

ORDINANCE #16-04

AN ORDINANCE UPDATING QUIET HOURS FOR GARDEN CITY, UTAH

WHEREAS, the Town of Garden City is a town duly incorporated under the general law of the State of Utah; and

WHEREAS, the Garden City Town Council is the Governing Body for the Town of Garden City and must administer the Garden City Municipal Code; and

WHEREAS, the Garden City Town Council is authorized to enact restrictions on city property for the safety of all Garden City residents; and

NOW THEREFORE, be it ordained by the Town Council, of the Town of Garden City, Rich County, State of Utah, that **Ordinance 12-303, Quiet Hours** be changed as follows:

12-303 Quiet hours. No person shall disturb the peace of others from ~~10~~ 11:00 p.m. to 6:30 a.m.

APPROVED, by the Garden City Town Council, Garden City, Rich County, State of Utah, this 9th day of June, 2016.

APPROVED:

John Spuhler, Mayor

Attest:

Kathy Hislop, Town Recorder

Voting:

	<u>Aye</u>	<u>Nay</u>
Argyle	___	___
Pugmire	___	___
Stocking	___	___
Warner	___	___
Spuhler, Mayor	___	___

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WHEREAS, the Garden City Town Council is the Governing Body for the Town of Garden City and must administer the Garden City Municipal Code; and

WHEREAS, the Garden City Town Council is authorized to enact restrictions on city property for the safety of all Garden City residents; and

NOW THEREFORE, be it ordained by the Town Council, of the Town of Garden City, Rich County, State of Utah, that **Ordinance 12-303, Quiet Hours** be changed as follows:

12-303 Quiet hours. No person shall disturb the peace of others from ~~10~~ 11:00 p.m. to 6:30 a.m.

APPROVED, by the Garden City Town Council, Garden City, Rich County, State of Utah, this 9th day of June, 2016.

APPROVED:

John Spuhler, Mayor

Attest:

Kathy Hislop, Town Recorder

Voting:

	<u>Aye</u>	<u>Nay</u>
Argyle	___	___
Pugmire	___	___
Stocking	___	___
Warner	___	___
Spuhler, Mayor	___	___

Parking Ordinance Motion
Planning Commission
June 1, 2016

#16-04

Commission Member Stevens made the motion to approve as written, with changes in "A". Commission Member DeGroot seconded the motion. All in favor and the motion carried.

ORDINANCE #16-01

AN ORDINANCE UPDATING THE PARKING REQUIREMENTS

WHEREAS, the Town of Garden City is a town duly incorporated under the general law of the State of Utah; and

WHEREAS, the Garden City Town Council is the governing body for the Town of Garden City and must administer the Garden City Municipal Code; and

WHEREAS, the Garden City Town Council is authorized to govern the health, safety and wellness of the citizens and visitors of the Town of Garden City; and

NOW THEREFORE, be it ordained by the Town Council of the Town of Garden City, Rich County, State of Utah, that Ordinance #11C-300 be changed as follows:

CHAPTER 11C-300 Parking and Loading Space

11C-301 Purpose The purpose of these off street parking requirements is to reduce congestion and traffic hazards in the Town by incorporating adequate, attractively designed off street parking for various land uses. Parking areas shall be designed in such a manner that they will result in maximum efficiency, protection of public safety, provided for the special needs of the handicapped, and where appropriate, insulate surrounding land uses from adverse impacts created by such parking.

11C-302 Off-Street Parking Required

- A. At the time any building or structure is erected or enlarged or increased in capacity or any use is established, there shall be provided off-street parking spaces for automobiles in accordance with the following requirements. A detailed site plan showing the required off street parking spaces shall be presented to the Planning Commission for approval. All off street parking shall comply with all of the standards prescribed in this chapter, and shall be permanently maintained in good condition for the duration of the use or uses served by the facility.
- B. Parking shall be located on the same lot or abutting lot to the requested use. In no case shall required parking be located across a public street without written approval of the Planning Commission and only when the parking area is within 100 feet.
- C. Uses not listed shall be based on the most similar use in the table as determined by the Planning Commission.
- D. Any use of property which, in the effective date of this ordinance, is nonconforming only with the regulations relating to off-street parking may continue in the same manner, provided that parking facilities shall not be further reduced.

- E. Lighting used to illuminate any off street parking area shall be arranged to reflect the light away from adjacent properties and street traffic and shall comply with the dark sky ordinance.
- F. All areas designated for off street parking shall not be used for outdoor storage of materials or equipment.
- G. Parking Setbacks. The Planning Commission will determine at design review the appropriate parking setback. The placing of building and parking elements on a site shall be evaluated by the Planning Commission on the basis of the following factors:
 1. Relationship to other buildings both horizontally and vertically.
 2. Natural land features, such as slopes or trees.
 3. Physical features and controlled ingress and egress.
 4. Visibility from vehicular approaches and distant highways.
 5. Type of use and structure.
 6. Building height.
- H. Connection of interior Parking Lots. Private parking lots, within any development, shall be required to provide interior access to adjacent parking lots and interior private roadways. When new developments are being constructed adjacent to existing business, the project shall be required to join existing drives and parking lots at property lines. When new developments are proposed adjacent to undeveloped land or underdeveloped business, the new development shall be required to construct connections, which will allow joining of future roads or parking lots. All access between interior lots and roads shall be open to the public for customer parking and access.

11C-303 Handicap Parking. Handicap parking shall meet the requirements of the most recent amendment of the Americans with Disabilities Act (ADA).

11C-304 Parking Space Size. The dimensions of each off-street parking space shall be at least nine (9) feet by twenty (20) feet for diagonal or ninety-degree spaces; or nine (9) feet by twentytwo (22) feet for parallel spaces.

Type of Space	Minimum Width	Minimum Length
Diagonal	9 feet	20 feet
90° Angle	9 feet	20 feet
Parallel	9 feet	22 feet
Oversized Stalls	9 feet	40 feet

11C-305 Computation Of Off Street Parking Spaces The table on the following pages contains the minimum parking requirements for specific uses. To clarify the computation of off street parking spaces, the following standards shall apply:

- A. **Parking calculations shall be based on gross square footage of a building unless stated different in the table below. Outdoor seating must also be included in parking calculations.**
- B. If a fractional number is obtained one parking space shall be required for that fraction.
- C. If more than one use is located on a site, the number of off street parking to be provided shall be equal to the sum of the requirements of each use.
- D. **Parking requirements for Short Term Rentals (STRs) see chapter 8-601-G and 8-607-B.**
- E. **If the gross square footage of an existing nonresidential building is not altered but the use is changed, then no additional parking spaces are required.**
- F. **If gross square footage of an existing nonresidential building is altered regardless of use, then the minimum parking requirements must be calculated.**
- G. In the event that off-street parking cannot be reasonably provided in accordance with the provisions of this title, a commercial property owner may be allowed to make a payment-in-lieu of providing parking spaces, according to the following conditions:
 - 1. The Planning Commission must review all payment-in-lieu of parking requests.
 - 2. The payment-in-lieu fee shall be established by resolution.
 - 3. Payment-in-lieu of parking shall be permitted to provide no more than 30% of the parking spaces required by this chapter.

<u>Residential Land Use</u>	Required Parking Spaces	Employee Parking
Duplexes, multi-family dwellings, condominiums, townhouses	Studio 1 space 2 to 3 bedrooms 2 spaces 4 or more bedrooms 3 spaces Guest parking: 1 space for each 3 units	
Second residential unit	1 space in addition to that required for the primary dwelling	
Senior housing	.5 space for each unit plus 1 guest space for each 10 units	1
Single-Family dwellings	2 spaces per unit	
<u>Non residential land use</u>		
Amusement park/entertainment facilities	Determined by conditional use	

Art galleries, artisan/ craft shop,	1 space per 500 sq. ft	1
Auto and vehicle maintenance and repair	4 spaces for each service bay	1
Auto/vehicle sales and/or parts store	1 space per 400 sq. ft	1
Banks and financial services	1 space per 300 sq. ft	2
ATM's	1 space for each exterior ATM	
Bed & Breakfast (Inns)	1 space per guest unit	1
Building material stores	1 space per 500 sq. ft	1
Child day care centers	1 space for each 10 children that the facility is licensed to accommodate	2
Community/Convention Centers, lodges and meeting halls	1 space per 100 sq. ft.	2
Grocery Store	1 space per 250 sq. ft.	2
Hotels	1 space and .2 oversize spaces for each guest hotel room; plus, retail, restaurant, and conference uses calculated at 50% of the requirements of this table.	2
Laundromats	1 space for each 5 washing machines	
Libraries and museums	1 space per 300 sq. ft	1
Medical Clinics, offices, labs, pharmacies, and other outpatient facilities	1 space per 500 sq. ft	3
Night clubs and bars	1 space per 100 sq. ft	3
Offices	1 space per 500 sq. ft	1
Outdoor commercial recreation	Spectator seats: 1 space for each 4 seats Sports courts: 2 spaces per court plus 1 space per 500 sq. ft. of area other than courts	1
Personal services: Barbers/beauty, etc.	1 space per 500 sq. ft.	1
Plant nurseries and garden supply stores	1 space per 500 sq. ft of indoor use area; 1 space per 2,000 sq. ft. of outdoor use area	1
Public safety facilities	1 space per 500 sq. ft	1
Religious facilities, churches, places of worship	1 space per every 4 seats to maximum seating capacity	
Restaurants (indoor and outdoor dining)	1 space per 180 sq. ft	2 spaces for every 1,000 sq. ft.
Retail Stores	1 space per 500 sq. ft.	1
Schools – public and private		

Grade 9 and lower	1 space per classroom	2 per classroom
Grade 10 – 12	5 spaces per classroom	1 per classroom
Service station/Convenience Store	1 space per pump island, does not include parking at the pump	1
Short Term Rental	See ordinance 8-601-G and 8-607-B	
Studios – art, dance, music, photograph, etc.	1 space per 180 sq. ft.	1
Theaters	1 space per 100 sq. ft.	1
Transient Business	1 space per 150 sq. ft of commercial area	2
Utility facilities	1 space per 1,000 sq. ft	1
Veterinarians, animal hospitals, kennels, boarding, pet shops	1 space per 500 sq. ft	1
Warehousing, wholesaling and distribution		1 space per employee
Wholesale design showrooms	1 space per 1,000 sq. ft	1

APPROVED, by the Garden City Town Council, Garden City, Rich County, State of Utah, this 9th day of June, 2016.

APPROVED:

John Spuhler, Mayor

ATTEST:

Kathy Hislop, Town Recorder

Voting:

	Aye	Nay
Argyle	___	___
Pugmire	___	___
Stocking	___	___
Warner	___	___
Spuhler, Mayor	___	___

RESOLUTION #R16-02

A RESOLUTION OF THE TOWN OF GARDEN CITY ADOPTING THE 2015 PRE-DISASTER MITIGATION PLAN: BEAR RIVER REGION

WHEREAS, the Town of Garden City is a Town duly incorporated under the general laws of the State of Utah; and

WHEREAS, the Town of Garden City recognizes the threat that natural hazards pose to people and property within Garden City; and

WHEREAS, the Town of Garden City has participated in the creation of a multi-hazard mitigation plan, hereby known as the 2015 PRE-DISASTER MITIGATION PLAN: BEAR RIVER REGION in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, the 2015 PRE-DISASTER MITIGATION PLAN: BEAR RIVER REGION identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Town of Garden City from the impacts of future hazards and disasters; and

WHEREAS adoption by the Town of Garden City demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2015 PRE-DISASTER MITIGATION PLAN: BEAR RIVER REGION.

NOW THEREFORE, BE IT RESOLVED by the Town of Garden City, Utah, that:

In accordance with Garden City Municipal Code Chapter 3-302, the Garden City Town Council adopts the 2015 PRE-DISASTER MITIGATION PLAN: BEAR RIVER REGION.

This resolution shall be effective on the date it is adopted.

DATED this 9th day of June, 2016.

APPROVED:

Attest:

John Spuhler, Mayor

Kathy Hislop, Town Clerk

Council Members Voting:

	Aye	Nay
Argyle	___	___
Pugmire	___	___
Stocking	___	___
Warner	___	___
Spuhler, Mayor	___	___

(LOCAL COMMUNITY)

Utah

RESOLUTION NO. _____

A RESOLUTION OF (LOCAL COMMUNITY) ADOPTING THE 2015 PRE-DISASTER MITIGATION PLAN:
BEAR RIVER REGION

WHEREAS (local governing body) recognizes the threat that natural hazards pose to people and property within (local community); and

WHEREAS (local community) has participated in the creation of a multi-hazard mitigation plan, hereby known as the 2015 PRE-DISASTER MITIGATION PLAN: BEAR RIVER REGION in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS 2015 PRE-DISASTER MITIGATION PLAN: BEAR RIVER REGION identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in (local community) from the impacts of future hazards and disasters; and

WHEREAS adoption by (local governing body) demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2015 PRE-DISASTER MITIGATION PLAN: BEAR RIVER REGION.

NOW THEREFORE, BE IT RESOLVED BY (LOCAL COMMUNITY), Utah, THAT:

In accordance with (local rule for adopting resolutions), (local governing body) adopts the 2015 PRE-DISASTER MITIGATION PLAN: BEAR RIVER REGION.

This resolution shall be effective on the date it is adopted.

DATED this _____ day of _____, 2015/2016.

Signed

Printed Name and Title

Jurisdiction Name

ATTEST

Name/Title

**SECTION 7: RICH COUNTY RISK
ASSESSMENT & COMMUNITY SECTIONS**

History and Background of Natural Hazards in Rich County

Flooding

The flood risk for Rich County seems minimal. The county is sparsely populated and the communities are generally not located near a flood source. The Bear River passes through Rich County in an area with some agricultural use. It flows primarily through rural areas with little or no development. However, it is difficult to tell where flood risk exists for the entire county, since only Woodruff currently has a Flood Insurance Rate Map for their community. The Army Corps of Engineers did a study in 2003 which generally defines flood risk for communities that do not participate in the National Flood Insurance Program. This study was also useful in the risk assessment for Rich County communities.

All of the four incorporated cities in Rich County have small streams and drainages that pass through the communities. These communities have historically experienced minimal impacts from flooding.

The southern half of Bear Lake is located in Rich County. A great deal of beach front development has occurred along the shores of Bear Lake. The rising lake level has rarely threatened lakeshore development but some flooding of homes has occurred. PacifiCorp operates a hydroelectric facility on the lake and has purchased some of the flood prone lakeshore properties to mitigate the impact of high lake level flooding.

One other major concern regarding flood hazards in Rich County, as with many other Utah counties, is that of canal breakage flooding. Many of the canals in the region were built a century ago, and if any fail there could be damage to homes and property. Also, the connection between flooding and landslides should be considered. As water saturation levels increase, the potential for mud/sediment/debris flows also increase.

In Rich County, only Woodruff Town has a delineated flood plain. Lakertown is listed as being a NSFHA (No Special Flood Hazard Area) which is all Zone C on the FEMA floodplain maps.

While FEMA floodplains are a great planning tool for hazard mitigation, most of Rich County has never been mapped by FEMA. An August 2003 report entitled Flood Hazard Identification Study: Bear River Association of Governments by the U.S. Army Corps of Engineers was completed to help communities without floodplain data. This study generally identified areas of flooding concern for municipalities lacking data (See Appendix B for the full report). However, the report was only intended to give communities very general estimates of where flood risk may exist. Also, many flooding events happen outside of the FEMA 100-year floodplain delineations (around 40%). There are other ways that flooding occurs as well, such as canals, reservoirs/ponds, wildfire, incorrect grading, and plugged sewer and storm water systems (Scott Stoddard, personal communication, 11/13/08). Below is a discussion of flooding risks for communities in Rich County. Only those communities thought to be at risk for flooding have been included.

Wildfires

Wildfires occur with some frequency in Rich County. The vast majority occur in areas that are predominately sage and scrub vegetation on Bureau of Land Management (BLM) owned land. Most fires rarely threaten human safety or property and are often allowed to burn. The primary conflict area in terms of threat to property is related to wildfire areas above Garden City town proper, in mostly secondary home developments associated with the Bear Lake Recreation area. Some of these homes are built in heavily timbered areas. Bridger Village and Sweetwater developments are great concerns to local emergency planners in regard to wildfire.

Portions of the Uinta-Wasatch-Cache National Forest are located in western Rich County. Transitioning down slope from the forest into the Bear Lake valley and Garden City, a significant number of cabins are located along hillsides above the town center. Some of these homes are built in heavy vegetation and timber. Many are surrounded by lower sage type vegetation communities.

These areas are at risk from wildfire originating

in the Forest Service managed land to the west and also human caused fire within or below the developments. Much of this development in Bridger Village is bisected by U.S 89 as it makes its rather steep descent into Garden City from Cache County. Sparks caused by overheating brakes on heavy trucks have been known to start fires adjacent to the road. In the right conditions, these types of fires can quickly spread to portions of this development and others.

Below is a map showing historical wildfire locations in Rich County:

Landslides/Steep Slopes

There are really no accounts of landslide activity in the County which has been particularly destructive to infrastructure, structures, or other lands. However, the Utah Geological Survey completed statewide mapping of landslide potential. The Rich County dataset includes high landslide risk areas on some of the hillsides north and east of the Sweetwater development, east of the public beaches on the west shore near Rendezvous Beach, northeast of Round Valley, and in South Eden Canyon.

One thing that should be considered regarding landslides, were they to occur in populated places

of Rich County, is that flooding can increase the destructiveness of landslides. As saturation levels increase, the chance for mud/sediment/debris flows also increases.

Earthquakes

Although not as seismically active as Box Elder and Cache Counties, Rich County does have recorded seismic activity. The predominant and most active faulting potential is on the East Bear Lake Fault east of the lake. However, there is risk on the west side of the lake also, where the most recent earthquake in the region started from the West Bear Lake Fault in 1884 (Covington, 2008). Another issue to consider when looking at earthquake risk is that of liquefaction potential. While there have not been any studies done to delineate liquefaction potential for Rich County, there is a potential given the right soils and saturation levels during an earthquake event. Also, it is possible that a Tsunami large enough to cause damage could be produced on Bear Lake during an earthquake given the fault locations under the lake. Damage to shoreline residences could happen during such an event.

On November 9, 1884 the Bear Lake valley experienced an estimated 6.3 magnitude earthquake with the epicenter southeast of St. Charles, Idaho followed by aftershocks of 2.3 magnitudes. The earthquake was felt as far away as Ogden. Add info on Woodruff EQ

Kalliser indicates that the Bear Lake East Fault is active with evidence of large earthquakes in the recent past. He reports a continuous line of scarplets in recent sediments on the east shore of the lake. In addition, the delta fans at the mouth of North and South Eden Canyons are displaced by faulting.

Some faulting has been reported by bathograms in the bottom of Bear Lake.

While a geological fault may not be very wide physically, damage around the fault can be detrimental. This is often referred to as the "damage zone (Susanne Janecke, personal communication, 9/25/08)." This damage zone is now thought to be much larger than recognized previously. While geologists used to recommend a

general fault buffer of fifty feet on either side of the fault, they now recognize a much larger damage zone. According to the Utah Geological Survey, up thrown sides of well defined quaternary faults require planning for a 250 foot damage zone; while down thrown sides of well defined faults require planning for a 500 foot damage zone. For those faults not well defined, a general 1,000 foot damage zone should be considered (Richard Giraud, personal communication, 10/6/08; Christopher Duross, personal communication, 10/30/08; Christensen et al., 2003). Because of data and time limitations in this plan, a standard 500 foot damage zone was analyzed for well defined quaternary faults, and a standard 1,000 foot damage zone was analyzed for those faults that are not well defined.

Below is a map showing historical earthquake locations in Rich County:

Of the 525 regulated dams 518 are designated as “low hazard” by the State of Utah Division of Water Rights. As defined by state statute, low hazard dams are those dams which, if they fail, would cause minimal threat to human life, and economic losses would be minor or limited to damage sustained by the owner of the structure.

A total of 5 dams have been designated as “moderate hazard” by the State of Utah in Rich County. Moderate Hazard dams which, if they fail, have a low probability of causing loss of human life, but would cause appreciable property damage, including damage to public utilities.

The State of Utah has rated 2 dams in Rich County as “high hazard” which means that, if they fail, have a high probability of causing loss of human life or extensive economic loss, including damage to critical public utilities.

Dam failure inundation maps and emergency action plans for each of the high risk dams can be found on the Utah Division of Water Right’s website at: <http://waterrights.utah.gov/cgi-bin/damview.exe?Startup>.

Natural Hazard Profiles

Table 8: Rich County Flood Hazard Profile

Frequency	Infrequent
Severity	Moderate
Location	Generally along rivers, streams, and canals.
Seasonal Pattern	Spring flooding as a result of snowmelt. Mid-late summer cloudburst events.
Duration	A few hours or up to three weeks for snowmelt flooding
Speed of Onset	1-6 hours
Probability of Future Occurrences	Moderate - there is a 1% chance of flooding in any given year in the 100-year floodplain.

Dam Failure

There are 525 regulated dams located in Rich County. Most of these dams are small detention ponds, small agricultural reservoirs or livestock watering facilities and most pose a minimal threat to human safety or property.

Table 9: Rich County Wildfire Hazard Profile

Frequency	Annually (to some extent)
Severity	Moderate
Location	Dispersed throughout the whole county
Seasonal Pattern	Generally the worst from early July to mid September (depends on drought conditions)
Duration	A few hours to two weeks
Speed of Onset	1-6 hours
Probability of Future Occurrences	High (Based on data from 1973-2008, there is a 22.9% chance a fire of at least 1,000 acres will occur every year)

Table 10: Rich County Landslide/Steep Slopes Hazard Profile

Frequency	Infrequent
Severity	Moderate
Location	The hillsides north and east of the Sweetwater development, east of the public beaches on the west shore near Rendezvous Beach, northeast of Round Valley, and in South Eden Canyon.
Seasonal Pattern	Generally the worst in the wetter spring months.
Duration	Up to two weeks
Speed of Onset	No warning
Probability of Future Occurrences	Low

Table 11: Rich County Earthquake Hazard Profile

Frequency	Occasional
Severity	Moderate
Location	Entire County with highest frequency in the Bear River Mountain Range. Surface fault ruptures are likely to occur in fault zones on the east shore of Bear Lake.
Seasonal Pattern	None
Duration	A few minutes with potential aftershocks
Speed of Onset	No warning
Probability of Future Occurrences	Based on 1962-2001 data, there is a 7.7% chance every year of an earthquake of 3.0 magnitude or greater.

Table 12: Rich County Dam Failure Hazard Profile

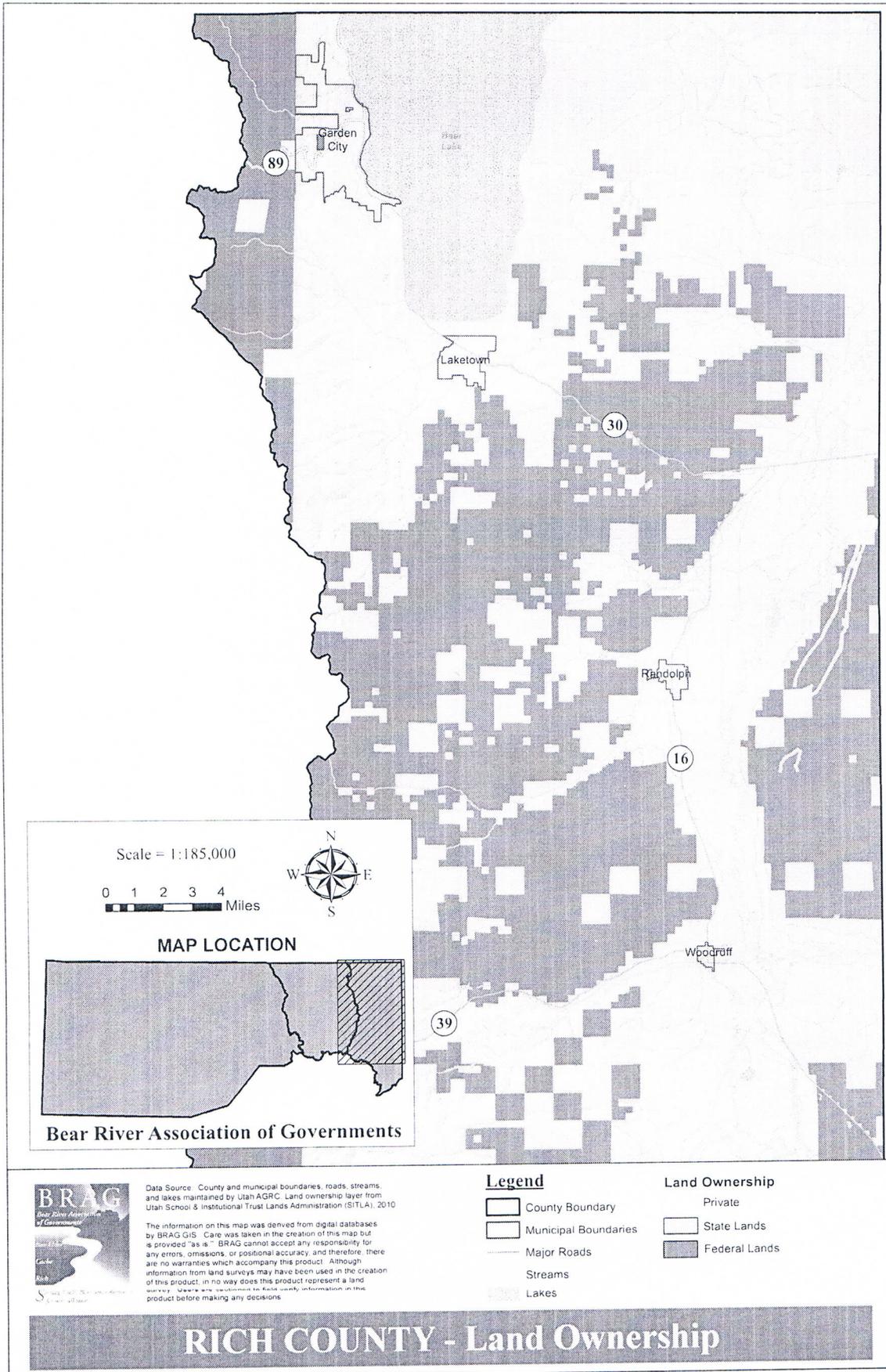
Frequency	Rare
Severity	Potentially Catastrophic
Location	Areas downstream of failed dam.
Seasonal Pattern	Anytime. Highest risk in spring during snowmelt.
Duration	A few hours
Speed of Onset	No warning
Probability of Future Occurrences	Low

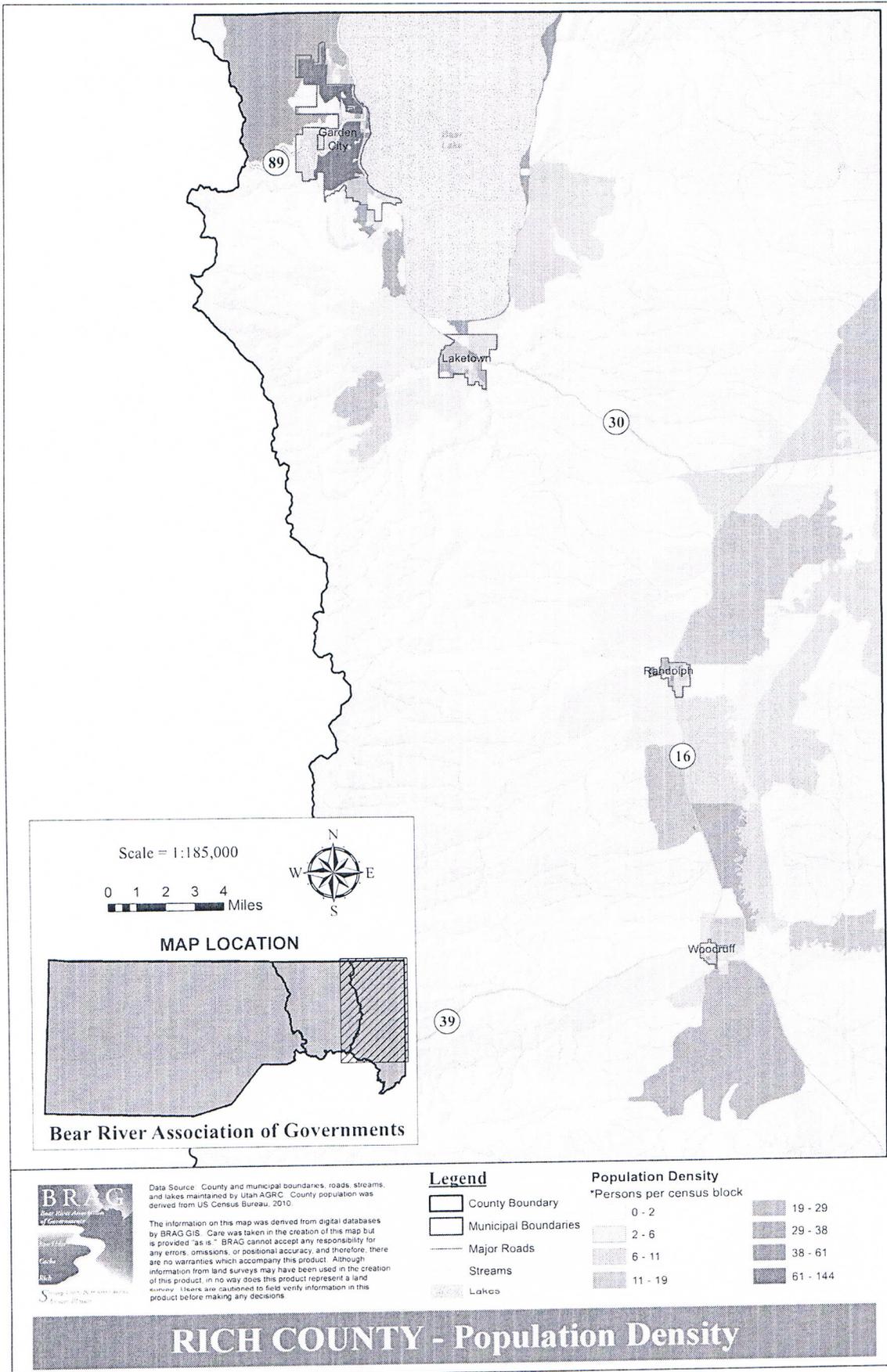
Repetitive Loss Properties

There are no repetitive loss properties in Rich County (FEMA, 2008).

COUNTY-WIDE NATURAL HAZARD MAPS

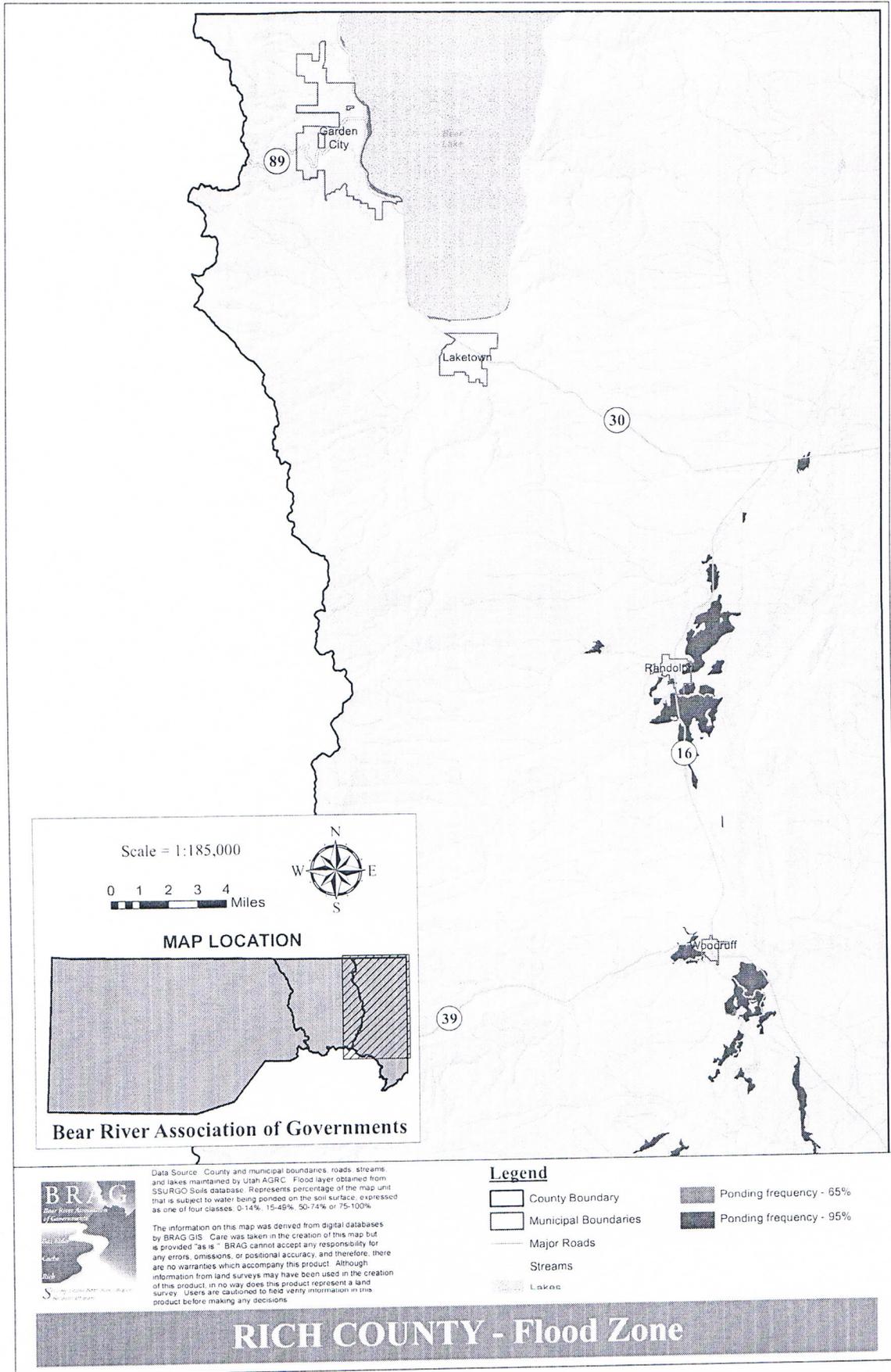
(Please see pages 5-44 to 5-51)

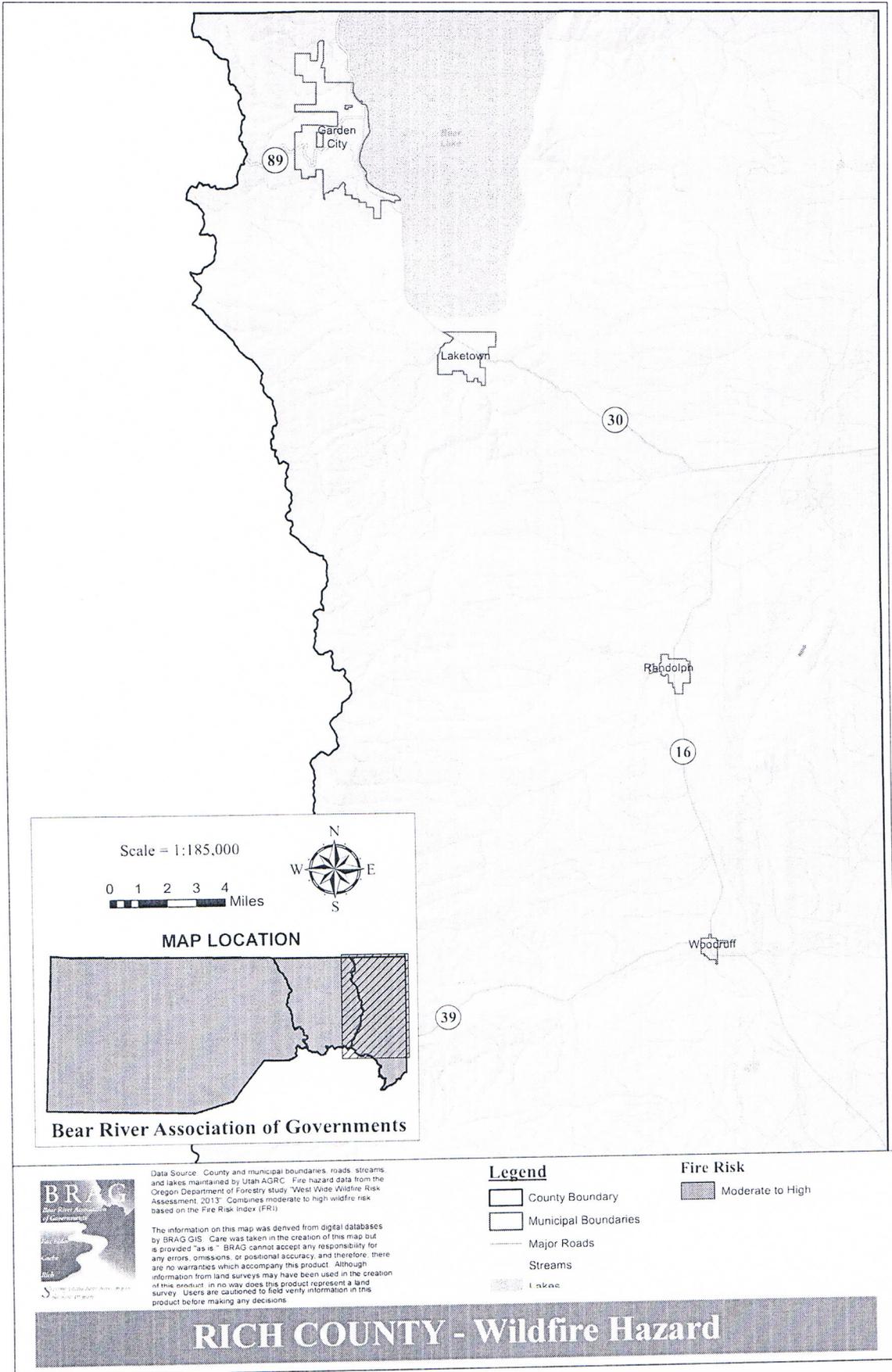


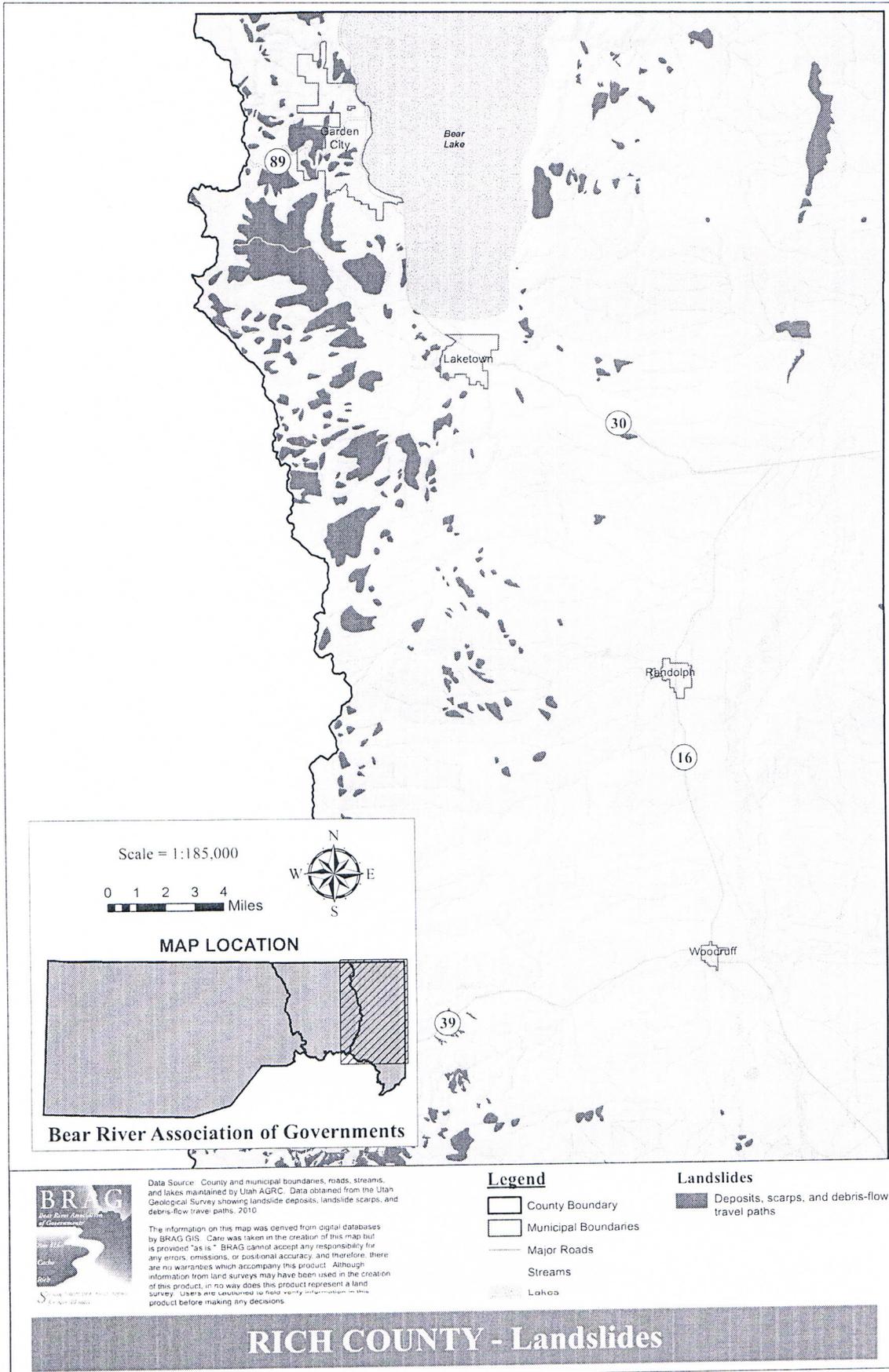


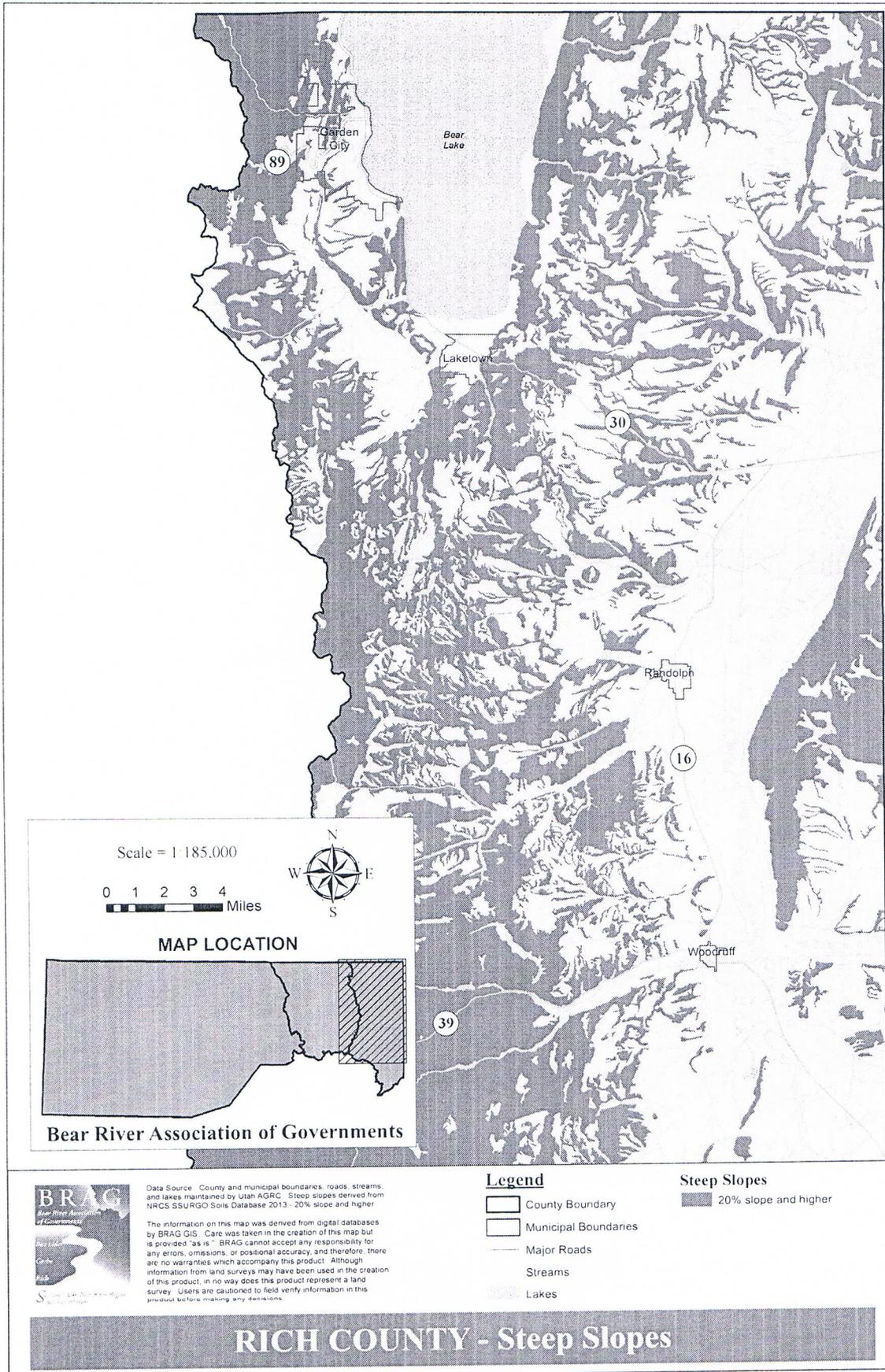
Data Source: County and municipal boundaries, roads, streams, and lakes maintained by Utah AGRC. County population was derived from US Census Bureau, 2010.

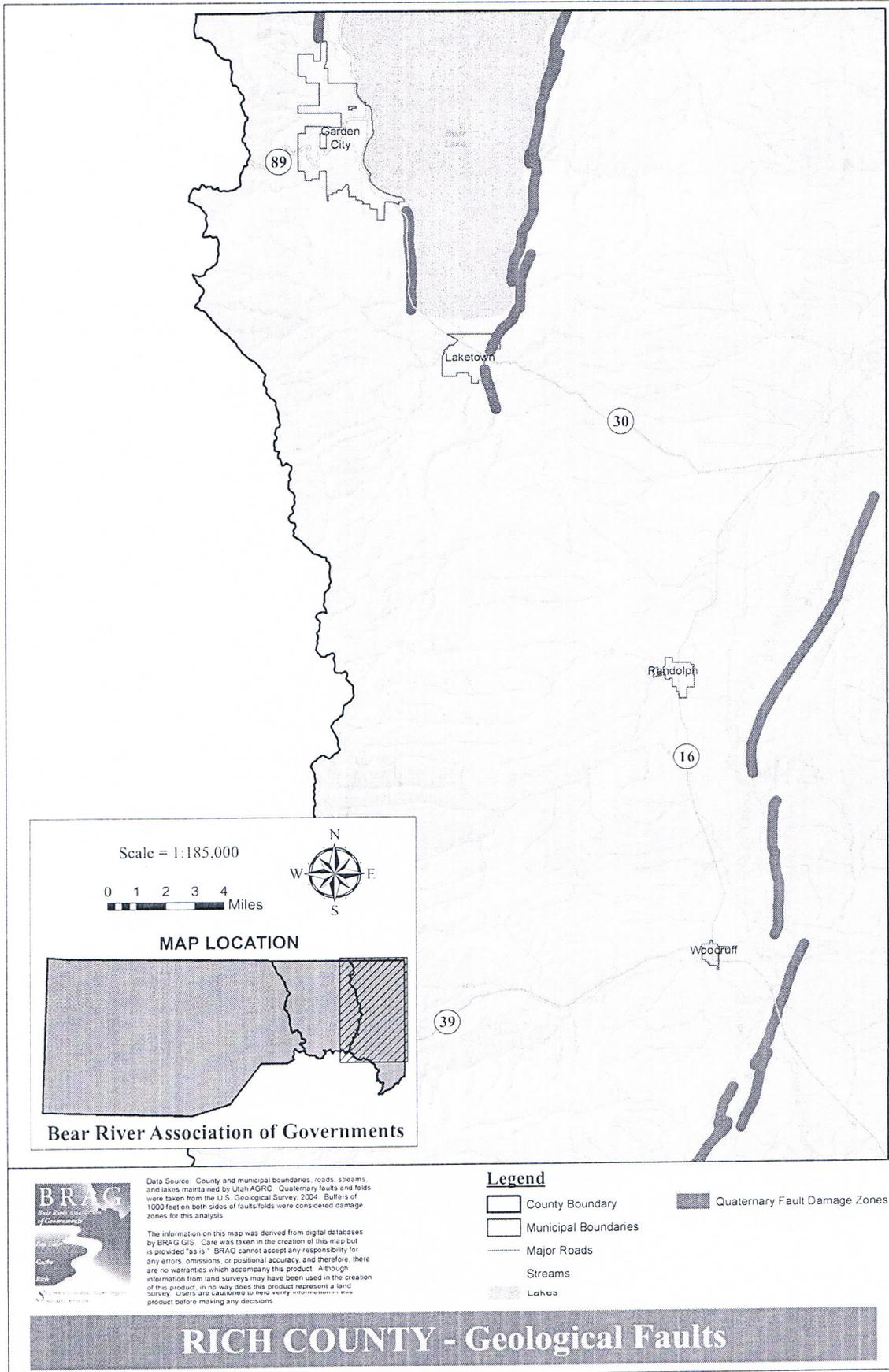
The information on this map was derived from digital databases by BRAG GIS. Care was taken in the creation of this map but is provided "as is." BRAG cannot accept any responsibility for any errors, omissions, or positional accuracy, and therefore, there are no warranties which accompany this product. Although information from land surveys may have been used in the creation of this product, in no way does this product represent a land survey. Users are cautioned to field verify information in this product before making any decisions.

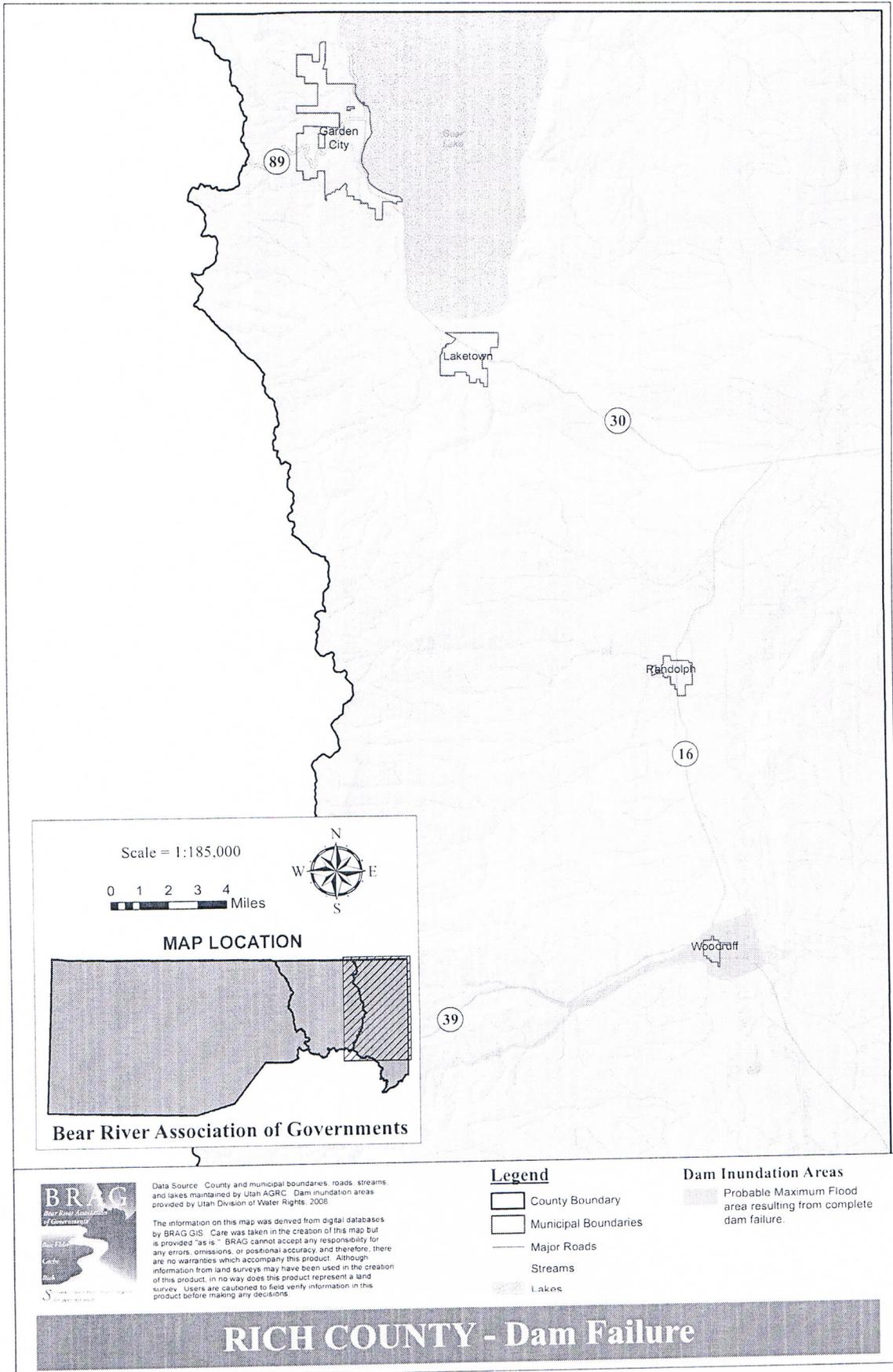












COMMUNITY SECTIONS: NATURAL HAZARDS, POTENTIAL LOSSES, AND MITIGATION STRATEGIES

RICH COUNTY

Analysis of hazard risk involving Rich County revealed that there is potential risk resulting from **dam failure, faults, landslide, poor soils, and steep slopes**. These hazards have varying potential to impact life, property, infrastructure, agriculture, and recreational features within municipal boundaries. Currently, liquefaction and wildfire hazards have the greatest potential to impact the community based on potential loss values. Other natural hazard types not mentioned were found to have no potential impacts to Rich County. See the following tables for more detailed descriptions of potential losses associated with each natural hazard associated with jurisdictional elements.

Table 13: Rich County Potential Loss Figures

Natural Hazards

Dam failure. Rich County’s risk of dam failure involves Birch Creek Reservoir west of the town Woodruff, as well as Woodruff Creek Dam located in Wyoming nine miles East of Woodruff. Every structure located in Woodruff would be at risk if either one of these dams were to fail. Infrastructure, residents, environment, agriculture, and amenities in this area could experience significant damage.

Faults. Rich County has a great potential for earthquakes. The predominant and most active faulting probability is on the East Bear Lake Fault east of the lake. Woodruff, Randolph, and Laketown are some of the jurisdictions that could experience significant damage in the occurrence of an earthquake. Human life, structures, agriculture, and other amenities in the fault zone are all at risk for this natural hazard.

Landslide. The jurisdictions having the greatest tendencies for landslides are Garden City and Laketown, located in the northern most region

Rich County, 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	215	66	7,684,738	6	452,739	824,628
Faults	352	108	13,623,992	1	271,923	137,438
Wildfire	0	0	0	0	0	0
Flood	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0
Landslide	486	149	29,889,215	0	0	0
Slope	1167	358	48,190,591	5	2,725,092	687,190
Poorly Drained Soils	427	131	31,315,380	5	3,640,837	687,190

* Based on average persons per owner household for Rich County from 2013 American Community Survey, which is 3.26.
 ** Current Market Value per parcel. Numbers were derived from Rich County parcels data provided by the Rich County Assessor.
 *** Based on average sales, receipts, or value of shipments of firms with or without paid employees, per firm (\$137,438 per firm). Derived from 2002 Survey of Business Owners for Rich County, US Census Bureau.

Rich County, UT, Agricultural Features at Risk					
Hazard Type	Lands at Risk			Farms & Barns****	
	Agriculture Production*	Farm Land**	Grazing***	Century Farms	Historic Barns
	# of Acres			# of Farms	# of Barns
Dam Failure	3375.22	3773.31	637.19	0	0
Faults	4151.27	3867.24	3150.94	1	0
Wildfire	0	0	0	0	0
Flood	0	0	0	0	0
Liquefaction	0	0	0	0	0
Landslide	750.56	2015.4	21026.03	0	0
Slope	2790.99	0	181002.89	0	0
Poorly Drained Soils	7903.8	8155.32	33.74	2	0

* 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 that are suitable for farming purposes based on soil type and composition, as describe in the 2013 Natural Resource Conservation Service, SSURGO datasets.
 *** Lands currently associated with grazing allotments identified as part of the Grazing Improvement Program (Utah AGRC, 2012)
 **** Based on data compiled by the Bear River Association of Governments.

Rich County , UT, Critical Facilities at Risk					
Hazard Type	Critical Facilities Types				
	Emergency Services/Law Enforcement ¹	Schools/Public Facilities ²	Health Care Facilities ³	Places of Worship ⁴	Infrastructure ⁵
Dam Failure		Rendezvous Beach State Park, Camp Hunt			5 Bridges, 6 Dams
Faults		Bear Lake Aquatics Base, 1 RV Park			1 Bridge, 8 Dams
Wildfire					
Flood					
Liquefaction					
Landslide		2 Campgrounds, Cook Reservoir			27 Dams , Cisco's Landing LLC
Slope		1 Campground, 1 Hwy 89 Overlook			225 Dams
Poorly Drained Soils					

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

Rich County, UT, Agricultural Features at Risk					
Hazard Type	Lands at Risk			Farms & Barns****	
	Agriculture Production*	Farm Land**	Grazing***	Century Farms	Historic Barns
	# of Acres			# of Farms	# of Barns
Dam Failure	3375.22	3773.31	637.19	0	0
Faults	4151.27	3867.24	3150.94	1	0
Wildfire	0	0	0	0	0
Flood	0	0	0	0	0
Liquefaction	0	0	0	0	0
Landslide	750.56	2015.4	21026.03	0	0
Slope	2790.99	0	181002.89	0	0
Poorly Drained Soils	7903.8	8155.32	33.74	2	0

* 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 that are suitable for farming purposes based on soil type and composition, as describe in the 2013 Natural Resource Conservation Service, SSURGO datasets.
 *** Lands currently associated with grazing allotments identified as part of the Grazing Improvement Program (Utah AGRC, 2012)
 **** Based on data compiled by the Bear River Association of Governments.

Rich County, UT, Environmental & Recreational Features at Risk						
Hazard Type	Environmental Features at Risk			Recreational Features at Risk		
	Wetland/ Riparian ^o	Lakes ¹	Streams ²	Parks ³	Trails ⁴	Amenities ⁵
	# of Acres		# of Miles	# of Acres	# of Miles	# of Amenities
Dam Failure	664.06	21.64	47.04	0	3.18	2
Faults	2385.36	1236.83	80.9	0	1.97	0
Wildfire	0	0	0	0	0	0
Flood	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0
Landslide	196.48	50.96	134.78	0	53.2	2
Slope	788.76	111.27	844.19	0	296.17	6
Poorly Drained Soils	1564.28	50.79	55.83	1.16	0.11	0

Note: Total acres of land and miles of streams and trails were identified using multiple datas 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.

of Rich County. Having steeper slopes and a large amount of development, it poses great risks to human life, structures, and infrastructure. Although there are no accounts of landslide activity, the Rich County dataset includes high landslide risk areas in much of the northern parts of the Rich County Region.

Slope. Rich County has risks associated with steep slopes within its unincorporated areas. Steep slopes have the potential to impact life, property, infrastructure, and environmental, recreational and agricultural features in the jurisdiction.

Poorly Drained Soils. The towns Randolph and Woodruff have the largest threat for poorly drained soils. Both located adjacent to reservoirs and having high ponding frequencies. This hazard has a potential to effect human life, structures, infrastructure, environmental and recreational features, and agriculture.

Future Development

No concerns involving potential future development within Rich County were reported by city representatives.

Hazard Mitigation Strategies

Table 14: Rich County Mitigation Strategies

RICH COUNTY- COMMUNITY MITIGATION STRATEGIES									
Protecting Current Residents and Property									
Jurisdiction	Hazard	Goal	Action	Action (For NFIP Compliance, if Applicable)	Priority (High, Medium, Low)	Time-frame (Year)	Potential Funding Sources	Estimated Cost	Resources
Rich County	Dam Failure	Protect current residents and property	Update existing plans for dam failure	N/A	N/A	N/A	N/A	N/A	Div water rights
Rich County	Landslide	Protect current residents and property	Map past and potential landslide locations with an overlay of existing ownership and development.	N/A	Low	N/A	N/A	N/A	UGS, AGRC
Rich County	Wildfire	Protect current residents and property	Continue urban wildfire interface education. Continue to build firebreaks around homes in existing wildfire areas (Firebreak, USFS above Sweetwater).	N/A	Medium	N/A	N/A	N/A	FFSL
Rich County	Steep Slopes	Protect current residents and property	Determine slopes that may slip in an earthquake or severe weather event.	N/A	N/A	N/A	N/A	N/A	Rich county public works, Private contractors
Rich County	Severe Weather	Protect current residents and property	Coordinate with the National Weather Service to provide alerts concerning possible approaching cells in populated areas	N/A	Medium	2016	DEM, FEMA	N/A	N/A
RICH COUNTY- COMMUNITY MITIGATION STRATEGIES									
Protecting Future Residents and Property									
Jurisdiction	Hazard	Goal	Action	Action (For NFIP Compliance, if Applicable)	Priority (High, Medium, Low)	Time-frame (Year)	Potential Funding Sources	Estimated Cost	Resources
Rich County	Landslide	Protect future residents and property	Consider earth movement in any future development.	N/A	N/A	N/A	N/A	N/A	N/A
Rich County	Wildfire	Protect future residents and property	Consider natural vegetation types and property protection when reviewing new development.	N/A	Medium	N/A	N/A	N/A	FFSL, County, Cities
Rich County	Steep Slopes	Protect future residents and property	Minimize or prohibit any development	N/A	N/A	N/A	N/A	N/A	N/A
Rich County	Severe Weather	Protect future residents and property	Utilize warning systems	N/A	N/A	N/A	N/A	N/A	N/A
Rich County	Dam Failure	Protect future residents and property	Minimize or prohibit development below dams.	N/A	N/A	N/A	N/A	N/A	N/A

GARDEN CITY

Analysis of hazard risk involving the community of Garden City revealed that there is potential risk resulting from **wildfire, landslides, steep slopes, and poorly drained soils**. These hazards have varying potential to impact life, property, infrastructure, agriculture, and recreational features within municipal boundaries. Currently, landslide, slope, and poorly drained soil hazards have the greatest potential to impact human life, property, and various community amenities based on potential loss values. Other natural hazard types not mentioned were found to have no potential impacts to the unincorporated portions of Garden City. See the following tables for more detailed descriptions of potential losses associated with each natural hazard associated with jurisdictional elements.

Table 15: Garden City Potential Loss Figures

Natural Hazards

Landslides. Although there have been no large accounts of landslide activity in Garden City, the Utah Geological Survey completed statewide mapping of landslide potential in this jurisdiction. Landslides have the potential to impact life, property, critical facilities, infrastructure, and environmental, recreational and agricultural features in the jurisdiction. Areas for this risk are predominantly located on the western slopes and unincorporated parts near Garden City..

Slopes. Garden City has risks associated with steep slopes within its incorporated and unincorporated areas. Steep slopes have the potential to impact life, property, infrastructure, and environmental, recreational and agricultural features in the jurisdiction.

Garden City, 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	0	0	0	0	0	0
Flood	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0
Landslide	528	162	31,368,728	0	0	0
Slope	238	73	18,478,240	2	2,332,683	274,876
Poorly Drained Soils	544	167	34,341,783	3	3,152,825	412,314

* Based on average persons per owner household for Rich County from 2013 American Community Survey, which is 3.26.
 ** Current Market Value per parcel. Numbers were derived from Rich County parcels data provided by the Rich County Assessor.
 *** Based on average sales, receipts, or value of shipments of firms with or without paid employees, per firm (\$137,438 per firm). Derived from 2002 Survey of Business Owners for Rich County, US Census Bureau.

Garden City, UT, Infrastructure at Risk										
Hazard Type	Infrastructure at Risk									
	Railroad Lines		Natural Gas Lines		Electrical Power lines		Roads		Canals	
	# of Miles	\$ Value¹	# of Miles	\$ Value²	# of Miles	\$ Value³	# of Miles	\$ Value⁴	# of Miles	\$ Value⁵
Dam Failure	0	0	0	0	0	0	0	0	0	0
Faults	0	0	0	0	0	0	0	0	0	0
Wildfire	0	0	0	0	0	0	0.03	15,750	0	0
Flood	0	0	0	0	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0	0	0	0	0
Landslide	0	0	0	0	0	0	12.15	6,378,750	0.22	330,000
Slope	0	0	0	0	0	0	8.91	4,677,750	0.51	765,000
Poorly Drained Soils	0	0	0	0	0	0	0	0	0	0

¹ Based on figures from 2009 Pre-Disaster Mitigation Plan for Bear River Region, Utah.
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, May 2015).
³ Based on estimates from Logan Light and Power, 2015.
⁴ Based on estimates derived from an average 28' wide, 4" thick asphalt county road with gravel subgrade replacement. Cache County, 2015.
⁵ Based recent Cache County and regional project cost estimates, 2015.

Garden City , UT, Critical Facilities at Risk					
Hazard Type	Critical Facilities Types				
	Emergency Services/Law Enforcement	Schools/Public Facilities	Health Care Facilities	Places of Worship	Infrastructure
Dam Failure		Garden City Park, Ideal Beach, Blue Water Beach			
Faults					
Wildfire					
Flood					
Liquefaction					
Landslide					
Slope					2 dams
Poorly Drained Soils					

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

Garden City, UT, Agricultural Features at Risk					
Hazard Type	Lands at Risk			Farms & Barns****	
	Agriculture Production*	Farm Land**	Grazing***	Century Farms	Historic Barns
	# of Acres			# of Farms	# of Barns
Dam Failure	0	0	0	0	0
Faults	0	0	0	0	0
Wildfire	0	0	0	0	0
Flood	0	0	0	0	0
Liquefaction	0	0	0	0	0
Landslide	69.72	167.3	0.8	0	0
Slope	21.54	0	5.72	0	0
Poorly Drained Soils	16.39	0	0	0	0

* 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 that are suitable for farming purposes based on soil type and composition, as describe in the 2013 Natural Resource Conservation Service, SSURGO datasets.
 *** Lands currently associated with grazing allotments identified as part of the Grazing Improvement Program (Utah AGRC, 2012)
 **** Data source: Utah Division of Water Resources, Bear River Association of Governments

Table -- : Garden City, UT, Environmental & Recreational Features at Risk						
Hazard Type	Environmental Features at Risk			Recreational Features at Risk		
	Wetland/ Riparian	Lakes	Streams	Parks	Trails	Amenities
	# of Acres		# of Miles	# of Acres	# of Miles	# of Amenities
Dam Failure	0	0	0	0	0	0
Faults	0	0	0	0	0	0
Wildfire	0	0	0	0	0	0
Flood	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0
Landslide	11.43	0.12	4.86	0	0.98	0
Slope	11.6	0	4.64	0	3.44	0
Poorly Drained Soils	24.53	0.35	0.02	15.82	0	0

Note: Total acres of land and miles of streams and trails were identified using multiple datas 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.

Wildfire. Garden City is susceptible to the risk of wildfires, there is a potential for some infrastructure to receive damage in the occurrence of a wildfire.

Poorly Drained Soils. Garden City situated adjacent to Bear Lake tends to have problem soils. Residential and Commercial units near the shoreline experience the greatest risks. Most if not all infrastructure located near the lakes shoreline will have some type of risk for poor soils.

Future Development

There is a newer development being constructed with subdivisions in the Shundahai development area.

Hazard Mitigation Strategies

Table 16: Garden City Mitigation Strategies

GARDEN CITY- COMMUNITY MITIGATION STRATEGIES									
Protecting Current Residents and Property									
Jurisdiction	Hazard	Goal	Action	Action (For NFIP Compliance, if Applicable)	Priority (High, Medium, Low)	Time-frame (Year)	Potential Funding Sources	Estimated Cost	Resources
Garden City	Earthquake	Protect current residents and property	Creating community emergency response plans	N/A	Medium	2016	County, City, State, and Federal	N/A	City, County State, and Federal
Garden City	Wildfire	Protect current residents and property	Identify emergency evacuation routes in the various communities and publish on city and local fire department websites. Provide info to property owners on how to create defensible space around their homes	N/A	High	2015	Local Fire Department Budget	\$500	Fire District, County, PFSL
Garden City	Severe Weather	Protect current residents and property	Create local emergency community response groups	N/A	Medium	2016	Local churches, City, County	N/A	Local churches, City, County
Garden City	Flooding	Protect current residents and property	Providing information to public concerning hazard zones and preventative preparation	N/A	Medium	2016-2018	City and County	N/A	City and County
Garden City	Landslide	Protect current residents and property	Identify high risk areas and enact restrictive zoning laws for those hazard areas	N/A	Medium	2016-2020	City and County	N/A	City and County
GARDEN CITY- COMMUNITY MITIGATION STRATEGIES									
Protecting Future Residents and Property									
Jurisdiction	Hazard	Goal	Action	Action (For NFIP Compliance, if Applicable)	Priority (High, Medium, Low)	Time-frame (Year)	Potential Funding Sources	Estimated Cost	Resources
Garden City	Earthquake	Protect future residents and property	Review all future developments and business applications for adequate ingress and egress in relation to the expected traffic potential in the event of local evacuation emergency.	N/A	Medium	2016	City, County, State, and Federal	N/A	City, County, State, Federal
Garden City	Wildfire	Protect future residents and property	Require mandatory defensible setbacks in identified high risk wildfire zones before homeowners can receive occupancy permits	N/A	High	2016	City, and County	\$500	City, County, PFSL
Garden City	Landslides	Protect future residents and property	Identify potential risk zones and place restrictive zoning on them.	N/A	Medium	2016-2020	City, County	N/A	City, County
Garden City	Flooding	Protect future residents and property	Identify additional flood zones and ensure proper zoning laws in place.	N/A	Low	2016-2020	City and County	N/A	City and County
Garden City	Landslide	Protect future residents and property	Identify potential risk zones and place restrictive zoning on them.	N/A	Medium	2016-2020	City and County	N/A	City and County

LAKETOWN

Analysis of hazard risk involving the community of Laketown revealed that there is potential risk resulting from **faults, landslide, and slope**. These hazards have varying potential to impact human life, property, infrastructure, agriculture, and recreational features within municipal boundaries. Currently, all three of the risks most likely to be found in Laketown have the greatest potential to impact human life, property, and infrastructure based on potential loss values. Other natural hazard types not mentioned were found to have no potential impacts to Laketown. See the following tables for more detailed descriptions of potential losses associated with each natural hazard associated with jurisdictional elements.

Natural Hazards

Faults. Laketown has potentially the greatest risk of fault damage in Rich County due to the faults location, situated closest to any of the jurisdictions infrastructure. The eastern portions of the town bench lie on top of the East Bear Lake Fault. Human life, structures, and other amenities in the fault zone could suffer catastrophic damage in the event of a large earthquake.

Landslides. Laketown has the potential risk of landslides in areas found on the lower bench areas surrounding the town boundary. Landslides have the potential to impact life, property, infrastructure, and environmental, recreational and agricultural features in the jurisdiction.

Table 17: Laketown Potential Loss Figures

Laketown, 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	72	22	3,348,696	3	445,248	412,314
Wildfire	0	0	0	0	0	0
Flood	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0
Landslide	10	3	922,641	0	0	0
Slope	78	24	4,309,474	3	390,144	412,314
Poorly Drained Soils	0	0	0	0	0	0

* Based on average persons per owner household for Rich County from 2013 American Community Survey, which is 3.26.
 ** Current Market Value per parcel. Numbers were derived from Rich County parcels data provided by the Rich County Assessor.
 *** Based on average sales, receipts, or value of shipments of firms with or without paid employees, per firm (\$137,438 per firm). Derived from 2002 Survey of Business Owners for Rich County, US Census Bureau.

Laketown, UT, Infrastructure at Risk										
Hazard Type	Infrastructure at Risk									
	Railroad Lines		Natural Gas Lines		Electrical Power lines		Roads		Canals	
	# of Miles	\$ Value¹	# of Miles	\$ Value²	# of Miles	\$ Value³	# of Miles	\$ Value⁴	# of Miles	\$ Value⁵
Dam Failure	0	0	0	0	0	0	0	0	0	0
Faults	0	0	0	0	0	0	2.03	1,065,750	0.04	60,000
Wildfire	0	0	0	0	0	0	0	0	0	0
Flood	0	0	0	0	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0	0	0	0	0
Landslide	0	0	0	0	0	0	0.08	42,000	0	0
Slope	0	0	0	0	0	0	0.84	441,000	0	0
Poorly Drained Soils	0	0	0	0	0	0	0	0	0	0

¹ Based on figures from 2009 Pre-Disaster Mitigation Plan for Bear River Region, Utah.

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, May 2015).

³ Based on estimates from Logan Light and Power, 2015.

⁴ Based on estimates derived from an average 28' wide, 4" thick asphalt county road with gravel subgrade replacement. Cache County, 2015.

⁵ Based recent Cache County and regional project cost estimates, 2015.

Laketown , UT, Critical Facilities at Risk					
Hazard Type	Critical Facilities Types				
	Emergency Services/Law Enforcement	Schools/Public Facilities	Health Care Facilities	Places of Worship	Infrastructure
Dam Failure					
Faults					
Wildfire					
Flood					
Liquefaction					
Landslide					
Slope					
Poorly Drained Soils					

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

Laketown, UT, Agricultural Features at Risk					
Hazard Type	Lands at Risk			Farms & Barns****	
	Agriculture Production*	Farm Land**	Grazing***	Century Farms	Historic Barns
	# of Acres			# of Farms	# of Barns
Dam Failure	0	0	0	0	0
Faults	96.32	73.06	176.08	0	0
Wildfire	0	0	0	0	0
Flood	0	0	0	0	0
Liquefaction	0	0	0	0	0
Landslide	0	0	36.74	0	0
Slope	12.84	0	207.63	0	0
Poorly Drained Soils	0	0	0	0	0

* 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 that are suitable for farming purposes based on soil type and composition, as describe in the 2013 Natural Resource Conservation Service, SSURGO datasets.
 *** Lands currently associated with grazing allotments identified as part of the Grazing Improvement Program (Utah AGRC, 2012)
 **** Based on data compiled by the Bear River Association of Governments.

Laketown, UT, Environmental & Recreational Features at Risk						
Hazard Type	Environmental Features at Risk			Recreational Features at Risk		
	Wetland/ Riparian	Lakes	Streams	Parks	Trails	Amenities
	# of Acres		# of Miles	# of Acres	# of Miles	# of Amenities
Dam Failure	0	0	0	0	0	0
Faults	0.05	0	0	0	0.63	0
Wildfire	0	0	0	0	0	0
Flood	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0
Landslide	0	0	0	0	0.03	0
Slope	0	0	0	0	0.55	0
Poorly Drained Soils	0	0	0	0	0	0

Note: Total acres of land and miles of streams and trails were identified using multiple datas 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.

Slopes. Laketown has risk associated with steep slopes within its jurisdictional boundaries. Steep slopes have the potential to impact life, property, infrastructure, and environmental, recreational and agricultural features in the jurisdiction.

Future Development

There is currently one residential home being built on the hill.

Hazard Mitigation Strategies

Table 18: Laketown Mitigation Strategies

LAKETOWN- COMMUNITY MITIGATION STRATEGIES									
Protecting <u>Current</u> Residents and Property									
Jurisdiction	Hazard	Goal	Action	Action (For NFIP Compliance, if Applicable)	Priority (High, Medium, Low)	Time-frame (Year)	Potential Funding Sources	Estimated Cost	Resources
Laketown	Wildfire	Protect current residents and property	Create fire break on east side of town	N/A	Medium	2018	PDMG, USFS, FFSL	TBD	Local, Utah FFSL, County
Laketown	Earthquake/ Faults	Protect current residents and property	Update Geological Mapping	N/A	Medium	2020	UGS, FEMA, BRAG	Minimal	BRAG, USU, UGS, USGS
Laketown	Steep Slopes	Protect current residents and property	Update Geological Mapping	N/A	Medium	2020	UGS, FEMA, BRAG	Minimal	BRAG, USU, UGS, USGS
LAKETOWN- COMMUNITY MITIGATION STRATEGIES									
Protecting <u>Future</u> Residents and Property									
Jurisdiction	Hazard	Goal	Action	Action (For NFIP Compliance, if Applicable)	Priority (High, Medium, Low)	Time-frame (Year)	Potential Funding Sources	Estimated Cost	Resources
Laketown	Wildfire	Protect current residents and property	Create fire break on east side of town	N/A	Medium	2018	PDMG, USFS, FFSL	TBD	Local, Utah FFSL, County
Laketown	Earthquake/ Faults	Protect current residents and property	Update Geological Mapping	N/A	Medium	2020	UGS, FEMA, BRAG	Minimal	BRAG, USU, UGS, USGS
Laketown	Steep Slopes	Protect current residents and property	Update Geological Mapping	N/A	Medium	2020	UGS, FEMA, BRAG	Minimal	BRAG, USU, UGS, USGS

RANDOLPH

Analysis of hazard risk involving the community of Randolph revealed that there is potential risk resulting from **slope, and poorly drained soils**. These hazards have varying potential to impact human life, property, infrastructure, agriculture, and some environmental features. Other natural hazard types not mentioned were found to have no potential impacts to Randolph. See the following tables for more detailed descriptions of potential losses associated with each natural hazard associated with jurisdictional elements.

Table 19: Randolph Potential Loss Figures

Natural Hazards

Slope. Randolph has a potential risk due to steep slopes on the eastern foothills in the towns boundary as well as it's unincorporated region. There are a few residential units at risk as well as several acres of agricultural land.

Poorly Drained Soils. Randolph has a high potential for poorly drained soils. These soils have varying potential to impact human life, property, infrastructure, and some environmental and agricultural lands and features. Parts of the town as well as land outside of Randolph's town boundary have very

Randolph, 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	0	0	0	0	0	0
Flood	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0
Landslide	0	0	0	0	0	0
Slope	13	4	306,679	0	0	0
Poorly Drained Soils	104	32	2,827,709	2	318,453	274,876

* Based on average persons per owner household for Rich County from 2013 American Community Survey, which is 3.26.
 ** Current Market Value per parcel. Numbers were derived from Rich County parcels data provided by the Rich County Assessor.
 *** Based on average sales, receipts, or value of shipments of firms with or without paid employees, per firm (\$137,438 per firm). Derived from 2002 Survey of Business Owners for Rich County, US Census Bureau.

Randolph, 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	0	0	0	0
Wildfire	0	0	0	0	0	0	0	0	0	0
Flood	0	0	0	0	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0	0	0	0	0
Landslide	0	0	0	0	0	0	0	0	0	0
Slope	0	0	0	0	0	0	0	0	0	0
Poorly Drained Soils	0	0	0.28	392,000	0	0	1.17	614,250	0.41	615,000

¹ Based on figures from 2009 Pre-Disaster Mitigation Plan for Bear River Region, Utah.
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, May 2015).
³ Based on estimates from Logan Light and Power, 2015.
⁴ Based on estimates derived from an average 28' wide, 4" thick asphalt county road with gravel subgrade replacement. Cache County, 2015.
⁵ Based recent Cache County and regional project cost estimates, 2015.

Randolph , UT, Critical Facilities at Risk					
Hazard Type	Critical Facilities Types				
	Emergency Services/Law Enforcement	Schools/Public Facilities	Health Care Facilities	Places of Worship	Infrastructure
Dam Failure	Randolph Jail	Rich County Extension Office			
Faults					
Wildfire					
Flood					
Liquefaction					
Landslide					
Slope					
Poorly Drained Soils					

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

Randolph, UT, Agricultural Features at Risk					
Hazard Type	Lands at Risk			Farms & Barns****	
	Agriculture Production*	Farm Land**	Grazing***	Century Farms	Historic Barns
	# of Acres			# of Farms	# of Barns
Dam Failure	0	0	0	0	0
Faults	0	0	0	0	0
Wildfire	0	0	0	0	0
Flood	0	0	0	0	0
Liquefaction	0	0	0	0	0
Landslide	0	0	0	0	0
Slope	3.87	0	0.62	0	0
Poorly Drained Soils	80.3	107.36	0	0	0

* 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 that are suitable for farming purposes based on soil type and composition, as describe in the 2013 Natural Resource Conservation Service, SSURGO datasets.
 *** Lands currently associated with grazing allotments identified as part of the Grazing Improvement Program (Utah AGRC, 2012)
 **** Based on data compiled by the Bear River Association of Governments.

Randolph , UT, Critical Facilites at Risk					
Hazard Type	Critical Facilities Types				
	Emergency Services/Law Enforcement	Schools/Public Facilities	Health Care Facilities	Places of Worship	Infrastructure
Dam Failure	Randolph Jail	Rich County Extension Office			
Faults					
Wildfire					
Flood					
Liquefaction					
Landslide					
Slope					
Poorly Drained Soils					

Note: Critical facilites were identifed using multiple data sources including: Utah AGRC, UDOT, Utah Division of Water Water Resources, and public and community leader input.

Randolph, UT, Agricultural Features at Risk					
Hazard Type	Lands at Risk			Farms & Barns****	
	Agriculture Production*	Farm Land**	Grazing***	Century Farms	Historic Barns
	# of Acres			# of Farms	# of Barns
Dam Failure	0	0	0	0	0
Faults	0	0	0	0	0
Wildfire	0	0	0	0	0
Flood	0	0	0	0	0
Liquefaction	0	0	0	0	0
Landslide	0	0	0	0	0
Slope	3.87	0	0.62	0	0
Poorly Drained Soils	80.3	107.36	0	0	0

* 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 that are suitable for farming purposes based on soil type and composition, as describe in the 2013 Natural Resource Conservation Service, SSURGO datasets.

*** Lands currently associated with grazing allotments identified as part of the Grazing Improvement Program (Utah AGRC, 2012)

**** Based on data compiled by the Bear River Association of Governments.

Randolph, UT, Environmental & Recreational Features at Risk						
Hazard Type	Environmental Features at Risk			Recreational Features at Risk		
	Wetland/ Riparian	Lakes	Streams	Parks	Trails	Amenities
	# of Acres		# of Miles	# of Acres	# of Miles	# of Amenities
Dam Failure	0	0	0	0	0	0
Faults	0	0	0	0	0	0
Wildfire	0	0	0	0	0	0
Flood	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0
Landslide	0	0	0	0	0	0
Slope	0	0	0	0	0	0
Poorly Drained Soils	0	0	7368.18	0	0	0

Note: Total acres of land and miles of streams and trails were identified using multiple datas 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.

saturated soils with a high ponding frequency.

Future Development

No concerns involving potential future development within Randolph were reported by city representatives.

Hazard Mitigation Strategies

Table 20: Randolph Town Mitigation Strategies

RANDOLPH - COMMUNITY MITIGATION STRATEGIES									
Protecting Current Residents and Property									
Jurisdiction	Hazard	Goal	Action	Action (For NFIP Compliance, if Applicable)	Priority (High, Medium, Low)	Time-frame (Year)	Potential Funding Sources	Estimated Cost	Resources
Randolph	Wildfire	Protect current residents and property	Coordinate with agencies on response and prevention.	N/A	High	2016	N/A	Minimal	FFSL, County
Randolph	Earthquake	Protect current residents and property	Educate residents on Effects	N/A	Medium	2017	N/A	Minimal	State, UGS
Randolph	Dam Failure	Protect current residents and property	Work with Wyoming on finding dam affects	N/A	High	2017	N/A	N/A	Utah Water, Woodruff Leadership
Randolph	Problem Soils	Protect current residents and property	Review current ordinances and general plan for soils data.	N/A	N/A	N/A	N	N/A	N/A
RANDOLPH - COMMUNITY MITIGATION STRATEGIES									
Protecting Future Residents and Property									
Jurisdiction	Hazard	Goal	Action	Action (For NFIP Compliance, if Applicable)	Priority (High, Medium, Low)	Time-frame (Year)	Potential Funding Sources	Estimated Cost	Resources
Randolph	Wildfire	Protect future residents and property	Review current ordinances to see if they need any improvements.	N/A	Medium	2016	N/A	Minimal	Utah FSSL, Local, BLRC
Randolph	Earthquake	Protect current residents and property	Educate residents on Effects	N/A	Medium	2017	N/A	Minimal	State, UGS
Randolph	Dam Failure	Protect current residents and property	Work with Wyoming on finding dam affects	N/A	High	2017	N/A	N/A	Utah Water, Woodruff Leadership
Randolph	Problem Soils	Protect current residents and property	Review current ordinances and general plan for soils data.	N/A	N/A	N/A	N	N/A	N/A

WOODRUFF

Analysis of hazard risk involving the community of Woodruff revealed that there is potential risk resulting from **dam failure, and poorly drained soils**. These hazards have varying potential to impact human life, property, infrastructure, agriculture, environmental, and recreational features within municipal boundaries. Currently, dam failure has the greatest potential to impact human life, property, and various community amenities based on potential loss values. Potential impacts from poorly drained soils 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 Woodruff. See the following tables for more detailed descriptions of potential losses associated with each natural hazard associated with jurisdictional elements.

Table 21: Woodruff Town Potential Loss Figures

Natural Hazards

Dam failure. Woodruff has a very significant risk of dam failure. Two dam structures have the impact to completely flood the town of Woodruff. Birch Creek Reservoir west of the town Woodruff, as well as Woodruff Creek Dam located in Wyoming nine miles East of Woodruff. Every structure located in Woodruff would be at risk if either one of these dams were to fail. Human life, Infrastructure, structures, environmental features, agriculture, and amenities in this area could experience significant damage.

Poorly Drained Soils. On the western boundary of Woodruff there tends to be a higher risk for poorly drained soils. This hazard has the varying potential to impact human life, structures, agriculture, and environmental and recreational features. Poorly drained soils have a higher impact on resi-

Woodruff, 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	287	88	7,050,416	8	745,412	1,099,504
Faults	0	0	0	0	0	0
Wildfire	0	0	0	0	0	0
Flood	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0
Landslide	0	0	0	0	0	0
Slope	0	0	0	0	0	0
Poorly Drained Soils	16	5	229,651	0	0	0

* Based on average persons per owner household for Rich County from 2013 American Community Survey, which is 3.26.

** Current Market Value per parcel. Numbers were derived from Rich County parcels data provided by the Rich County Assessor.

*** Based on average sales, receipts, or value of shipments of firms with or without paid employees, per firm (\$137,438 per firm). Derived from 2002 Survey of Business Owners for Rich County, US Census Bureau.

Woodruff, 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	0.92	1,288,000	0.14	17,780	4.42	2,320,500	0.85	1,275,000
Earthquakes	0	0	0	0	0	0	0	0	0	0
Faults	0	0	0	0	0	0	0	0	0	0
Flood	0	0	0	0	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0	0	0	0	0
Landslide	0	0	0	0	0	0	0	0	0	0
Slope	0	0	0	0	0	0	0	0	0	0
Poorly Drained Soils	0	0	0	0	0	0	0	0	0	0

¹ Based on figures from 2009 Pre-Disaster Mitigation Plan for Bear River Region, Utah.
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, May 2015).
³ Based on estimates from Logan Light and Power, 2015.
⁴ Based on estimates derived from an average 28' wide, 4" thick asphalt county road with gravel subgrade replacement. Cache County, 2015.
⁵ Based recent Cache County and regional project cost estimates, 2015.

Woodruff, UT, Critical Facilities at Risk					
Hazard Type	Critical Facilities Types				
	Emergency Services/Law Enforcement	Schools/Public Facilities	Health Care Facilities	Places of Worship	Infrastructure
Dam Failure					
Faults					
Wildfire					
Flood					
Liquefaction					
Landslide					
Slope					
Poorly Drained Soils					

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

Woodruff, UT, Agricultural Features at Risk					
Hazard Type	Lands at Risk			Farms & Barns****	
	Agriculture Production*	Farm Land**	Grazing***	Century Farms	Historic Barns
	# of Acres			# of Farms	# of Barns
Dam Failure	158.27	288.39	0	0	0
Faults	0	0	0	0	0
Wildfire	0	0	0	0	0
Flood	0	0	0	0	0
Liquefaction	0	0	0	0	0
Landslide	0	0	0	0	0
Slope	0	0	0	0	0
Poorly Drained Soils	6.73	6.73	0	0	0

* 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 that are suitable for farming purposes based on soil type and composition, as describe in the 2013 Natural Resource Conservation Service, SSURGO datasets.
 *** Lands currently associated with grazing allotments identified as part of the Grazing Improvement Program (Utah AGRC, 2012)
 **** Based on data compiled by the Bear River Association of Governments.

Woodruff, UT, Environmental & Recreational Features at Risk						
Hazard Type	Environmental Features at Risk			Recreational Features at Risk		
	Wetland/ Riparian	Lakes	Streams	Parks	Trails	Amenities
	# of Acres		# of Miles	# of Acres	# of Miles	# of Amenities
Dam Failure	0	0	2.38	6.01	0	0
Faults	0	0	0	0	0	0
Wildfire	0	0	0	0	0	0
Flood	0	0	0	0	0	0
Liquefaction	0	0	0	0	0	0
Landslide	0	0	0	0	0	0
Slope	0	0	0	0	0	0
Poorly Drained Soils	0	0	0.14	0	0	0

Note: Total acres of land and miles of streams and trails were identified using multiple datas 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.

dential structures more than anything else.

Future Development

We have not yet attained this information from city representatives.

Hazard Mitigation Strategies

Table 22: Woodruff Town Mitigation Strategies

WOODRUFF - COMMUNITY MITIGATION STRATEGIES									
Protecting Current Residents and Property									
Jurisdiction	Hazard	Goal	Action	Action (For N/FIP Compliance, if Applicable)	Priority (High, Medium, Low)	Time-frame (Year)	Potential Funding Sources	Estimated Cost	Resources
Woodruff	Dam Failure	Protect current residents and property	Work with the Utah Division of Water Rights and other groups to implement Emergency Action Plans on a local level.	N/A	High	Ongoing	Utah Division of Water Rights, Local	Minimal	Utah Division of Water Rights, Local
Woodruff	Problem Soils	Protect current residents and property	Review current ordinances and general plan for soils data.	Review current ordinances and general plan for soils data.	Medium	2017	N/A	Minimal	N/A
WOODRUFF - COMMUNITY MITIGATION STRATEGIES									
Protecting Future Residents and Property									
Jurisdiction	Hazard	Goal	Action	Action (For N/FIP Compliance, if Applicable)	Priority (High, Medium, Low)	Time-frame (Year)	Potential Funding Sources	Estimated Cost	Resources
Woodruff	Dam Failure	Protect current residents and property	Work with the Utah Division of Water Rights and other groups to implement Emergency Action Plans on a local level.	N/A	High	Ongoing	Utah Division of Water Rights, Local	Minimal	Utah Division of Water Rights, Local
Woodruff	Problem Soils	Protect current residents and property	Review current ordinances and general plan for soils data.	Review current ordinances and general plan for soils data.	Medium	2017	N/A	Minimal	N/A