Chapter 13

HAZARDOUS AREAS

Hazardous areas are those which have certain characteristics that present a more obvious potential to do harm to human health or property if not properly recognized and planned for. These "characteristics" are both naturally occurring and those created by certain land uses.

This chapter sets out to identify the areas within the County having these naturally occurring characteristics, as well as the land uses creating such, so that proper regulation can be developed in order to prevent the identified hazards from coming to fruition.

NATURAL HAZARDOUS AREAS

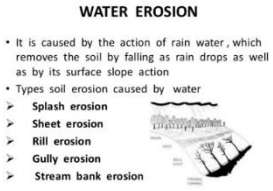
Seismic

Besides the Snake River Corridor, few known seismic zones are located in the County. The distribution of seismic activity near Jerome County shows that the Snake River Plain area has a low rate for earthquakes. The USGS Earthquake Damage Forecast map is located in Appendix B: 13-1.

Slope

Slope hazards occur predominately in the Snake River Canyon. Rock falls have occurred, and continue to occur, due to the freeze/thaw action within the cracks of the canyon walls. Although development has occurred along the Snake River Canyon, limitations or conditions have been placed on construction--on and below the rim. Current setback and building restrictions help to reduce conflicts; however, with anticipated growth, areas such as the Snake River Canyon corridor face increased pressure from development. Sloped areas and land along edges of the canyon rim are not always environmental hazards, but they pose significant development and land-management challenges that could result in property damage and death if not properly addressed. Erosion and stability problems in these areas are of primary concern.

Soil Erosion



Exposed surface soil materials are prone to erosion by wind and water (e.g., run-off, irrigation, etc.) Further erosion may be the result of ground-disturbing activities such as construction, quarrying, and tillage. Properties such as slope and climate affect erosion. For instance, soils on the greatest slopes have higher erosion hazards than soils on more level terrain. The amount of vegetative cover also affects

erodibility. Soils in Jerome County are susceptible to both wind and water erosion. Wind is the largest contributor to erosion.

A century of agricultural activities has changed much of the land. Past farming practices have led to soil erosion. Recognizing the valuable soil resource and its impacts, environmentally responsible farming practices has become of utmost importance to Jerome County.

The Natural Resources Conservation Service (NRCS) conducts a National Resources Inventory (NRI) that includes information on soil erosion by water and wind throughout Idaho. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_042978.pdf

By developing and practicing environmentally responsible methods of farming, the soil resource can be conserved for future generations. Continued utilization of livestock manure and compost that is removed from livestock facilities to the agricultural fields will help in a replacement of lost soils due to wind erosion. This also helps in the reduction of applying processed chemicals used in farming.

Flooding

Flooding is defined by the National Weather Service as "the inundation of normally dry areas as a result of increased water levels in an established water course." River flooding, the condition where the river rises to overflow its natural banks, may occur due to a number of causes including prolonged general rainfall, locally intense thunderstorms, snowmelt, and ice jams. Flooding can occur in a number of ways and many times are not independent of each other. They can also occur simultaneously during a flood event. In addition to these natural events, there are a number of factors controlled by human activity that may cause or contribute to flooding. These include dam or levee failure and activities that increase rate of runoff such as paving, reducing ground cover, and clearing forested areas.

The types of flooding considered for this Plan include:

- heavy rainfall
- rapid snowmelt
- rising groundwater
- limited canal-system capacity
- ice jams
- flash floods
- dam/levee failure
- human activities

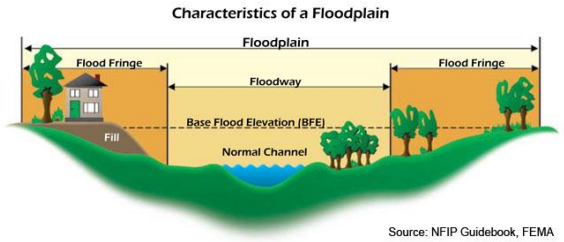
Flooding can threaten life, safety, and health. Although many plants, animals, and insects have evolved to accommodate and take advantage of these ever-changing environments, property and infrastructure damage may occur when people develop floodplains; and natural processes are altered or ignored. The extent of damage

caused by a flood depends on the topography, soils, and vegetation in an area, the depth and duration of flooding, velocity of flow, rate of rise, and the amount and type of development in the floodplain.

Projected flooding within the Snake River Basin is not likely to occur from a single storm but from warm or rainy weather and heavy snowmelt that could overfill existing reservoirs--exceeding the capacity and forcing excessively high release rates or a dam failure.

While not currently mapped in the County, alluvial fan flooding--involving sediment transport and unpredictable flow paths--has occurred and could occur again in a large event.

Floodplains



The land along waterways that is identified as being susceptible to flooding is called the floodplain. The principal flood problems for Jerome County are low-lying areas subject to periodic flooding caused by overflow of canal systems located throughout the County. Flooding events caused by nature can lead to canal bank overtopping. The major surface-water bodies in the County include the North Side main canal and the Milner-Gooding main canal along with their associated laterals and ditches. These areas are controlled and managed by the North Side Canal Company and the American Falls Reservoir District #2 during the irrigation season. Overtopping of irrigation canal facilities during the non-irrigation season occasionally occurs due to drifted snow and ice accumulation.

The smaller drainage areas of the County are also subject to flooding from severe thunderstorms. Flooding from intense rainfalls, snowfalls, and snowmelts usually occurs only in local areas and is very short in duration. Streets become flooded and transportation activities are hampered, but flooding of homes and businesses is quite limited. While these occur frequently, historically they do not inflict as much damage as the winter storms. Because of the severe flooding in the spring of 2017 due to winter storms, Jerome County is looking for funding to identify those areas in the County that are not presently identified on the September 4, 1985 Flood Insurance Rate Maps (FIRM). To protect residents throughout the U.S., the National Flood Insurance Program (NFIP) has been established. Currently, Jerome County is a member of this program. By participating in the NFIP, the County is eligible for federal financial support for flood insurance and development-grant programs. Floodplain maps and corresponding ordinances stem from this membership.

The State of Idaho, through the Idaho Department of Water Resources (IDWR), has worked with Jerome County to develop the floodplain program. Encroachment on flood plains--such as structures and fill--reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment

itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard by using floodways. With a few exceptions around the canal system, the only mapped NFIP floodplain in Jerome County is along the Snake River Canyon, which forms the boundary between Jerome and Twin Falls counties. More information regarding floodplain management may be obtained from the following website: https://ioem.idaho.gov/Pages/Plans/Mitigation/Documents/plan/State%20of%20Idaho%20Hazard%20Mitigation%20Plan%202013_Chapter%203.3.pdf

Airport Zones

Within the airport areas, noise and vibrations generated from aircraft adversely affect humans who live or work continuously under these conditions. The Department of Housing and Urban Development has set a specific limitation of 65 decibels on noise and safety.

Jerome County has two airports: one is located east of the City of Jerome, and the other is south of the city of Hazelton. Operations at these airports are limited to general aviation. Jerome County has created an airport overlay zone that is designed to protect the airports from development that would conflict with airport operations. The overlay regulates density of housing, structure heights, and types of land uses that would create difficulty with airport operations on a daily basis.

Hazardous Materials Transportation

Hazardous materials are commonly transported by truck and rail. Most hazardous materials typically found or used in Jerome County are flammable, combustible liquids and gases including gasoline, diesel, ammonium nitrate, ammonium hydroxide, propane, acetylene, phosphoric acid, and anhydrous ammonia. Some mixing of pesticides, which also presents a possible spill hazard, occurs at the local airport.

Transporting hazardous materials by truck and rail presents a risk of spillage or accidents while in transit. Highest exposure areas for an incident to occur are at major highway interchanges along Interstate 84, U.S. Route 93, State Highway 25, and along the rail that is throughout the County and through the cities of Eden, Hazelton, and Jerome.

Winter storms and steadily increasing traffic raises the likelihood of tanker truck accidents and vehicle-train collisions and derailments. Permanent or transient sites of hazardous chemicals and compounds may pose a risk to residents and workers in many locations throughout Jerome County.

Severe Weather

The impact of very cold temperatures that may accompany a severe winter storm may be life threatening. Severe winter storms occur almost annually in Jerome County and it is assumed that there are repetitive losses, especially caused by "straight-line" wind damage; however, this type of loss is not reported to a single point and thus is hard to track and quantify.

Severe thunderstorms frequently occur in the County. The National Weather Service defines a severe thunderstorm as winds in excess of 58 mph and hail greater than three quarters of an inch in diameter. Gusts from thunderstorms can reach as high as 120 mph in Jerome County. The threat of severe weather in the County is considered a significant hazard, which will cause a threat to life and property.

Drought is an expected climactic cycle in the State of Idaho. According to the National Drought Mitigation Center (NDMC), drought "originates from a deficiency of precipitation over an extended period of time, usually a season or more. This deficiency results in a water shortage for some activity, group, or environmental sector." Water supply is controlled by many factors including precipitation, evaporation, transpiration, and human use. The County has experienced moderate to extreme drought conditions.

RISK AND RISK MANAGEMENT

Certain high-risk land uses may present a risk if the operations are mismanaged. The Department of Environmental Quality (DEQ) is primarily charged with the regulation and enforcement of several of these sources that could become or create hazardous areas. Other state, federal, and local agencies play a part in regulating and helping these sources from becoming a potential risk. As such, these land uses could be deemed mismanaged if not in compliance with applicable local, state, and federal regulations and/or best management practices.

Nonpoint Source Pollution

Unlike polluted water that is discharged directly from a pipe (point source) into surface waters, nonpoint source (NPS) pollution comes from many diffuse sources. It generally does not have a single point of origin. NPS pollutants can be natural, such as sediment, or human-made, such as chemicals and toxics. They are generally found in or on the land and carried off by stormwater runoff when it rains or snowpack melt. Runoff picks up and carries away the pollutants, finally depositing them into nearby surface waters or leaching into ground water. Contaminated ground water is a significant concern because more than 95 percent of Idaho's drinking water comes from ground water.

Sometimes NPS pollution can be traced to several sources. The following are common NPS pollutants and their source:

- Chemicals and soaps from driveways and roofs
- Fertilizers and pesticides from agricultural lands and urban areas such as yards, parks, and golf courses
- Oil, antifreeze, and other toxic materials from roadways
- Sediment from improperly managed construction sites and crop and forestlands
- Salts from irrigation ponds and acid drainage from abandoned mines
- Bacteria and nutrients from livestock and pet wastes and faulty septic systems

http://www.deq.idaho.gov/water-quality/surface-water/nonpoint-source-pollution/

Additional Sources

DEQ addresses each of the following types of operations and identifies how they are monitored and steps that have been taken in the direction of management programs and plans for these sources:

Water Quality/Wastewater
http://www.deq.idaho.gov/water-quality/

- Wastewater Systems & Disposal
- Septic Systems
- Sludge & Biosolids
- Lagoon Seepage Testing
- Aquaculture
- Concentrated Animal Feeding Operations (CAFOs)aka Livestock Confinement Operations(LCOs)
- Stormwater

Waste Management & Remediation
http://www.deq.idaho.gov/waste-mgmt-remediation/

- Hazardous Waste (Universal, Mercury, Electronic, Sump, Solvents, Household)
- Solid Waste (Landfills, Incinerators, Transfer Stations, Processing Facilities, CESQG Management Facilities, Medical Waste, Wood or Mill Yard Debris, Waste Tires)
- Storage Tanks (Underground & Above Ground)
- Brownfields

According to the EPA website, excessive nitrogen and phosphorus that washes into water bodies and is released into the air are often the direct result of human activities. The primary sources of nutrient pollution are:

- Wastewater: Our sewer and septic systems are responsible for treating large quantities of waste, and these systems do not always operate properly or remove enough nitrogen and phosphorus before discharging into waterways.
- Stormwater: When precipitation falls on our cities and towns, it runs across hard surfaces - like rooftops, sidewalks and roads - and carries pollutants, including nitrogen and phosphorus, into local waterways
- In and Around the Home: Fertilizers, yard and pet waste, and certain soaps and detergents contain nitrogen and phosphorus, and can contribute to nutrient pollution if not properly used or disposed of. The amount of hard surfaces and type of landscaping can also increase the runoff of nitrogen and phosphorus during wet weather.
- Fossil Fuels: Electric power generation, industry, transportation and agriculture have increased the amount of nitrogen in the air through use of fossil fuels.
- Agriculture: Animal manure, excess fertilizer applied to crops and fields, and soil erosion make agriculture one of the largest sources of nitrogen and phosphorus pollution in the country.

https://www.epa.gov/nutrientpollution/sources-and-solutions

The IDWR website states that injection wells can directly or indirectly cause negative impact to groundwater resources. For more information on programs and regulations regarding injection wells, visit the IDWR website at https://idwr.idaho.gov/wells/injection-wells.html.

Source Water Protection Plans in Idaho

Source water protection is a voluntary effort a community can implement to help prevent contamination of the source water that supplies its public water system. The effort may involve creating a source water (or drinking water) protection plan and implementing regulatory and/or non-regulatory management practices. Preventing contaminants from entering a public water system supply greatly benefits the community by minimizing the problems that can occur from contaminants in the water supply, such as increased health risks to the public, expanded drinking water monitoring requirements, additional water treatment requirements, and expensive environmental cleanup activities.

Regulatory tools include items such as zoning ordinances, overlay districts, or site-plan review requirements. Non-regulatory tools include items such as educational or pollution prevention activities and implementation of best management practices. http://www.deq.idaho.gov/water-quality/source-water/protection/

Idaho Pollutant Discharge Elimination System Program (IPDES)

DEQ's IPDES Program will administer the discharge of pollutants into waters of the United States in Idaho. These discharges include municipal, industrial, storm water, pretreatment controls for certain discharges to publicly owned treatment works (POTWs), and the sewage sludge (biosolids) management program. DEQ is approved to administer the IPDES Program through the Clean Water Act and the "Rules Regulating the Idaho Pollutant Discharge Elimination System Program" (IDAPA 58.01.25).

To issue permits for discharging domestic and nondomestic wastewater and storm water to waters of the United States in Idaho, the IPDES Program will develop applicable permits authorizing effluent discharges and fact sheets describing how permit conditions are developed. IPDES permits will be written to comply with the state water quality standards and limit the amount of pollution that point sources may discharge into surface waters. http://www.deq.idaho.gov/water-quality/ipdes/

Waste Remediation Activities

Waste remediation is a process in which contaminants are removed or neutralized so that they cannot cause harm. It may entail actively removing the waste, which is generally preferable, or isolating or containing the waste on site because it too costly or impractical to remove. http://www.deq.idaho.gov/waste-mgmt-remediation/

Recycling in Idaho

Recycling is the process of transforming waste materials into usable resources. Recycling is one of several options to manage wastes. Other options include eliminating or reducing the generation of waste or reusing an item prior to recycling.

Recycling, like garbage collection in Idaho, is an optional service provided at the discretion of local governments or by private recycling companies. Although the state has no mandated waste diversion goal, pollution prevention and recycling are supported and encouraged through public education and outreach activities conducted by DEQ. http://www.deq.idaho.gov/waste-mgmt-remediation/recycling/