

- **Sec. 42-80. - Fuels management standards.**

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The intent of these standards is to reduce the potential for a catastrophic crown fire within the village while preserving the forested appearance of the village. The goal is to retain a forest environment with a 40 square foot per acre minimum basal area density of mature trees. This translates to 40, 14-inch diameter trees per acre. When computing minimum required basal area, trees smaller than 14-inch diameter will be projected to grow to 14-inch diameter.

(a)

All properties shall meet the following requirements for each particular zone. Upon determination by the village that a property is in compliance, the village will issue a letter to the property owner. Initial thinning should normally last a period of ten years before ladder fuels and tree growth are sufficient to require a maintenance thinning. Maintenance activities such as pine needle raking and ladder fuel removal shall be conducted on a yearly basis. However, circumstances such as drought and bark beetle mortality can cause a property to deviate from these standards and become non-compliant. Should a property not be maintained or otherwise become non-compliant, the property owner will be notified to correct the problem and be given a timeframe for coming back into compliance. Should compliance not be obtained in the established timeframe, the property shall be designated non-compliant and the landowner of record will be assessed a fine, increase in billing, or other penalties that are in effect until such time as the property is again in compliance.

(1)

Zone 1 Structure Protection (zero to ten feet from structure or deck). This zone should be devoid of flammable vegetation as much as possible. Trees within this zone shall be considered a part of the structure and the zone extended accordingly.

a.

Remove all non-decomposing pine needles, flammable ground materials and activity slash. Pine needles are to be raked and placed appropriately for Village removal.

b.

Remove all ladder fuels including shrubs beneath the crown of conifers.

c.

Separation between crowns is per chart [42-80](#) #2.

d.

Maximum of five similar sized trees with overlapping crowns then there must be separation as per chart [42-80](#) #2.

e.

Prune all species at least 15 feet above ground and, if tree height permits, ten feet above structure eave.

f.

Ornamental spruce and planted tree-form conifers that can't be trimmed to structure eave shall be removed or modified through mitigation measures as approved by the Village of Ruidoso such as xeriscaping or vertical and horizontal spacing to reduce ignition risk.

g. Removal of any live tree greater than 20 DBH requires a permit.

h. No wood chips allowed except in planting beds.

i. No firewood stored unless covered by approved fire retardant cover.

j. No flammable construction material stored unless covered by fire retardant cover.

k. No standing dead trees allowed.

l. Grass and common weeds shall be trimmed low to ground or eliminated.

m. Planted vegetation shall be fire resistant and low growing.

n. There shall be no low growing flammable vegetation such as juniper (including ornamental juniper).

o. Roofs and gutters shall be kept free of pine needles and other debris.

(2)
Zone 2 Defensible Space (greater than ten feet up to 200 feet from structure or deck as dictated by slope chart [42-80](#) #3). The intent of this zone is to reduce the threat to a structure from an advancing wildfire.

a. Remove all non-decomposing pine needles, flammable ground materials and activity slash within 30 feet of a structure,

b. Remove all ladder fuels including brush beneath crowns.

c. Minimum crowns separation of trees or "clumps" (maximum five similar sized trees per clump) as per chart [42-80](#) #2.

d. Separation of brush species shall be as per chart [42-80](#) #2.

e. Pine needles and grasses on vacant properties adjacent to residences and within residential areas shall be removed on a yearly basis so as not to provide a continuous fuel source in the event of a wildfire..

f.

Prune all species a minimum of ten feet from ground within 30 feet of structure or one third of tree height, whichever is less. Ornamental conifers such as Blue Spruce may be left untrimmed providing spacing and low ground fuels are maintained to minimize ignition potential.

g.

Minimum ten feet recommended between planting beds.

h.

Removal of any live tree greater than 20 inches DBH requires a permit.

i.

No wood chips allowed except in planting beds within 30 feet of structure.

j.

No firewood stacked within 20 feet of structures unless under approved fire retardant cover. All firewood must comply with the beetle habitat reduction requirements contained in subsection [54-133\(c\)\(5\)c](#). Firewood must be stacked with no more than two cords per stack.

k.

No flammable conifers less than eave height within 20 feet of vents, windows or doors.

l.

No standing dead trees within 60 feet of structure

(3)

Zone 3 Forest Woodlands (from the end of zone 2 to the edge of the property). This zone includes vacant lots and properties less than five acres in size. Where the property is within the defensible space of another property, zone 2 standards shall apply. This zone shall maintain an open forested appearance with well-spaced trees and openings. The zone should contain a variety of tree species of various ages. Groups of trees should be of similar ages and heights. Different groups will provide the multiple age structure and size structure.

a.

Remove all ladder fuels.

b.

Separation shall be as per chart [42-80](#) #2.

c.

Every effort shall be made to remove and utilize bole wood over six inches in diameter.

d.

Trim all species to six feet or one-third the height of the tree, whichever is less, measuring from the uphill side of the tree. Insure that shorter tree groups are upwind of taller tree groups (acts as ladder fuel).

e.

Except when the property has a fuels management plan approved by the director of forestry, removal of any live tree greater than 20 DBH requires a permit.

f.

Mastication and chipping of slash are allowed for slash disposal. Wood depth shall not exceed two inches. Bole wood over six inches in diameter shall be removed.

g.

Where possible all slash shall be removed, masticated or chipped. On steep slopes or where access is limited, alternative fuels management slash treatments may be approved by the director of forestry.

h.

Green wood retained for firewood shall be treated for beetle habitat per subsection [54-133\(c\)\(5\)c](#).

i.

Up to three, 12-inch DBH or larger non-hazardous standing dead trees may be retained per acre for wildlife habitat. Recent beetle killed trees must be harvested and removed or treated as per subsection [54-133\(c\)\(5\)c](#).

j.

All non-decomposing ground debris greater than five inches in diameter shall be removed, except up to five downed logs per acre greater than 12 inches in diameter may be retained for wildlife habitat.

(4)

Large tracts (more than five acres with or without structures). A fuels reduction plan shall be prepared and/or approved on a case by case basis by the director of forestry. Where structures are involved they shall be treated as in zones 1 and 2. The zone shall have an open forested appearance. These properties shall be treated with the intent to keep a wildfire on the ground to minimize spotting potential. The goal of treatment is to prevent a stand replacing crown fire. Some untreated areas may remain to meet agreed upon objectives providing there is sufficient treated area surrounding the untreated areas to mitigate crown fire spread.

a.

Treated areas of the properties shall have no ladder fuels.

b.

Separation of trees shall be as per chart [42-80](#) #2 as near as possible. Modification of this Separation may be approved by the director of forestry to meet specific objectives.

c.

Perimeter thinning shall be of sufficient width to prevent a sustainable crown fire from advancing to an adjacent property.

d.

Every effort shall be made to remove and utilize bole wood over five inches in diameter. Bole wood not removed shall be felled along the contour or otherwise treated upon direction of the director of forestry.

e.

Except when the property has a fuels management plan approved by the director of forestry, removal of any live tree greater than 20 DBH requires a permit.

f.

Where possible, slash shall be treated with full removal, mastication or chipping. Lop and scatter may be used as a less desirable alternative.

g.

If lop and scatter is allowed, slash shall be lopped and scattered to less than two feet in depth to accelerate decomposition. Lopped and scattered slash shall not be placed under the drip line of residual trees.

h.

No standing dead trees are allowed within 150 feet of the property perimeter.

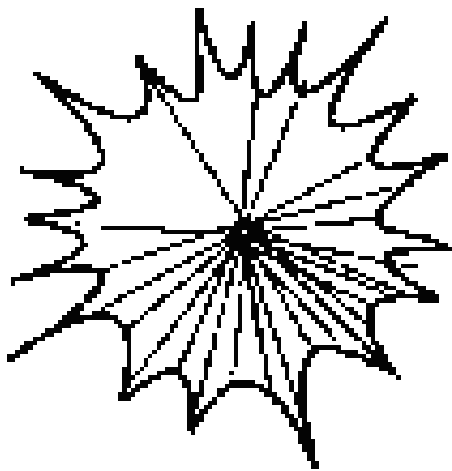
i.

Trees shall be pruned where appropriate to meet objectives but may be left un-pruned if Separation is adequate to prevent fire movement from tree to tree.

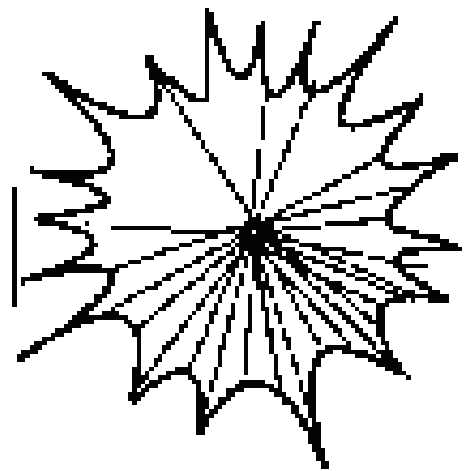
j.

If a zone 4 property is used for a commercial purpose, a fuels management plan shall be developed in partnership with the landowner to meet the commercial objectives and manage fuels on the site. The signed plan will be an agreement between the director of forestry and the landowner for the certification period. If the director of forestry and the landowner cannot come to agreement, the matter will be presented to the planning and zoning commission for resolution.

Crown Separation Measurement Diagram
Chart [42-80](#) #1



X



X

Y

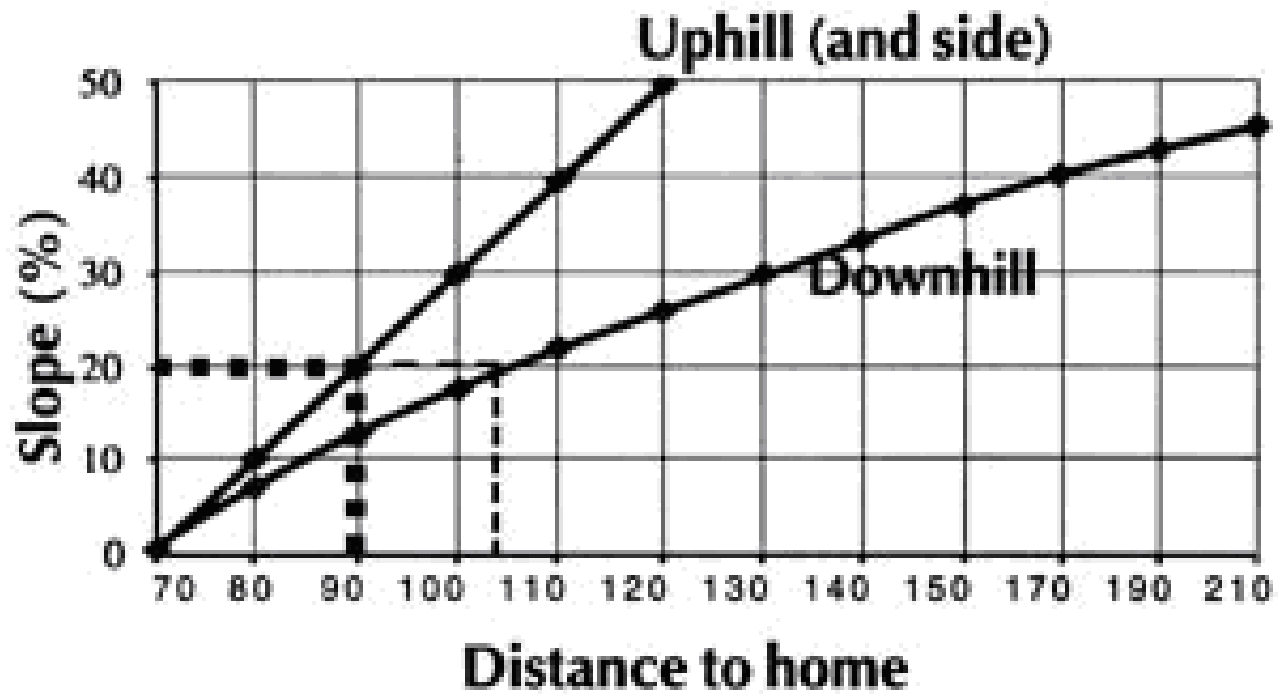


Measure crown separation (X) from the outside of the crown of one tree or clump of trees to the outside of the crown of the next tree.

Minimum Tree Crown and Shrub Clump Separation
Chart [42-80](#) #2

Percent (%) Slope		Individual Tree Crown Separation	Tree Group Crown Separation
0-10 %	10'	15'	2½ times shrub height
11-20%	15'	20'	3 times shrub height
21-40%	20'	25'	4 times shrub height
40%	30'	35'	6 times shrub height

Zone 2 Defensible Space Outer Edge Measurement based on Slope
Chart [42-80](#) #3



This chart indicates the minimum recommended dimensions for defensible space from the home to the outer edge of zone 2. For example: if the home is situated on a 20-percent slope, the minimum defensible space dimensions would be 90 feet uphill and to the sides of the home and 104 feet downhill from the home.

(Ord. No. 2002-04, 6-25-02; Ord. No. 2002-06, 6-25-02; Ord. No. 2004-04, 5-11-04; Ord. No. 2006-04, 6-27-06; [Ord. No. 2013-06](#), 7-9-13; Ord. No. [2016-05](#), 3-8-16)

- **Sec. 42-81. - Fire hazard ratings form.**

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Forestry official will complete this form on site during the lot assessment.

	POINTS		POINTS
<u>Subdivision Design</u>		<u>Fire Protection</u>	

Ingress/Egress		Fire Response	
Two ways to evacuate neighborhood within 1,000'	1 _____	Property located in Village of Ruidoso	1 _____
One way to evacuate neighborhood within 1,000'	3 _____	Property located in County	5 _____
One way to evacuate neighborhood > 1,000' away	5 _____	Water Supply	
Width of Primary Road @ driveway		500 GPM Hydrant within 1,000 feet	1 _____
20 feet or more	1 _____	Hydrant farther than 1,000 feet or draft site	3 _____
Less than 20 feet	3 _____	Water source 20 min or less, round trip	5 _____
Accessability		Water source farther than 20 min, round trip	10 _____
Road grade 5% or less (avg. within 1,000')	1 _____	Utilities (electric service)	

Road grade more than 5% (avg. within 1,000')	3 _____	Underground mains and service lines	1 _____
Secondary Road Terminus		Underground service lines only	3 _____
Not a dead-end	0 _____	Aboveground service lines	5 _____
Loop roads, cul-de-sacs with an outside	1 _____	<u>Construction Materials</u>	
radius of 45 feet or greater		Siding	
Cul-de-sac turnaround	3 _____	Noncombustible	1 _____
Dead-end roads 200 feet or less in length	3 _____	Combustible	5 _____
Dead-end roads greater than 200 feet in length	5 _____	Deck	
Average Lot Size		Noncombustible	1 _____
10 acres or larger	1 _____	Decks over 6' w/noncombustible	1

		uprights	_____
Larger than 1 acres, but less than 10 acres	3 _____	Combustible w/firesafe crawlspace	3 _____
1 acres or less	5 _____	Combustible	5 _____
Street Signs		Sofits	
Present	1 _____	Parapet/Santa Fe style/1hr. rated enclosed	0 _____
Not present	5 _____	Enclosed	1 _____
<u>Vegetation (UWIC Definitions)</u>		Open	5 _____
Fuel Types		Windows	
Light	1 _____	Low E	1 _____
Medium	5 _____	Double Pane	3 _____
Heavy	10	Single Pane	5

	_____		_____
Defensible Space (what is possible?)		Roof	
More than 100 feet of treatment from buildings	1 _____	Class A Fire Rated	1 _____
Less than 100 feet of treatment from buildings	5 _____	Class B Fire Rated	3 _____
Adjacent Landscape (within 10 feet)		Class C Fire Rated	5 _____
Installed Landscape (within 10 feet)		Non-Rated	10 _____
Xeriscape or dirt	0 _____	Stem Walls/Structural Support	
Flame Resistant Plants	1 _____	Non Combustible Enclosed	1 _____
Flammable Plants	3 _____	Combustible Enclosed	3 _____
Flammable Ties and	5 _____	Non-Combustible Post & Beam	5 _____

Timbers			_____
<u>Topography</u>		Combustible Post & Beam	10 _____
Slope 10% or less	1 _____		
Slope more than 10%, but less than 20%	4 _____		
Slope more than 20%, but less than 30%	<u>7</u> _____	FIRE HAZARD RATING	_____
Slope 30% or more	10 _____	Med= ≤59; High= 60-74; Extreme= ≥75	
LOT ASSESSMENT FEE \$ _____		APPROVED _____ / _____ / _____	
FOOTPRINT DEBRIS FEE \$ _____		BY _____ / _____ / _____	

Explanation of [Sec. 42-81](#) Fire Hazard Ratings Formcategories

Subdivision Design

Ingress/Egress - In the event of a fire, how many ways within 1,000 feet of the building site, do fire trucks have to get in and evacuees get out of the neighborhood or subdivision? Ex: Parts of Upper Canyon (Main Road) have only one way in and one way out.

•
Width of Primary Road - Can large fire trucks and evacuating vehicles pass by each other easily? Measure from centerline of road to edge of pavement. If unpaved measure to edge of 2X4 drivable surface. Then multiply by 2. Measure in feet.

•
Accessibility - Steepness of the road can slow the response time of a fire truck full of water. Have the surveyor do this when the plot plan is being done. Measure average grade within 1,000 feet of building site.

•
Secondary Road Terminus - This has to do with maneuvering fire trucks safely as they arrive at your site. What best describes what yours looks like.

•
Average Lot Size - Use the size on the plot plan if this is a single lot development. Use the average lot size if this is a subdivision development.

•
Street Signs - Are there street signs present or will there be (subdivision development).

Vegetation (UWIC definitions)

•
Fuels Types - Relates to rate of fire spread in the general, adjacent area. *Light* fuels are those where average height of predominant vegetation is less than 3 feet tall. *Medium* is 3 feet to 6 feet tall. *Heavy* is greater than 6 feet tall. Predominant vegetation covers the majority of ground when viewed as a landscape or "bird's eye" view.

•
Defensible Space - Achieving compliance with [Sec. 42-80](#) Fuels Management Standards requires a Forestry Department final inspection. The lot size will determine if you can achieve 100' of defensible space around the structure. If you are building in a high density area, a distance of 100 feet from your structure may include adjacent lots. The condition of adjacent lots within 100 feet will not affect your rating calculation.

•
Adjacent Landscape (within 10 feet) - This refers to planted vegetation. In general, if you are watering or irrigating a planting bed, it is considered non-flammable. See *Firewise Plant Materials* for a detailed list.

Topography - Your surveyor can establish this per the plot plan. The Forester will verify in the field. This is the same as required on the site development plan.

Fire Protection

•
Water Supply - All Village fire hydrants are considered to produce a minimum of 500 gallons per minute. 1,000 feet is measured from the hydrant to the structure. A draft site can be a lake, pond,

tank, swimming pool, etc that has a minimum of 3000 gallons. Where no hydrants exist, check with your Fire Department to determine round trip time frames.

Utilities - This refers to ELECTRIC POWER ONLY and does not include communications. Main lines run along roads and easements. Service lines are those that connect to your structure.

Construction Material

•
Siding - Non-combustible siding includes but not limited to stucco, rock, concrete, brick, metal, true log construction, adobe, and concrete block. Combustible siding includes wood, T-111 plywood and composition materials. Check with the manufacturer.

•
Decks - Non-combustible decking material includes metal or composites like Trek. Non-combustible uprights include metal and heavy timbers (8"x8" post and beam). Non-combustible crawlspace are built solid with non-combustible material or skirted with ¼"x ¼" wire mesh for decks with an average height of less than 2 feet above grade. Check with the manufacturer.

•
Sofits - Class I (1hr. enclosed): Fasia = 2"x 4", 6", 8", Soffit = 5/8" FireX sheetrock underlay or stucco with no venting. Class II: Fasia = 1"x 4", 6", 8" lumber, Soffit = 1" material, no venting

•
Windows - Low E windows have high reflectivity properties. They are marked in the corner of the pane like tempered glass is labeled. These may be used in one area or on one side of structure to reduce rating.

•
Roofing - Check with roofing suppliers or manufacturers for proper assembly of roof materials and roof classifications A, B, or C.

•
Stem Wall - Non-combustible material includes block, stucco, concrete and ¼"x ¼" wire mesh. Non-combustible post and beam includes: metal poles and heavy timber (8"x8" or >).

(Ord. No. 2002-06, 6-25-02; Ord. No. 2004-04, 5-11-04; Ord. No. 2006-04, 6-27-06)