

ENVIRONMENT



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ENVIRONMENT

10.1 Introduction

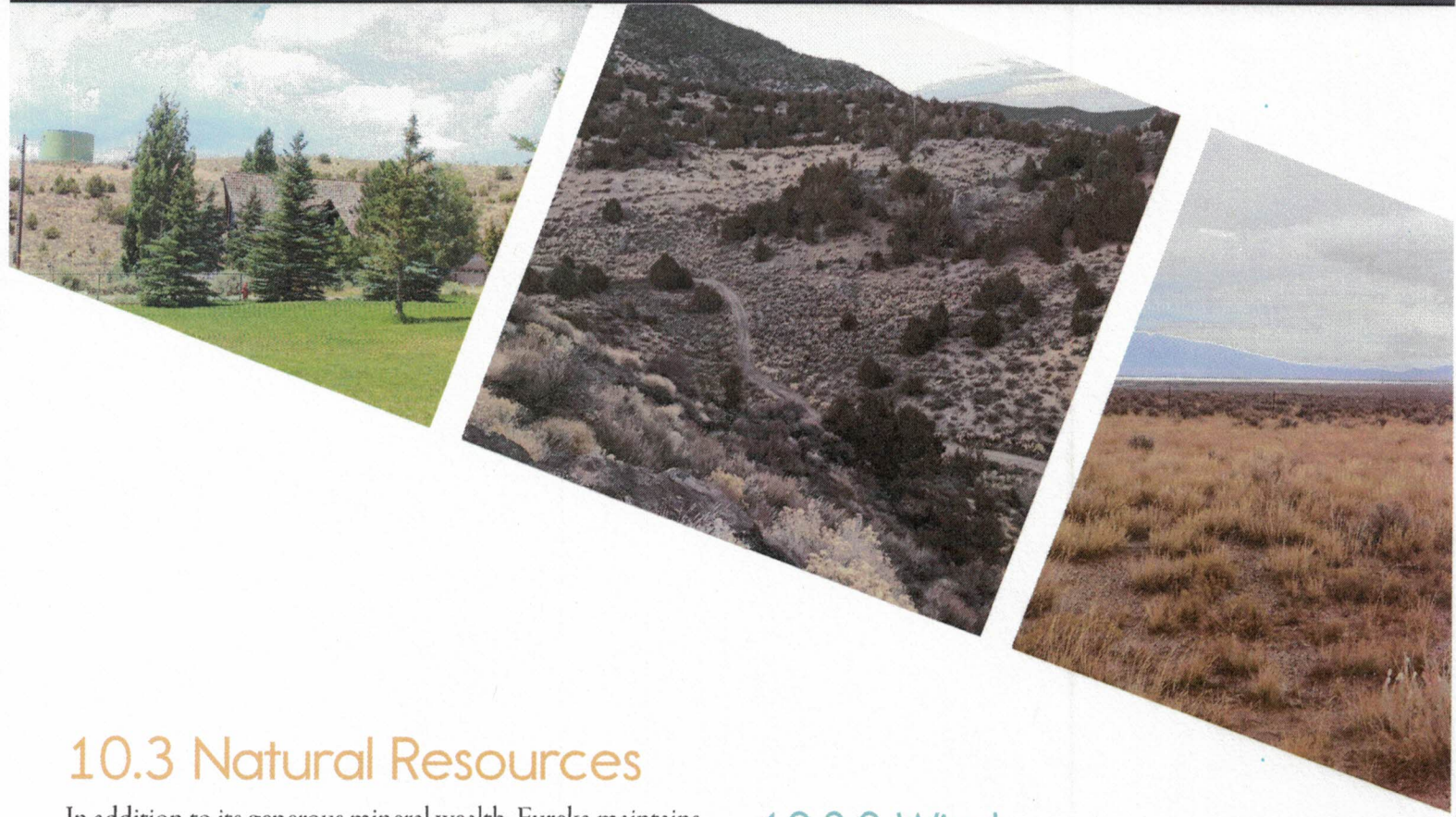
Eureka's unique mountainous terrain and mining heritage have had significant impacts on the environmental landscape of the community. Natural resource and mineral extraction have played a significant role in shaping Eureka's past and will be critical in planning for its future. The region has tremendous mineral wealth that has driven the local economy and left significant impact on the landscape, including soil, water, and air quality. The General Plan provides recommendations to City leaders as Eureka continues to explore mineral extraction as an economic driver, while limiting its negative impacts on the quality of life for local residents. This chapter is intended to highlight these environmental concerns and assets that exist within the City of Eureka. This chapter will also

establish adequate goals to preserve, enhance, and utilize the surrounding environment.

10.2 Climate and Vegetation

Eureka is situated in a semi-arid climate region that is characterized by high summer temperatures, low humidity, wide temperature ranges, and low seasonal precipitation. However, its mountainous topography introduces some variation from these characteristics, most notably in the form of slightly cooler temperatures during the summer and increased snowfall during the winter compared to the surrounding valleys.





10.3 Natural Resources

In addition to its generous mineral wealth, Eureka maintains its own water system through local wells, and is noted for improved air quality compared to the regional valleys. Efforts should be made to preserve the quality of these resources. City policies should carefully balance economic development opportunities with the protection of natural resources and the health of local residents so these resources can be a benefit to the community of Eureka for years to come.

10.3.1 Mining

While mineral extraction and mining formed the foundation of Eureka's settlement and development history, current residents feel it is important for Eureka to seek to diversify its local economy. This means that while mining will continue to play a role in the community, it is anticipated to employ fewer workers than in previous years. City policies should continue to support mining activities where appropriate to support economic development opportunities.

10.3.2 Wind

The Utah Department of Natural Resources identified Eureka as a high-wind zone, as highlighted in Map 10.1. This designation makes Eureka an ideal location for wind power production through the use of wind turbines. This could provide local economic development opportunities while improving local infrastructure facilities. Eureka should seek to develop this comparative advantage to respective industries through the local chamber of commerce.

10.4 Natural Hazards

Eureka City has a responsibility to increase awareness of natural hazards to its citizens through the use of maps, brochures, and social media. The City works to mitigate these hazards and their impact through its zoning ordinance, land use regulations, and building codes.

10.4.1 Fire

Eureka faces increased fire hazard due to geographic location in a narrow valley with swift east-west winds. The steeply vegetated slopes are subject to frequent drought which exacerbates this risk to local structures and residents. In 2016, the Utah Division of Forestry, Fire, and State Lands documented the fire risk level for each community in Utah, ranking communities between 1 and 12, with 1 indicating the least at risk and 12 the most at risk. Factors included the number of fire occurrences, fuels hazards, values protected, and fire protection capabilities of the local community. Eureka received a score of 12, indicating the highest level of fire risk possible.

Eureka should take a number of steps to mitigate this severe fire risk. Such steps to minimize the fire risk include:

1. Ensure that all building code standards are in compliance with the Utah State Fire Code Act adopted in 2011
2. Provide proper setbacks between buildings in the Zoning Ordinance

3. Development Review process should ensure that each building plan follows the fire safety standards as outlined in the Building Code and Zoning Ordinance
4. Provide fire evacuation routes that are made publicly available at City Hall

10.4.2 Floods

Despite the steep topography surrounding Eureka, the community does not face significant risk of flooding. Map 10.2 shows a map details the official Federal Emergency Management Agency (FEMA) floodplain. As evident in the map, most of Eureka is at low risk of flooding. The only locations that are at high risk are a few small ravines leading into the valley and Main Street, which follows the lowest topographic path in the valley down to the western end of the valley. Main Street businesses and adjacent homeowners should be made aware of this threat and the City should make the necessary preparations in the case of such an event.

10.4.3 Mines

The Tintic District's mining legacy continues to present risks to the local population and visitors. These risks exist as both potential mine contamination and the physical risk of open mines to individuals. This remains a concern of many local residents who suggest improvements should be made to limit access to open mines. The State of Utah operates an Abandoned Mine Reclamation Program to assist communities and landowners in identifying and securing abandoned mine sites to prevent public injury. The City could also explore developing a Tintic Historic Tour program to better organize visitors and prevent mine accidents.

fire mitigation:

ensure building code standards are in compliance
with utah state fire code act

provide proper setbacks between buildings

ensure building plans follow fire safety standards

provide fire evacuation routes in city hall



10.5 Geologic Hazards

In order to ensure the health, safety, and protection of property, cities and counties enact geologic hazards ordinances to encourage prudent land uses in hazardous areas. Geologic hazards can be considered at various times during planning and development but, in general, are best considered early in the process. Some geologic hazards cannot be mitigated or are too costly to mitigate and, therefore, are best avoided. Other hazards are easily mitigated and need not influence land use significantly as long as the hazard is identified. The purpose of this section is to outline a series of geologic hazards associated with Eureka and offer recommendations as how to mitigate such risk.

10.5.1 Earthquakes

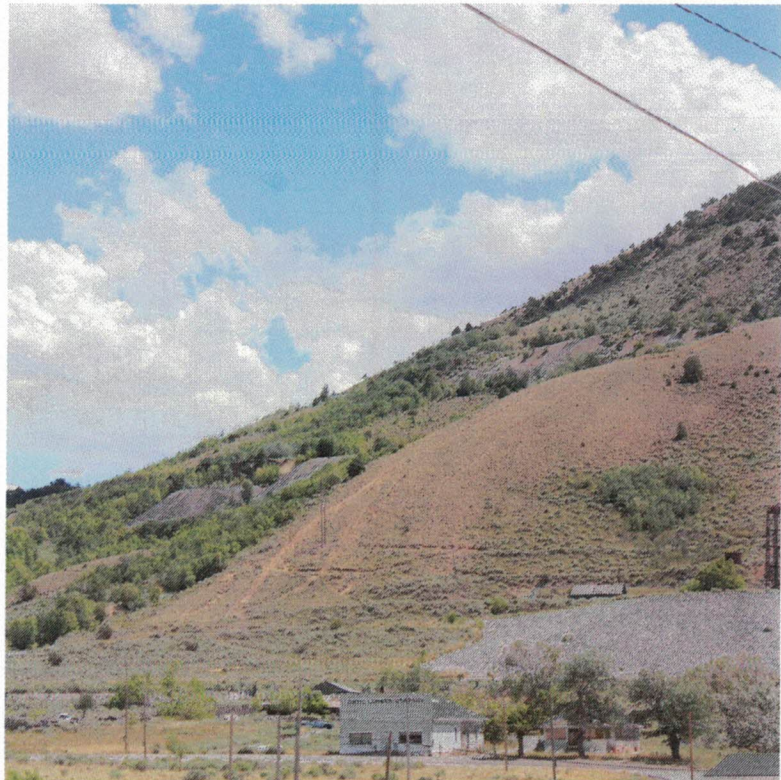
Earthquakes have the potential for inflicting greater loss of life and property in a single event than all other hazards in Utah. Earthquakes may have varied and wide-ranging effects

depending on their location, size, and the geologic conditions of the affected area. Hazards accompanying earthquakes include ground shaking, surface fault rupture, soil liquefaction, tectonic subsidence, seismically induced slope failure, and flooding. Severe ground shaking represents the greatest hazard during an earthquake because it affects large areas and induces many of the secondary effects associated with earthquakes.

There is potential for severe earthquake damage to the buildings and infrastructure in Eureka due to the fault systems in the adjacent area. The cluster of faults that are of main concern to Eureka lie about 2 miles to the west. However, tectonic activity in the region has varied throughout the last 14,000 years which makes forming an accurate prediction model for future earthquake events difficult.

10.5.2 Landslides

Landslides are one of the most commonly occurring geologic hazards in Utah. A landslide is typically defined as a mass of



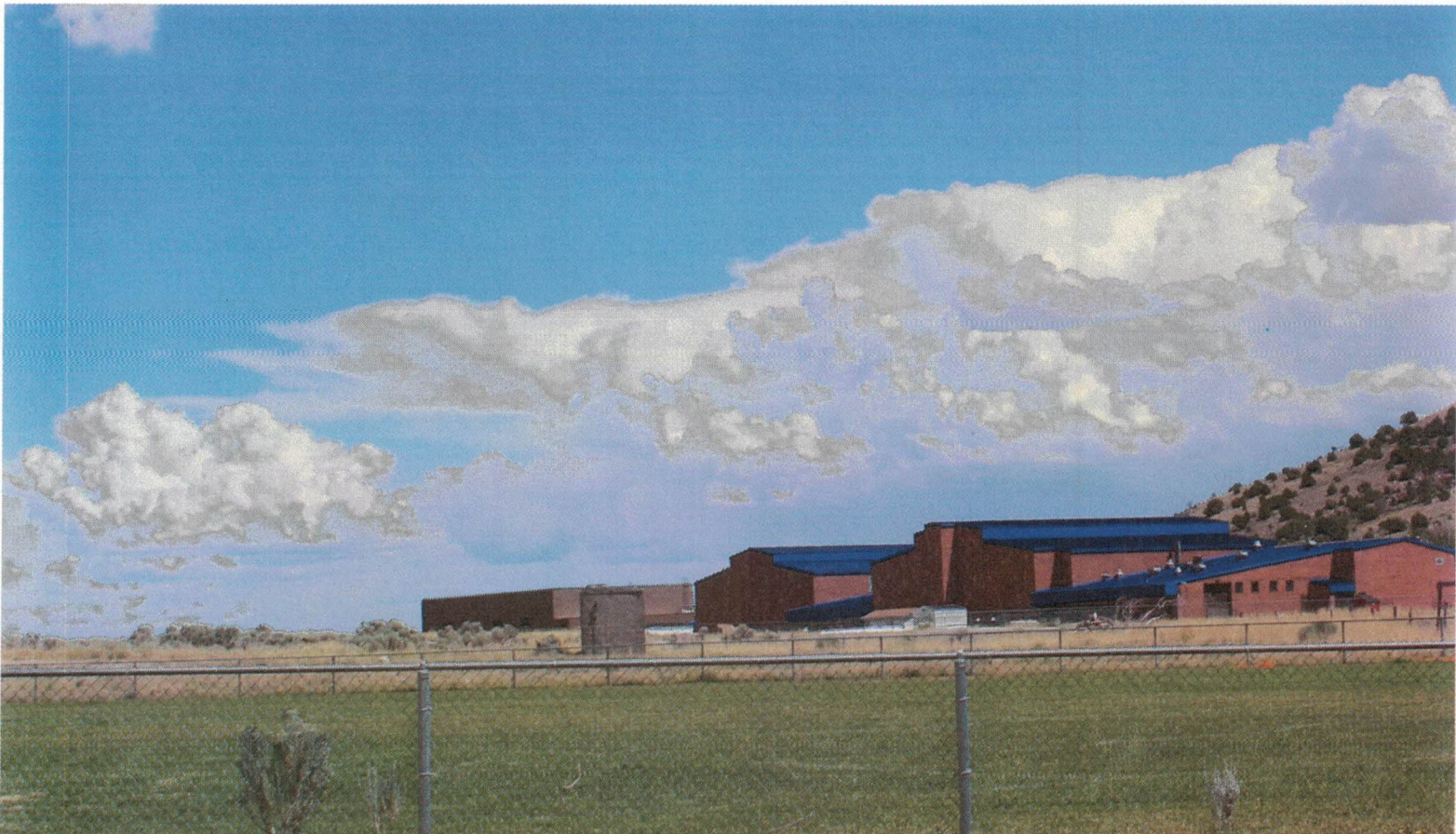
earth or rock which moves downslope by flowing, spreading, sliding, toppling, or falling. Where possible, landslides are categorized by depth to the slide plane, by slide type (i.e., shallow, which generally includes debris slides and flows; deep seated, which includes slump and earth flows; and lateral spreads), and by age (historical or older).

The wet years of 1982-86 resulted in the largest economic losses ever sustained in Utah due to natural hazards. Although situated in a narrow valley with steep hillsides to the north and south, Eureka itself does not face a serious risk of landslides; however, future development on such hillsides could increase the risk the landslide occurrences. Areas prone to landslide occurrences have been identified in Map 10.3. This should be taken into consideration when planning for trail use in these areas. Additionally, US-6 is the only main transportation route into and out of Eureka and some sections are vulnerable to landslide occurrences. Such an event could potentially isolate Eureka from supplies and aid in the case of an emergency.

10.5.3 Recommendations

Residents can avoid geologic hazards by selecting construction sites that have been carefully evaluated by professional geologists or engineers. Eureka's efforts to minimize geologic hazards to people and properties include:

1. Special review procedures and ordinances for building on hillsides or in other environmentally sensitive areas.
2. Requiring developers to identify and assess geologic hazards prior to development.
3. Preparing construction guidelines for roads and other improvements on sensitive hillsides.
4. Regulations that limit development densities on lands that contain severe hazards or constraints.



Goals & Strategies:

Ascertain, utilize, and market appropriately the natural resources Eureka has to offer in order to attract economic development

Preserve open space as well as key natural resources so current and future residents can continue to enjoy the natural amenities in and around Eureka

Help inform citizens and protect them from natural hazards

Determine what natural resources are advantageous to Eureka.

Planning Commission, Mayor, City Council, and City Staff

Market these opportunities through the local chamber of commerce and extend outreach to the respective industries.

Planning Commission, Mayor, City Council, and City Staff

Upon complete annexation, classify the local watershed area in the Zoning Ordinance as a designation that does not permit development.

Planning Commission, Mayor, City Council, and City Staff

Change the Zoning Ordinance to allow homes to be built on smaller lots to preserve more land.

Planning Commission, Mayor, City Council, and City Staff

Rely on official geological and hydrological maps to understand potential hazards.

Planning Commission, Mayor, City Council, and City Staff

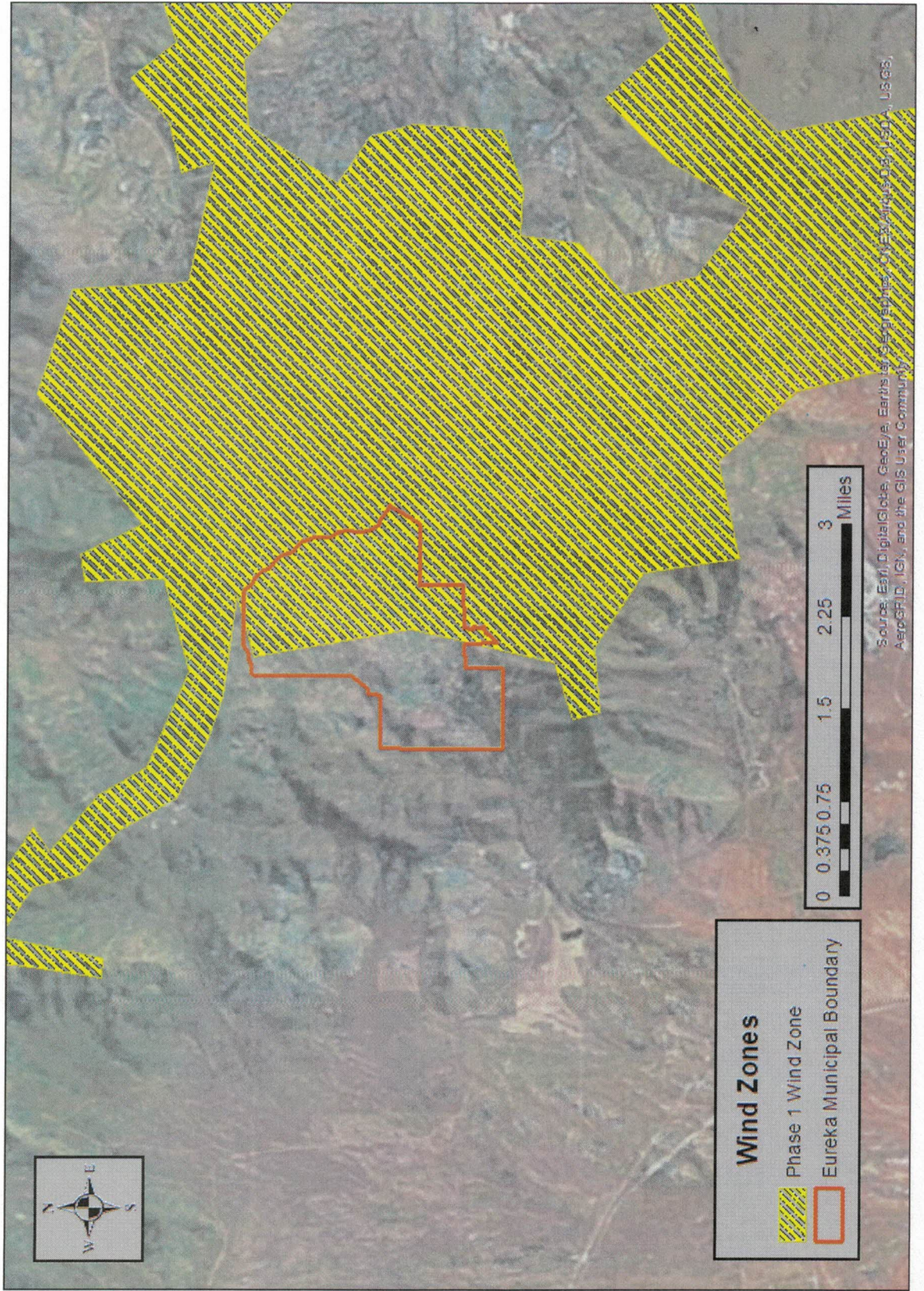
Assist citizens to know how and where to access environmental maps that detail local hazards.

Planning Commission, Mayor, City Council, and City Staff

Follow best practices and standards for development on or near sites with potential hazards.

Planning Commission, Mayor, City Council, and City Staff

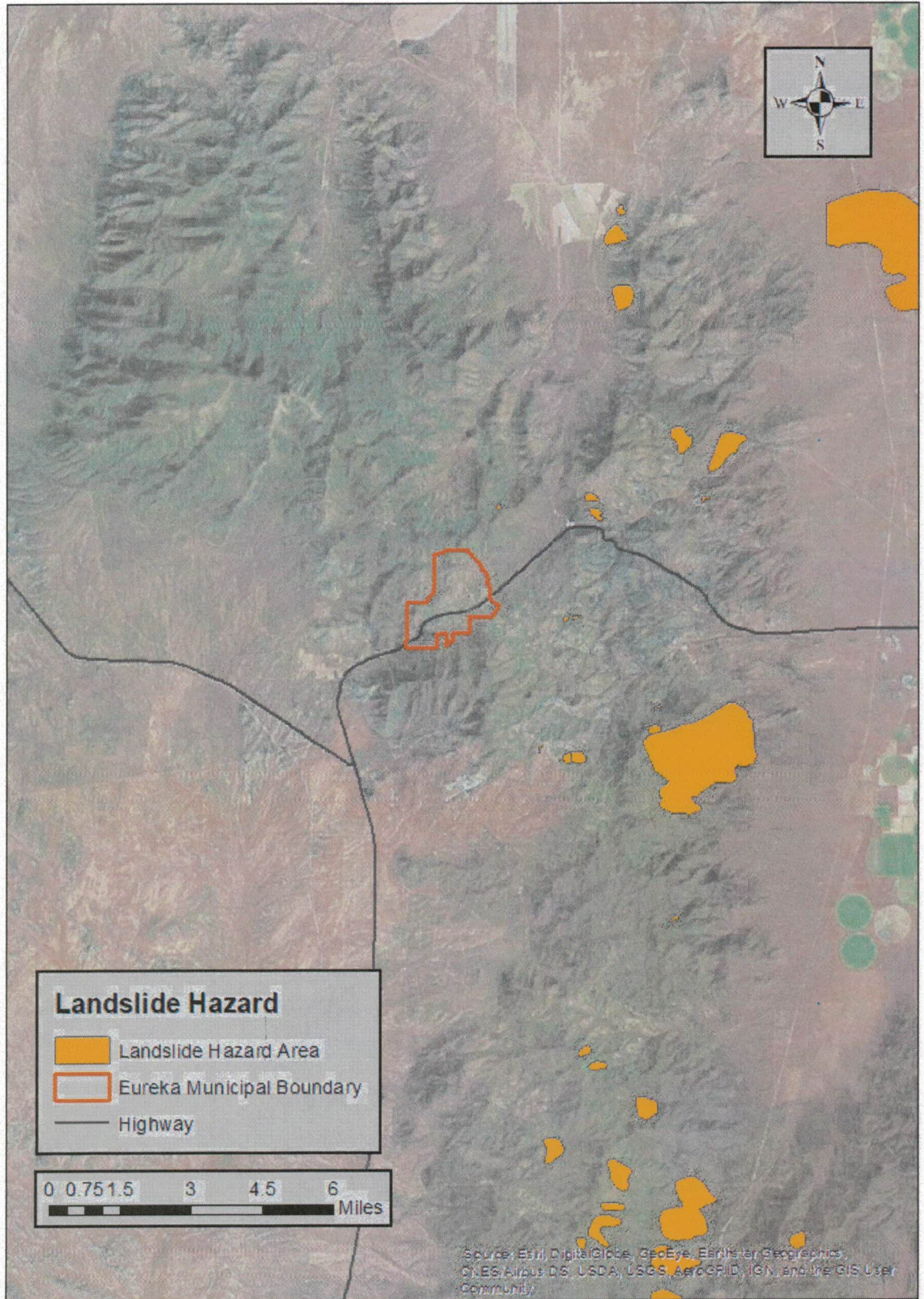
Map 10.1: Eureka City Wind Zones



Map 10.2: Eureka City Flood Risk



Map 10.3: Eureka City Landslide Hazard



Map 10.4: Eureka City Soil Types

