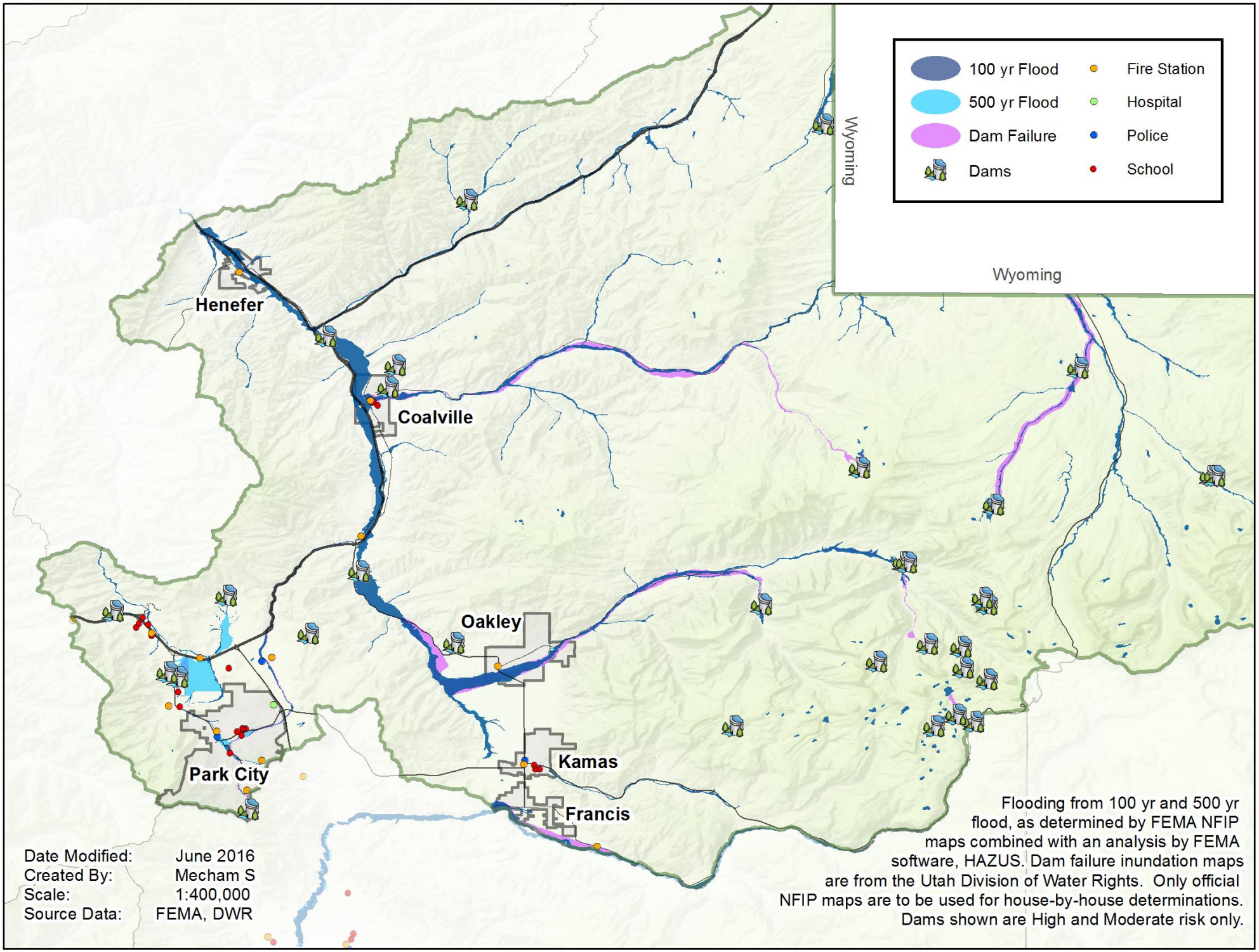
History

Flooding

Location/Extent	Date	Fatalities	Damages	Source	Details
Summit	7/29/1969	0	$1,250	SHELDUS	
Summit County	4/30/1983	0	$4,761,905	FEMA Disaster Declaration	
Summit County	8/17/1984	0	$0	FEMA Disaster Declaration	
Summit County	6/7/1986	0	$50,000	SHELDUS	
Summit, Wasatch, Morgan, Weber	5/15/1997	0	$0	NOAA	
Western Unita Mountains (Zone)	12/26/1998	0	$2,000	NOAA	
Summit, Rich, Cache, Weber, Most of Morgan, Salt Lake, Box Elder (Zone)	4/28/2005	0	$0	NOAA	
Summit and Wasatch Counties (Zone)	4/15/2006		$50,000	NOAA	
Peoa	6/6/2010	0	$5,000,000	NOAA	Heavy Rain/ Snow Melt
Coalville	4/19/2011	0	$0	NOAA	Heavy Rain/ Snow Melt
Peoa	6/24/2011	0	$20,000	NOAA	Heavy Rain/ Snow Melt
Peoa	7/1/2011	0	$50,000	NOAA	Heavy Rain/ Snow Melt
Coalville	2/9/2014	0	$40,000	NOAA	Heavy Rain

Summit County has received a total of $85,392.68 in FEMA Flood claims since 1978

Summit County and its cities in the NFIP program have 0 repetitive loss facilities


100 yr Flood
500 yr Flood
Dam Failure
Dams
Fire Station
Hospital
Police
School
Wyoming
Wyoming
Henefer
Coalville
Oakley
Kamas
Francis
Park City
Date Modified: June 2016
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Scale: 1:400,000
Source Data: FEMA, DWR
Flooding from 100 yr and 500 yr flood, as determined by FEMA NFIP maps combined with an analysis by FEMA software, HAZUS. Dam failure inundation maps are from the Utah Division of Water Rights. Only official NFIP maps are to be used for house-by-house determinations. Dams shown are High and Moderate risk only.

Wildland Fire

Overview

Wildfire is the most frequently occurring natural hazard within the Summit County area. It can also pose the most eminent danger to current and future residents. Each jurisdiction is surrounded by mountains and have structures abutting forested areas.

Development Trends

As development occurs on the bench areas of Summit County more homes will be in danger of wildfire. Communities need to make developers and homeowners aware of the danger. Cities and the county should also require firebreaks and access roads along urban/wildland interfaces. Although development brings homes closer to areas of potential wildfire, it also brings water and access for firefighters closer to the urban fringe. Firewise community development principles, such as not storing firewood near homes, installing fire resistant roofing and cleaning debris from rain gutters will reduce potential loses.

Profile

Frequency	Multiple wildland fires occur in Utah County Every year.
Severity	Moderate
Location	Hillsides and mountainous areas, open grass and range lands.
Seasonal Pattern	Summer and fall depending on weather conditions.
Duration	A few hours to a few weeks depending upon conditions
Speed of Onset	1 to 48 hours
Probability of Future Occurrences	High Major Fires: 0.09 (300 acres and larger) All Fires: 0.3 (50 acres and larger)

History

Fires

Fire Name	Start Date	Acres	Cost	Source	Fire Cause
East Fork	6/28/2002	14204.70	$14,200,000	FS	
Eagle Canyon	7/24/1999	3744.00		BLM	Human
Lily Lake	6/23/1980	3260.77	$0	FS	
Echo	7/21/2000	750.00		BLM	Human
Echo	8/14/2003	300.00		BLM	Human
Total Fires 300 Acres and larger 5		22259.48	$14,200,000		
Echo Canyon	8/16/2007	294.00		BLM	Human
Boy Scout	6/27/1994	221.55	$125,000	FS	
Dry Fork	9/6/2000	200.91	$1,300,000	FS	
North Fork Provo	1967	195.36	$0	FS	
1918 Fire	1918	185.72	$0	FS	
S. S. HELL	8/18/1986	150.00		BLM	Human

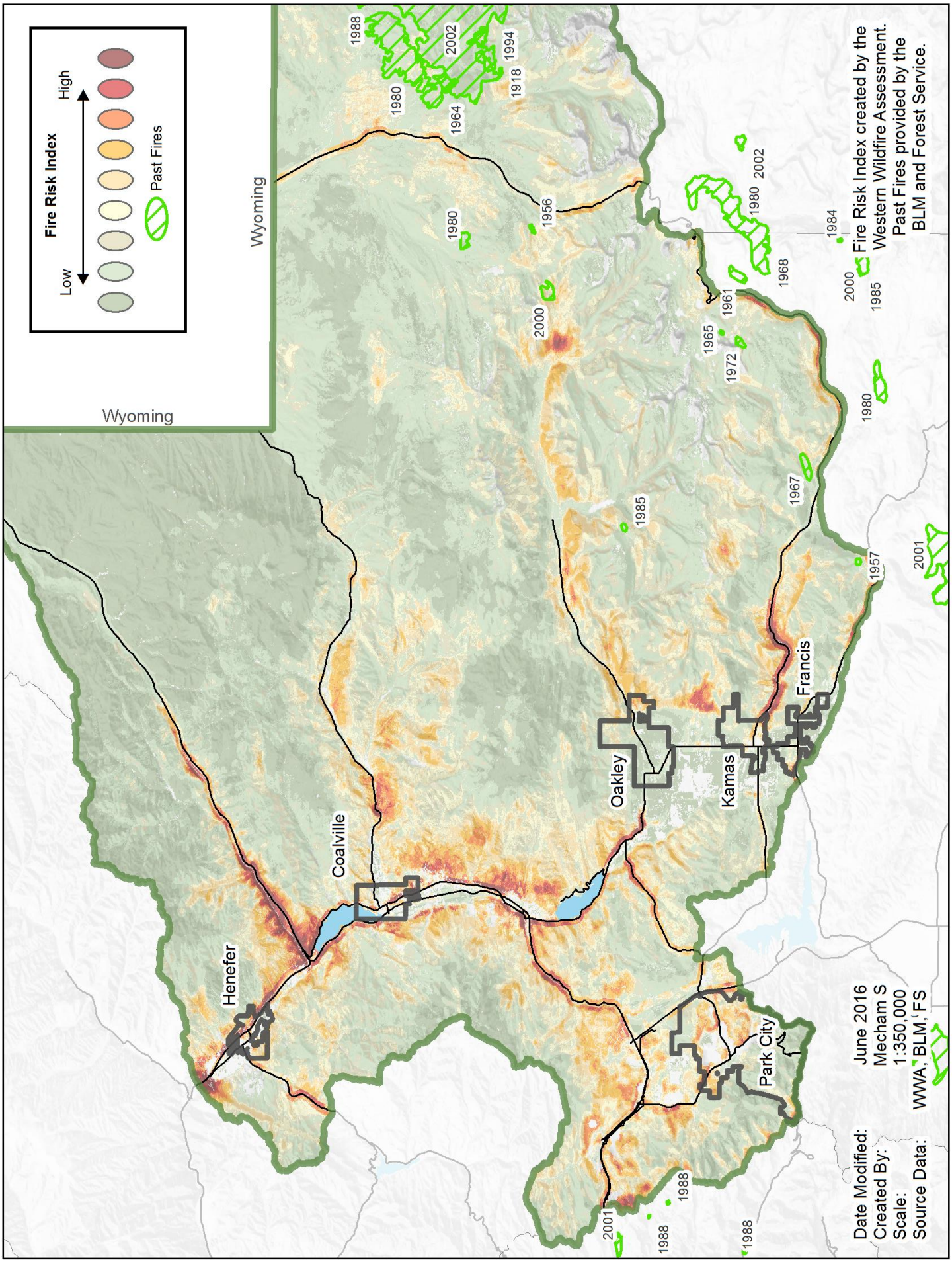
Deer Creek Fire	1980	141.03	$0	FS	
Coal Mine	6/12/2006	99.55	$75,000	FS	
Haystack Mountain	1972	74.37	$0	FS	
Phone Booth	8/21/2007	56.00		BLM	Human
1964 Fire	10/11/1964	55.19	$0	FS	
Total Fires over 50 acres 16		23933.16	$15,700,000		

Mitigation

The FFSL has helped communities develop Community Fire Plans. According to the FFSL, the purpose of community fire planning is to:

- Empower communities to organize, plan, and take action on issues impacting community safety
- Enhance levels of fire resistance and protection to the community
- Identify the risks of wildland/urban interface fires in the area
- Identify strategies to reduce the risks to homes and businesses in the community during a wildfire

Community Name	Date Signed
Alpine Acres (Near Oakley)	Sep 2008
Aspen Mountain/Aspen Acres (In Weber Canyon)	Aug 2006
Beaver Springs Ranch (aka Beaver Creek Ranch in Weber Canyon)	Nov 2015
Canyon Rim (Near Oakley)	Aug 2006
Cherry Canyon (Near Wanship)	Jun 2008
Colony at White Pine Canyon (Park City)	Sep 2006
Echo Creek Ranches (Echo)	Aug 2014
Hidden Lake (Weber Canyon)	Aug 2006
Holiday Park (Weber Canyon)	Aug 2006
Manorlands (North Central County)	Sep 2014
Monviso (North Central County)	Oct 2011
Moose Hollow (Weber Canyon)	Sep 2008
Park City	Oct 2014
Pine Mtn. (Weber Canyon)	Sep 2006
Pine Plateau (North Central County)	Unfinished
Pinebrook Master HOA (Park City)	Oct 2006
Pines Ranch (Weber Canyon)	Jul 2014
Rockport (State Park)	Jul 2006
Samak	Aug 2006
Silver Creek (Park City)	Unfinished
South Fork (Provo Canyon)	May 2007
Stagecoach Estates (Park City)	Aug 2007
Summit Park (N of Park City)	Aug 2014
Tollgate Canyon CWPP (Near Park City)	Jul 2008
Uintalands (North Central County)	Sep 2011


Fire Risk Index
Low
High
Past Fires
Wyoming
Wyoming
Henefer
Coalville
Oakley
Kamas
Francis
Park City
Fire Risk Index created by the Western Wildfire Assessment.
Past Fires provided by the BLM and Forest Service.
Date Modified: June 2016
Created By: Mecham S
Scale: 1:350,000
Source Data: WWA, BLM, FS

Landslide

Overview & Development Trends

Park City, the economic center of Summit County, boasts the largest ski areas in the United States with five-star lodges and numerous condos tucked into the hillside. Park City's success is largely due to its picturesque slopes, and future development will most assuredly be related to scenic views and resort development. Due to the high value of much of the development occurring in the area, measures should be taken to reduce the potential for loss. Increased analysis and geotechnical reports should become an integral part of the development and building process. Careful consideration should be given to ensure cutting and filling for any project is minimized.

Profile

Frequency	Movement likely occurs nearly every year.
Severity	Moderate; several structures have been condemned.
Location	Along most mountains and hillsides.
Seasonal Pattern	Spring when ground saturation is at its peak.
Duration	Minutes to years.
Speed of Onset	Seconds to days.
Probability of Future Occurrences	High – Due to terrain and construction within sloped areas.

History

Location	Date	Damages	Source
Summit County	1/1/1983	$8,603,666.52	SHELDUS database
Summit County	1/1/1984	$1,471,256.97	SHELDUS database

Note that only events of great magnitude are recorded in National databases. Numerous events involving few structures have occurred but not recorded in disaster databases.

Earthquake

Overview

As development occurs in Summit County, more buildings and people will be in danger from earthquakes. However, newer buildings will be built to better standards, which will decrease the risk of damage compared to older structures. It is interesting to note that when most residential structures are engineered, out the three categories of design criteria; seismic zone, wind shear and snow load; the design criteria for wind shear over-rules the other criteria.

Development Trends

Due to Summit County being outside of the Wasatch Fault zone the severity of a potential earthquake is thought to be lower. Recent development trends have been to build on steeper slopes and benches which can lessen the potential for liquefaction but increase susceptibility to earthquake triggered landslides. Ultimately, new construction in the area equals more structures that are susceptible to earthquakes. Each construction project should be thoroughly reviewed for resistance to ground shaking and other earthquake related hazards.

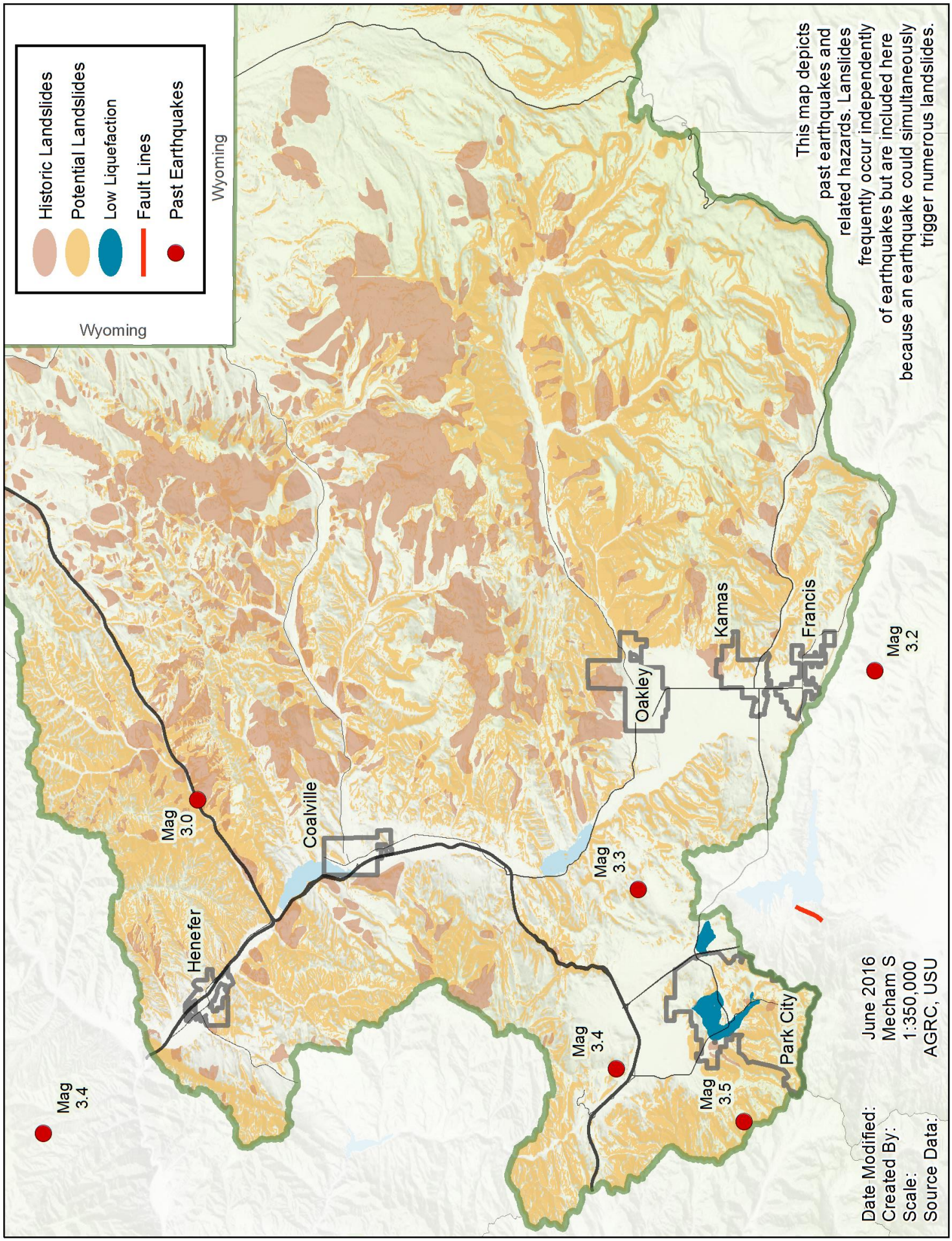
Profile

Frequency	Low: Events above 3.0 on the Richter scale are rare. Minor events (below 3.0) occur every month.
Severity	High (up to 5.0)
Location	Some faults throughout the county.
Seasonal Pattern	None
Duration	1 to 6 minutes excluding aftershocks.
Speed of Onset	Seconds
Probability of Future Occurrences	Low: 0.08 (events above 3.0)

History

Location	Magnitude	Date
E of Snyderville, Summit County	3.3	11/6/1988
Kimball Junction, Summit County	3.4	12/6/1995
W of Park City, Summit County	3.5	6/30/1999
SW of Emery	3	9/5/2005

*United States Geologic Survey: earthquake.usgs.gov/earthquakes/search


Historic Landslides
Potential Landslides
Low Liquefaction
Fault Lines
Past Earthquakes
Wyoming
Wyoming
This map depicts past earthquakes and related hazards. Lanslides frequently occur independently of earthquakes but are included here because an earthquake could simultaneously trigger numerous landslides.
Mag 3.4
Mag 3.0
Henefer
Coalville
Mag 3.3
Oakley
Kamas
Francis
Mag 3.2
Mag 3.4
Mag 3.5
Park City
Date Modified: June 2016
Created By: Mecham S
Scale: 1:350,000
Source Data: AGRC, USU

Severe Weather

Overview

Summit County's mountainous terrain makes it particularly susceptible to Winter Weather. Add to the topography those who seek snowy slopes for recreation and disaster can ensue, as seen in the table below. Avalanches, typically a voluntary risk, have caused the most deaths in Summit County, particularly around areas like Park City during recreational activities. These numbers will only increase as development in tourism-centered areas grows. Snow/Winter Weather is responsible for the most injuries and monetary damages of any type of severe weather. Summit County government actively emphasizes household accountability and preparation as individuals from less rural settings move into the area.

Profile

Frequency	Frequent Multiple events happen each year.
Severity	Moderate
Location	Region wide with some locations more frequent due to geography.
Seasonal Pattern	All year depending upon the type of event.
Duration	Seconds to Days
Speed of Onset	Immediate
Probability of Future Occurrences	Very Probable. Avalanche and Winter Weather have the highest probability of occurrence of all weather hazards facing Summit County.

History

Summit County NOAA Extreme Weather Events Summary

	Deaths			Injuries			Property Damage			Crop Damage		
	1950-1999	2000-2009	2010-2015	1950-1999	2000-2009	2010-2015	1950-1999	2000-2009	2010-2015	1950-1999	2000-2009	2010-2015
Hail	0	-	-	0	-	-	$0	-	-	$200	-	-
Wind	1	-	-	6	-	-	$223,000	-	-	$0	-	-
Avalanche	2	28	14	7	15	1	$50,000	$20,000	$0	$0	$0	$0
Snow/Winter Weather	11	1	0	53	13	0	$704,500	$822,550	$50,000	$8,600	$20,000	$0
Cold/Wind Chill/Extreme Cold	0	0	-	0	0	-	$0	$0	-	$0	$0	-
High and Strong Wind	0	0	0	6	1	1	$223,000	$19,800	$30,000	$0	$0	$0
Lightning	-	4	0	-	7	1	-	$0	$0	-	$0	$0
Thunderstorm Wind	1	0	0	0	0	0	$0	$0	$0	$0	$0	$0

Damage Assessment and Mitigation

Overview

Listed below are the damage assessments for each of the participating jurisdiction followed by an update of the community's mitigation strategies from the 2010 plan, after which are the strategies the community wishes to pursue in the course of this plan. Damage assessments were calculated using the methodologies mentioned in the Methods section. Strategies were developed by each community with assistance from MAG as requested.

Summit Unincorporated	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	501	$87,019,002	5934.7
500 Year Flood	1038	$382,586,953	6860.9
Dam Failure	742	$290,439,865	5649.7
Fire-High and Moderate Risk	4178	$1,504,764,115	26307.2
Landslide	774	$93,692,535	7345.2
Liquefaction	0	0	0.0

Protecting Current Residents and Structures (2010)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	Yes	
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes	

Protecting Future Residents and Structures (2010)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes	

Summit County

Protecting Current Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	USDI – Bureau of Reclamation, Local Government UDEM, FEMA, UDHS, MAG
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government, MAG, UDEM, FEMA
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, Utah Div of FFSL, County Fire Districts

Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Mediu m	1 year	TBD	Local Cash, Grants	Local Government, UGS, UDEM, MAG, FEMA
All-Hazards Planning	CEMPC –(Community Emergency Management Planning Committee)	High	Ongoing	Minimal	Local Cash, Grants	Local Government UDEM, FEMA
HazMat Planning	LEPC	High	Ongoing	Minimal	Local Cash, Grants	Local Government UDEM, FEMA

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	USDI – Bureau of Reclamation, Local Government UDEM, FEMA, UDHS, MAG
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, MAG, UDEM, FEMA
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government, Utah Div of FFSL, County Fire Districts
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, UDEM, MAG, FEMA
All-Hazards Planning	CEMPC (Community Emergency Management Planning Committee)	High	Ongoing	Minimal	Local Cash, Grants	Local Government UDEM, FEMA
HazMat Planning	LEPC	High	Ongoing	Minimal	Local Cash, Grants	Local Government UDEM, FEMA

Coalville	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	201	$22,411,483	166.2
500 Year Flood	209	$23,587,575	169.3
Dam Failure (Joyce Boyer Lake)	113	$10,359,114	84.8
Fire-High and Moderate Risk	93	$16,422,326	371.9
Landslide	1	$3,552	6.8
Liquefaction	0	0	0.0

Protecting Current Residents and Structures (2010)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, USDA Grant and Loan	Local Government	Yes	

Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes	

Protecting Future Residents and Structures (2010)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government FEMA, UDHS	Yes	Waiting on the new approved FEMA Flood Maps
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government UGS, USGS	Yes	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Somewhat	Health, Safety, Nuisance ordinances addresses many landscaping/weed removal requirement to help reduce wildfires.
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	1 years	Minimal	Local Cash, Grants	Local Government UGS, USGS	In the process.	The city is waiting on the approved FEMA Flood Maps so that they can do it all at once.
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	No	The city has a Sensitive Lands ordinance that covers this information. No specific public education campaign.

Protecting Current Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party

Flooding/ Dam Failure	Bridge/Culvert Expansion along Chalk Creek	High	4 years	$800,000	Grants and Local Cash	Local Government
Wildfire	Fire Restriction ordinance	High	6 months	No cost	N/A	Local Government
Landslide	Incorporate Landslide maps into Hazards Lands Map	High	1 year	Minimal	Local Cash	Local Government
Earthquake	Conduct seismic retrofitting assessments for critical public facilities most at risk to earthquakes. (public works building and city building)	Medium	2 years	Minimal	Local Cash	Local Government

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Wildfire	Review and update Sensitive Land Ordinance so that it specifically addresses and incorporates FIREWISE landscaping requirements and allows for creating defensible zones around power lines, oil and gas lines and other infrastructure systems.	Medium	2 years	Minimal	Local Cash, Grants	Local Government
Wildfire	When updating the General Plan and future land use map include considerations for wildfire hazards within land use, public safety, and other elements of the General Plan.	Medium	2 years	Minimal	Local Cash	Local Government
Landslide	Incorporate, within development ordinances and reviews, setback requirements on parcels near high risk areas for landslides.	Medium	2 years	Minimal	Local Cash	Local Government, USGS, UGS
Landslide	Enforces existing restrictions and/or limit activity that would strip slopes of essential top soil and vegetation.	Medium	2 years	Minimal	Local Cash	Local Government, USGS, UGS
Flooding	Evaluate and incorporate drainage capacities with detention and retention basins, keeping ditches clear by requiring debris removal, plan for necessary bridge and culvert modification.	High	2 years	$50,000	Local Cash	Local Government

Flooding	Better understand the capacity of the city storm water system by updating the city's Storm water Master Plan.	High	2 years	$70,000	Local Cash/Grants	Local Government

Francis	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	10	$1,445,499	28.8
500 Year Flood	10	$1,445,499	28.8
Dam Failure	0	0	0.0
Fire-High and Moderate Risk	18	$3,307,733	34.7
Landslide	0	0	0.0
Liquefaction	0	0	0.0

Protecting Current Residents and Structures (2010)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, reason why
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes, Francis has been working with residents that are within the flood plain to let them know that they are in the flood plain.	

Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	Have not taken the time to do the inventory
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes, Francis is currently working with South Summit Fire District to come up with information to give to residents within the wildland urban interface zone.	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	No	Francis has not had the resource to educate the residents.
Protecting Future Residents and Structures (2010)								
Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, reason why
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Flooding/ Dam Failure	Canal safety program.	High	3 years	TBD	Local Cash, Grants	Local Government	No	Still need to work on this
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Still need to work on this

Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Still need to work on this

Protecting Current Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS
Flooding/ Dam Failure	Canal safety program.	High	3 years	TBD	Local Cash, Grants	Local Government
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Henefer	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	38	$4,357,953	96.5
500 Year Flood	46	$5,206,343	125.4
Dam Failure	0	0	0.0
Fire-High and Moderate Risk	42	$6,644,986	675.6
Landslide	0	0	0.0
Liquefaction	0	0	0.0

Protecting Current Residents and Structures (2010)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	Yes, Echo Dam retrofitted	
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	No	Resources

Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	No	Lack of Resources

Protecting Future Residents and Structures (2010)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	No	Waiting on new FEMA maps
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	No	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Coordination efforts fell through

Protecting Current Residents and Structures (Henefer)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding	Timely notification system, organized equipment and aid	Med	1 year	Minimal	Local Cash	Local Government
Drought	Monitor Spring flows, reservoir storage and usage	Moderate	Ongoing	Minimal	Local Cash, private owners	Local Government, private owners

Earthquake	Inspect structures and utilities. Facilitate repairs and clean up	High	4 years	High	Local Cash, Grants, Insurance	Local Government, FEMA, Insurance
Hazardous Materials spill	Notification system for citizens and education	Moderate	1 year	Minimal	Local Government	Local Government
Infectious Disease	Notification system	Moderate	1 year	Minimal	Local Government	Local Government
Wildfire	Provide water for fire suppression	Moderate	Ongoing	Moderate	Local Government	Local Government

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
All Hazards	Timely notification system, organized equipment and aid	Med	1 year	Minimal	Local Cash	Local Government
Wildfire	Provide water for fire suppression	Moderate		Moderate	Local Government	Local Government

Kamas	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	0	0	0.0
500 Year Flood	0	0	0.0
Dam Failure	0	0	0.0
Fire-High and Moderate Risk	15	$2,650,275	42.7
Landslide	1	$307,732	11.2
Liquefaction	0	0	0.0

Protecting Current Residents and Structures (2010)

Hazard	Action	Priority	Timeline	Estimated	Potential	Responsible	Implemented?	If not, why not?

				Cost	Funding Sources	Party		
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes, Kamas has been working with the State to update the FEMA flood plain map within the City Limits.	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	Still need to work on this.
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	No	Still need to come up with the information to educate the property owners within the urban wildland fire interface zone.
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	No	We need to identify the area that have the potential for landslides so we can education the residents.

Protecting Future Residents and Structures (2010)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Yes, we have been working with the State to update the FEMA flood plain map. Once approved by FEMA, we will incorporate into our general plan.	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Still need to come up with a plan.
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	No	Will work on when we update our ordinances.

Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	no	Still need to work on this.

Protecting Current Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS
Wildfire	Incorporate FIREWISE landscaping requirements into	High	1 year	Minimal	Local Cash, Grants	Local Government

	local ordinances within areas at risk.					
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Oakley	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	168	$29,156,053	381.6
500 Year Flood	171	$29,701,996	383.9
Dam Failure- Smith and Morehouse, Abes Lake	132	$21,068,743	362.1
Fire-High and Moderate Risk	20	$9,593,550	309.1
Landslide	12	$16,113,719	619.6
Liquefaction	0	0	0.0

Protecting Current Residents and Structures (2010)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS		
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government		
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government		
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS		

Protecting Future Residents and Structures (2010)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS		
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS		
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government		
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS		

Park City	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	336	$100,118,941	34.7
500 Year Flood	811	$250,021,185	128.8
Dam Failure	44	$20,895,617	65.9
Fire-High and Moderate Risk	388	$304,481,408	315.0
Landslide	139	$172,256,628	241.8
Liquefaction- low	2767	$1,112,844,403	774.1

Protecting Current Residents and Structures (2010)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA UDHS	Limitedly	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	In process	
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	In process	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	In process	

Protecting Future Residents and Structures (2010)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/Dam Failure	FEMA Firm was integrated into Park City's Environmental GIS system for Building/Planning Dept.	High	2 years	10,000	Park City	Park City	Completed	
Flooding/Dam Failure	PCMC implemented a WebGIS allowing the public to research local flood plain issues on the Web.	High	2 years	15,000	319 CWA Grant	Park City	Completed	
Flooding/Dam Failure	http://dagrc.utah.gov/ParkCityGIS/				319 CWA Grant	Park City	City Engineer?	
Flooding/Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	In Process	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Ongoing with Shakeout	

Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	In Process	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	City Engineer	

Protecting Current Residents and Structures (Park City)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding	New Storm Water Utility	High	3-5 yr	3 Million	Local Cash	Local Government
Flooding	Update FIRM	Med	City Engineer	Minimal	Local Cash, FEMA	Local Government, State, FEMA
Fire	Create Community Wildfire Protection Plan with PCFD	High	Completed 2014, now implementing	2-50 thousand	Local Cash, Grants	Local Government, Fire Department
Earthquake	Upgrade City Buildings	Medium	Ongoing	Significant	Local Cash, Grants	Local Government

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk	Medium	1 year	Minimal	Local Cash, Grants	Local Government

Other City Participation

The following jurisdictions attended the first physical meeting to discuss the Hazard Mitigation Plan. Every jurisdiction was contacted by phone and email on multiple occasions. Chris Crowley, Summit County's Emergency Manager, allowed us to present to several other cities and entities at an emergency planner's meeting on June 14, 2016.

Hazard Mitigation Plan Review
Summit County, Feb 9, 2016

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