# Physical Constraints

## General

Physical Constraints are those physical features that due to safety or cost concerns may potentially restrict where and how development occurs. For purposes of this Plan, physical constraints include Geologic Hazards and constraints, Floodplains, Wetlands, Wildfire, radiation, landfills, abandoned mines, and Wildlife.

### Goal

Ensure New Developments properly address physical constraints.

### Policies

**A. General**

1. Development should not aggravate, accelerate, or increase the level of risk from natural hazards.
2. Identify physical constraints in the general proximity of proposed developments to ensure the Intensity of development is appropriate when weighed against these conditions.
3. Where physical constraints exist, the priority should be to avoid these areas; if avoidance is not possible, apply environmentally appropriate Mitigation. Safety and environmental concerns should be balanced with aesthetic concerns.
4. Where site design avoids physical constraints, the density that would have been allowed in that area may be transferred to another portion of the site, if not in conflict with other Policies in this Plan.

## Wildfire

Wildfire is the uncontrolled burning of trees, grass and brush whose rate of spread or movement is unchecked. It can be caused by human activity or natural means. Wildfires may present a hazard to development and/or development may present an ignition risk to the forest. Jefferson County has implemented a Defensible Space program to address development in Wildfire hazard areas.

### Goal

Ensure that proposed land uses are managed to decrease Wildfire hazards.

### Policies

**A. General**

1. New Development should implement the Mitigation recommendations outlined in the local Fire Protection District's Community Wildfire Protection Plan (CWPP).
2. Avoid development or mitigate impacts in Severe Wildfire Hazard Areas.
3. Avoid New Development in Fire Chimneys.
4. Use accepted methods of forest management to reduce Severe Wildfire Hazard Areas to a low or medium rating for proposed developments. (See Appendix C II.a.) The entire site should be mitigated, not just the building site. Mitigation should be performed in accordance with the

Colorado State Forest Service, other current authorities and local fire district recommendations.

5. Setbacks from the perimeter of a New Development should accommodate Defensible Space management zone 2 requirements.
6. Decrease densities as Wildfire hazards become more severe.
7. Locate Facilities with high concentrations of people away from Severe Wildfire Hazard Areas.
8. Encourage effective alternative On-Site water supplies, such as ponds and cisterns, for fire protection in developments without fire hydrants.
9. Development in moderate or Severe Wildfire Hazard Areas should identify "no build" areas, building construction and design, landscaping/Defensible Space/fuel management, access and water availability.
10. New Development in the Wildfire Hazard Overlay District should employ underground utility lines.

**B. Access**

1. Consider the risk of Wildfire hazards along roadways leading to proposed developments, especially when served by a cul-de-sac. Where appropriate, create shaded fuel breaks as recommended in the CWPPs.
2. In the Wildfire Hazard Overlay District, New Development on a cul-de-sac longer than 1 mile should demonstrate how emergency access will be obtained.
3. Link existing development to New Development to provide multiple access points.

# Environmental Stewardship

## Hazards

Where hazardous conditions exist, hazardous events are more apt to occur. An unstable slope can become a Landslide area when triggered by severe and continuing rains, by earthquakes, or by poorly designed and constructed buildings. It is in the best interest of the County and its residents to avoid or mitigate hazardous conditions, so that each is not subject to future safety or cost implications.

### Goal

Protect people and property from hazardous conditions and events.

### Policies

**A. General**

1. Recognizing that hazards cross jurisdictional boundaries, planning efforts should be promoted that foster cooperation and coordination among agencies and organizations involved in the Mitigation of the risks associated with the hazards.
2. Work with Jefferson County Weed and Pest Management and other applicable agencies to address noxious weeds and forest pests.
3. Recognize hazardous conditions and events while evaluating improved technologies and strategies to deal with those conditions and events.

**D. Wildfire**

1. Encourage private and public landowners to manage their forests by developing and maintaining a

diversity of species, ages, and stand densities to serve as a natural deterrent to pest and fire outbreaks.
2. Support the Community Wildfire Protection Plans as adopted by the local fire protection districts.
3. Encourage property owners and HOA's to implement the recommendations of their local Community Wildfire Protection Plan (CWPP).
4. Explore incentives for voluntary fire Mitigation on existing properties.
5. When updating Area Plans, existing subdivisions should be evaluated for whether evacuation routes exist or if they need to be planned for in the future.
6. Work with Emergency Management when establishing priorities for roadway improvements, particularly in those areas with high Wildfire potential.
7. Support the Front Range Fuels Treatment Roundtable.
8. Encourage slash collection programs throughout the mountainous areas of the County.

# Outreach

## General

Outreach programs are important tools and may be more appropriate than regulations in certain cases. Land planners involve a variety of disciplines and agencies when reviewing development cases and when updating plans or regulations. These connections make planning meetings an excellent forum for distributing information about planning and other subjects to County citizens.

### Goal

Inform and educate the public about issues related to land use planning.

### Policies

**A. General**

1. Inform the public about the risks of living and developing in identified hazardous areas.
2. Encourage all residents to register their cell phone numbers with the Sheriff's Office to ensure that they receive notification in the event of an emergency.

Appendix:

**Hazards** - Hazards in Jefferson County can represent a significant challenge to developers. Hazards are conditions which pose a threat to health, life, limb, or property. Hazards can include Floodplains, Geologic Hazards, Wildfire hazards, and hazards resulting from human activities such as abandoned mines and landfills. The County has assessed the relative risk of each hazard and then grouped the hazards into classes. The most limiting hazards are classified as high risk or moderate risk areas. Minimum lot sizes are suggested depending on the level of the risk – the higher the risk, the larger the lot size.

Environmental hazards that exist in Jefferson County include:

- Dipping Bedrock
- Subsidence

- Rockfall
- Landslides and Slope Failure
- Methane Gas
- Wildfire
- Post Wildfire flooding and mud flow area
- Floodplains
- Potentially Unstable Slopes
- Highly Erodible Soils
- High swelling/expansive soils and bedrock
- Highly Sensitive Soils
- Naturally occurring radiation

**c. Reasons for staying off 30% or greater slopes**

Adverse impacts of development on steeply sloping property include:

- Increased Wildfire danger
- Increased clearing for Defensible Space
- Increased incidence of Geologic Hazards
- Difficulty in drilling wells
- Difficulty in siting septic systems
- Difficulty in meeting county driveway and road standards
- Increased erosion
- Increased visual impact of hillside cuts
- Building design constraints
- Increased engineering expense

# II. Hazards

**a. Wildfire Hazards:**

Jefferson County Emergency Management has developed the "Jefferson County Multi-Jurisdictional Multi-Hazard Mitigation Plan" and "Community Wildfire Protection Plans (CWPP)" to address hazards in the County.

Wildfire hazards include risk to structures and risk from structures to the forests and brush lands. The magnitude of this hazard is affected by vegetation density, type, and other characteristics, slope steepness, slope aspect, atmospheric conditions, and the presence of special terrain conditions such as saddles, gullies, or fire chimneys which cause a draft much like a fireplace flue. This hazard is rated as low, moderate, or severe, as defined in the Glossary:

**Resources**

For more information regarding forest management, Wildfire Mitigation, and Defensible Space the

following documents can be obtained through the Colorado State Forest Service. Some of these publications may also be available on the Colorado State University Cooperative Extension Natural Resources Web site (http://www.ext.colostate.edu/menu_natr.html).

- Creating Wildfire-Defensible Zones, no. 6.302
- Fire-Resistant Landscaping, no. 6.303
- Forest Home Fire Safety, no. 6.304 – an overview.
- FireWise Plant Materials, no. 6.305
- Grass Seed Mixes to Reduce Wildfire Hazard, no. 6.306
- Fire Line Intensity Map
- Native Trees for Colorado Landscapes, no. 7.421
- Native Shrubs for Colorado Landscapes, no. 7.422
- Fuelbreak Guidelines for Forested Subdivisions, Frank C. Dennis
- Landowner Guide to Thinning
- FireWise Construction, Design and Materials, Peter Slack

Glossary:

**Fire Chimney**

Densely vegetated drainages on slopes greater than 30 percent. Wind, as well as air pre-heated by a fire, tends to funnel up these drainages, rapidly spreading fire upslope. (For a picture see the Elk Creek Fire Protection District's CWPP.)

**Wildfire**

Uncontrolled burning of trees, grass, and brush. Severity may be affected by topography, forest conditions, and weather.

**Wildfire Hazard Areas**

The hazard presented by the uncontrolled burning of trees, brush, and grass. The magnitude of this hazard is affected by vegetation density, slope, atmospheric conditions, and the presence of special terrain conditions such as saddles, gullies, or fire chimneys which cause a draft much like a fireplace flue. This hazard is rated as low, moderate, and high, and is defined as follows:

**Low:** A wildfire in these areas can be controlled by available fire fighting personnel and equipment. Little to no property damage is expected, and there is not a threat to human life. They are typified by light fuel loads on slopes less than 30 percent.

**Moderate:** A wildfire in these areas can be difficult to control by available fire fighting personnel and equipment. There is the potential for destruction of property, and human life is threatened. They are typified by moderate fuel loads on slopes less than 30 percent.

**Severe:** A wildfire in these areas is generally uncontrollable by available firefighting equipment and personnel. Protection of property or lives cannot be provided. They are typified by heavy fuel loads, or areas with moderate or heavy fuel loads on steep slopes, greater than 30 percent, or the presence of special terrain conditions mentioned above.