

LINCOLN COUNTY SUBDIVISION REGULATIONS

Fire Risk Assessments

Introduction

The fire risk rating system for proposed developments is a planning tool for fire prevention. It assesses the potential wildfire hazards faced by developments planned in the Wildland Urban Interface (WUI).

The risk rating for planned subdivisions allows trained prevention planners to assess areas for risk, so that they may communicate the potential hazards to community planners, local government officials and developers prior to final platting or construction. It organizes physical site information such as planned road access, topography, fuels, planned construction and water sources so that the planner can easily review all information at once.

The Fire Risk Assessment (FRA) is a recommendation by a qualified fire prevention professional and may be required as part of a preliminary plat submittal. The recommendations of the FRE are reviewed by the Planning Department and are generally recommended as a condition of final plat approval for review by the governing body.

NOTE: The developer is advised to first consult with the local Fire Protection Agency (FPA) to ascertain particular requirements of the FPA and the needs of the specific area. This information will be helpful to present to the FRE prior to their assessment.

To cover costs of reviewing subdivision plats, site visits, and other activities associated with the review and preparation of an FRA, the developer shall pay a non-refundable fee at the time an application for preliminary plat is submitted to the Lincoln County Planning Department. The current fees, payable to the Lincoln County Planning Department, are as follows:

NUMBER OF PROPOSED LOTS OR DWELLING UNITS FEES:

1-5 (minor subdivisions)	\$ 150
6 or more (major subdivisions)	\$ 200 plus \$ 10/per lot
Fire Risk Assessment Follow-Up	\$ 100
Fire Risk Waiver	\$ 100

***** Mileage will be added to fees *****

For a list of the Lincoln County Approved Fire Risk Evaluator, please contact the Planning Department.

How to Use the Risk Rating System

Each new subdivision, including amended plats, shall be required to have an FRA completed along with the accompanying recommendations for ameliorating an unsatisfactory risk. Recommendations are based on the premise that the new residents of a subdivision should live in an environment that is “firesafe” for at least the next 10-15 years. The FRE is expected to visit each proposed subdivision and base their assessment on experience with wildland fire ignitions. The area to be rated can be as large or as small as deemed necessary. However, a rating area shall meet these criteria:

1. The FRE shall assign an ignition risk fire hazard rating of **low**, **moderate**, or **high** to each Subdivision. The rating is based upon:
 - a. Physical conditions including access, topography and fuels.
 - b. Historical ignition patterns.
 - c. Suppression capability of responsible fire departments, agencies.
 - d. Resistance to control.
 - e. Interviews with local, state, and federal agency fire personnel,
2. The FRA shall take into account the surrounding design, construction materials, availability of fire suppression resources, fuels, topography, nearby risk, etc., that will effect fire occurrence or impact within the subdivision or adjacent property; and the following **PRIMARY** factors:
 - a. **Interface Condition:** Subdivision / Community safety is affected by the density and distribution of structures with respect to the surrounding wildland environment, (i.e., Will proposed structures be densely located (greater than 1 per 3 acres) or more widely situation? Will proposed structures be located adjacent to or immediately below another structure where there is a threat to the neighbor?)
 - b. **Access:** Design aspects of roadways influence the hazard rating assigned to a subdivision. All subdivisions must meet the Lincoln County Subdivision Regulations Design Standards for Streets and Roads.
 - c. **Utilities:** Proposed subdivisions are required to have new utilities installed underground. However, poorly maintained existing overhead power lines can be a potential ignition source for wildfires. It is important to keep power line corridors clear of flammable vegetation, especially around power poles and beneath transformers. Fires have been known to start from arcing power lines or exploding transformers during windstorms or during periods of high electricity demand. Keeping flammable vegetation cleared from beneath power lines and around power poles reduces potential hazards from damaged power lines. Energized power lines may fall and create additional hazards for residents and firefighters including blocked road access. Power failures are especially dangerous to a subdivision that lacks backup sources for electrical power. Many communities rely on electric pumps to provide water to residents and firefighters for structure protection and fire suppression.
 - d. **Defensible/Survivable Space:** Consists of density and type of fuel around a home which determines the potential fire exposure and potential for damage to the home. A greater volume of trees, shrubs, dry weeds, dry grass, woodpiles, and other combustible materials near the home will ignite more readily, produce more intense heat during a fire, and increase the threat of losing the home. Defensible space is one of the factors that homeowners can most easily manipulate in order to improve the chances that a home or other property avoids damage or complete loss from a wildfire.

The Montana DNRC provides standard directions for vegetative reduction around structures and adjacent to access roads on form F-701. Lincoln County considers these to be Firewise protection standards and requires they become part of covenants for new subdivisions. Lots less than *three (3) acres* in size should have the entire lot treated so that the crowns are approximately ten (10) feet apart, understory “ladder” fuels reduced and ground fuels treated so that a crown fire is unlikely and control by ground fire crews is likely.

Other considerations for defensible space are the threat of a fire burning into the proposed subdivision property from adjacent property; or fire burning out of a proposed subdivision property into adjacent properties.

3. The FRE describes a Probable Fire Behavior Resistance to Control for each subdivision based on an analysis under existing and current conditions. The Probable Fire Behavior Resistance to Control scenario does not describe the most likely outcome of a wildfire event in the interface, but it illustrates the potential for damage if a given set of conditions were to occur simultaneously. The Probable Fire Behavior Resistant to Control scenarios described in this document are for public education purposes and are part of the basis for the fuel reduction recommendations.

SUPPRESSION CAPABILITIES

The availability and capability of fire suppression resources based on the knowledge of the capabilities or limitations of the fire suppression resources in a subdivision can help the residents take action to maximize the resources available. Factors considered in the assessment include:

1. **Availability, Number, and Training Level of Firefighting Personnel.** When a fire begins in or near a community, having the appropriate firefighting personnel available to respond quickly is critical to saving structures and lives. Whether there is a local paid fire department, volunteer department, or no local fire department impacts how long it takes for firefighting personnel to respond to a reported Wildland fire or to a threatened community.
2. **Quantity and Type of Fire Suppression Equipment** The quantity and type of available fire suppression equipment has an important role in minimizing the effect of a wildfire on a community. Effective Wildland firefighting requires specialized equipment.
3. **Water Resources.** The availability of water resources is critical to fighting a Wildland fire. Whether there is a community water system with adequate fire flow capabilities, or whether firefighters must rely on local ponds or other drafting sites affects how difficult it will be for firefighters to protect the community.

PHYSICAL CONDITIONS

The physical conditions include slope, aspect, topography, fuel type, and fuel density. With the exception of changes to the fuel composition, the physical conditions in and around a community cannot be altered to make the community more fire safe. Therefore, an understanding of how these physical conditions can influence the behavior of a fire is essential to planning effective preparedness activities, such as fuel reduction treatments. Physical conditions considered in the assessment include:

1. **Slope, Aspect, and Topography.** In addition to local weather conditions, slope, aspect, and topographic features are also used to predict fire behavior. Steep slopes greatly influence fire behavior. Fire usually burns upslope with greater speed and longer flame lengths than on flat areas. Fire will burn down slope; however it usually burns downhill at a slower rate and with shorter flame lengths than in upslope burns. West and south facing aspects are subject to more intense solar exposure, which preheats vegetation and lowers the moisture content of fuels. Canyons, ravines, and saddles are topographic features that are prone

to higher wind speeds than adjacent areas. Fires pushed by winds grow at an accelerated rate compared to fires burning in non-windy conditions. Homes built mid-slope, at the crest of slopes, or in saddles are most at risk due to wind-prone topography in the event of a wildfire.

2. **Fuel Type and Density.** Vegetation type, fuel moisture values, and fuel density around a community affect the potential fire behavior. Conifer forests are the principal concern in Lincoln County. Describing fuel types by fuel models is recommended in order to describe both the fuel type and density. A Fuel Model 10 will be of greater concern than a Fuel Model 8. A Fuel Model 10 in combination with steep slopes or high winds can create a situation in which the worst-case fire severity scenario can occur.

DETECTION AND COMMUNICATION

Fires are reported in Lincoln County through 911 calls to the Lincoln County Sheriff's Office, which dispatches volunteer fire department personnel. All Wildland fires in Lincoln County are also dispatched from the Lincoln County Sheriff's Office based off of a map that show jurisdiction of the Montana Department of Natural Resources & Conservations (DNRC) and the United States Forest Service (USFS). The Lincoln County Sheriff's Office has access to the state mutual aid frequencies, and the radio system is compatible with neighboring agencies.

RECOMMENDATIONS & DEVELOPMENT:

A wide variety of treatments and alternative measures can be used to reduce ignition risks, mitigate fire hazards, and promote fire safe communities. Proposed recommendations typically include physical removal or reduction of flammable vegetation, increased community awareness of the risk of fires and how to reduce those risks, and coordination among fire suppression agencies to optimize efforts and resources.

NOTES TO FIRE RISK EVALUATORS:

- **Always rate projects individually. If you have doubts about what to make a separate rating area, err on the small side. In the risk rating system, breaking a single development into smaller areas will provide useful fuel information. Large areas may produce inaccurate, meaningless or misleading information.**
- **The assessment shall be represented by a single plat, which has distinct site factors. For Example: subdivisions in phases shall be evaluated individually, per phase.**

LINCOLN COUNTY SUBDIVISION REGULATIONS

Fire Risk Assessment – Pre-Development Rating Form

SUBDIVISION NAME: _____ NO. LOTS: _____ Total Acres: _____

SUBDIVISION HAZARD RISK RATING: _____ LOW _____ MODERATE _____ HIGH

DATE: _____ RATED BY: _____

BRIEF PROPERTY DESCRIPTION

DESCRIBE THE SUBDIVISION: N-S-E-W & MILES FROM NEAREST CITY TOWN, ETC

ROADS

ACCESS

- Access is by **County** roads
- Access is by **Private Primary** roads (24 ft driving surface)
- Access is by **Private Secondary** roads (20 ft driving surface)
- Access is by a **Driveway** only (12-16 ft driving surface)
- Access is **NOT** in

<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
<input type="checkbox"/>	YES	<input type="checkbox"/>	NO

DESCRIBE ACCESS: CONNECTION TO A COUNTY ROAD, SURFACE, ETC...

GRADE

- Are there roads that exceed 10 %

YES NO

DESCRIBE DIFFERENCES IN GRADE AND THEIR LOCATION

ROADS *continued*

ENDINGS

- Interior road(s) will dead end
- Interior road(s) will end IN Cul-de-Sac
- Interior road(s) will end IN hammerhead

<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
<input type="checkbox"/>	YES	<input type="checkbox"/>	NO

DESCRIBE ROAD ENDINGS: WIDTH OR CUL-DE-SAC, ETC...

BRIDGES

- Bridges to the subdivision lots exist or are planned
- IF the bridge(s) are in, are they built to Lincoln County Standards

<input type="checkbox"/>	EXIST	<input type="checkbox"/>	PLANNED
<input type="checkbox"/>	YES	<input type="checkbox"/>	NO

EXPLAIN BRIDGE, MATERIALS, LOCATION AND USAGE

TOPOGRAPHY

SLOPE

- above 30%

<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
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EXPLAIN LOCATION OF SLOPES IN REGARDS TO INCREASED FIRE RISK

HAZARDOUS FEATURES

- Adjacent Steep Slopes, Draws / Ravines, Chimneys, Canyons, or Saddles

<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
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EXPLAIN ANY FEATURES, LOCATIONS, ETC...

FUELS

TYPE

- Slash, thick duff, bug kill, dense lodge pole, etc

<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
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EXPLAIN TYPES OF FUELS AND THEIR DANGERS

FUELS *continued*

IGNITION RISK SOURCES

- Adjacent Campgrounds / Campsites / Picnic Grounds, Children Areas YES NO
(playgrounds, schools, camps, etc.), Commercial Land Uses / Businesses, Sawyer Operations / Debris
Burning, Domestic Wood Heating, Farming /Ranching, Milling, Mining, Power lines / Transformers,
Recreation Sites (shooting ranges, 4x4 / motorbike areas, party sites, fishing / hunting, Railroad
accesses, etc.), well traveled routes (highways, Forest System Roads), other potential ignition sources

EXPLAIN TYPES OF RISK SOURCES AND THEIR DANGERS

GREENBELTS AND BREAKS

- Maintained greenbelts, alleys, fuel breaks, etc. YES NO

EXPLAIN ANY FUEL BREAKS THAT MIGHT AIDE IN PROTECTION

FIRE SUPPRESSION

DRAFT SOURCES

- Draft Sources Available are further than 5 mi. via **PRIMARY** roads YES NO
DESCRIBE SOURCES, LOCATION, ACCESS, ETC...

AVAILABLE WATER SOURCES

- Are ANY sources < 2 mi. roundtrip? YES NO
- Are there any water sources on site (*ponds, creeks, waterfront*) YES NO
- *If there is, will it provide enough water* YES NO
DESCRIBE SOURCES, LOCATION, ACCESS, ETC...

STRUCTURAL FIRE PROTECTION

- Within 5 driving miles to a fire station

YES NO

NAME THE FIRE STATION THAT WOULD SERVICE SUBDIVISION, ACCESS ABILITY, ETC...

PROBABLE FIRE BEHAVIOR RESISTANCE TO CONTROL

BASED ON AN ANALYSES UNDER EXISTING AND CURRENT CONDITIONS

RECOMMENDATIONS FOR FIRE PROTECTION (*Other than Firewise condition around the homes*)

ADDITIONAL COMMENT:

Fire Risk Assessor's Signature

Review Date

LINCOLN COUNTY SUBDIVISION REGULATIONS

Fire Risk Assessment – Post Treatment Form

SUBDIVISION NAME: _____ NO. LOTS: _____ Total Acres: _____

SUBDIVISION IGNITION RISK RATING: ___ LOW ___ MODERATE ___ HIGH

DATE: _____ RATED BY: _____

FIRE RISK ASSESSMENT FOLLOW UP

Were the recommendations completed to your specifications & approval? YES NO

PLEASE EXPLAIN IF A DEVIATION WAS GRANTED, OR COMPLETED BY THE DEVELOPER THAT DIFFERS FROM THE ORIGINAL PRELIMINARY PLAT RECOMMENDATIONS OF APPROVAL TO THE FRA.

Fire Risk Assessor's Signature

Follow-Up Review Date
