

# Wildfire Hazard & Risk Assessment Instructions

## INTRODUCTION

The process for assessing your subdivision or neighborhood can be divided into five distinct steps. Each is necessary to efficiently and accurately perform the assessment. The steps should be completed in order; however, step 5 can be completed separately from the rest of the assessment. In completing your assessment, you will need to use the Wildfire Hazard and Risk Assessment Scoresheet found on this CD-ROM.

## STEP 1 - IDENTIFY AREAS TO BE EVALUATED

There are two types of subdivisions that are at risk from a wildfire – boundary interface subdivisions and intermix interface subdivisions. Fully developed subdivisions whose lots form a distinct boundary with wildlands are called boundary interfaces. Subdivisions where undeveloped lots (wildlands) are interspersed with developed lots are referred to as intermix interfaces.

If the number of undeveloped lots within an intermix interface subdivision are few, the danger of a wildfire burning into the subdivision is greatly reduced. This usually occurs once the subdivision is more than 75% built out (three out of four lots are developed). Subdivisions where this occurs need not be assessed unless they also have a boundary interface component or the vegetation found on the undeveloped lots is rated extreme hazard.

Wildlands fewer than 5 acres and completely surrounded by development are referred to as “occluded interface” areas and need not be assessed unless it is felt that the undeveloped parcels pose a high risk to neighboring structures because of high fuel loads or high flammability characteristics of the structures.

Once the wildland/urban interface area to be assessed has been determined, give it a name (like “Oak Woods Unit South”) and delineate the area on a map. If the subdivision is very large, divide it into neighborhoods, especially if the characteristics of the subdivision are not uniform throughout (for example: an area of the subdivision with five -to seven-acre lots may be assessed as a unit).

## STEP 2 - IDENTIFY THE RISK

Determine if the immediate area (within five miles) has had a higher than average occurrence of wildfires. This can mean either a history of wildfires burning into the subdivision or a higher than average number of wildfires starting in the area. Your local forestry office can help you determine how this compares with the average for the county. If the immediate area does indeed have a higher than average occurrence of wildfires, you will need to assign risk points on the Wildfire Hazard and Risk Assessment Scoresheet.

## STEP 3 - IDENTIFY THE FUEL HAZARD TYPE

Use the pictorial guide (Description of Fuel Models) on this CD-ROM to determine the vegetation types or fuel models within intermix areas and along the interface boundary.

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If there is a mixture of vegetation types in the area, you should select the type most likely to do structural damage. This will probably be the vegetation type that is closest to the structures. Be sure to look beyond the edge of the vegetation boundary. Plants tend to be bigger along the edge of open areas in response to increased sunlight. You will get a better picture of the average vegetation heights by looking past the edge into the interior of the undeveloped area.

Once the vegetation type has been determined, assign the characteristic (light, medium, heavy, or slash) that accurately describes the fuel. Convert your selected vegetation type to points in Section B of the Wildfire Hazard and Risk Assessment scoresheet.

#### STEP 4 - COMPLETE THE WILDFIRE HAZARD AND RISK ASSESSMENT SCORESHEET

Evaluate the following factors on the scoresheet:

- A. Means of Access
- B. Vegetation (Fuel Models – evaluated in Step 3)
- C. Topography
- D. Additional Rating Factors
- E. Roofing Assembly
- F. Building Construction
- G. Available Fire Protection
- H. Placement of Gas and Electric Utilities
- I. Totals for Home or Subdivision (total of all points)

#### STEP 5 - IDENTIFY CRITICAL FACILITIES TO BE PROTECTED

Critical facilities are those facilities that will need special protection from wildfire. This may be because the facilities are necessary to maintain infrastructure function, are smoke-sensitive or would be very hazardous if ignited by an encroaching wildfire. A power substation, for example, may need additional brush clearance to provide adequate defensible space. In the case of a nursing home, a wildfire evacuation plan may also be necessary in order to quickly and efficiently transport patients out of smoky conditions. *This process can be completed at any stage of the assessment.* Seek the help of local fire service professionals and community leaders in identifying critical facilities and developing a plan to eliminate hazards that threaten these facilities.

##### Facilities that need special protection due to their flammability:

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- Flammable liquid storage tanks
- Landfills/dumps/junk yards
- Sawmills and lumberyards
- Hazardous materials storage areas
- Schools/day care centers
- Nursing homes/assisted living facilities
- Medical facilities
- Airports
- Correctional facilities
- Roadways

##### Facilities that need special protection in order to maintain infrastructure function:

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- Power plants/substations
- Power transmission lines
- Water plants/well fields
- Water treatment plants/lift stations
- Fire and law enforcement stations
- Communication towers

# Wildfire Hazard & Risk Assessment Scoresheet

\*\* This document is based upon the NFPA 1144

## DIRECTIONS

Assign a value to the most appropriate element in each category and place the number of points in the box on the right.

### A. Means of Access

#### 1. Ingress and egress

a. Two or more roads in/out	0	
b. One road in/out	7	

#### 2. Road width

a. $\geq$ 7.3 m (24 ft)	0	
b. $\geq$ 6.1 m (20 ft) and $<$ 7.3 m (24 ft)	2	
c. $<$ 6.1 m (20 ft)	4	

#### 3. All-season road condition

a. Surfaced road, grade $<$ 5%	0	
b. Surfaced road, grade $>$ 5%	2	
c. Non-surfaced road, grade $<$ 5%	2	
d. Non-surfaced road, grade $>$ 5%	5	
e. Other than all-season	7	

#### 4. Fire service access

a. $\leq$ 91.4 m (300 ft) with turnaround	0	
b. $>$ 91.4 m (300 ft) with turnaround	2	
c. $<$ 91.4 m (300 ft) with no turnaround	4	
d. $\geq$ 91.4 m (300 ft) with no turnaround	5	

#### 5. Street signs

a. Present [102 cm (4 in.) in size and reflectorized]	0	
b. Not present	5	

### B. Vegetation (fuel models)

#### 1. Characteristics of predominate vegetation within 91.4 m (300 ft)

a. Light (eg, grasses, forbs, sawgrasses, and tundra) <i>NFDRS Fuel Models A, C, L, N, S, and T</i>	5	
b. Medium (eg, light brush and small trees) <i>NFDRS Fuel Models D, E, F, H, P, Q, and U</i>	10	
c. Heavy (eg, dense brush, timber and hardwoods) <i>NFDRS Fuel Models B, G, and O</i>	20	
d. Slash (eg, timber harvesting residue) <i>NFDRS Fuel Models J, K, and L</i>	25	

#### 2. Defensible space

a. More than 30.48 m (100 ft) of vegetation treatment from the structure(s)	1	
b. 21.6 m to 30.48 m (71 ft to 100 ft) of vegetation treatment from the structure(s)	3	
c. 9.14 m to 21.3 m (30 ft to 70 ft) of vegetation treatment from the structure(s)	10	
d. $<$ 9.14 m (30 ft) of vegetation treatment from the structure(s)	25	

### C. Topography within 9.1 m (300 ft) of structure(s)

#### 1. Slope

a. Slope $\leq$ 9%	1	
b. Slope 10% to 20%	4	
c. Slope 21% to 30%	7	
d. Slope 31% to 40%	8	
e. Slope $>$ 41%	10	

**D. Additional Rating Factors (rate all that apply)**

**I. Miscellaneous**

a. Topographical features that adversely affect wildland fire behavior	0-5	<input type="text"/>
b. Areas with a history of higher fire occurrence than surrounding areas due to special situations (eg, heavy lightning, railroads, escaped debris burning, and arson)	0-5	<input type="text"/>
c. Areas that are periodically exposed to unusually severe fire weather and strong dry winds	0-5	<input type="text"/>
d. Separation of adjacent structures that can contribute to fire spread	0-5	<input type="text"/>

**E. Roofing Assembly**

**I. Roof class**

a. Class A roof	0	<input type="text"/>
b. Class B roof	3	
c. Class C roof	15	
d. Nonrated	25	

**F. Building Construction**

**I. Materials (predominate)**

a. Noncombustible/fire-resistive siding, eaves, and deck	0	<input type="text"/>
b. Noncombustible/fire-resistive siding and combustible deck	5	
c. Combustible siding and deck	10	

**2. Building setback relative to slopes of 30% or more**

a. $\geq$ 9.14 m (30 ft) to slope	1	<input type="text"/>
b. $<$ 9.14 m (30 ft) to slope	5	

**G. Available Fire Protection**

**1. Water source availability**

a. Pressurized water source availability - 1892.7 L/min (500 gpm) hydrants $\leq$ 304.8 m (1000 ft) apart	0	<input type="text"/>
b. Pressurized water source availability - 946.4 L/min (250 gpm) hydrants $\leq$ 304.8 m (1000 ft) apart	1	
c. Nonpressurized water source availability (off site) - $\geq$ 946.4 L/min (250 gpm) continuous for 2 hours	3	
d. Nonpressurized water source availability (off site) - $<$ 946.4 L/min (250 gpm) continuous for 2 hours	5	
e. Water unavailable	10	

**2. Organized response resources**

a. Station $\leq$ 8 km (5 mi.) from structure	1	<input type="text"/>
b. Station $>$ 8 km (5 mi.) from structure	5	

**3. Fixed fire protection**

a. NFPA 13, 13R, 13D sprinkler system	0	<input type="text"/>
b. None	5	

**H. Placement of Gas and Electric Utilities**

**I. Placement of utilities**

a. Both underground	0	<input type="text"/>
b. One underground, one aboveground	3	
c. Both aboveground	5	

**I. Totals for Home or Subdivision (total of all points)**

Hazard Assessment	Total Points
Low	$<$ 40
Moderate	40-69
High	70-112
Extreme	$>$ 112