

## **CHAPTER SIXTEEN - HAZARDOUS AREAS**



### **16.0 Introduction**

Hazardous areas are those areas with the potential to threaten human health, safety and property. Hazardous areas can refer to the natural environment such as waterways and floodplains. In addition, landfills, waste disposal areas, railroad crossings and tracks, grain elevators, transportation routes for hazardous materials by rail and truck, wildfires and airport clear zones could be hazards created by humans. The burning of grasses, weeds, crops and other materials, as well as fugitive dust, can impact air quality. It is important to identify these areas in order to prevent development from taking place in potentially hazardous areas whenever it is possible to do so.

### **16.1 Existing Conditions**

**16.1.1 Geology/Topography** - There are no geological or topographical issues in the city of Payette. Topography is relatively flat, with a grade of 2 - 4 percent.

**16.1.2 Minerals** - No prominent minerals have been found within the city limits of Payette, or in the city's Area of Impact.

**16.1.3 Soil Erosion** - Exposed surface soil materials are prone to erosion by wind and water. Ground-disturbing activities such as construction, quarrying and tillage increase soil erosion. Soil erosion also occurs from runoff, irrigation and wind.

Properties such as slope and climate affect erosion. The amount of vegetative cover also affects erosion. Surface irrigation is the largest contributor to erosion.

#### **16.1.4 Soils and Slopes**

**16.1.4.1 Soils** - A complete review of the soils of the area can be seen in Exhibit 12 - 4, in Chapter Twelve (Agriculture.)

**16.1.4.2 Slopes** - Slopes in Payette vary depending on soil types. Based on Soil Survey data and definitions of soil types in the Payette area, slopes in the city of Payette range from 2 - 7 percent.

## **16.2 Natural Hazards**

**16.2.1 Floodplain/ Flood Fringe** - Floodplains and flood fringes are areas that are seasonally inundated by rivers, streams, or creeks. These areas are delineated in terms of the frequency of flooding, such as a 100-year or 500-year period. Generally, the 100-year and 500-year floodplains are immediately adjacent to the Payette River. The Payette River floodplains were delineated by the Federal Emergency Management Administration (FEMA) map dated February 15, 1984.

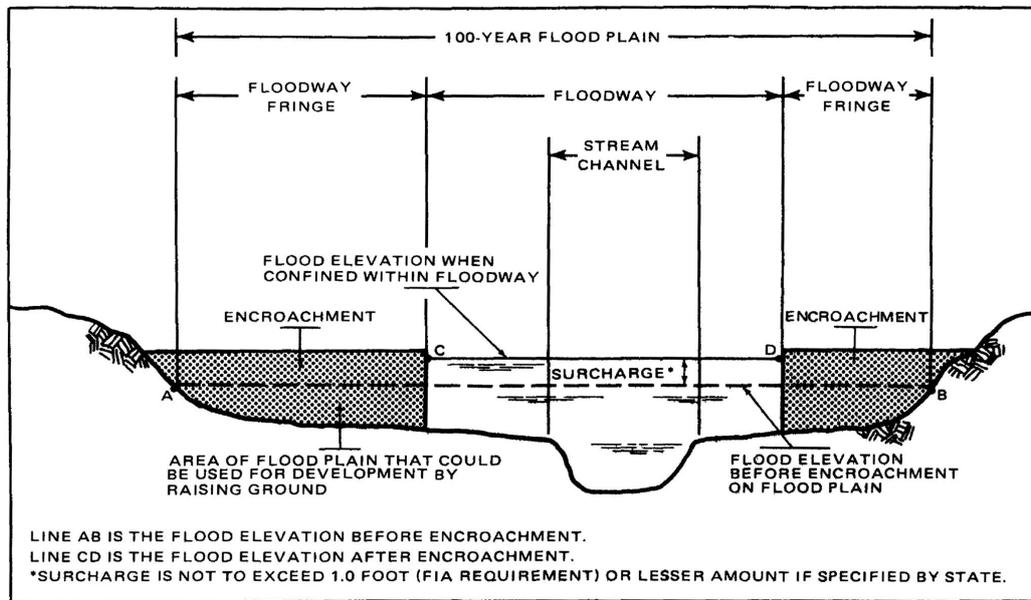
FEMA generally conducts engineering studies to manage its National Flood Insurance Program (NFIP). Flood hazard areas are identified as areas subject to inundation by a flood that has a one percent or greater chance of being equaled or exceeded during any given year. This type of flood is commonly referred to as the 100-year flood or base flood. A 100-year flood is not a flood that occurs every 100 years.

A floodplain consists of two parts:

1. The floodway, which is the most severe part of the floodplain at the time of flooding; characterized by deep and fast-moving water.
2. The floodway fringe, which is less severe than the floodway, and is identified by slower-moving waters during flood periods.

Special attention and concern should be given to the Payette River and Snake River floodplains as residential and commercial development moves westward. Exhibit 1 is a schematic of a flood plain.

**Exhibit 1: Floodplain Schematic**



**16.2.2 Rivers and Irrigation** - There are various areas where open water exists in the city and in the city Area of Impact. The Payette and Snake River and other waterways that feed into the river can be hazardous. It should be noted that playing in these areas where water is present could be hazardous.

**16.2.3 Storm Water Drainage** - The City of Payette currently handles natural drainage with a storm sewer collection system located through the community. This system collects water and delivers it to the river.

**16.2.4 Well-Head Protection** - Groundwater is used throughout the county for domestic and public water supply. The protection of the public water supply and its sources from contamination has come under scrutiny by the Environmental Protection Agency (EPA). The EPA has mandated that each state must prepare a well-head protection plan for public water. The Idaho Well-Head Protection Plan was recognized and approved by both the Idaho Legislature and the EPA; the plan laid the groundwork and provided guidance for developing individual public water system well-head protection plans. Many communities throughout Idaho have subsequently pursued voluntary well-head protection efforts under the guidance set

forth in the state's plan. The Idaho Department of Environmental Quality (DEQ), has done an evaluation of all drinking well sources in the state.

According to the Idaho DEQ, a detection above a drinking water standard MCL, any detection of a VOC or SOC, or a detection of total coliform bacteria or fecal coliform bacteria at the well-head will automatically give a high susceptibility rating to a well despite the land use of the area because a pathway contamination already exists.

On October 31, 2006, JUB Engineers submitted the City of Payette's City Source Water Protection Plan. The purpose of the plan was to identify populations and water-demand projections as well as detailed review of alternative water sources for the city of Payette for the next 50 years.

FEMA has identified that the flood map for the selected area is number 1601980133B, effective on 02/15/1984.

**16.2.5 Earthquake/ Seismic Activity** - Idaho is ranked fifth highest in the nation for earthquake risk, after California, Alaska, Nevada, and Utah, according to the FEMA in Idaho. Idaho has experienced two of the largest earthquakes in the lower 48 states in the last 40 years. In 1983, the Borah Peak quake measured 7.3 on the Richter scale - the largest ever recorded in Idaho. Payette is in a fairly high seismic zone. Exhibit 2 describes earthquake/ seismic activity in Payette.

**Exhibit 2: Regional Earthquakes - Date, Time, Magnitude and Location**

Magnitude	Date	Time	Epic Center Location
4.1	11/30/2002	09:29:25	N.A.
4.0	10/27/1994	03:35:53	Challis, Idaho
3.8	10/4/2002	00:56:04	N.A.
3.8	9/29/2005	13:50:15	N.A.
3.8	10/2/2005	01:10:01	N.A.
3.8	9/28/2005	05:27:32	N.A.

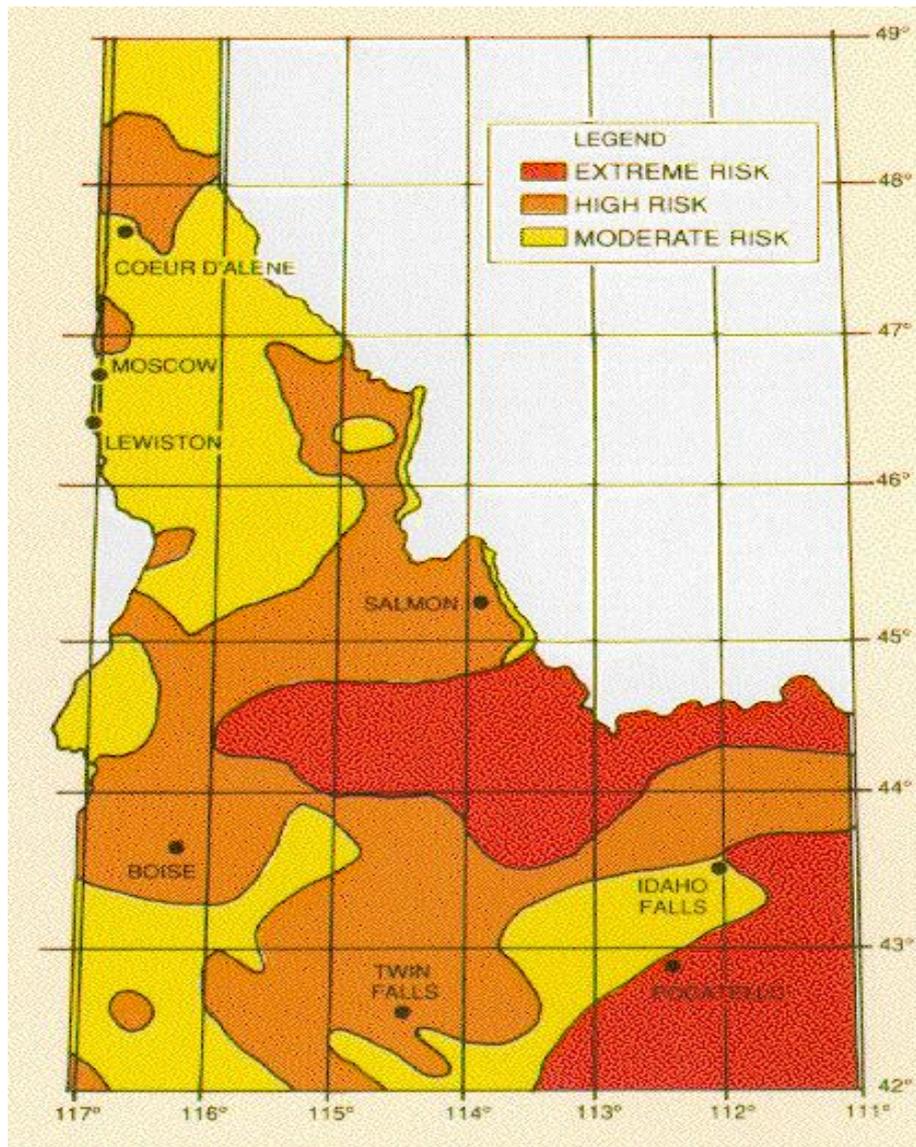
Source: <http://www.City-data.com>

N.A. : Not Available

The newest fault line discovered in September 2010 is located within Idaho's Sawtooth Range, approximately 65 miles from Boise. It is located at the north near Stanley Lake and extends south at least as far as Pettitt Lake. The city of Payette,

which is located in a low-risk seismic zone, could be affected (see Exhibit 3.) Since 1988, all buildings in Idaho have been required to conform to the Uniform Building Code (UBC), now the International Building Code (IBC). The IBC designates different earthquake hazard zones (Zones 0 - 4), and within each zone different building design and construction features are required to ensure earthquake resistance.

**Exhibit 3: Geological Seismic Shaking Hazard Map of Idaho**



## 16.2.6 Winter Storms/ Freezing, Drifting Snow and Snowloads

**16.2.6.1 Winter Storms and Freezing** - A winter storm will have one or more of the following elements: blizzard conditions, heavy snow, accumulations of freezing rain/drizzle, and/or heavy sleet. A blizzard is a storm lasting about three hours or longer with winds of thirty-five miles per hour and considerable falling and/or blowing snow frequently reducing visibilities to 1/4 mile. The havoc caused by blizzards is generally on a smaller scale since roads are not universally closed, and winds involved usually subside more quickly than snow melts. Freezing is an expected winter weather event. Freezing is most hazardous when it is associated with severe snowstorms, blizzards, or power outages.

**16.1.6.2 Snow Loads** - Snow can affect buildings, particularly roofs, in many ways. It can cause the collapse of roofs due to heavy snow accumulation; ice and ice dams can result in water leakage under shingles and over flashings; snow



can slide from sloped roofs and skylights, endangering pedestrians, drifting around buildings, hindering access by people and vehicles and wetting the inside of buildings from infiltration of wind-blown snow.

Snow loads on roofs depend on climatic variables such as the amount and type of snowfall, wind, air temperature, amount of sunshine, and on roof variables such as shape, thermal properties, exposure and surrounding environment. Ground loads are the basis for estimation of roof loads. Snow may or may not be an issue. The December 2016 - January 2017 storms were highly unusual. The snowfall has caused a financial loss estimated to be over \$300 million.

**16.2.7 Areas of Groundwater Contamination** - Based upon the City of Payette's water study, there is no indication of groundwater contamination.

## **16.3 Man-Made Hazards**

**16.3.1 Firewise** - The National Fire Protection Association's (NFPA, [www.nepa.org](http://www.nepa.org)) Firewise Communities program encourages local solutions for

wildfire safety by involving homeowners, community leaders, planners, developers, firefighters, and others in the effort to protect people and property from the risk of wildfire. The program is co-sponsored by the USDA Forest Service ([www.fs.fed.us](http://www.fs.fed.us)), the U.S. Department of the Interior ([www.doi.gov](http://www.doi.gov)), and the National Association of State Foresters ([www.stateforesters.org](http://www.stateforesters.org)).

In order to save lives and property from wildfire, NFPA's Firewise Communities program teaches people how to adapt to living with wildfire and encourages neighbors to work together and take action now to prevent future losses.

**16.3.2 Transportation of Agricultural Products** - The transport of agricultural products is part of Payette's and Payette County's roadway system. Agricultural businesses move products to market or for processing during various seasons of the year. In addition, slow moving (farm equipment) vehicles are located on the same city and county roadway systems. It is important that drivers use extra caution when driving behind these vehicles and especially when they choose to pass.

**16.3.3 Hazardous Materials Transportation by Truck or Rail** - Hazardous materials are commonly transported by truck and rail. Transporting hazardous materials by truck and rail presents high risk of spillage while in transit. Highway 95 passes through the city of Payette where heavy loads do pass through the city, and the city may have hazardous materials transported on trucks or the railroad coming through the community.

**16.3.4 Railroad Crossings** - Crossing railroad tracks for automobiles and pedestrians is always hazardous, that is why caution is always important. The City has always tried to partner with local railroad officials to provide safer access. There is one crossing located on 7<sup>th</sup> Avenue where sidewalks would be appropriate to provide safe passage.

**16.3.5 Disaster Services** - Any plan to provide services and assistance during an emergency will require on-site technology personnel as well carefully developed recovery and service continuity plans and technologies, including communications and collaboration systems, connectivity and database tracking systems.

The City of Payette has the Fire Department trained to respond to hazardous material incidents as part of a regional network. In addition, the City is part of the County Emergency Operations Plan, which addresses responses to both hazardous materials incidents and natural disasters. The County Sheriff serves as the Disaster Services Coordinator and meets with all police chiefs and fire chiefs in the county on a monthly basis to keep the Plan updated.

## **16.4 Hazardous Areas Goals, Objectives, and Strategies**

- GOAL:**            **Protect the public health, safety and welfare of city residents and property, where reasonably possible, by minimizing the impacts of potential hazardous areas within the city.**
- OBJECTIVE 1:**    Promote and strive to provide a safe community for residents and visitors.
- STRATEGY 1:**    Educate the citizens about potential hazardous areas and exposures in the city.
- STRATEGY 2:**    Identify and take appropriate steps to reduce impacts of hazardous areas.
- STRATEGY 3:**    Prevent or limit development activity in known hazardous areas.
- STRATEGY 4:**    Continue to work with the appropriate agencies to develop and emergency evacuation plan.
- a.    Preparedness through public education training, drills, and exercises.
  - b.    An early warning system should be developed.
  - c.    Identify alternative routes in case of emergency
- STRATEGY 5:**    City staff will continue to work with railroad officials to provide safe access on 7<sup>th</sup> Avenue and other areas as identified