

COPY

RESOLUTION 2018-13

A GRANITE COUNTY RESOLUTION AMENDING THE GRANITE COUNTY SUBDIVISION REGULATIONS PERTAINING TO FIRE SAFETY REQUIREMENTS OF THE GEORGETOWN LAKE FIRE SERVICE AREA

WHEREAS, Montana law at Sections 76-3-501 et al., MCA, allows Granite County to amend its subdivision regulations; and,

WHEREAS, the Georgetown Lake Fire Service Area has requested that the Board of Granite County Commissioners amend the current Granite County Subdivision Regulations to replace the existing fire safety requirements for the Georgetown Fire Service Area with the said Fire Service Area's newly proposed and amended fire safety requirements attached as Exhibit A; and,

WHEREAS, the Granite County Fire Service Area Board of Trustees has approved the fire safety requirements attached hereto as Exhibit A and the Granite County Planning Board has also approved the said fire safety requirements; and both the Georgetown Lake Fire Service Area and Granite County Planning Board both recommend to the Board of Granite County Commissioners that the current Granite County Subdivision Regulations be amended to incorporate the amendments to the said fire safety requirements; and,

WHEREAS, the Board of Granite County Commissioners published proper notice of a public hearing as required by Section 76-3-503, MCA, held the public hearing and considered all the public comment, and find that the said newly proposed fire safety requirements are reasonable and consistent with the law.

NOW, THEREFORE, IT IS RESOLVED by the Board of Granite County Commissioners hereby amend the current Granite County Subdivision Regulations to incorporate the fire safety requirements as set forth in Exhibit A as the amended fire safety regulations for the Georgetown Lake Fire Service Area, with such regulations being applicable and binding as provided for by law. Exhibit A is incorporated into this current Resolution by this reference thereto.

THEREFORE, BE IT FINALLY RESOLVED that this Resolution is effective immediately and applies to all new subdivision applications with the proposed subdivision located within the Georgetown Lake Fire Service Area in Granite County.

UNANIMOUSLY ADOPTED AND PASSED this 21st day of August, 2018, A.D.

BOARD OF COUNTY COMMISSIONERS
OF GRANITE COUNTY

Bill Slaughter
Bill Slaughter, ~~Chairperson~~

Scott C. Adler
Scott C. Adler, Commissioner

Barton C. Bonney
Barton C. Bonney, Commissioner



ATTEST: *Blanche McLure*
Blanche McLure, Clerk

APPROVED AS TO FORM AND CONTENT:

Blaine C. Bradshaw
Blaine C. Bradshaw, Granite County Attorney

GEORGETOWN LAKE FIRE SERVICE AREA FIRE PROTECTION STANDARDS

General

The GEORGETOWN LAKE FIRE SERVICE AREA (**GTLFSA**) Fire Protection Standards have been developed based on International, US, State, and County standards and requirements available for review and determined to be applicable to the **GTLFSA**. During review every attempt has been made to ensure that these standards are necessary and applicable to the **GTLFSA**. The documents, codes, standards, and guidelines referenced in this document have been determined to be the most current and valid versions as of June 1, 2017. These documents are routinely revised and updated so it is inferred that any reference to these documents and standards is a reference to the most recent valid version.

Scope

The Georgetown Lake Fire Service Area Fire Protection Standards provide the minimum planning, construction, and maintenance requirements for subdivisions to provide for the protection of life and property from emergency incidents.

Purpose

All subdivisions shall be planned, designed, constructed, and maintained to minimize the risk of fire and to ensure effective, efficient, and safe response to and mitigation of emergency incidents in order to protect persons, property, and natural resource areas. **GTLFSA** may allow or require a modification to these Standards if it believes that such modification would best serve the intended Purpose.

These standards have been developed to provide a variety of options to consider when developing the fire protection plan. Early review with the **GTLFSA** will ensure that the fire protection plan complies with these standards. **GTLFSA** may impose a particular option if they determine it best serves the intended purpose.

As a condition of final plat approval, the County must receive a letter from **GTLFSA** that verifies that the fire protection equipment and features have been accomplished and are in compliance with these standards.

Due to the fact that fire protection equipment and features required by these standards are necessary to ensure public safety, **GTLFSA** does not support the bonding of any items required by these regulations in order for the developer to obtain final plat approval. For health and safety reasons all elements of the fire protection plan shall be completed and all improvements installed prior to final plat approval.

Use

This document is intended to clarify and elaborate upon the areas in the *Requirements For Development Within the Wildland-Urban Interface* (RFDWWUI) (Appendix 2) which is adopted as a regulatory document by **GTLFSA**, and where the local agency having jurisdiction (**GTLFSA**) is granted the authority to act or exercise judgement in any capacity. This document is numbered to correspond with the sections of the RFDWWUI document, and should be read and interpreted in concert with such corresponding section(s).

Non-Residential and Multi-Family Developments

The standards contained in this document are to be used only for one and two family residential developments.

All Non-Residential and Multi-Family developments must comply with the current version of the International Fire Code, as adopted by the relevant County or the State of Montana.

Section I: Requirements for Subdivision Regulations

4. a. i. – Two approach routes

- For subdivisions located in Granite County, the risk mitigation measures 4. a. i. A. VI. – *interior fire sprinklers* and 4. a. i. A. VII. - *exterior fire-retardent sprinkler systems* are not currently available due to the inability to permit or inspect these systems.

4. a. iv. and v. - Road Standards – Width and grade

- For roadways or driveways with dry hydrants located along them, see also: 5. b. ii. – *Drafting Sites and Dry Hydrants (Access)*.

- All fire access roads must be constructed to support the imposed load of fire apparatus weighing at least 75,000 pounds (34 050 kg).

5. a. i. - Location of required water sources

- A hydrant for an approved water source that meets the 1,000 gpm for 30 minutes standard must be located within 1,000 feet of the center of the proposed building envelope.
- A hydrant from a water source approved under the reduced requirements of 5. b. vi. A. *Modifications*, must be located within 500 feet of the center of the building envelope.
- Distances from hydrants are to be measured as driven, on the center of an approved, all season road.
- Note that location restrictions for hydrants exist in multiple sections.
- Hydrants must conform with Supplement 2 -*Standards for Fire Hydrants in the GTLFSA*.

5. b. ii. – Drafting Sites and Dry Hydrants

A. Design:

- For all non-pressurized systems the maximum water lift is 14 vertical feet, measured from a point 3 feet above the adjacent roadway or access area surface to the water level after the required volume of water has been removed. (2017 NFPA 1142 Annex B, 4.3).
- Note that due to allowances for sediment, drought, vortex, and freezing issues; ponds and natural water sources will likely need to contain much more water than other types of systems in order to meet requirements.
- Hydrant intakes for natural sources must be at least two feet above the lake bottom or streambed, six horizontal feet from where the pipe enters the water, and must be at least two feet below the minimum water and ice level; or otherwise certified by a licensed engineer to prevent pickup of sediment, or creation of a vortex, at required flow rates.
- An allowance for a 3 foot unusable ice layer shall be used in any calculations involving a lake or pond.

- See also: Supplement 1 - *Standards for Cisterns and Storage Tanks*, and Supplement 2 - *Standards for Fire Hydrants in the GTLFSA*.

Location:

- A dry hydrant or its required access area may not be located within 100 feet of any combustible structure, unless another hydrant meeting the standard in 5. a. i., is available within 1,000 feet of the structure, as driven, on the center of an approved, all season road.
- Spacing / distance is addressed in: 5. a. i. - *Location of required water sources*.

Access:

- The roadway, driveway, or constructed area, adjacent to a dry hydrant and providing required access, shall, at a minimum, consist of at least a 75 foot length of all season roadway, at a consistent grade of 5% or less and a minimum width of 26 feet, exclusive of shoulders. A similarly constructed area that contains a turn around area of 120 feet in diameter is preferred.
- An approved turn-around provision must be incorporated within 500 feet of a required water source (hydrant).
- Parking shall be prohibited in a required access area or turn around provision.
- Rights of access and use shall be as required in Supplement 3 - *Rights of Access and Use*

5. b. iii – Pressurized hydrant systems

- A Community Public Water System as defined by MT DEQ, which is designed and operated per MT DEQ standards for supplying fire protection to that lot, is acceptable.
- A hydrant for a pressurized system shall not be located within a distance of twice the height of any combustible structure, unless there is another water source meeting the requirements of 5. a. i. within 1,000 feet, as driven, on the center of an approved, all season road.

- Spacing / distance is addressed in: 5. a. i. - *Location of required water sources.*

5. b. iv. – Tanks and cisterns

Design:

- See Supplement 1 - *Standards for Cisterns and Storage Tanks*

Access

- See Supplement 3 - *Rights of Access and Use*

5. b. v. Testing and maintenance

- A. Full flow testing shall be performed once annually and a detailed report of the flow test procedures and results shall be provided to **GTLFSA**. **GTLFSA** shall be notified of the scheduled testing and may elect to witness the test. **GTLFSA** may require testing be performed at a different time if it suspects that seasonal variations might be relevant to the results obtained.
- B. Maintenance shall be as required in 7. b. ii. - *Maintenance of Equipment and Features.*

5. b. vi. A. – Modifications

This allowed reduction in fire flow demand is due to a lesser extent of exposure hazards to other structures in rural areas and not a need for less water. The understanding is that there may not be enough water to fight the fire at the structure but that the limited exposures in a rural setting can be protected.

Any lot served by a Community Public Water System as defined by MT DEQ, that is designed and operated per MT DEQ standards for supplying fire protection for that lot, is exempted from the stored water volume requirements contained below.

For a minor subdivision (a subdivision that creates five or fewer lots from a tract of record (76-3-103 (9) MCA)) of one and two family residential developments, the total required stored water volume for non-pressurized systems shall be calculated by one or both of the following methods:

1. If the structure(s) volume for any buildable lot(s) can be determined or reasonably estimated, by the method outlined in NFPA 1142 4.2.1 through 4.3.2., for those lots. Restrictive covenants shall be implemented to reflect the maximum building volume and construction type as used in the calculation.
2. If the structure(s) volume for any buildable lot(s) can not be determined or reasonably estimated, a value of 4,000 gallons per buildable lot shall be used for those lots. (2,800 sq./ft. x 10 equivalent).

It is not practical or efficient to use stored water systems of less than 10,000 gallons, therefore: The minimum size of any individual water storage source to be used to provide the required water volume calculated above is 10,000 useable gallons

While in most instances, the purpose of these standards will be best served by on-site water supplies, in certain cases, and upon approval by **GTLFSA**, an alternative to providing developed water sources on-site, may be to provide funding for **GTLFSA** apparatus and equipment.

In certain cases, and upon approval by **GTLFSA**, a combination of on-site water supplies and funding for **GTLFSA** apparatus and equipment may be a viable alternative.

Monetary Payment Calculation for Offsite Water Development:

The monetary payment is calculated at \$1.00/gallon as of January 1, 2017. (The cost per gallon will be time adjusted to inflation using the US Dept. of Labor Bureau of Labor Statistics CPI Inflation Calculator).

If the developer proposes this alternative, some possible reasons for approving this alternative could be:

- Topography which will not allow development, installation, or required access to an on-site supply.
- Smaller developments.
- Proximity of adequate existing and developed water resources
- A preference for single resources of 30,000 gallons useable capacity, and not less than 10,000 gallons useable capacity.

5. b. vi. C. – Modifications

- To the extent possible, stored water systems must consist of 30,000 useable gallon sources dispersed to optimize delivery to the intended building envelopes.

7. b. ii. - Maintenance of Equipment and Features

- Provisions shall be incorporated in the plat documents describing how required fire protection equipment and features are to be maintained currently and in the future, by whom, and how **GTLFSA** can be assured that the required fire protection equipment and features will continue to function appropriately. The **GTLFSA** will not be responsible for any maintenance, electricity, or any other costs associated with enhancements, upgrades or other measures necessary to assure the required fire protection equipment and features continue to function to original specifications.
- The maintenance and associated costs of required fire protection equipment and features shall be assumed by the sub-divider/developer/owner unless and until such time as a homeowner's association assumes responsibilities.

Section II: Requirements for Zoning Regulations

3. a. i. – Two approach routes

- For subdivisions located in Granite County, the risk mitigation measures 3. a. i. A. VI. – *interior fire sprinklers* and 3. a. i. A. VII. – *exterior fire-retardent sprinkler systems* are not currently available due to the inability to permit or inspect these systems.

3. a. iii. and iv. - Road Standards – Width and grade

- For roadways or driveways with dry hydrants located along them, see also: Section 1 - 5. b. ii. – *Drafting Sites and Dry Hydrants (Access)*.
- All fire access roads must be constructed to support the imposed load of fire apparatus weighing at least 75,000 pounds (34 050 kg).

5. b. ii. - *Maintenance of Equipment and Features*

- Provisions shall be incorporated in the plat documents describing how required fire protection equipment and features are to be maintained currently and in the future, by whom, and how **GTLFSA** can be assured that the required fire protection equipment and features will continue to function appropriately. The **GTLFSA** will not be responsible for any maintenance, electricity, or any other costs associated with enhancements, upgrades or other measures necessary to assure the required fire protection equipment and features continue to function to original specifications.
- The maintenance and associated costs of required fire protection equipment and features shall be assumed by the sub-divider/developer/owner unless and until such time as a homeowner's association assumes responsibilities.

Supplement 1

Standards for Storage Tanks and Cisterns in the GTLFSA

- A. Tanks, cisterns, and related equipment, shall be certified by a licensed engineer as suitable for the intended purpose and installation, and as providing required flows and/or volumes.
- B. Prior to final review, the following documents are required to be provided to the **GTLSA**: A copy of the engineer's certification and any other relevant engineer's statements relating to the installation. If a commercially produced system is used, a copy of the operation manual, and a copy of the installation instructions.
- C. All components shall be designed to provide 1,000 gpm flow for the required volume.
- D. All components shall be of a design and/or material that will not cause the water to be contaminated by particulate matter, products of decay or corrosion, or other contaminants that may be harmful to fire equipment.
- E. All openings shall be sealed or screened when the tank is not being accessed, for public safety, and to prevent the entry of contaminants.
- F. An access/inspection cover shall be provided that allows ready personnel access upon removal of a padlock. Cover shall be at least 12 inches above the surrounding grade, not more than 40lbs in weight, and designed such that it cannot fall into tank during removal.
- G. At least two feet of water must remain above the end of the suction intake after the required volume has been removed from the tank, or the tank must be engineered to prevent vortex formation at the required flow with a lower water level. Vortex breakers are commercially available that may be helpful in reducing tank size while still providing the required flow rate and usable capacity.
- H. Suction intake for hydrant must be located at least 12 inches from bottom of tank unless an alternate design is certified by the engineer to provide the required flow, or if otherwise specified for a commercially manufactured inlet or vortex breaker.

- I. A filling provision must be provided for tanks and cisterns. Fill connection must have two 2½ inch female National Standard Hose thread connections with covers, installed to provide a horizontal connector, 36 to 48 inches above the surrounding surface. Filler pipe shall be not less than 4 inches ID, or not less than 2½ inches ID, if two pipes are used. If separate filler pipes are not used, the inlets shall be clappered. The discharge end of filler pipe(s) shall not be located within 6 horizontal feet of suction pipe, and/or shall be designed to prevent aeration of suction inlet when used. Filler pipes shall be adequately braced, or of such construction that they will not be damaged by hose strain.
- J. A separate air vent shall be provided, and shall be 6" ID, or shall be certified adequate for outflow or inflow of 1,000 gpm. Vent opening shall be screened, not sealed.
- K. Tanks and cisterns shall have an automatic self-supplying fill feature.
- L. Buried tanks and cisterns that are not designed for fire equipment loads shall be installed or barricaded such that fire vehicle travel over the tank is not possible. Required access area dimensions must be maintained.
- M. All non-pressurized water sources shall be treated as containing non-potable water.
- N. As a reminder, an approved hydrant, per Supplement 2 - *Standards for Fire Hydrants in the GTLFSA*, is required to be provided.
- O. As a reminder, per 5. b. vi. A. – *Modifications*, the minimum size for a tank or cistern is 10,000 usable gallons.

Supplement 2

Standards for Fire Hydrants in the GTLFSA

All Fire Hydrants

- A. A minimum of three feet of clear, unobstructed space, shall be provided around a hydrant.
- B. Hydrants shall be installed within 10 feet of the adjacent roadway or access area surface.
- C. Hydrants shall be readily and safely accessible from the all-season road or all-season access area, and shall not be at risk from near-by structures, steep slopes, chimneys, or other hazards. An approved draft support for a dry hydrant is not considered an obstruction.
- D. All hydrant connections shall be provided with protective caps. Caps and valves must have either a pentagon nut, or rocker lug feature, that is compatible with standard hydrant wrenches.
- E. Hydrants shall be protected from damage from vehicles and snow removal equipment, and shall be marked and snow-staked as approved by the GTLFSA.

Pressurized Fire Hydrants

- A. A pressurized hydrant system must be designed to deliver the required minimum flow at 20 psi residual pressure, for the required time period.
- B. Hydrant installations conforming with MT DEQ *Standards for Water Works* are acceptable.
- C. Hydrants shall have a bottom valve size of at least five inches, one 4.5 inch pumper nozzle and two 2.5 inch nozzles. Nozzle thread shall be National Hose male.
- D. Hydrant pumper nozzle must face a fire pumper intake when parked in the provided access area, or adjacent roadway.
- E. Hydrants shall be installed such that the top operating nut is 48 to 60 inches above the surrounding surface.

- F. Hydrant drains shall be above the seasonal high ground water table. A gravel pocket or dry well must be provided unless the natural soils will provide adequate drainage. If hydrant drains cannot be located above the seasonal high ground water table, hydrants with plugged drains may be allowed, with explicit approval of the **GTLFSA**. Freeze protection must be maintained.
- G. Shall be "Fire Hydrant Red" in color.
- H. Per 5. b. iii, a hydrant for a pressurized system shall not be located within a distance of twice the height of any combustible structure, unless there is another water source meeting the requirements of 5. a. i. within 1,000 feet, as driven, on the center of an approved, all season road.

Non-Pressurized (Dry) Fire Hydrants

- A. A dry hydrant uses the drafting capability of fire equipment to access water that is not pressurized, or is not adequately pressurized to provide the required flow at 20 psi residual pressure.
- B. Hydrants, and all system components, shall be designed and constructed to provide a minimum of flow of 1,000 gpm for a fire pumper at draft, at the installed elevation.
- C. Hydrants shall be installed so that the center of the threaded connector is 28 to 30 inches above the adjacent roadway or access area surface.
- D. A hydrant shall have a single 6" NH male connection with removable screen and cover. The connection must face a fire pumper intake when parked in the provided access area.
- E. Piping shall be not more than 30 feet in length, a minimum of 6 inches ID, with a maximum total of 200 degrees of elbows and bends used; unless an alternate design is certified by a licensed engineer to provide the required flow.
- F. At a minimum, Schedule 40 pipe and components shall be used. If PVC piping is used, extra care must be used with it with regard to stabilization and protection from stresses or impacts such as pushed snow, ground movement, or vehicle impact.

- G. System piping shall be supported and/or stabilized using approved engineering design practices. Particular attention shall be given to elbows, and other stress points, such as the pumper connection.
- H. Adequate freeze protection, as certified by a licensed engineer, shall be provided.
- I. Piping shall be sloped downward toward the source water, so as to prevent trapped air when drafting. Any size reducers shall be of the eccentric type, oriented to prevent trapped air in the piping.
- J. Appropriate sealing materials must be used to ensure that all joints remain airtight.
- K. All exposed surfaces, and all underground metal surfaces shall be protected to prevent deterioration.
- L. Except for tank/cistern installations, a commercially produced intake screen with a self closing, hinged end cover shall be used; unless an engineer certified design that allows for effective back flushing is used.
- M. If system design is such that a hydrant type that normally would be used with a pressurized system would be required to overcome static pressure or static water level (freezing) issues, explicit approval from the **GTLFSA** is required, as the hydrant drains will need to be sealed. The hydrant manufacturer should be consulted to assure that the particular hydrant used will have adequate sealing under vacuum conditions, or the system may fail testing.
- N. Per 5. b. ii, hydrant intakes for natural sources must be at least two feet above the lake bottom or streambed, six horizontal feet from where the pipe enters the water, and must be at least two feet below the minimum water and ice level, or otherwise certified by a licensed engineer to prevent pickup of sediment, or vortex creation, at required flow rates.
- O. Per 5. b. ii, for all non-pressurized systems the maximum water lift is 14 vertical feet, measured from a point 3 feet above the adjacent roadway or access area surface to the water level after the required volume has been removed.
- P. Per 5. b. ii, a dry hydrant or it's required access area may not be located within 100 feet of any combustible structure, unless another

hydrant meeting the standard in 5. a. i., is available within 1,000 feet of the structure, as driven, on the center of an approved, all season road.

- Q. A draft hose support structure may be provided to help protect from vehicles and pushed snow, minimize the strain on the exposed pipe during cold weather, and to help facilitate connection of the suction hose with minimal manpower. The draft hose support structure should be located directly in front of the hydrant, 3 feet from the pumper connection, and the top of the support should be the same height as the bottom of the connection to allow for the draft hose to be in a horizontal position. A partially buried, flat topped boulder may be an aesthetically pleasing execution. If a draft hose support is used, required access area dimensions must be maintained.

Supplement 3

Rights of Access and Use

A perpetual easement for unrestricted access to, inspection and testing of, and use by; **GTLFSA** or any successor fire protection or water service agency, and their co-operators; of a required water supply system; shall be recorded and noted on the plat documents.

GTLFSA may require that access be available to fire protection systems using a **GTLFSA** designated key or equivalent.

Whenever the **GTLFSA** takes water from a system, that was not from a natural, self-replenishing source, for use in an incident that does not threaten the property of the system owner(s); the **GTLFSA** shall either replace the water taken with non-potable water, or, the **GTLFSA** shall estimate the net quantity of water taken based on the capacity of the emergency apparatus used. The **GTLFSA** shall make a reasonable effort to contact the system owner and offer to compensate the owner for the estimated net water taken, at the rate in effect for residential potable water above the base rate, in the City of Anaconda. Testing of the system shall not require compensation for water used.

Damage to a water system discovered during use or testing, or caused by a reasonable effort to access the system and obtain the designed water flow, is not responsibility of the **GTLFSA**.

Appendix 1

List of Source Publications

Appendix 2

"REQUIREMENTS FOR DEVELOPMENT WITHIN THE WILDLAND-URBAN INTERFACE" adopted from the State document "GUIDELINES FOR DEVELOPMENT WITHIN THE WILDLAND-URBAN INTERFACE September 24, 2009".

APPENDIX 1

List of Source Publications

Guidelines for Development within the Wildland-Urban Interface
(September 24, 2009)

NFPA 1142 (2017 edition)

International Fire Code 2012 as adopted by the State of Montana
(Rule: 23.12.601)

CWPP Granite County (November 2005)

CWPP Anaconda-Deer Lodge County (September 2005)

MT DEQ Standards for Water Works (August 8, 2014 Edition)

APPENDIX 2

**REQUIREMENTS FOR DEVELOPMENT
WITHIN THE
WILDLAND-URBAN INTERFACE**

Adopted from:

**GUIDELINES FOR DEVELOPMENT
WITHIN THE
WILDLAND-URBAN INTERFACE**

September 24, 2009

On June 22, 2017

by Georgetown Lake Fire Service Area (GTLFSA)

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DEFINITIONS

1. **Access:**
 - a. **legal access** means a property fronting a public (city, county, state, or federal) street, road, or easement that has been dedicated for public use, or a private street, road, or easement that has been dedicated for either public or private use;
 - b. **physical access** means property fronting a street, road, or driveway that has been constructed in conformance with road standards adopted by the AHJ; and
 - c. **access**, from a practical standpoint shall be defined as a road or roads that provide all-weather, all-season access.
2. **Accessory building or structure** means any building or structure used incidentally to another building or structure. It may be unenclosed, without a complete exterior wall system enclosing the area under roof or floor above.
3. **Alternative** means a system, condition, arrangement, material, or equipment submitted to the AHJ as a substitute for applicable requirements.
4. **Approved** means acceptable to the authority having jurisdiction or other entity having jurisdictional authority.
5. **Aspect** means the compass direction toward which a slope faces.
6. **Authority Having Jurisdiction (AHJ)** means jurisdictions, approving agencies, private entities, and/or property owners who may assume the role of an AHJ, given a statutory authority or legal responsibility.
7. **Building** means any structure used or intended for supporting any use or occupancy.
8. **Building envelope** means the designated area of a lot within which a structure or structures can be built and which is depicted or described on a site plan, final subdivision plat, or lot layout.
9. **Canyon** means a deep valley with steep slopes carved from the landscape by a river or a stream.
10. **Combustible** means any material that, in the form in which it is used and under conditions anticipated, will ignite and burn (see noncombustible).
11. **Community Wildfire Protection Plans (CWPP)** are authorized and defined in Title I of the Healthy Forests Restoration Act (HFRA) passed by Congress on November 21, 2003, and signed into law by President George W. Bush on December 3, 2003.
12. **Critical fire weather** means a set of weather conditions (usually a combination of high temperatures, low relative humidity, and strong wind)

whose effects on fire behavior make control difficult and threaten firefighter safety.

13. **Cul-de-sac** means a street having only one outlet for vehicular traffic and terminating in a bulb or hammerhead shaped turn-around area.
14. **Defensible space** means an area, either natural or manmade, where material capable of allowing a fire to spread unchecked has been treated, removed, or modified to slow the rate and intensity of an advancing wildfire and to provide a safe working area for wildfire suppression operations to occur while protecting life and/or improved property.
15. **Development** means land use development or construction projects that involve substantial property improvement and usually a change in the land use character within a subject property or properties. Such development generally involves using land for residential or commercial/industrial purposes.
16. **DLI** means the Montana Department of Labor and Industry.
17. **Driveway** means a vehicular ingress and egress route that serves no more than two buildings or structures or no more than five dwelling units, not including accessory structures.
18. **Dwelling** means any structure or portion thereof providing complete, independent living facilities for one or more households.
19. **Easement** means the right of a property owner to use all or a portion of another's property for a specified purpose, created by law, agreement, deed, or other document.
20. **Evacuation** means the temporary movement of people and their possessions from locations threatened by a hazard.
21. **Fire chimney** means topographical features, usually canyons, gulches or valleys, which tend to funnel or otherwise concentrate fire toward the top of steep slopes. Fire chimneys are generally less than one-half mile in length, have slopes of 20 percent or steeper, are less than 600 feet wide, and are at least 120 feet deep as measured from the bottom of the ravine to the crest of either adjacent ridge or slope.
22. **Fire flow** means the flow rate of a water supply (measured at 20 psi [137.9 kPa] residual pressure) that is available for firefighting.
23. **Fire hazard** means a fuel complex (defined by kind, arrangement, volume, condition, and location) that determines the ease of ignition and/or resistance to fire control.

24. **Fire hydrant** means a valved connection on a year-round water supply system having one or more outlets that is used to supply water for fire departments.
 - a. **Pressurized hydrant** means an arrangement of pipe permanently connected to a year- round water source with a pressurized water supply system that provides a ready means of water supply for firefighting purposes.
 - b. **Dry (draft) hydrant** means an arrangement of pipe permanently connected to a year- round water source other than a piped, pressurized water supply system that provides a ready means of water supply for firefighting purposes and that utilizes the drafting (suction) capability of fire department pumpers.
25. **Fire protection feature** means any feature outlined in the fire protection plan, or any other features that aid in the prevention or protection from fire.
26. **Fire protection plan** means a document prepared for a specific project or development proposed for the WUI area. It describes ways to minimize and mitigate the fire problems created by the project or development, with the purpose of reducing impact to (and enhancing) the community's fire protection delivery system.
27. **Fire resistance rated construction** means the use of materials and systems in the design and construction of a building or structure to safeguard against the spread of fire within a building or structure and the spread of fire to or from buildings or structures to the WUI area.
28. **Fire weather** means weather conditions favorable to the ignition and rapid spread of fire. In wildfires, this generally includes high temperatures combined with strong winds and low humidity (see critical fire weather).
29. **Fuels** means all combustible materials within the WUI including, but not limited to vegetation and structures.
30. **Fuel break** means an area, strategically located for fighting anticipated fires, where the native vegetation has been modified or replaced so that fires burning into it can be more easily controlled. Fuel breaks divide fireprone areas into smaller areas for easier fire control and to provide access for firefighting.
31. **Fuel loading** means the volume of fuel in a given area. Generally expressed in tons or pounds per acre, fuel loading may be referenced by fuel size or timelag categories, and may include surface fuels or total fuels.
32. **Fuel mosaic** means a fuel modification system that provides for the creation of islands and irregular boundaries to reduce the visual and ecological impact of fuel modification.

33. **Governing body** means the legislative body of a city, town, county or consolidated government, created pursuant to Title 7, chapter 2, MCA.
34. **Greenbelt** means an area with fire-resistive vegetation (planted or native), maintained to cause a reduction in fire intensity, and used for purposes other than fire protection (golf course, cemetery, park, playground, mowed park, orchard, etc.).
35. **Ground fuels** means all combustible materials such as grass, duff, loose surface litter, tree or shrub roots, rotting wood, leaves, peat, or sawdust that typically support combustion.
36. **Gulch** means a V-shaped valley formed by erosion. It may contain a small perennial or ephemeral stream.
37. **Hammer head turnaround** means a road ending that terminates with a T-shaped turnaround similar to the head of a hammer.
38. **Hazard** means a fuel complex defined by kind, arrangement, volume, condition, and location that determines the ease of ignition and/or of resistance to fire control.
39. **Highway, road, or street**, whether these terms appear together or separately or are preceded by the adjective "public", are general terms denoting a public way for purposes of vehicular travel and include the entire areas within the right-of-way (60-1-103(19), MCA).
40. **Improved property** means a piece of land or real estate upon which a structure has been placed, a marketable crop is growing (including timber), or other property improvement has been made.
41. **Jurisdiction** means the legal power, right or authority over a territory, or the territory within which each may be exercised.
42. **Ladder fuels** means fuels that provide vertical continuity, allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease.
43. **Land or property owner** means any and all individuals, organizations, corporations, or other parties with a titled interest in the subject property. For all other purposes of these regulations, the terms "property owner", "landowner", and "owner" mean both the seller and the purchaser under a contract for deed.
44. **Land use** means the type or degree of activity occurring or intended to occur on a piece of land.
45. **Life safety** means actions taken to prevent the endangerment of people threatened by emergency incidents or by activities associated with the management.

46. **Local Government** includes city councils, county commissions, and other elected and appointed officials who work for local government.
47. **Mitigation** means action that moderates the severity of a fire hazard or risk.
48. **Noncombustible** is a material that in the form in which it is used and under the conditions anticipated, will not aid combustion or add appreciable heat to an ambient fire.
49. **Obstructions** mean any object or collection of objects that may deter, hinder, or block access.
50. **Occupancy** means the purpose for which a building, or portion thereof is used or intended to be used.
51. **Open space** means land or water areas provided or preserved in an essentially undeveloped state for active or passive park or recreation purposes; land conservation or other natural resource protection; historic or scenic purposes; or assisting in the shaping of the character, direction, and timing of community development.
52. **Planned Unit Development (PUD)** means a land development project consisting of residential clusters, industrial parks, shopping centers, or office building parks that compose a planned mixture of land uses built in a prearranged relationship to each other and having open space and community facilities in common ownership or use (76-3-103(10), MCA).
53. **Primary access road** means a main entry and exit road. Usually the road(s) that provide(s) access to the development from a highway, county road, or major arterial. Must provide for unobstructed traffic circulation during an emergency.
54. **Private road or street** means a street or road providing access that is not a public road or street.
55. **Public highway, road, or street**, whether the terms appear together or separately or are preceded by the adjective "public", are general terms denoting a public way for purposes of vehicular travel and include the entire area within the right-of-way.
56. **Public highways** means all streets, roads, highways, bridges, and related structures:
 - a. built and maintained with appropriated funds of the United States, the state, or any political subdivision of the state;
 - b. dedicated to public use;
 - c. acquired by eminent domain, as provided in Title 70, chapter 30, and Title 60, chapter 4, MCA; or

- d. acquired by adverse use by the public, with jurisdiction having been assumed by the state or any political subdivision of the state (60-1-103(22), MCA).
57. **Risk** means the measure of the probability and severity of adverse effects to persons or property that results from an exposure to a wildland fire (direct flames, radiant heat, or firebrands).
58. **Secondary road** means a road that leaves a primary access road to reach homes, buildings, recreational sites, etc. that lie away from the primary road.
59. **Street or road** means any access, not including a driveway, providing access to more than one parcel and primarily intended for vehicular access.
60. **Slash** means an accumulation of any burnable, organic material that has been severed or removed from its natural state.
61. **Slope** means an upward or downward incline or slant, usually calculated as a percent of slope (rise or fall per 100 feet [30.45m] of horizontal distance).
62. **Street or road identification signs** means any sign containing words, numbers, directions, or symbols that provide information to emergency responders.
63. **Structure** means that which is built or constructed, an edifice or building of any kind, or any piece of work artificially built-up or composed of parts joined together in some definite manner.
64. **Structure protection** means protecting a structure from the threat of damage from an advancing wildland fire. Protection involves the use of standard wildland protection tactics, control methods, and equipment, including fire control lines and the extinguishment of spot fires near or on the structure. The protection can be provided by both the rural and/or local government fire department and the wildland fire protection agency.
65. **Subdivision** means a division of land or land so divided that it creates one or more parcels containing less than 160 acres that cannot be described as a one-quarter aliquot part of a United States government section, exclusive of public roadways, in order that the title to or possession of the parcels may be sold, rented, leased, or otherwise conveyed and includes any resubdivision and further includes a condominium or area, regardless of its size, that provides or will provide multiple space for recreational camping vehicles or mobile homes (76-3-103(15), MCA).
66. **Surface fuels** means all materials lying on or immediately above the ground, including needles, leaves, duff, grass, small dead wood, downed logs, stumps, large limbs, low brush, and reproduction.

67. **Survivable space**: Survivable space is defined as the characteristics of a structure and the adjacent area and their ability to survive a wildland fire. Appropriate and applicable survivable space provisions provide the best chance for a structure to resist loss and/or major damage during a wildland fire, on its own without direct suppression intervention by firefighters.
68. **Traffic lane** means that portion of a roadway that provides a single lane of vehicle travel in one direction.
69. **Tree crown** means the primary and secondary branches growing out from the main stem, together with twigs and foliage.
70. **Turnaround** means a portion of a street or road, unobstructed by parking, that allows for a safe reversal of direction for emergency equipment.
71. **Turnout-Pullout** means an area along the edge of a street or road that provides a space for a vehicle to safely move out of a traffic lane in order to permit the passage of emergency or other types of vehicles.
72. **Valley** means an elongated depression of the Earth's surface, usually found between ranges of hills or mountains.
73. **Vegetation** means any plant, native or planted, living or dead: tree, shrub, bush, grass, flower, etc.
74. **Vegetation management plan** means a plan that reduces the amount of fuel available for wildland fires, reducing the probability of a rapidly spreading wildland fire. Elements of the plan include removal of slash, snags, other ground fuels, surface fuels, ladder fuels and dead trees, and thinning of live vegetation.
75. **Water supply** means an acceptable source of water for firefighting activities.
76. **Wildland** means an area in which development is essentially nonexistent, except for roads, railroads, power lines, and similar facilities.
77. **Wildland fire or wildfire** means an unplanned and uncontrolled fire spreading through vegetative fuels, at times involving structures.
78. **Wildland fire protection** means the work of prevention, detection, and suppression of wildland fires, and includes the training required to perform those functions.
79. **Wildland-Urban Interface (WUI)** means the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

SECTION I: REQUIREMENTS FOR SUBDIVISION REGULATIONS

1. Wildland Fuel Mitigation

a. Defensible Space

- i. A building envelope shall be defined on each lot prior to construction of a structure in cooperation with the AHJ.
- ii. Each building envelope shall have a minimum defensible space established prior to construction, and the defensible space shall be based on the attached guideline chart (see Defensible Space Guidelines, Appendix B).

b. Vegetation Management Plan

- i. The subdivider shall provide a vegetation management plan for all properties and streets or roads within the subdivision, including the open space.
- ii. The plan shall be approved by the AHJ and shall be implemented prior to the filing of the final plat for the subdivision. The intent of a vegetation management plan is to reduce fuel loading and provide continuous maintenance of the fuel load. The plan shall address managing vegetation to meet the following goals:
 - A. protect life and property;
 - B. reduce the potential for a fire on improved property to spread into wildland fuels, and for a fire in wildland fuels to spread into improved property or structures. This also applies to reducing the potential for a fire spreading to or from lands adjacent to the subdivision;
 - C. provide a defensible space and a safe working areas for emergency responders fighting fire. Defensible space shall be based on the attached chart (see Defensible Space Guidelines in Appendix B); and
 - D. maintain important native plant communities, the ecological processes that influence them, and consistency with fish and wildlife habitat conservation goals. Consulting with biologists in the preparation and implementation of the vegetation management plan is strongly encouraged.
- iii. All areas within five feet of each side of a driveway shall be cleared of vegetation to a maximum height of five inches prior to the construction

of any new structures or the alteration, moving, or change of use of an existing structure on an existing lot.

2. Site Development

- a. **Steep Slopes.** Structures in new subdivisions shall not be sited in areas where the slope exceeds 30 percent as measured before disturbance or alteration. Any proposed lot within a new subdivision that has slopes that exceed 30 percent shall have a building envelope or no-build areas established on the face of the final plat for the subdivision that provides for a building site on slopes less than 30 percent. The structures located on each lot shall be located within the building envelope or away from no-build areas as determined by the governing body.
- b. **Chimneys.** Buildings and building sites are prohibited within ravines or other topographical features which constitute "fire chimneys", and within 150 feet of the apex of "fire chimneys". Any proposed lot within a new subdivision with a "fire chimney" located on the lot shall have a no-build area/zone designated on the face of the final plat for the subdivision that prohibits future development within "fire chimneys" and within 150 feet of the apex of "fire chimneys".
- c. **Improvements Prior to Construction.** Water sources, wells, draft sites, hydrants, fire breaks, access routes, and other fire protection equipment or features required by the preliminary plat approval shall be installed prior to construction of any residential or commercial/industrial structures in a new subdivision.

3. Fuelbreaks and Greenbelts

WUI fire protection may rely on fuelbreaks and greenbelts to separate communities, groups of structures, or individual homes. These breaks can slow or stop the spread of an oncoming fire. Locate fuelbreaks and greenbelts to protect both existing and planned developments and adjacent wildlands.

Good landscaping design can incorporate vegetation or fire fuelbreaks in planned developments. These fuelbreaks shall not be a bare soil trail bulldozed around a subdivision, but can be as simple as the removal of dead and fallen trees, tree limbs, shrubs, and other flammable vegetation together with breaking the continuity of vegetation in a band 100 to 300 feet around the perimeter of the development.

One of the most effective means of providing fire protection is the use of open spaces and public use areas such as parks, recreation sites, picnic areas, trails, and perimeter roads to break fuel continuity.

Natural features such as rocky formations with little or no vegetation or rivers or streambeds in which vegetation has been thinned and dead and dying materials removed can also be utilized to the extent allowed by the Montana Streamside

Management Zone (SMZ) Law in an overall subdivision landscaping plan to help retard an advancing wildfire.

4. **Means of Access**

Most non-firefighter deaths during wildland fires occur during evacuation or attempts to escape from a fire front. Access to developed areas requires that public and private roads, bridges, and driveways be properly constructed to provide for safe ingress and egress for fire personnel and equipment and the public.

Streets and roads providing legal and physical access to lots in new subdivisions and other improvements that help ensure access shall address the following. These access Requirements apply to all means of access, public or private.

a. **Streets and Roads**

i. Legal and physical access to the lots in all subdivisions and other developments shall be provided by a minimum of two approach routes, located as remotely from each other as possible to assure more than one escape route for residents and access routes by emergency vehicles. In addition, it is encouraged that new developments plan for and connect to adjoining properties and their road systems.

A. Subdivisions that cannot provide a minimum of two approach routes are prohibited. However they may be allowed if developers can mitigate the risks by use of one or more of the following measures, and when approved by the AHJ:

- I. increased defensible space requirements;
- II. fuel breaks along the roadways;
- III. turnouts and pull-outs;
- IV. cul-de-sacs and/or hammer head turnarounds;
- V. increased flows of fire protection water supply;
- VI. interior fire sprinklers;
- VII. exterior fire-retardent sprinkler systems; and
- VIII. safety zones.

ii. All subdivisions shall be designed to ensure that fire apparatus has access to within 150 feet of all portions of the buildings constructed on the lots in a proposed development.

iii. In areas of extreme fire hazard classification, as determined by the AHJ, the length of a road ending in a cul-de-sac or hammer head shall not exceed 600 feet. In all other areas the maximum length will be 1000 feet. See the referenced documents in Appendix C.

iv. Road Standards:

- A. Roadways and driveways shall have a minimum clear width of 12 feet for each lane of travel, not including shoulders. They shall have a minimum clearance in height of 13 feet, 6 inches.
- B. Roads shall be constructed of an all weather surface that is capable of supporting all legal loads and as approved by the AHJ.
- v. Grades shall not exceed ten percent, except as approved by the AHJ.
- vi. Bridges and Culverts
 - A. Bridges and culverts shall be designed to accommodate high water flows, including 100-year flood flows in the Federal Emergency Management Agency National Flood Insurance Program, and constructed using accepted engineering practices. Bridges shall be constructed to accommodate the heaviest legal load allowed. Load limits shall be posted on all bridges.
 - B. Vegetation shall be cleared to a minimum of five feet from around all bridges. Bridges shall be constructed of noncombustible material.
- vii. Property owners shall provide emergency access to all open space within the subdivision. The access shall be sufficient to provide access for wildland firefighting vehicles. The fire protection access shall be approved by the AHJ.
- viii. Roadside Fuel Reductions
 - A. All areas within five feet of each side of the driving surface on a public street or road shall be cleared of all vegetation.
 - B. For private streets or roads, all areas within five feet on either side of the driving surface shall be cleared of all vegetation.

b. Gates

- i. The clear opening provided through gates shall be two feet (0.61 m) wider than the traveled way.
- ii. All gates shall be located a minimum of 30 feet (9.2 m) from the public right-of-way and shall not open outward.
- iii. Fire department personnel shall have ready access to locking mechanisms on any gate that restricts access, or the gate shall be constructed to "break away".

c. Signage

- i. All roads within a new subdivision shall be identified with approved non-combustible, reflective road signs that meet the applicable local standard.
- ii. All residential or commercial structures within a new subdivision shall be clearly identified prior to occupancy with address numbers that are plainly visible and legible from the street. Numbers shall be a minimum of four inches in height and reflective.

5. Water Supply

a. **Water Supply Requirements.** Due to the wide variety of situations and levels of fire protection that exist across the state of Montana, the location of each development will present a unique set of challenges for the AHJ.

- i. Minimum GPM Requirements. Regardless of the delivery method or source water, for the purposes of the protection of residential structures the water system shall be capable of being supplied on site at a minimum of 1,000 gpm for a minimum of 30 minutes. The AHJ will determine location or locations of tanks and hydrants as necessary to meet the threat from wildland fire.

b. **Requirements**

- i. Water Supply Needs. Water supply needs may be satisfied by the use of:

- A. pressurized water systems with hydrants as approved by AHJ;
- B. draft sites from natural water sources such as ponds and streams as approved by the AHJ; and
- C. storage tanks with dry hydrants as approved by the AHJ. The AHJ may suggest warning alarms in the event of lower than required water supplies.

- ii. Draft Sites/Dry Hydrants

- A. Whether the water source is manmade or natural, dry hydrants shall be installed at all draft sites. The design, construction, locations, access and maintenance plans for these sites shall be approved by the AHJ.
- B. The draft site shall have emergency vehicle access from an access road constructed in accordance with access requirements (see means of access). Fire department access points shall either be located along an access road or along an approved driveway that does not exceed 150 feet (45.720 meters) in length.

and resources shall be in accordance with standards approved by the AHJ.

- c. Defensible space of not less than 30 feet shall be provided around water tank structures, water supply pumps, and pump houses. Portions of trees and other combustible vegetation within 30 feet of the facilities shall be removed.
- D. Water supply facilities in the WUI dependent on electrical power to meet water supply demands shall provide standby power systems to ensure that an uninterrupted water supply is provided. The standby power source shall be capable of providing power for a minimum of two hours.
 - I. When approved by the AHJ, the standby power suggestion may be waived when the primary power service is underground.
 - II. Standby power is not required when the water supply facility serves no more than one single family dwelling.

vi. Modifications

- A. For a minor subdivision or for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire flow is impractical, the fire flow requirements may be modified downward by the AHJ.
- B. Fire flow may be modified upward by the AHJ where conditions indicate an unusual susceptibility to group fires or conflagrations. An upward modification shall not be more than twice that suggested for the building or buildings under consideration.
- c. Water supply points may be developed at a single location or at a number of locations within the vicinity of the development. The location or locations shall be determined in concert with the AHJ in order to best support suppression activities by the AHJ.

6. **Alternative Development.** The AHJ may approve, or recommend approval of an alternative development proposal when the overall design, as proposed by the applicant, meets or exceeds the intent of these Requirements and is not detrimental to public health, safety, and welfare.

7. **Miscellaneous**

- a. **Mapping of Fire Protection Features.** The subdivider shall provide a detailed site map, including all fire protection features (i.e., access roads, hydrants systems, water supply points, etc. installed in the development) to the AHJ.

b. Maintenance of Equipment and Features

- i. All fire protection equipment and features shall be properly maintained to provide at least the same level of performance and protection as designed.
- ii. Maintenance shall be ensured by whatever mechanism that is acceptable to the AHJ, upon final plat approval.

SECTION II: REQUIREMENTS FOR WILDLAND-URBAN INTERFACE ZONING REGULATIONS

1. Fuel Mitigation

a. Defensible Space

- i. Any new construction or the alteration, moving, or change of use of an existing residential or commercial structure shall be required by zoning to establish a minimum protection zone based on the attached guideline chart (see Appendix B, Defensible Space Guidelines).
- ii. All accessory structures within the defensible space shall meet the fire resistive construction techniques established by the DLI.
- iii. Single specimens of trees, ornamental vegetation, cultivated groundcover (such as green grass, ivy, or similar plants), or native grasses and weeds trimmed to a maximum height of four inches, shall be allowed provided any such plants do not form a means of readily transmitting fire.

b. Vegetation Management

- i. Areas adjacent to streets, roads, and driveways shall be treated to meet the requirements in a.iii. above, with the exception of single specimens of trees.
 - A. For driving surfaces, all areas within five feet of each side of the driving surface shall be cleared.
 - B. For streets or roads, all areas within five feet of each side of the driving surface shall be cleared of all vegetation.

2. Site Development and Building Construction Standards

- a. **Steep Slopes.** Structures in new subdivisions shall not be sited in areas where the slope exceeds 30 percent as measured before disturbance or alteration. Any lot proposed for development within a zoning district that has slopes that exceed 30 percent, shall designate on the lot layout in the application for a zoning compliance approval, a building envelope or no-build area that provides for a building site on slopes less than 30 percent.
- b. **Fire Chimneys.** Buildings and building sites are prohibited within ravines or other topographical features which constitute "fire chimneys", and within 150 feet of the apex of "fire chimneys". Any proposed lot with a "fire chimney" located on the lot shall have a no-build area/zone designated on the face of

the final plat for the subdivision that prohibits future development within "fire chimneys" and within 150 feet of the apex of "fire chimneys".

- c. **Construction of Residential, Commercial, or Accessory Structures.** The construction of new residential, commercial, or accessory structures and the substantial improvement, relocation, and replacement of existing structures shall consider the allowed construction techniques developed or adopted by the AHJ.
- d. **Vegetation Management Plan.** A vegetation management plan shall be developed and approved by the AHJ prior to any new construction or alteration, moving, or change of use of an existing residential or commercial structure on an existing lot.
 - i. The plan approved by the AHJ shall be implemented prior to the construction of any new structures or the alteration, moving, or change of use of an existing structure on an existing lot.
 - ii. The plan shall address vegetation management to meet the following goals:
 - A. to protect life and property;
 - B. to reduce the potential for a fire on improved property from spreading into wildland fuels and from a fire in wildland fuels from spreading into improved property or structures. This also applies to reducing the potential for a fire spreading to or from adjacent lands;
 - C. to provide safe working areas for emergency responders fighting fire; and
 - D. to maintain important native plant communities, the ecological processes that influence them, and consistency with fish and wildlife habitat conservation goals. Consulting with biologists in the preparation and implementation of the vegetation management plan is strongly encouraged.
 - iii. All areas within five feet of each side of a driveway shall be cleared of vegetation prior to the construction of any new structures or the alteration, moving, or change of use of an existing structure on an existing lot.

3. Means of Access

The majority of non-firefighter deaths during wildland fires occurs during evacuation or attempts to escape from a fire front. Access to developed areas requires that public and private roads, bridges, and driveways be properly constructed to provide for safe ingress and egress for fire personnel and equipment and the public.

Streets and roads providing legal and physical access to lots and other improvements that help ensure access shall address the following. These access Requirements apply to all means of access public or private.

a. Applicable to New Subdivisions

- i. Legal and physical access to the lots in all subdivisions, approved but not yet built upon, shall be provided by a minimum of two approach routes, located as remotely from each other as possible to assure more than one escape route for residents and access routes by emergency vehicles. In addition, it is encouraged that developments plan for, and connect to, adjoining properties and their road systems.
 - A. Subdivisions that cannot provide a minimum of two approach routes are prohibited. However, they may be allowed if developers can mitigate the risks by use of one or more of the following measures, and when approved by the AHJ:
 - I. larger defensible spaces;
 - II. fuel breaks along the roadways;
 - III. turnouts and pull outs;
 - IV. cul-de-sacs and/or hammer head turnarounds;
 - V. increased flows of fire protection water supply;
 - VI. interior fire sprinklers;
 - VII. exterior fire-retardent sprinkler systems; and/or
 - VIII. safety zones.
- ii. Fire Apparatus Access. All subdivisions shall be designed to ensure that fire apparatus have access to within 150 feet of all portions of the buildings constructed on the lots in a proposed development.
- iii. Road Standards
 - A. Roadways shall have a minimum clear width of 12 feet for each lane of travel, not including shoulders. They shall have a minimum clearance in height of 13 feet, 6 inches.
 - B. Roads shall be constructed of an all weather surface that is capable of supporting all legal loads and as approved by the AHJ.
- iv. Grades shall not exceed ten percent, except as approved by the AHJ.
- v. Bridges and Culverts
 - A. Bridges and culverts shall be designed to accommodate high water flows and constructed using accepted engineering practices. Bridges shall be constructed to accommodate the heaviest legal load allowed. Load limits shall be posted on all bridges.

B. Vegetation shall be cleared to a minimum of five feet from around all bridges. Bridges shall be constructed of noncombustible material.

vi. Emergency Access. Property owners shall provide emergency access to all open space within a subdivision. The access shall be sufficient to provide access for wildland firefighting vehicles. The fire protection access shall be approved by the AHJ.

vii. Roadside Fuel Reductions

A. All areas within five feet of each side of the driving surface on a public street or road shall be cleared of all vegetation.

B. For private streets or roads, all areas within five feet of each side of the driving surface shall be cleared of all vegetation.

b. Applicable to Existing Lots/Tracts of Record

i. Fire apparatus shall have access to within 150 feet of all portions of the buildings constructed on the lots.

ii. Adequate turn-around area for fire apparatus shall be provided if a dead-end driveway exceeds 150 feet in length.

iii. New roads/driveways necessary to serve the new or altered building shall be constructed of an all weather surface that is capable of supporting all legal loads and as approved by the AHJ. Roadways shall have a minimum clear width of 12 feet for each lane of travel, not including shoulders. The road/driveway shall have a minimum clearance height of 13 feet, 6 inches.

iv. For lots that have only one approach route, a larger defensible space or fuel breaks may be required by the AHJ.

v. For private streets or roads or driveways that provide direct access to the building lot, clearance of all vegetation to a minimum of five feet from each edge of the driving surface of the private road easement or driveway shall be established and maintained.

c. Gates

i. The clear opening provided through gates shall be two feet (0.61 m) wider than the traveled way.

ii. All gates shall be located a minimum of 30 feet (9.2 m) from the public right-of-way and shall not open outward.

- iii. Fire department personnel shall have ready access to locking mechanisms on any gate that restricts access or the gate shall be constructed to "break away".

d. Signage

- i. All roads shall be identified with approved non-combustible, reflective road signs that meet the applicable local standard.
- ii. All residential or commercial structures shall be clearly identified with address numbers that are plainly visible and legible from the street prior to occupancy.

4. Alternative Development.

The AHJ may approve or recommend approval of an alternative development proposal when the overall design, as proposed by the applicant, meets or exceeds the intent of these Requirements and is not detrimental to public health, safety, and welfare.

5. Miscellaneous - Maintenance of Equipment and Features

- a. All fire protection equipment and features shall be properly maintained to provide at least the same level of performance and protection as originally designed.
- b. Maintenance shall be ensured through the use of whatever mechanism is acceptable to the AHJ.

APPENDIX A

HOMEOWNER'S CODE OF RESPONSIBILITY RESPONSIBILITIES OF PROPERTY OWNERS IN THE WILDLAND-URBAN INTERFACE

Property owners, residents, and visitors in areas threatened by wildfire have a responsibility for their own life safety. Understanding the risks of living or being in the wildland-urban interface (WUI) is part of that responsibility.

The two keys to your survival and that of your property are early preparedness and clear decision-making at the time of the threat. Perform fuels mitigation: create survivable space areas around your buildings. You must also prepare yourself. Learn some of the risks of staying or evacuating. Evaluate whether you are physically and emotionally prepared to stay, and whether other family members will be able to cope with evacuating (including possibly leaving someone behind) or staying. This will enable you to make good decisions during a wildfire threat.

A. PREPARING YOUR PROPERTY

In order for your assets, structures, and property to have the best opportunity to survive a wildfire and to be defended safely, these basic principles must be followed.

1. Assets, structures, and property have to be properly prepared and maintained **before** a wildfire threatens them. Utilize the Guidelines in this document to assist in preparation. If you have further questions, contact your local fire district or department.
2. Do not assume firefighters will be readily available to defend your property. Prepare your property to survive a major wildfire without firefighter intervention. You must have good access, fire-resistant structures and landscaping, an adequate water supply, and a safe area ready in advance. This will also make defending your property more effective whether you are defending it yourself or receive assistance from firefighters.

B. CREATING A FIRE PLAN

Develop a plan to address your own options for dealing with a wildfire threatening your assets, structures, and property.

1. Know where fire is likely to be a threat to your property and evaluate how to access or exit your property safely.
2. Learn and evaluate the risks of evacuating on mid-slope roads and roads where heavy fuel loads are present.

3. Understand weather patterns and the likely effects weather will have. That knowledge will help you decide whether you should evacuate or stay at your property.
4. Know where your safe zones are.

C. EVACUATING

Evacuate early if you have any doubts about the survivability of your property, your personal safety, and your physical and/or mental ability to stay. Know likely evacuation routes. Make sure everyone knows evacuation plans such as the location you and/or your family will evacuate to in case you are split up for any reason, including someone staying behind. Keep in mind that one of the highest risks during a wildfire is traveling on evacuation routes and roads. Even during an early evacuation, fire can cut off your evacuation route. Listen to the advice of local law enforcement and fire protection officers and make your decisions accordingly.

D. CONCLUSION

The decision whether to stay or go is yours. You have a legal right to remain and defend your property. Every situation is different and has to be evaluated at the time of the threat. What is right for you might not be right for someone else under the same circumstances. However, you must be confident you are making the best possible decision for your safety and that of your family and others involved with you. Property preparation and educating yourself and your family on the dangers of staying or evacuating during a wildfire will make that possible.

PROTECTION ZONE GUIDELINES

Zones	Requirements	Recommendations	Comments
Zone A - Structure Zone			
0-5 feet from structure	<ul style="list-style-type: none"> *Maintain non-combustible ground material 2 to 3 feet around structure (Planting beds, rock gardens, pavers, gravel or bare soil). *Fire resistant plants required (See <i>Fire Resistant Plants for Montana Landscapes and Fire and Your Landscape</i>). *Remove all pine needles & flammable ground materials. *Prune tree limbs and branches within 10 feet of the roof. *Remove tree limbs and branches within 10 feet of chimney. *Use <i>Firewise</i> construction and landscaping concepts in this zone. 	<ul style="list-style-type: none"> * Maintain low combustible ground covers. * Minimize flammable vegetation in this zone provided it: <ul style="list-style-type: none"> - does not touch or overhang the home; - is not a species that retains dead material or deposits excessive quantities of ground fuel; and - is located far enough away from the home so that they will not ignite the home by direct flame contact or radiant heat emission. *Seasonally: <ul style="list-style-type: none"> - keep roof and rain-gutters clear of needles and leaves; and - store firewood outside the landscape zone during fire season. 	Wildland fire is the #1 threat to the residents of Montana. The goal in this zone is to reduce the potential home ignition sources. What is done now will greatly enhance structure survivability and fire fighter safety.
Zone B - Landscape Zone			
6-30+ feet from structure	<ul style="list-style-type: none"> *Maintained lawn or mowed grass (3-4"). *Remove pine needles and flammable ground materials. *Prune all trees so the lowest limbs are at least 6 to 10 feet above the ground. *Min 30 feet between crowns of native trees or "clumps", (max 5 feet trees/clump). *Maintain 20 feet between planting islands & groups of shrubs. 	<ul style="list-style-type: none"> * Keep lawns watered, (as conditions allow). * Consider planting beds, rock gardens, xeriscaping and fire resistant plants. * Use bedding plants (<18 inches high). * Consider non-flammable landscape material. * If a moderate or high hazard area, consider fire-resistant materials for patio furniture and other accessories around the home. * Keep patio cushions inside the home when not in use during periods of high fire potential. 	The goal in this zone is to reduce radiant heat and to provide the critical space where fire fighters might be deployed to defend the home.
Zone C - Forest/Wildland Transition Zone			
From 31 feet to 100+ feet from home	<ul style="list-style-type: none"> *Mow the grassy fuels annually. *Preferred densities for native trees: <ul style="list-style-type: none"> - spacing – 20 feet X 20 feet *Remove all ladder fuels. *Maintain 20 feet between crowns of native trees or "clumps" (max 5 trees/clump). *20 feet between planting islands. *Prune native tree limbs 15 feet from ground or 1/3 of live crown, which ever is less. 	<ul style="list-style-type: none"> * Consider a mixture of deciduous and coniferous trees. Most deciduous trees do not support high intensity fires. * Provide added protection with "fuel breaks", such as driveways, gravel walkways, and lawns. * Provide access through fences for fire apparatus access to your remaining property. * Consider coordination with neighboring properties. * Store firewood and other combustibles in this Zone. * Recommend modifying the fuels to the property line for lots \leq 2.5 acres. 	Treatment in this zone will create conditions unfavorable for a crown fire, and transition the wildland fire to a ground fire. Tree spacing is intended to reduce the ability to sustain a crown fire and to provide a radiant heat barrier to the residence.

Definitions:

Clumps means groups of trees where crowns are less than 10 feet apart.

Crown means the outer edge of tree or "clumps" of trees.

Native trees means Lodgepole Pine, Ponderosa Pine, Douglas Fir, Rocky Mountain Juniper, Spruce, and Quaking Aspen.

Pine needle removal means to rake only down to the decomposing layer to avoid erosion problems.

Ladder fuels means vegetation of different heights, close enough to allow a surface fire to spread vertically to the top of a tree.

PROTECTION ZONE GUIDELINES

Zones	Requirements	Recommendations	Comments
Zone D - Property Perimeter Buffer			
120+ foot wide buffer around perimeter	<ul style="list-style-type: none"> *Remove heavy accumulations of woody debris, such as piles of stem wood or branches. *Preferred densities for native trees: <ul style="list-style-type: none"> - spacing – 15 feet X 15 feet *Remove all ladder fuels. *Maintain 15 feet between crowns of native trees or "clumps" (max 5 trees/clump). *10 feet between planting islands. 	<ul style="list-style-type: none"> * Prune native tree limbs min. 8 to 15 feet from ground or 1/3 of crown, which ever is less. * Coordinate with neighboring properties. * Treat entire perimeter of property. 	Consistent application of these treatments will create conditions where a crown fire could be transformed into a ground fire, slowing its rate of spread and creating an opportunity for fire suppression resources to safely respond. This zone starts at the property line and comes in a minimum of 120 feet.

Definitions:

Clumps means groups of trees where crowns are less than 10 feet apart.

Crown means the outer edge of tree or "clumps" of trees.

Native trees means Lodgepole Pine, Ponderosa Pine, Douglas Fir, Rocky Mountain Juniper, Spruce, Quaking Aspen.

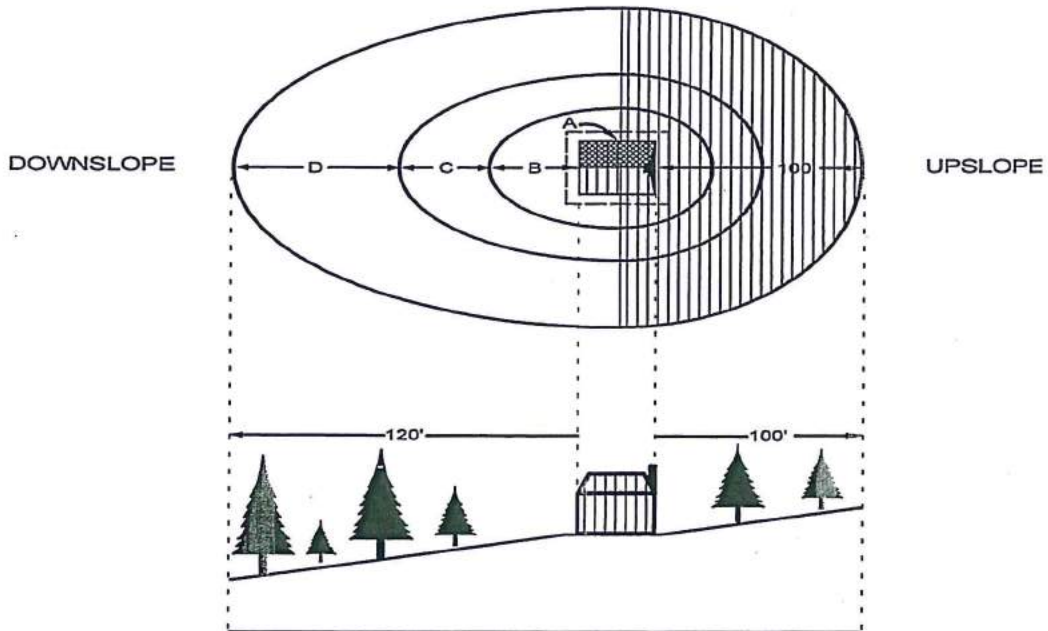
Pine needle removal means to rake only down to the decomposing layer to avoid erosion problems.

Ladder fuels means vegetation of different heights, close enough to allow a surface fire to spread vertically to the top of a tree.

Appendix B

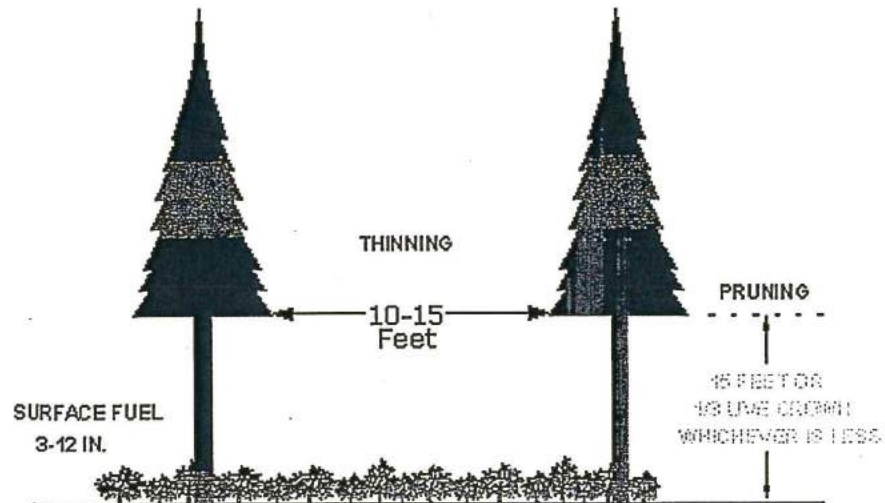
Defensible Space Guidelines

As slope increases, the need for larger defensible spaces increases. This chart indicates the minimum suggested distances from the structure or structures to be protected by the defensible space zones. Each of these distances indicates concentric rings spreading out from Zone A.



Percent Slope	Zone B Minimum	Zone C Minimum	Zone D Minimum
0-10	10 feet	20 feet	70+ feet
10-20	15 feet	25 feet	80+ feet
20-30	20 feet	30 feet	100+ feet

Thinning and Pruning



1. Thin trees to 10-15 feet between crowns.
2. Prune limbs on all remaining trees to 15 feet or 1/3 of total crown height, whichever is less.
3. Maintain surface vegetation at 12 feet or less.

**APPENDIX C
SOURCES**

PUBLICATIONS	
Available From (Organization)	Publication
Montana DNRC Fire and Aviation Bureau 2705 Spurgin Road Missoula, MT 59804 (406) 542-4250	<i>Fire Risk Rating For Existing and Planned Wildland Interface Developments in Montana</i>
International Code Council 4051 West Flossmoor Road Country Club Hills, IL 60478-5795 www.iccsafe.org/cs/	<i>International Wildland/Urban Interface Code</i> <i>International Fire Code</i>
National Fire Protection Association (NFPA) 1 Batterymarch Park Quincy, Massachusetts 02169-7471 www.nfpa.org/	<i>NFPA 1, Fire Code</i> <i>Annex H</i> <i>Annex I</i> <i>NFPA 1141 Standard for Fire Protection Infrastructure for Land Development in Suburban and Rural Area.</i> <i>NFPA 1142, Standard on Water Supplies for Suburban and Rural Fire Fighting</i> <i>NFPA 1144, Standard for Reducing Structure Ignition Hazards from Wildland Fire</i>
U.S. Fire Administration 16825 S. Seton Ave. Emmitsburg, MD 21727 www.usfa.dhs.gov/	<i>Water Supply Systems and Evaluation Methods Vol. I & II</i>
Montana State University Extension Office 416 Culbertson Hall, Montana State University–Bozeman Bozeman MT 59717 www.montana.edu/wwwpb/pubs/mt200101AG.pdf	<i>Fire-Resistant Plants for Montana Landscapes</i>
WEBSITES	
Organization	Website
Firewise	www.firewise.org
FireSafe Montana	www.firesafemt.org/index.php
Keep Montana Green	www.keepgreen.org

VI-R Special Requirements for Subdivisions Proposed in Areas of High or Very High Fire Hazard

Fire hazard designation may be determined by the local fire protection authority, the Community Wildfire Plan or an independent wildfire assessment. Granite County will give preference to the designation set by the local fire protection authority. For areas identified as wildfire high hazard areas the following apply:

- a. All subdivisions located within the Georgetown Lake Fire Service Area must comply with the regulations set forth in Appendix S.
- b. A Fire Prevention and Control Plan approved by the local fire service area or fire district must accompany the submission of any application for preliminary plat approval.
- c. The Fire Prevention and Control Plan must include the following items:
 - i. An analysis of the wildfire hazards on the site, as influenced by existing vegetation and topography;
 - ii. A map showing the areas that are to be cleared of dead, dying, or severely diseased vegetation, including a continued vegetation management plan;
 - iii. A map of the areas that are to be thinned to reduce the interlocking canopy of trees;
 - iv. The identification of roads, and bridges are sufficient for emergency vehicle access and fire suppression activities. Slopes of all roads and driveways must be provided. Signage must be provided. Snow removal areas outside of ditches must be provided.
 - v. A map showing building envelopes if proposed
 - vi. Covenant(s) requiring compliance with Wildland Interface guidelines including:
 - A. Survivable space as defined by current state fire standards;
 - B. Additional on-site water requirements as identified by the local fire district or fire service area;
 - C. Fuel breaks and greenbelts;
 - D. Covenant demonstrating continual compliance with survivable space standards.

- d. Provisions for the maintenance of fire guidelines shall be included in the covenants, conditions, and restrictions for the development. A property owners' association must be formed and designated to enforce the covenants, conditions, and restrictions.
- e. At least two entrances/exits must provide escape routes for residents and access to the subdivision by fire-fighting vehicles for subdivisions of 15 lots or more or where identified by the local fire protection authority. In-line cul-de-sacs may be considered for accessing 14 lots or less. In line cul-de-sacs shall be built with a minimum right-of-way radius of 75 feet and a minimum roadway radius of 60 feet. The governing body must review gates for subdivisions proposed to be gated. Bridges providing access to the subdivision must be built to a design load of HS 20 and constructed of non-flammable materials. Road rights-of-way must be cleared of slash.
- f. Building sites may not be located on slopes greater than 25 percent or at the apex of "fire chimneys". (Topographic features, usually drainage ways or swales, which tend to funnel or otherwise concentrate fire toward the top of steep slopes.) Areas of 25 percent slope or more shall be noted on the plat as unbuildable.
- g. Subdivisions must show the presence of on-site or off-site water sources. All water sources, whether on-site or off-site, must be approved by the local fire jurisdiction prior to preliminary plat application. A letter from the local fire jurisdiction verifying water source approval must accompany the preliminary plat application. Subdivision may provide payment for development of off-site water sources to the fire service area or fire district which the subdivision is located within or contracted with. On-site water may be required as determined by the local fire district or fire service area.
- h. Subdivisions located outside of the Georgetown Lake Zoning District are required to place a covenant or plat restriction on newly created lots stating all new structures must be placed a minimum of twenty feet (20') from property lines so as to minimize the potential for flame spread and to permit adequate access for fire fighting equipment. Subdivisions located within the Georgetown Lake Zoning District must comply with new structure setbacks as defined by the zoning regulations.
- i. The availability, through a fire protection district or contract of services with a fire district, of fire protection services adequate to respond to fires that may occur within a subdivision.