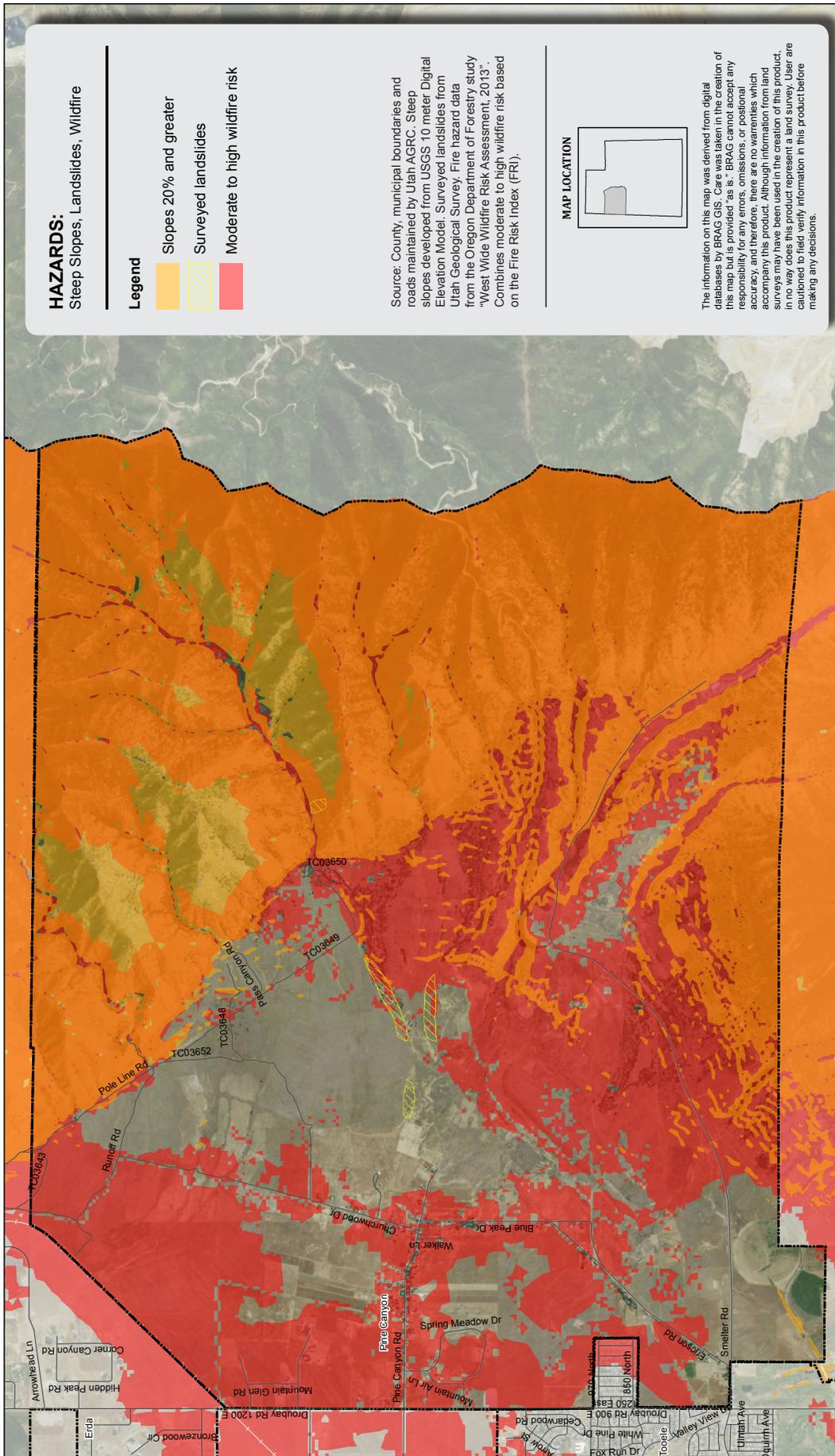
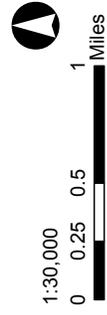
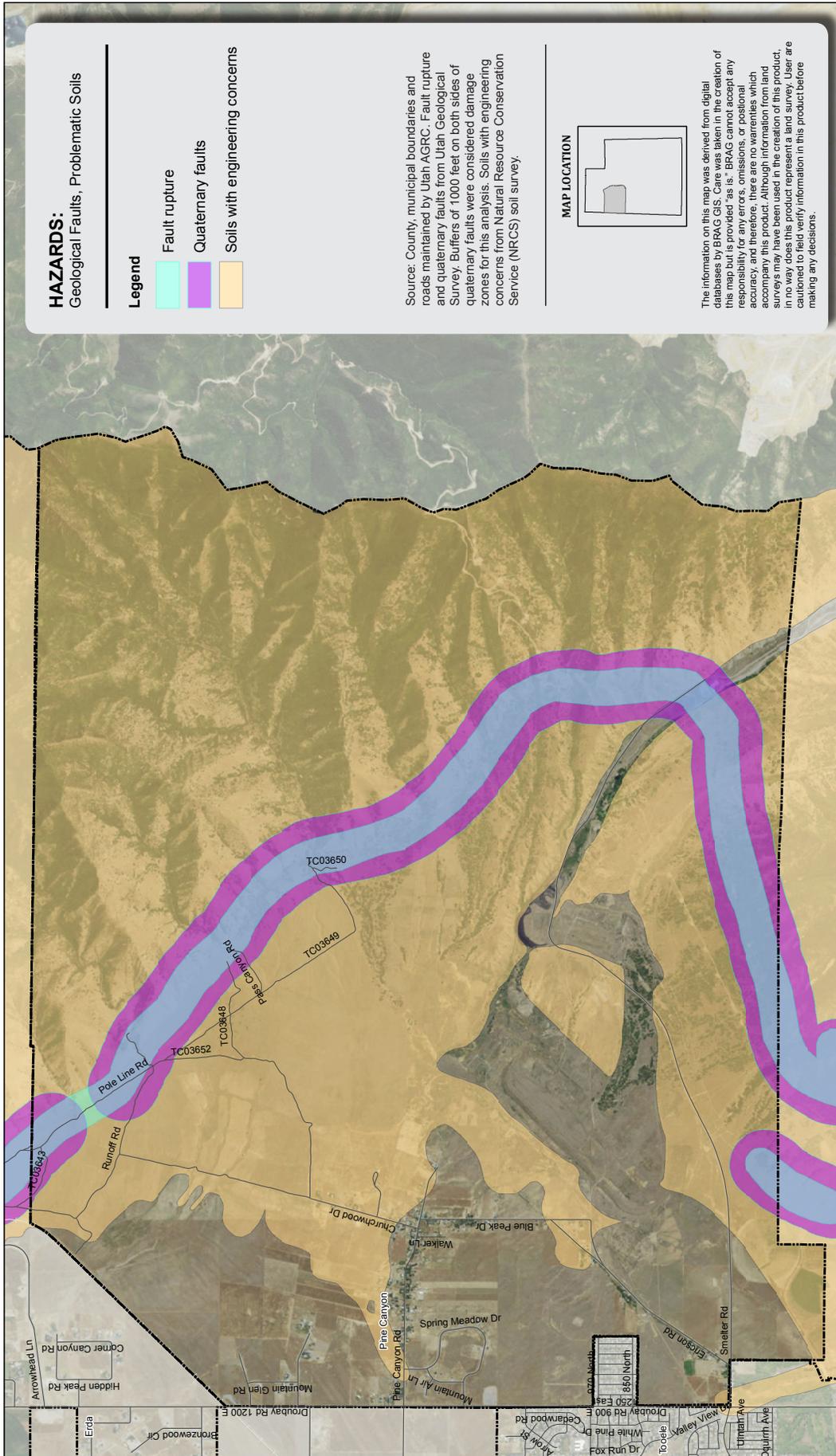


SECTION 11: PINE CANYON COMMUNITY RISK ASSESSMENT



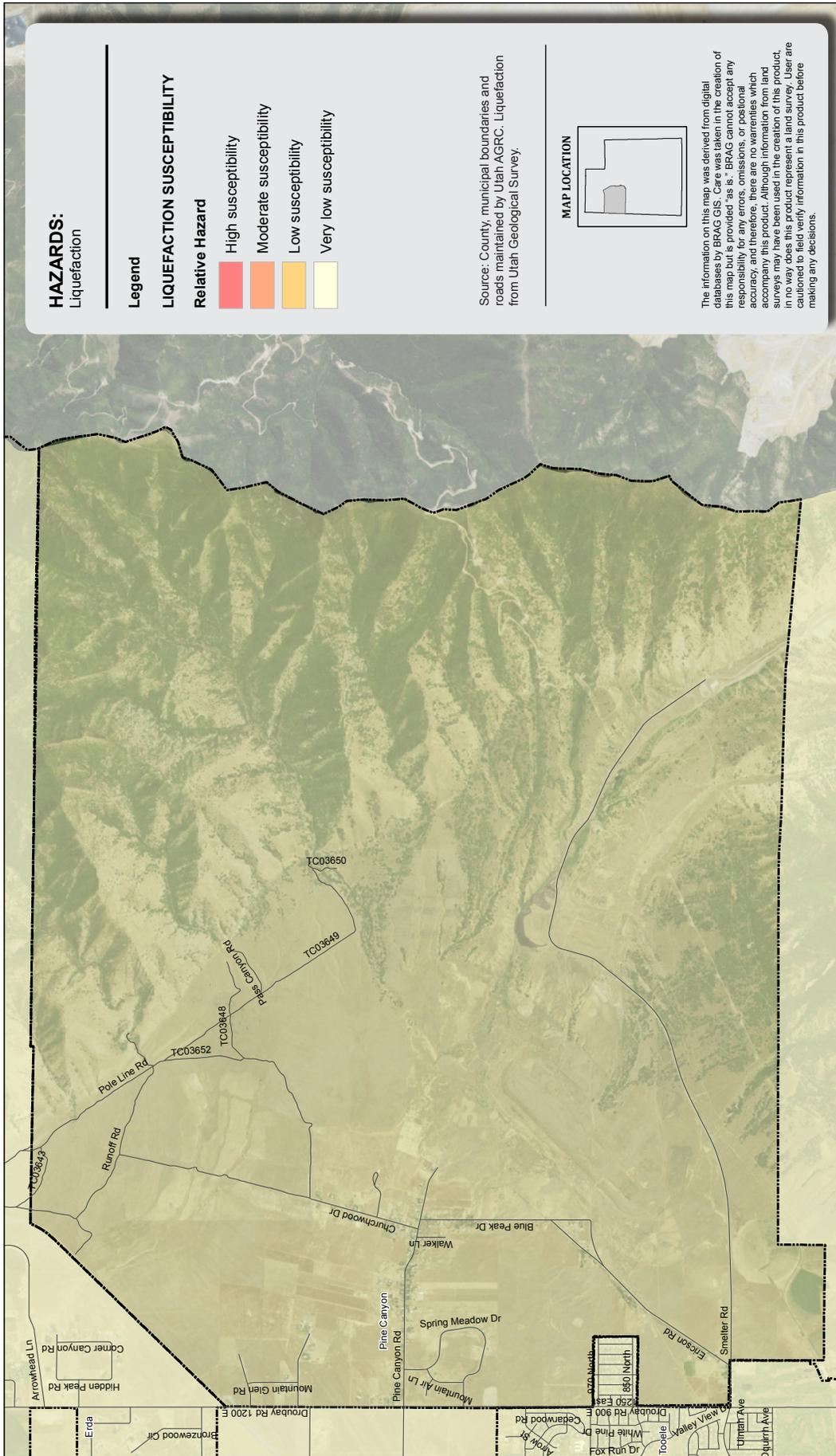
PINE CANYON, UTAH



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PINE CANYON, UTAH



PINE CANYON, UTAH

PINE CANYON NATURAL HAZARDS, POTENTIAL LOSSES, AND MITIGATION STRATEGIES

PINE CANYON

Analysis of hazard risk involving the community of Pine Canyon revealed that there is potential risk resulting from **faults, flood (soils), landslide, steep slopes, and wildfire**. These hazards have varying potential to impact human life, property, critical facilities, infrastructure, agriculture, environmental, and recreational features within municipal boundaries. Currently, wildfire has the greatest potential to impact human life, property, and various community amenities based on potential loss values. Potential impacts from faults, flooding soils, landslides, and slopes appear to have less potential for impacts, yet still pose risks. Other natural hazard types not mentioned were found to have no potential impacts to Pine Canyon. See the following tables for more detailed descriptions of potential losses associated with each natural hazard

Table 26: Pine Canyon Potential Loss Figures

Flood (soils). Portions of Pine Canyon are at risk to flooding based on soils data. Although very rare, Pine Canyon’s risk of flooding could affect several parts of town and its population. Areas most susceptible to flooding are portions of the community north of 2000 North, eastern portions of the town near the mouth of the canyon, and well as areas along Ericson Road. Flooding soils resulting in these areas pose a threat to human life, structures, critical facilities, infrastructure, and other environmental, recreational, and agricultural amenities and lands within city limits.

Faults. Pine Canyon has risk of fault damage. The community is situated next to a quaternary fault. The eastern portions of the community, especially areas of the foothills and bench, lie along portions of the that fault. Environmental, recreational, and agricultural amenities in the fault zone could suffer damage in the event of a large earthquake.

Wildfire. Pine Canyon is susceptible to moderate-high risk of wildfire in small portions of the town with steeper slopes and grassy and shrubby vegetation types. Areas are also at risk due to their proximity to urban forests. Wildfires have the potential to impact over 500 people in the town, as well as over 150 structures.

Pine Canyon, UT, Residential & Commercial Development at Risk						
Hazard Type	~Residents at Risk*	Residential Units at Risk		Commercial Units at Risk		
		# Units	\$ Value**	# Units	\$ Value**	\$ Potential Revenue Loss***
Dam Failure	0	0	\$0	0	\$0	\$0
Faults	0	0	\$0	0	\$0	\$0
Wildfire	506	156	\$42,163,402	0	\$0	\$0
Flood (FEMA)	0	0	\$0	0	\$0	\$0
Flood (Soils)	93	29	\$7,133,169	0	\$0	\$0
Liquefaction	0	0	\$0	0	\$0	\$0
Landslide	0	0	\$0	0	\$0	\$0
Slope	0	0	\$0	0	\$0	\$0
High Water Table	0	0	\$0	0	\$0	\$0
Unsuitable Soils for Buildings	186	58	\$10,185,926	0	\$0	\$0

* Based on average persons per owner household for Tooele County from 2013 American Community Survey, which is 3.2.

** Current Market Value per parcel, including building and land values. Data provided by Tooele County.

*** Based on average sales, receipts, or value of shipments of firms with or without paid employees, per firm (\$642,261 per firm). Derived from 2007 Survey of Business Owners for Tooele County, US Census Bureau.

Pine Canyon, UT, Critical Facilities at Risk						
Hazard Type	Critical Facilities Types					
	Emergency Services/Law Enforcement	Schools/Public Facilities	Health Care Facilities	Places of Worship	Infrastructure	Other
Dam Failure	0	0	0	0	0	0
Faults	0	0	0	0	2 Dams	0
Wildfire	1 EMS, 1 Fire Station	0	0	0	1 Broadband Anchor, 3 Dams	1 Oil/Gas Well, 3 Water Storage Facility
Flood (FEMA)	0	0	0	0	0	0
Flood (Soils)	0	0	0	1 Church	1 Dam	0
Liquefaction	0	0	0	0	0	0
Landslide	0	0	0	0	0	0
Slope	0	0	0	0	0	3 Water Storage Facilities
High Water Table	0	0	0	0	0	0
Unsuitable Soils for Buildings	0	0	0	0	0	0

Note: Critical facilities were identified using multiple data sources including: Utah AGRC, UDOT, Utah Division of Water Resources, and public and

Pine Canyon, UT, Infrastructure at Risk										
Hazard Type	Infrastructure at Risk									
	Railroad Lines		Natural Gas Lines		Electrical Power lines		Roads		Canals	
	# of Miles	\$ Value ¹	# of Miles	\$ Value ²	# of Miles	\$ Value ³	# of Miles	\$ Value ⁴	# of Miles	\$ Value ⁵
Dam Failure	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Faults	0	\$0	0	\$0	0	\$0	4.496306	\$2,360,561	0.11	\$165,000
Wildfire	1.05	\$1,575,000	0.16	\$224,000	2.89	\$367,030	10.92	\$5,733,000	2	\$3,000,000
Flood (FIRM)	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Flood (Soils)	0	\$0	0	\$0	0.06	\$7,620	2.44	\$1,281,000	1.82	\$2,730,000
Liquefaction	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Landslide	0	\$0	0	\$0	0	\$0	0	\$0	0.1	\$150,000
Slope	0	\$0	0	\$0	0	\$0	1.81	\$950,250	0.47	\$705,000
High Water Table	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Unsuitable Soils for Buildings	0.04	\$60,000	0	\$0	0.46	\$58,420	11.82	\$6,205,500	5.97	\$0

¹ Based on figures from 2009 Pre-Disaster Mitigation Plan for Bear River Region, Utah (\$1,500,000/mi).
² Based on average replacement cost estimates for gas lines ranging from 2-inches-20 inches in diameter. These cost are based solely on labor and material costs, and may vary based on time, scope, and site specific variations (Questar, 2015).
³ Based on estimates from Logan Light and Power, 2015 (\$127,000/mi).
⁴ Based on estimates derived from an average 28' wide, 4" thick asphalt county road with gravel subgrade replacement. Cache County, 2015 (\$525,000/mi).
⁵ Based recent Cache County and regional project cost estimates, 2015 (\$1,500,000/mi).

Pine Canyon, UT, Environmental & Recreational Features at Risk							
Hazard Type	Environmental Features at Risk			Recreational Features at Risk			
	Wetland/ riparian	Lakes	Streams	Parks	Trails	Trails (Master)	Amenities
	# of Acres		# of Miles	# of Acres	# of Miles	# of Miles	# of Amenities
Dam Failure	0.00	0.00	0.00	0.00	0.00	0.00	0
Faults	0.20	0.00	9.18	0.00	0.00	2.50	0
Wildfire	17.48	0.00	0.00	0.00	0.00	20.86	0
Flood (FIRM)	0.00	0.00	0.00	0.00	0.00	0.00	0
Flood (Soils)	3.01	0.77	3.17	0.00	0.00	3.72	0
Liquefaction	0.00	0.00	0.00	0.00	0.00	0.00	0
Landslide	0.00	0.00	0.73	0.00	0.00	0.00	0
Slope	3.20	0.06	17.57	0.00	0.00	21.09	0
High Water Table	0.00	0.00	0.00	0.00	0.00	0.00	0
Unsuitable Soils for Buildings	9.58	1.32	32.17	0.00	0.00	0.00	0

Note: Total acres of land and miles of streams and trails were identified using multiple data sources including: Utah AGRC, U.S. Fish and Wildlife Service, U.S. Forest Service, U.S. Geological Survey, Utah Division of Water Resources, and public and community leader input.

Pine Canyon, UT, Agricultural Features at Risk		
Hazard Type	Lands at Risk	
	Agriculture Production*	Grazing**
	# of Acres	
Dam Failure	0.00	0.00
Faults	7.19	3,059.73
Wildfire	1,258.61	6,714.22
Flood (FIRM)	0.00	0.00
Flood (Soils)	544.08	138.29
Liquefaction	0.00	0.00
Landslide	18.87	26.04
Slope	17.02	5,847.61
High Water Table	0.00	0.00
Unsuitable Soils for Buildings	0.00	8,008.75

* Lands that are currently associated with agricultural activities involving water related land use, as described in the 2007 Utah Division of Water Resources, *Water Related Land Use* dataset.
 ** Lands currently associated with grazing allotments identified as part of the Grazing Improvement Program (Utah AGRC, 2012)

Slopes. Pine Canyon has risk associated with steep slopes within its boundaries. Areas of greatest concern have slopes of over 20%, which are commonly found adjacent to mountainous areas of the Oquirrh Mountain Range. Areas bordering streams also appear to have an increased exposure to risk. Steep slopes have the potential to impact property, infrastructure, and environmental, recreational and agricultural features in the jurisdiction.

Landslides. Isolated portions of Pine Canyon could suffer potential losses to landslides. Infrastructure, Environmental, and Agricultural lands that are most likely to be impacted include western portions of the town near the slopes of Anaconda Reservoir and areas near the mouth of the canyon. Landslides have the potential to impact infrastructure, and environmental, and agricultural features in the jurisdiction. .

Future Development

Currently, there is a proposed development of around 1,000 homes on the east side of Erda between Lake Point and Pine Canyon. These homes could potentially be affected by wildfire, landslides, and geologic hazards.

Hazard Mitigation Strategies

(See Section 17: Unincorporated Tooele County Community Risk Assessment)