Requirement §201.6(c)(2)(i): [The risk assessment **shall** include a] description of the…location and extent of all natural hazards that can affect the jurisdiction. The plan **shall** include information on previous occurrences of hazard events and on the probability of future hazard events.

WHY PLAN FOR NATURAL HAZARDS?

Across the United States, natural hazards cost communities billions of dollars, taking a toll on the built environment, human life, and the local economy. The Five County region of southwestern Utah is no exception. Since its settlement in the mid 1800s, the region and its residents have been subject to financial loss and property damage from flooding, landslides, wildfires, and severe weather. Using the past as an indicator, it is fair to presume that natural hazards will inevitably impact the region in the future. This fact illustrates the critical need for strategies to reduce risk from natural hazards.

> It's interesting how there's never enough money to prevent problems, but we always find the money to correct problems.
> -Unknown Author

Events such as flooding and wildfires are part of natural processes. They become natural disasters when they impact the built environment. The growing population of the region highlights the interface between people, property, and the natural environment, and places them at risk from natural hazards. The population table listed below illustrates the rapid population growth experienced in the Five County region over the past 10 years. As a whole the region saw an increase in population of 88,800 or 64.5%. Iron and Washington counties experienced the most dramatic amount of population growth. This is in large part due to the uniquely dynamic economy stimulated by the abundance of environmental resources found within the area. And it's not likely that the growth will stop there. According to population estimates provided by the Governor's Office of Planning and Budget, by 2050 the population of the region is projected to be 891,890 or an increase of 294% from the 2009 population.

Population: Five County region

County	2009	1999	Population change	% change
Washington	159,084	88,105	70,979	80.6%
Iron	49,080	32,879	16,201	49.3%
Kane	6,703	6,073	630	10.4%
Beaver	6,547	5,951	596	10.0%
Garfield	5,044	4,650	394	8.5%

Total	226,458	137,658	88,800	64.5%
Source: Governor's Office of Planning and Budget: 2008 Baseline Projections				

DEMOGRAPHICS

The Five County region has changed dramatically over the course of the past decade. As illustrated above, the late 90's and early 00's brought a population boom to most of the area. Although the five counties of the southwestern Utah share common geographic boundaries, the economic make-up of the individual counties varies considerably. The three counties that share access to Interstate 15 (Beaver, Iron and Washington) exhibit more diverse economic bases and more resilient economies. The two more remote counties (Garfield and Kane) are dependent upon tourism as their primary economic base. Recreational uses have grown in importance to the region, driving population growth and providing the bases for an increasingly important tourism sector of the regional economy.

The Five County region's economy may be vulnerable to natural hazard events if highways, streets and railroads become impassable due to flooding, landslides, wildfires, earthquakes or other natural hazard events. The southwestern portion of Utah is traversed by Interstate 15, U.S. Highway 89 and several State Highways. These roadways bring visitors in and through our area and provide access for residents. Employees would be unable to get to work while products and business inventory, including perishable foods, would be stalled along the way. The region's tourism industry would be impacted as well. As business and industry recover from inventory damage, transportation delays, disruption of communication and utilities, and ultimately loss of customers in the wake of a natural hazard event, the entire region can suffer severe economic consequences.

THE FIVE COUNTY LANDSCAPE

The geography and environment of a region play important roles in community planning. As towns, cities, and counties develop, planners must consider the "lay of the land" and the many environmental issues that come with it. The Five County region has many unique issues pertaining to its distinct geography and environment. As such, it is vitally important that we understand the land on which we develop, and its accompanying limitations and potential problems.

The Five County region is mostly semi-arid and generally dry. The aridity in the region is accentuated by its lower latitude, which makes it warmer than most regions to the north. Much of this area is characterized by lower elevation, which also increases the mean annual temperature. Though scholars classify most of the region as "desert," only the areas with lower elevations are considered "hot" deserts, or regions where the winters average above 32 degrees Fahrenheit. This would include most of Washington County which usually does not have snow in the winter, and has extremely warm summers. The rest of the region, which consists of higher elevations, is considered to be a "cool" desert, with snowy winters and warm summers. Some exceptions exist over the highest elevations, mountainous regions such as Brian Head, which are classified as "undifferentiated highlands" since they experience cooler temperatures and higher humidity than the rest of the area. These mountainous regions generally have very cold, snowy winters and cool summers.

The nature of the climate in this region leaves it susceptible to a few severe weather occurrences. Although most of the country is subject to flash floods, they are particularly damaging in this region since the soil is dry, somewhat un-vegetated, and easily eroded. Threats to human life and damage to property are not only a result of rapidly rising waters, but of catastrophic mud slides as well. Mountainous areas of the region possess a higher potential for blizzards, cold spells, and avalanches in the winter. The entire region is susceptible to fires resulting from lighting strikes in the spring and summer.

The Five County region contains two major physiographic provinces. Most of Beaver, Iron, and Washington County lay within the Basin and Range province, which generally consists of north-south trending mountain ranges separated by broad arid valleys with interior drainage. Garfield and Kane counties are located in the Colorado Plateau, which consists of uplifted sedimentary rock strata. The soil in this area consists mostly of aridisols, an iron rich desert soil that can be quite productive if cultivated. Native to the valleys throughout most the region is a variety of grasses, junipers, and pinion pines, while xerophytes and desert scrub are native to the lower elevations.

The Five County region is also speckled with a variety of topographic features. Some of this area has experienced a great amount of volcanic activity, which is evident in extinct volcanoes, mountains, great lava fields, and mesas. Geologic forces have uplifted huge portions of the land, and have created great rifts in others. Of particular notoriety are the erosive features of the area including the great canyons and cliffs carved by water and wind that make up the numerous national and state parks.