

**CHAPTER 13
SONOMA COUNTY FIRE SAFETY ORDINANCE
FIRE SAFE STANDARDS DEVELOPMENT IN THE SRA AND LRA**

ORDINANCE NO. 6184

AN ORDINANCE OF THE BOARD OF SUPERVISORS OF THE COUNTY OF SONOMA, STATE OF CALIFORNIA, AMENDING CHAPTER 13, "FIRE SAFETY ORDINANCE" OF THE SONOMA COUNTY CODE TO ADOPT BY REFERENCE AND AMEND SELECTED PROVISIONS, CHAPTERS AND APPENDICES OF THE CALIFORNIA CODE OF REGULATIONS, TITLE 24, 2016 EDITION OF THE CALIFORNIA FIRE CODE; TO ADOPT LOCAL FINDINGS; AND TO MAKE TECHNICAL AND ADMINISTRATIVE REVISIONS TO CHAPTER 13.

SECTION I. Chapter 13 of the Sonoma County Code is amended to read:

**CHAPTER 13
SONOMA COUNTY FIRE SAFETY ORDINANCE**

Article I. General Provisions.

Sec. 13-1. Short title.

This chapter shall be known and may be cited as the Sonoma County Fire Safety Ordinance.

Historical Reference (Ord. No. 6049, § I, 11-5-2013; Ord. No. 5905, § I, 11-2-2010; Ord. No. 5373, § 2, 2002; Ord. No. 4905, § 1, 1995.)

Sec. 13-2. Administrative regulations.

(a) The County Fire Chief, the director of Permit and Resource Management, or both may adopt, amend or repeal administrative regulations to implement, interpret or make specific provisions of this chapter. Notice of the proposed adoption, amendment, or repeal of a regulation pursuant to this section shall be posted for a period of thirty (30) days in the public lobby of the permit and resource management building, and shall be mailed to every person who has filed a request for notice of such actions with the County Fire Chief, the director of Permit and Resource Management, or both. Every notice shall include a copy of the express terms of the proposed action and a statement that the public may submit written comments on the proposed action prior to the close of the posting period. The County Fire Chief, the director of Permit and Resource Management, or both, as appropriate, may approve, modify, or withdraw the proposed adoption, amendment or repeal of a regulation following the posting period.

(b) The adoption, amendment or repeal of a regulation pursuant to this section shall take place not less than fifteen (15) nor more than one hundred eighty (180) days following the close of the posting period specified in subsection (a), and shall be effective upon posting of an order of adoption, amendment or repeal in the public lobby of the permit and resource management building. Each such order shall include a concise and clear summary of the action taken by the County Fire Chief, the director of Permit and Resource Management, or both, and shall remain posted for a period of thirty (30) days.

(c) The regulations adopted or amended pursuant to this section shall have the same force and effect as provisions of this chapter. Failure by any person to comply with any regulation adopted or amended pursuant to this section shall be a violation of this chapter.

(d) The regulations adopted or amended pursuant to this section shall be periodically compiled and copies thereof made available to the public for purchase at cost or review free of charge at the office of Fire and Emergency Services Department or the Department of Permit and Resource Management.

Article IV. County Fire Code is amended to read:

Article IV. County Fire Code.

**Sec. 13-15. County Fire Code designated--Administration and enforcement--
Amendment by local fire protection districts.**

(a) The 2016 California Fire Code as adopted by reference and amended in this article, shall constitute the County Fire Code.

(b) Except as otherwise provided in subsection (c), the administration and enforcement of the County Fire Code within a local fire protection district shall be the responsibility of the local Fire Chief. The County Fire Chief shall be responsible for the administration and enforcement of the County Fire Code within those portions of the unincorporated area of the county not in a local fire protection district.

(c) The County Fire Chief shall be responsible for plan checking and inspection of new construction and alterations subject to the County Fire Code, Chapter 13 within both those portions of the unincorporated area of the county not in a local fire protection district and those portions of the unincorporated area of the county in a local fire protection district which has adopted the County Fire Code,

unless a local fire protection district notifies the County Fire Chief in writing that it has elected to have the local Fire Chief exercise those responsibilities within its jurisdictional area, whether according to the County Fire Code or the district's amendment of the County Fire Code adopted per subsection (d).. Any such action shall only be effective if it is thereafter approved by the Board of Directors of the local fire

protection district.

Exceptions

- 1) Development applications subject to enforcement of Title 14 of the Natural Resources Code, Division 1.5, Chapter 7, Subchapter 2. Buildings shall receive final approval and inspections by Sonoma County Fire and Emergency Services Department as delegated by California Department of Forestry and Fire Protection.
- 2) Residential Construction classified as R-3 as delegated by the chief building official to Sonoma County Fire and Emergency Services Department pursuant to the California Building and California Residential Code.
- 3) Sonoma County Fire shall be responsible for record keeping and inspection reports submitted by the local fire protection district to the chief building official.

(d) Pursuant to Health and Safety Code, Section 13869.7, a local fire protection district may amend all or any part of the County Fire Code for application within its jurisdictional area. Any such amendment shall first be referred to the County Fire Prevention Officers Association for review and recommendation, and shall only be effective if it is thereafter approved by the Board of Directors of the local fire protection district and ratified by the Board of Supervisors. The Board of Supervisors shall not ratify such amendment if it includes provisions that are less restrictive than the provisions of the County Fire Code.

Sec. 13-16. Conflicting regulations.

The provisions of this chapter shall prevail over any inconsistent provision contained in the California Fire Code or the National Fire Codes; provided, in the case of inconsistent regulations, no regulation shall prevail that is less restrictive than the regulations established by the State of California unless otherwise authorized by the State.

(123) Article V. Chapter 13 of the Sonoma County Code is amended to read:

Article V. Fire Safe Standards

Division A. In General.

Sec. 13-21. Findings.

The Board of Supervisors makes the following findings pertaining to the conditions and requirements contained in this article:

(a) The conditions and requirements contained in this article are consistent with and in furtherance of the goals, objectives and policies of the public safety element of the general plan.

(b) The conditions and requirements contained in this article are necessary because the failure to adopt them would place residents and property within the unincorporated area of the county in a condition perilous to health or safety, or both.

(c) The conditions and requirements contained in this article are necessary to comply with the requirements of Public Resources Code section 4290 and California Code of Regulations, Title 14 Natural Resources Code, Division 1.5, Chapter 7, Subchapter 2 SRA Fire Safe Regulations.

(d) The conditions and requirements contained in this article are necessary because growth and development within the unincorporated area of the county has increased the potential for significant losses from wildland and structure fires and adversely impacted rural and wildland fire fighting resources.

(e) The conditions and requirements contained in this article are necessary because wildland fires are becoming an increasing threat to structures and loss of life, where in the past the only threat was to wildland resources.

(f) The conditions and requirements contained in this article are necessary because structure fires are escaping to the surrounding wildlands and destroying other structures as well as wildland resources.

(g) The conditions and requirements contained in this article are necessary because there are not enough firefighting resources available, even with mutual aid, to protect both wildland resources and the structures intermingled amongst such resources and it is financially infeasible to increase firefighting resources to the level necessary to provide such protection.

(h) The conditions and requirements contained in this article are necessary because they represent a cost effective alternative to increasing firefighting resources.

(i) The conditions and requirements contained in this article will ensure that all new development within the unincorporated area of the county will provide a basic level of fire protection around itself making it easier and safer for firefighters to fight wildland and structure fires.

(j) The conditions and requirements contained in this article will not totally prevent losses from wildland and structure fires, but will reduce the severity of the losses that do occur through built-in fire protection and better fire response infrastructure.

(k) The conditions and requirements contained in this article will create an opportunity for firefighters to defend a structure from a threatening wildland fire and protect the wildlands from an escaping structure fire.

(l) The conditions and requirements contained in this article will increase the safety of firefighters protecting lives, structures and wildland resources.

Sec. 13-22. Citation – Purpose.

This article shall be known and may be cited as the “Sonoma County Fire Safe Standards” or the “Fire Safe Standards.” This article is adopted for the purpose of establishing minimum fire safe standards for development within the unincorporated area of the county located in the State Responsibility Area subject to the provisions of California Code of Regulations Title 14, Division 1.5 and the Local Responsibility Area when authorized by Sonoma County Fire Code as amended when not subject to other regulated building standards. Where a development subject to the provisions of this article cannot meet a specified standard, an exception to the standard may be applied for pursuant to Section 13-23. This article is not intended to restrict or otherwise limit the authority or discretion of the County to impose additional requirements when reviewing applications for development. Nothing in this article is intended to supersede more restrictive provisions of this Code and where another provision of this Code establishes a more stringent requirement, that requirement shall control.

Sec. 13-23. Compliance with standards required— exceptions to standards.

(a) All development subject to the provisions of this article shall be constructed and maintained in compliance with the standards specified in this article. Approvals and permits for any development may be withheld or refused until adequate provision has been made to ensure such compliance.

(b) Exceptions to the standards specified in this article and mitigated practices may be allowed where the exception or mitigated practice provides the same overall practical effect as the specified standards.

(c) Application for an exception or mitigated practice shall be made in writing by an applicant for development or the applicant's authorized representative. The application shall state the specific section or sections of this article for which an exception or mitigated practice is proposed, material facts supporting the contention of the applicant, the details of the exception or mitigated practice proposed, and a map showing the proposed location and setting of the exception or mitigated practice. The burden of proving that a proposed exception or mitigated practice is warranted shall be on the applicant.

(d) The county Fire Chief shall determine whether to grant, deny, or modify any application for an exception or mitigated practice filed in connection with the

issuance of any building permit. The planning commission, board of zoning adjustments, project review and advisory committee, or design review committee shall determine whether to grant, deny, or modify any application for an exception or mitigated practice filed in connection with any development approval under their respective jurisdictions. Modification of an application for an exception or mitigated practice by the County Fire Chief, planning commission, board of zoning adjustments, project review and advisory committee, or design review committee shall be limited to the alternate fire protection measures specified in Section 13-62.

(e) Where an application for an exception or mitigated practice is denied or modified, the applicant may appeal such denial or modification. Appeal from a denial or modification by the County Fire Chief shall be made pursuant to Article III of this chapter. Appeal from a denial or modification by the planning commission, board of zoning adjustments, project review and advisory committee, or design review committee shall be made pursuant to Chapter 25 or Chapter 26 of this Code, as appropriate. In order to grant an appeal, the body hearing the appeal must find that the exception or mitigated practice proposed meets the intent of this article.

(f) A written copy of any decision granting an appeal within a State Responsibility Area shall be provided to the director of Forestry and Fire Protection within ten (10) days after the decision is final.

Sec. 13-24. Scope of coverage.

(a) Except as otherwise provided in Section 13-25, the provisions of this article shall apply to all development on all lands within the unincorporated area of the county.

(b) Except as otherwise provided in this article, all applications for development approvals shall be accompanied by plans, engineering calculations, and other data necessary to determine compliance with the provisions of this article.

(c) Except as otherwise provided in this article, compliance with the provisions of this article shall occur prior to the commencement of construction of any structure unless otherwise authorized by the County Fire Chief.

Sec. 13-25. Exemptions.

The provisions of this article shall not apply to any of the following, except to the extent provided for herein:

(a) Any building granted an agricultural exemption pursuant to Chapter 7 of this Code, provided that the building does not exceed 8,000 square feet in size and is not located in a State Responsibility Area.

(b) Any road or bridge used exclusively for access to an agricultural operation; or an agricultural exempt structure; or a Group U occupancy accessory to a one- or two-family residential dwelling, as defined in the County Building Code, that is under less than 1,000 square feet in area.

(c) Any road or bridge used exclusively for the management and harvesting of wood products.

(d) Any new building having a floor area of less than six hundred forty (640) square feet and containing an occupancy other than a detached Group U occupancy as defined in the County Building Code, except that the provisions of Divisions C and E of this article shall apply to all such buildings.

(e) Any new building accessory to a one- or two-family residential dwelling with a floor area of less than one thousand (1,000) square feet and containing a detached Group U occupancy as defined in the County Building Code, except that the provisions of Divisions C and E of this article shall apply to all such buildings.

(f) Any existing road that provides year-round unobstructed access to conventional drive vehicles, including sedans and fire engines, which was constructed and serving a legal parcel prior to January 1, 1992, except that (1) the provisions of Division C of this article shall apply to all such roads, and (2) all of the other provisions of this article shall apply to any such road if it is extended, reconstructed or improved pursuant to a development approval, but only to the portion of the road that is extended, reconstructed or improved.

(g) Any road required as a condition of any development approval granted prior to January 1, 1992, except that (1) the provisions of Division C of this article shall apply to all such roads, and (2) all of the other provisions of this article shall apply to any such road if it is extended, reconstructed or improved pursuant to a new development approval, but only to the portion of the road that is extended, reconstructed or improved.

(h) Any driveway serving a legally constructed residential building prior to January 1, 1992, except that (1) the provisions of Division C of this article shall apply to all such roads, and (2) all of the other provisions of this article shall apply to any such driveway if it is extended, reconstructed or improved pursuant to a new development approval, but only to the portion of the driveway that is extended, reconstructed or improved.

(i) Any legal or legal non-conforming building constructed prior to January 1, 1992, or any building for which a building permit was issued or an application for a building permit was accepted as complete for filing prior to January 1, 1992; except that the provisions of this article shall apply to any such building if the occupancy is changed, altered, or otherwise converted to any Group R, Division 3 occupancy as defined in the County Building Code.

(j) Any addition to an existing building adding a floor area less than six hundred forty (640) square feet including a detached Group U occupancy as defined in the County Building Code, except that the provisions of Divisions C and E of this article shall apply to all such buildings.

Sec. 13-26. Administration and enforcement – inspections.

(a) The administration and enforcement of the provisions of this article shall be the shared responsibility of the County Fire Chief and the director of Permit and Resource Management.

(b) Inspections to determine compliance with the provisions of this article shall be the responsibility of the County Fire Chief or the director of Permit and Resource Management, as appropriate. The County Fire Chief or the director of Permit and Resource Management may authorize a local Fire Chief to conduct inspections within a local fire protection district under the direction of the County Fire Chief or the director of Permit and Resource Management. In such cases, inspection results shall be provided to the County Fire Chief or the director of Permit and Resource Management promptly after completion of the inspection.

Sec. 13-27. Distance measurements.

All distances specified or referenced in this article shall be measured horizontally unless otherwise stated.

Division B. Emergency Access.

Sec. 13-28. Intent.

This division establishes minimum emergency access requirements to provide safe access for emergency fire equipment and civilian evacuation concurrently, and to allow unobstructed traffic circulation during a wildfire emergency.

Sec. 13-29. Availability of emergency access.

All buildings shall be accessible to emergency fire equipment by a road or driveway constructed to within one hundred fifty (150) feet of any portion of an exterior wall of the first story of the building or such closer distance as the director of Permit and Resource Management deems necessary to provide adequate access for emergency fire equipment.

Sec. 13-30. Road and driveway surfaces.

All roads and driveways shall have all-weather driving surfaces. All structural sections shall be constructed so as to a minimum of 75,000 pounds or exceed the following standards:

- (a) On level areas and grades of less than five percent (5%), roads and driveways shall have a gravel surface. The structural section of the road or driveway shall be at least one foot (1') of compacted Class 2 Aggregate Base.
- (b) On grades of between five percent (5%) and ten percent (10%), roads and driveways shall have a double seal coat surface. The structural section of the road or driveway shall have an armor coat surface, constructed according to CalTrans Standard Specifications Section 37, Bituminous Seal Double Application, and the base portion of the road or driveway shall be at least one foot (1') of compacted Class 2 Aggregate Base.
- (c) On grades of greater than ten percent (10%), roads and driveways shall have an asphalt concrete surface. The structural section of the road or driveway shall be asphalt concrete of at least two tenths of a foot (0.2') thick. The base portion of the structural section shall be at least five tenths of a foot (0.5') of compacted Class 2 Aggregate Base.
- (d) In lieu of the prescriptive structural sections required by subsections (a), (b) and (c), a design of the section may be prepared by a licensed civil engineer using a soils investigation that provides soil R-value and expansion index. Alternatively, the engineer may use an R-value of 5 and waive the soil report unless a soil engineering report is required because of specific site conditions. The traffic index to be used for the design shall be not less than 3.5.

Sec. 13-31. Road and driveway grades.

- (a) No road or driveway shall have a maximum grade in excess of fifteen percent (15%), without the approval of the county Fire Chief. In granting such approval, the County Fire Chief may require such additional fire protection measures under Section 13-63 as he or she deems necessary to mitigate access constraints. A road or driveway may include grades up to twenty percent (20%) for distances not exceeding three hundred feet (300') within any one thousand feet (1,000') of road or driveway unless sufficient grade reductions are provided to allow for vehicle cool down period
- (b) A vertical curve shall be required for any road or driveway when the algebraic difference in grade exceeds three percent (3%) for driveways, and two percent (2%) for private roads. The length of any vertical curve shall not be less than fifty feet (50').
- (c) The maximum surface cross slope shall be five percent (5%) for all surface types unless a greater cross slope is required to meet super elevation requirements. The minimum surface cross slope for all surface types shall be two percent (2%).

(d) Turnarounds shall have a maximum longitudinal slope of eight percent (8%). The longitudinal slope is defined as the slope corresponding to the long axis of a vehicle as it travels into, out of, and through a turnaround. This slope shall be maintained beginning and ending at the point of tangency of the edge of pavement curves for the turnaround. The cross slope perpendicular to the longitudinal slope shall not exceed five percent (5%).

(e) Fire apparatus cool down areas shall have a minimum width of twenty two feet wide (22'-0") thirty feet (30') long with a minimum taper of twenty-five feet (25') on each end. The length of the turnout shall be measured along the roadway or driveway centerline. cool down area shall be provided with minimum curves set in section 13-32 and shall be located on a maximum grade not exceeding five percent (5%). Cool down turnout shall not be allowed on the inside of the horizontal curves without approval of the fire code official.

Sec. 13-32. Road and driveway horizontal curves and intersections.

(a) No road or driveway shall have a horizontal inside radius of curvature of less than fifty feet (50'). If the roadway or driveway width is less than twenty-four feet (24'), then additional roadway or driveway widths shall be required as follows:

(1) Four feet (4') of additional width for curves with a horizontal inside radius of fifty feet (50') to one hundred feet (100') and a central angle greater than forty-five (45°) degrees; and

(2) Two feet (2') of additional width for curves with a horizontal inside radius of one hundred feet (100') to two hundred feet (200') and a central angle greater than forty-five (45°) degrees.

The road shall have the full width widening beginning at the point of tangency of the curve requiring the widening to the end point of tangency of that curve or subsequent curves requiring widening (if reverse curves are used). A five-to-one (5:1) taper shall be used to transition from the base width into and out of the widened width.

(b) Unless otherwise approved by the County Fire Chief, where a private road, with a throat width equal to or greater than eighteen feet (18') as measured thirty feet (30') from the edge of pavement, intersects a public road, the edge of pavement radius shall begin with a line a minimum of twelve feet (12') from and parallel to the physical centerline of the public road and a minimum radius of twenty-five feet (25') shall be provided from this point to the point of tangency with the edge of pavement of the private road. A taper of not less than ten-to-one (10:1) shall be provided along the public road when the public road is less than twenty-four feet (24') wide.

(c) Where a private road, with a throat width measuring equal to or greater than

twelve feet (12') and less than eighteen feet (18') or a driveway with a throat width equal to or greater than ten feet (10') as measured thirty feet (30') from the edge of pavement, intersects a public or private road, the edge of pavement radius shall begin with a line a minimum of twelve feet (12') from and parallel to the physical centerline of the public or private road and a minimum radius of twenty-five feet (25') shall be provided from this point to the point of tangency with the edge of pavement of the private road or driveway. A taper of not less than ten-to-one (10:1) shall be provided along the public or private road when the public or private road is less than twenty-four feet (24') wide. In lieu of a ten-to-one (10:1) taper connecting private road or driveway to private road only, a radius of forty feet (40') may be used.

(d) Where a driveway, with a throat width measuring equal to or greater than ten feet (10') and less than eighteen feet (18') as measured thirty feet (30') from the edge of pavement, intersects a private road, the edge of pavement shall be a minimum radius of forty feet (40'). Any driveway with a throat width greater than eighteen feet (18'), as measured thirty feet (30') from the edge of the pavement, that intersects a private road, shall comply with the private road/public road requirements set forth in subsection (b) of this section.

(e) Road and driveway horizontal curves and intersections may be reduced when proven by scientific method of a recognized vehicle modeling program. The method shall be performed based on the length, width, wheel base and turning radius of a standard Type 1 Fire Apparatus.

(f) Turnouts shall not be located in a horizontal curve unless additional width is provide. Width shall exceed the minimums set in subsection (a) in addition to the minimum width of the required turnout.

Sec. 13-33. Roadway and driveway structures (bridges).

(a) All roadway and driveway structures shall be designed, constructed, and maintained in accordance with applicable sections of the County Building Code, the Standard Specifications for Highway Bridges, and any administrative regulations adopted pursuant to Section 13-2, and shall have a minimum designed live-load capacity of HB-17. All roadway and driveway structures shall be constructed pursuant to a valid building permit. All roadway and driveway structures shall be inspected according to the administrative and inspection provisions of the County Building Code.

(b) All roadway and driveway structures shall have appropriate signing identifying structure capability, including weight and vertical clearance limits, installation and certification date and any one-way road or single traffic lane conditions.

(c) All roadway bridges having only one traffic lane shall be constructed to provide a minimum unobstructed width of twelve feet (12') shall provide for unobstructed visibility from one end to the other and shall have turnouts at both ends.

(d) All driveway structures shall be constructed to provide a minimum of one (1) twelve foot (12') traffic lane and an unobstructed vertical clearance of fifteen feet (15') along the entire length of the driveway structure. Any driveway structure with a minimum unobstructed width of twelve feet (12') shall not exceed sixty-five feet (65') in length.

(e) Any road or driveway structure required to have a turnaround may have either a hammerhead/T, a stub out, or terminus bulb. All turnarounds shall have a minimum turning radius of forty feet (40'), bulbs shall be forty feet (40') from the center point of the bulb, hammerhead/T and stub out shall have entry and exit curves of no less than a forty foot (40') radius. If a hammerhead/T is used, the top of the "T" shall be a minimum of sixty feet (60') in length. If a stub is used, then the length of the turnaround shall be forty feet (40'), as measured from the roadway or driveway edge. The minimum width of either a hammerhead/T or a stub out shall be equivalent to the roadway or driveway entering the turnaround.

(f) Any road or driveway structure required to have a turnout, shall have a turnout that is a minimum of twenty two feet (22') wide, including the roadway and the turnout, and thirty feet (30') long with a minimum taper of twenty-five feet (25') on each end. The length of the turnout shall be measured along the roadway or driveway centerline.

Sec. 13-34. Two-way roads.

(a) In addition to meeting the applicable standards in the preceding sections, all two-way roads shall have a right-of-way of not less than twenty-five feet (25') and shall be constructed to provide a roadway with a minimum of two (2) ten foot (10') traffic lanes providing two-way traffic flow. When permitted in a subdivision's conditions of approval and approved by the appropriate county departments, as identified in the subdivision's conditions of approval, the subdivision may have a two-way road of not less than twelve feet (12') with two foot (2') Shoulders on each side and turnouts and turnarounds. Spacing of the turnarounds and turnouts shall be as set forth in the subdivision's conditions of approval. If the subdivision's conditions of approval do not set forth spacing requirements, then turnarounds shall be at a minimum interval of one thousand three hundred and twenty feet (1,320'). Turnouts shall be a minimum of five hundred feet (500') and shall not be located on the inside of horizontal curves without approval from the fire code official.

(b) Any road or driveway structure required to have a turnaround may have either a hammerhead/T, a stub out, or terminus bulb. All turnarounds shall have a minimum turning radius of forty feet (40') bulbs shall be forty feet (40') from the center point of the bulb, hammerhead/T and stub out shall have entry and exit curves of no less than a forty foot (40') radius. If a hammerhead/T is used, the top of the "T" shall be a minimum of sixty feet (60') in length. If a stub is used, then the length of the turnaround shall be forty feet (40'), as measured from the roadway or driveway edge. The minimum

width of either a hammerhead/T or a stub out shall be equivalent to the roadway or driveway entering the turnaround.

(c) Any road or driveway structure required to have a turnout shall have a turnout that is a minimum of twenty two feet (22') wide, including the roadway and the turnout and thirty feet (30') long with a minimum taper of twenty-five feet (25') on each end. The length of the turnout shall be measured along the roadway or driveway centerline.

Sec. 13-35. One-way roads.

In addition to meeting the applicable standards in the preceding sections, all one-way roads shall comply with the following requirements:

(a) All one-way roads shall have a right-of-way of not less than twenty five feet (25') and shall be constructed to provide a roadway with a minimum of one (1) twelve foot (12') traffic lane and 1 foot (1') shoulders on each side providing one-way traffic flow.

(b) All one-way roads shall connect to a two-way road at both ends, and shall provide access to an area zoned for no more than ten (10) dwelling units.

(c) All one-way roads exceeding five hundred feet (500') in length shall have a turnout constructed at approximately the midpoint of the road. Any one-way road exceeding one thousand feet (1,000') in length shall also have turnouts constructed approximately every five hundred feet (500') along the entire length of the road.

(d) No one-way road shall exceed two thousand six hundred forty feet (2,640') in length.

(e) Any road or driveway structure required to have a turnout, shall have a turnout that is a minimum of twenty two feet (22') wide, including the roadway and the turnout and thirty feet (30') long with a minimum taper of twenty-five feet (25') on each end. The length of the turnout shall be measured along the roadway or driveway centerline.

Sec. 13-36. Dead-end roads.

In addition to meeting the applicable standards in the preceding sections, all dead-end roads shall comply with the following requirements:

(a) All dead-end roads shall have a maximum length, including any dead-end roads accessed from the original dead-end road, not exceeding the following cumulative lengths regardless of the number of parcels served:

(1) Parcels zoned for less than one (1) acre - eight hundred feet (800');

(2) Parcels zoned for 1 acre to 4.99 acres - one thousand three hundred twenty feet (1,320');

(3) Parcels zoned for 5 acres to 19.99 acres - two thousand six hundred forty feet (2,640'); and

(4) Parcels zoned for 20 acres or larger - five thousand two hundred eighty feet (5,280').

All lengths shall be measured from the edge of the roadway at the intersection that begins the dead-end road to the farthest point on the dead-end road. Where a dead-end road crosses areas of differently zoned parcels, requiring different length limits, the average size of the parcels served shall determine the maximum allowable length of the road.

(b) All dead-end roads serving parcels five (5) acres or larger shall have turnarounds constructed approximately every one thousand three hundred twenty feet (1,320') along the entire length of the road.

(c) All dead-end roads shall have a turnaround constructed at the terminus of the road. Any road or driveway structure required to have a turnaround may have either a hammerhead/T, a stub out, or terminus bulb. All turnarounds shall have a minimum turning radius of forty feet (bulbs shall be forty feet (40') from the center point of the bulb, hammerhead/T and stub out shall have entry and exit curves of no less than a forty foot (40') radius. If a hammerhead/T is used, the top-of the "T" shall be a minimum of sixty feet (60') in length. If a stub is used, then the length of the turnaround shall be forty feet (40'), as measured from the roadway or driveway edge. The minimum width of either a hammerhead/T or a stub out shall be equivalent to the roadway or driveway entering the turnaround.

Sec. 13-37. Driveways.

In addition to meeting the applicable standards in the preceding sections, all driveways shall comply with the following requirements:

(a) All driveways shall be constructed to provide a minimum of one (1) twelve foot (12') traffic lane and an unobstructed vertical clearance of fifteen feet (15') along the entire length of the driveway.

(b) All driveways exceeding one hundred fifty feet (150') in length shall have a turnout constructed at approximately the midpoint of the driveway. Any driveway exceeding eight hundred feet (800') in length shall have turnouts constructed approximately every four hundred feet (400') along the entire length of the driveway. Driveways required to have a turnout, shall have a turnout that is a minimum of twenty

two feet (22') wide, including the roadway and the turnout and thirty feet (30') long with a minimum taper of twenty-five feet (25') on each end. The length of the turnout shall be measured along the roadway or driveway centerline and shall not be located on the inside of horizontal curves without approval from the fire code official.

(c) All driveways exceeding one hundred fifty feet (150') in length shall have a turnaround constructed within fifty feet (50') of the residential building served by the driveway. Any driveway longer than 1320 feet shall have additional turnarounds located at intervals no less than 1320 feet unless approved by the county Fire Chief. Parking shall not be allowed in the approved turnaround location

(d) Any road or driveway structure required to have a turnaround may have either a hammerhead/T, a stub out, or terminus bulb. All turnarounds shall have a minimum turning radius of forty feet (bulbs shall be forty feet (40') from the center point of the bulb, hammerhead/T and stub out shall have entry and exit curves of no less than a forty foot (40') radius. If a hammerhead/T is used, the top of the "T" shall be a minimum of sixty feet (60') in length. If a stub is used, then the length of the turnaround shall be forty feet (40'), as measured from the roadway or driveway edge. The minimum width of either a hammerhead/T or a stub out shall be equivalent to the roadway or driveway entering the turnaround.

Sec. 13-38. Gate entrances.

(a) All gate entrances and similar structures shall be at least two feet (2') wider than the width of the traffic lane(s) serving the gate or structure.

(b) All gates providing access from a public road to a private road or private driveway shall be located at least thirty feet (30') from the roadway and shall open to allow a vehicle to stop without obstructing traffic on the roadway.

(c) Where a gated entrance is locked, a lock box or other emergency release device approved by the County Fire Chief shall be provided for emergency access.

Division C. Signing and Building Numbering.

Sec. 13-39. Intent.

This division establishes minimum signing and building numbering requirements to facilitate locating a fire and to avoid delays in response.

Sec. 13-40. Names of roads.

(a) All roads serving more than two (2) parcels shall be identified by a road name.

(b) All public roads requiring a road name shall be approved by the Board of Supervisors pursuant to procedures established by resolution or ordinance of the Board of Supervisors. Any public road having a road name may be renamed using the procedures for naming a public road.

(c) All private roads requiring a road name shall be named by the director of Permit and Resource Management or Sonoma County Fire pursuant to procedures established by resolution or ordinance of the Board of Supervisors. Any private road having a road name may be renamed using the procedures for naming a private road.

(d) When naming or renaming any road, the Board of Supervisors or the director of Permit and Resource Management, as the case may be, shall use the following standards:

- (1) Road names shall not be greater than eighteen (18) characters in length, exclusive of road digits and suffixes.
- (2) Road names shall have simple spelling and easy pronunciation.
- (3) Road names shall be compatible with road and street names in cities and other counties where appropriate.
- (4) Road names shall not duplicate or cause confusion with existing road names. Road names shall be deemed to be duplicates if they have different suffixes, but are otherwise the same.
- (5) Road names that are numbers or letters shall be avoided.
- (6) Road names that are geographically misleading shall be avoided.
- (7) Road names that are inappropriate or offensive shall be prohibited.
- (8) A road having a continuous alignment shall bear the same name.
- (9) Road extensions shall bear the same name as the existing road.
- (10) Roads or portions of roads to be connected in the future into a continuous alignment shall bear the same name.
- (11) Roads intersecting one another, or forming a deflection angle of greater than ninety (90) degrees shall generally have different names.
- (12) A cul-de-sac road may bear the same name as the road it intersects, provided that the suffix is court or place.

(13) No road shall be named such that it will intersect itself or create an intersection with a road having a duplicate name.

(14) Any other standards established by resolution or ordinance of the Board of Supervisors.

(15) All road names shall be approved by the area 911 coordinator and local Fire Chief within 10 days of notification.

Sec. 13-41. Size of letters, numbers and symbols for road signs.

All letters, numbers and symbols designating names on road signs shall be according to county road standards.

Sec. 13-42. Visibility and legibility of road signs.

All road signs shall be visible and legible from both directions of vehicle travel for a distance of at least one hundred feet (100'). All road signs shall indicate the road name and whether the road is public or private in each direction of vehicle travel in conformance with county road standards.

Sec. 13-43. Orientation and height of road signs.

All road signs shall have an orientation and height in conformance with county road standards.

Sec. 13-44. Placement of road signs identifying intersecting roads.

All road signs identifying intersecting roads shall be placed at the intersection of such roads.

Sec. 13-45. Signs identifying traffic access limitations.

All road signs identifying traffic access or flow limitations, including but not limited to, weight or vertical clearance limits, dead-end roads, one-way roads or single traffic lane conditions, shall be placed as follows:

- (a) At the intersection preceding the traffic access limitation; and
- (b) No more than one hundred feet (100') before such traffic access limitation.

Sec. 13-46. Addresses for buildings.

All buildings shall be identified by an address issued by the director of Permit and

Resource Management. When issuing addresses, the director of Permit and Resource Management shall use the following standards:

- (a) Addresses shall be compatible with addresses in cities and other counties where appropriate.
- (b) Addresses shall be assigned to reflect the road from which the primary driveway originates.
- (c) Addresses shall be issued in sequential order and have even numbers on one side of the road and odd on the other. In general, the even numbers shall be on the north and east sides of roads and/or on the right when facing in the direction of increasing magnitude. Existing addresses for roads requiring a road name change that do not conform to the provisions of this subsection may be accepted if the sequence is in logical order and the addresses are approved by the director of Permit and Resource Management and the County Fire Chief.
- (d) All buildings other than accessory buildings shall be assigned separate addresses. Individual units within residential and commercial buildings may be assigned subsidiary numbers or letters (e.g., apartment 10; suite A). Where possible individual units in multiple story buildings shall be assigned numbering sequences that identify the floor by the leading digit(s).
- (e) Any other standards adopted by resolution or ordinance of the Board of Supervisors or by administrative regulation of the director of Permit and Resource Management.

Sec. 13-47. Size of letters, numbers and symbols for addresses.

- (a) **Numbers for one- and two- family dwellings.** Numbers for one- and two-family dwellings shall be a minimum of four inches (4") high with a minimum stroke width of 0.5 inches (0.5"). Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole, or other sign or means shall be used to identify the structure.
- (b) **Numbers for other than one- and two- family dwellings.** Numbers for other than one- and two- family dwellings shall be a minimum of 12 inches (12") high with a minimum stroke width of one inch (1"). Suite numbers for other than one- and two-family dwellings shall be a minimum of six inches (6") high and 0.5 inches (0.5") stroke.

Exceptions:

1. These requirements may be modified with the approval of the fire code official.

2. Illuminated address numbers are not required for existing buildings where approved; reflective numbers are to be installed.

Sec. 13-48. Installation, location and visibility of addresses.

(a) All buildings shall have a permanently posted address, which shall be placed on building and shall be plainly visible and legible from the road on which the address is located or the primary driveway. The numbers shall contrast with their background.

(b) All buildings shall have a permanently posted address, which shall be placed at each driveway entrance and shall be visible and legible from both directions of travel along the road on which the address is located.

Exception: An approved internally lighted building address device may be used when such building address device is located on the building and the building is located within thirty feet (30' of the edge of the road on which the address is located.

(c) All address signs along one-way roads shall be visible from both the intended direction of travel and the opposite direction.

(d) Where multiple addresses are required at a single driveway, such addresses shall be mounted on a single approved post.

(e) Where a road provides access solely to a commercial building, the address sign shall be placed at the nearest road intersection providing access to the site.

Division D. Emergency Water Supply.

Sec. 13-50. Intent.

This division establishes minimum emergency water supply requirements to ensure a supply of water to attack a fire or defend property from a fire.

Sec. 13-51. Emergency water supply.

(a) All buildings shall have a permanent emergency water supply approved by the County Fire Chief, which shall be installed, maintained and available for use as follows:

(1) Except as otherwise provided in subsection (a)(3), where water is provided by a public water system, the permanent emergency water supply shall be installed and available for use prior to the completion of road construction;

(2) Except as otherwise provided in subsection (a)(3), where water is provided by a water system other than a public water system, the permanent emergency water supply shall be installed and available for use prior to the commencement of construction of any permanent structure;

(3) When authorized by the County Fire Chief, an interim emergency water supply acceptable to the County Fire Chief may be substituted for the permanent emergency water supply provided the permanent emergency water supply is installed and available for use prior to issuance of an occupancy permit or final inspection;

(4) When authorized by the County Fire Chief and local Fire Chief, the emergency water supply requirements may be waived when sufficient evidence is proven the intent to Title 14 of the Natural Resources Code, Division 1.5, Article 4 - Emergency Water Standards have been met.

(b) If the water supply to the parcel is provided by a public or community water system (urban parcel - see Definitions) the emergency water supply for residential buildings shall consist of a permanent hydrant located on the road within two hundred fifty feet (250') of the driveway or as provided in Appendix C of the California Fire Code measured from where the driveway intersects with the public or private road. Distance measurements shall be determined by hose lay along the road, not horizontal distance.

(c) If the water supply to the parcel is provided by a private water well (non-urban parcel - see Definitions) an emergency water storage of not less than two thousand five hundred (2,500) gallon capacity shall be provided. A single two-thousand five-hundred (2,500) gallon tank may serve more than one building on the same parcel, provided all hydrants are located in accordance with Section 13-52. When multiple tanks are utilized to achieve the required volume of water, the connection between the tanks

shall be an approved minimum four inch (4") diameter water line.

(d) Water tanks for emergency water supply placed inside the minimum setback requirement of Section 13-55 shall be constructed of non-combustible material. A flammable vegetation clearance of not less than twenty feet (20') shall be maintained around all poly-plastic or similar water tanks.

(e) All permanent emergency water supplies for commercial buildings shall meet the requirements of the California Fire Code if the building is served by a public water system or NFPA 1142, "Standard on Water Supplies for Suburban and Rural Fire Fighting" if the building is served by a water system other than a public water system.

Sec. 13-52. Hydrants.

(a) All buildings shall be protected by hydrants. The location, number, and type of hydrants for any building shall be as required and approved by the County Fire Chief or the director of Permit and Resource Management.

(b) All hydrants for non-urban parcels shall comply with the following requirements:

(1) Hydrant outlets shall be a minimum of eighteen inches (18") and a maximum of twenty-four inches (24") above grade, eight feet (8') from flammable vegetation, no closer than six feet (6') nor farther than twelve feet (12') from the edge of the road or driveway, and in a location where emergency fire equipment using it will not block the roadway. The hydrant serving any residential building shall be located at a turnout or turnaround, along the driveway to the building, or along the road that intersects with the driveway. The hydrant serving any residential building shall be connected to the emergency water supply by an approved minimum four inch (4") diameter water line.

(2) All hydrants shall be located between sixty feet (60') and one hundred fifty feet (150') from the residential building. The fire hydrant shall be installed so that a fire engine utilizing the hydrant may maintain a minimum distance of sixty feet (60') from the residential building. Distance measurements shall be determined by hose lay along a road or driveway, not horizontal distance.

Exceptions:

1. The distance to the hydrant, on a non-urban parcel with exclusively residential buildings on it, may exceed one hundred fifty feet (150') by one hundred fifty feet (150') for each additional five hundred (500) gallons of water storage capacity up to a maximum of two thousand five hundred and fifty feet (2,550') from the residential building as allowed by Table 13-52a.

- a. All hydrants shall have at least one (1) two and one-half inch (2½") outlet with male National Hose Threads and a cap. On water systems of greater than ten thousand five hundred (10,500) gallons, there shall also be at least one (1) four and one-half inch (4½") outlet with male National Hose Threads and a four and one half inch (4½") by two and one half inch (2½") reducer with a cap.
- b. All hydrants shall be a wet barrel hydrant or a draft hydrant as required by the delivery system and shall have suitable crash protection. The maximum height differential between the water source and the draft hydrant outlet shall be 10 feet (10'). Draft hydrants shall be supplied by six inch (6") minimum pipe size, and be equipped with a four and one-half inch (4½") National Hose male thread fitting with a cap.
- c. Crash protection shall be per California Fire Code, Chapter Three, Section 312.
2. A public fire hydrant can be used for the emergency water supply as allowed by Table 13-52b, for non-urban parcels with exclusively residential buildings on them.

Table 13-52a¹
Distance to hydrants based on volume of storage
Distance is from structure to hydrant
Gallons of Storage/Distance to Hydrant

2,500/150'	7,000/1,500'
3,000/300'	7,500/1,650'
3,500/450'	8,000/1,800'
4,000/600'	8,500/1,950'
4,500/750'	9,000/2,100'
5,000/900'	9,500/2,250'
5,500/1,050'	10,000/2,400'
6,000/1,200'	10,500/2,550'
6,500/1,350'	

Note:

¹This table applies only to parcels that have exclusively residential buildings on them.

Table 13-52b⁽¹⁾
Exception to hydrant distance⁽²⁾

Distance is measured from driveway entrance to the public hydrant

Road Distance	Flow Rate	Minimum Residual Pressure
1 Mile	500 GPM	20 PSI
1.5 Miles ⁽³⁾	1,000 GPM	20 PSI
1.75 Miles ⁽³⁾	1,500 GPM	20 PSI
2 Miles ⁽³⁾	2,000 GPM	20 PSI
3 Miles ⁽³⁾	2,500 GPM	20 PSI

Notes:

- ⁽¹⁾This table applies only to parcels that have exclusively residential buildings on them.
- ⁽²⁾Distances within these ranges can be prorated based on volume of flow available.
- ⁽³⁾This Distance can be used when a letter is on file from the local Fire Chief and the department has a minimum of one 500 gpm water tender in inventory

Sec. 13-53. Signing of water sources.

Each hydrant or access to water for any residential or commercial building shall be identified as follows:

- (a) If located along a driveway, a reflective blue marker, with a minimum dimension of three inches (3"), shall be located on the driveway address sign and mounted on a fire retardant post; or
- (b) If located along a road either of the following is acceptable:
- (1) A reflective blue marker, with a minimum dimension of three inches (3"), shall be mounted on a fire retardant post. The sign post shall be within three feet (3') of the hydrant, with the sign no less than three feet (3') nor greater than five feet (5') above ground, aimed toward headlights, in a horizontal position and visible from the driveway, or
- (2) As specified in the State Fire Marshal's Guidelines for Fire Hydrant Markings Along State Highways and Freeways, May 1988.

Division E. Fuel Modification.

Sec. 13-54. Intent.

This division establishes minimum fuel modification requirements to reduce the possibility and intensity of a wildfire, to provide increased safety for emergency fire equipment, personnel and evacuating civilians, and to provide a point of attack against or defense from a wildfire.

Sec. 13-55. Setback for building defensible space.

- (a) On parcels less than one (1) acre, all buildings shall have a setback from any property line or the centerline of any road of not less than the applicable minimum setbacks specified in Chapter 26 of the County Building Code.
- (b) On parcels one (1) acre or larger located in the State Responsibility Area, all new buildings and accessory buildings shall have setbacks to the property line and/or exterior wall protection according to Table 13-55(a) and Table 13-55(b).

Table 13-55 (a)
Exterior walls, within State Responsibility Area,
without automatic fire sprinkler protection

Exterior Wall Element		Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	(Fire-resistance rated)	1 hour-tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	< 10feet
	(Not fire-resistance rated)	Comply with CRC Sec R327.7 or CBC Sec 707A	≥ 10 feet
Projections	(Fire-resistance rated)	1 hour on the underside	< 10 feet
	(Not fire-resistance rated)	Comply with CRC Section R327.7 or CBC Section 707A Comply with Section CRC Sec R327.9 or CBC Sec.709A	10 feet
Openings in walls	Not allowed	N/A	< 10 feet
	25% maximum of wall area	Comply with Section R327.8 or CBC Sec 708A	>10 feet
	Unlimited	Comply with Section R327.8 or CBC Sec 708A	20 feet
Penetrations	All	Comply with Section R302.4 or CBC 714.3	< 10 feet
		Comply with Section R327.6 or CBC 706A	10 feet

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable.

Table 4905.4 (B)
Exterior Walls, Within State Responsibility Area,
With Automatic Fire Sprinkler Protection

Exterior Wall Element		Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	(Fire-resistance rated)	1 hour-tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	< 10 feet
	(Not fire-resistance rated)	Comply with Section R327.7 or CBC Sec 707A	10 feet
Projections	(Fire-resistance rated)	1 hour on the underside	< 10 feet
	(Not fire-resistance rated)	Comply with Section R327.9 or CBC Sec.709A	10 feet
Openings in walls	Not allowed	N/A	< 10 feet
	Unlimited	Comply with Section R327.8 or CBC Sec 708A	10 feet
Penetrations	All	Comply with Section R302.4 or CBC 714.3	< 10 feet
		Comply with Section R327.6 or CBC 706A	10 feet

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable.

Sec. 13-56. Flammable vegetation clearance areas for roads and driveways.

All roads and driveways shall have a flammable vegetation clearance area on each side of the road or driveway of not less than ten feet (10') unless otherwise authorized by the director of Permit and Resource Management.

Sec. 13-57. Setbacks for planted vegetation from electric power lines – installation of new power lines.

All electric utility companies shall make every reasonable effort to select routes and types of conductors that minimize the risk of fire when installing new overhead electric utilities.

Sec. 13-58. Disposal of flammable vegetation and fuels.

All disposal, including chipping, burying, burning or removal to a landfill site, of flammable vegetation and fuels caused by site development and construction, road and driveway construction, or fuel modification shall be completed prior to completion of

road or driveway construction, or foundation inspection for a building permit, whichever occurs first.

Sec. 13-59. Greenbelts.

Any development which designates a facility or land use as a greenbelt shall locate the greenbelt strategically, as a separation between wildland fuels and buildings. The director of Permit and Resource Management shall approve the location of any greenbelt.

Sec. 13-59.5. Defensible Space.

(a) A Fire Protection Plan shall be required for any new residential or commercial building within a State Responsibility Area (SRA) located in a Very High Severity Zone. The plan shall be prepared by a qualified professional and shall be approved by the County Fire Chief. The plan shall include, at a minimum, defensible space zones, identification of vegetation types, replacement of non-native flammable vegetation with approved fire-resistive vegetation, and a maintenance program for all vegetation. When required by the Code official, the property owner shall record a covenant, in a form satisfactory to County Counsel, which ensures that the approved plan will be implemented and maintained.

(b) The fire protection plan shall be based upon a site-specific wildfire risk assessment that includes considerations of location, topography, aspect, flammable vegetation, climatic conditions and fire history. The plan shall address water supply, access, building ignition and fire-resistance factors, fire protection systems and equipment, defensible space and vegetation management.

(c) A copy of the fire protection plan shall be retained by the property owner.

(d) The cost of fire protection plan preparation and review shall be the responsibility of the applicant. All existing buildings shall meet the requirements of Public Resources Code (PRC 4291) for defensible space.

(e) All existing buildings shall meet the requirements of the California Fire Code, Chapter 49, Section 4906 and 4907.

Sec. 13-60. Roofing.

All structures regulated by the County Building Code shall have roof coverings that comply with the requirements of Chapter 7 of this Code.

Division F. Other Fire Protection Measures.

Sec. 13-61. Intent.

This division establishes alternate fire protection measures for use in place of standards specified in this article which cannot be met and additional fire protection measures to mitigate parcel specific fire protection problems.

Sec. 13-62. Alternate fire protection measures.

When authorized, pursuant to Section 13-23, any of the following alternate fire protection measures may be used as exceptions to the standards specified in this article or as mitigated practices:

- a) Increased emergency water supply requirements;
- b) Installation of a sprinkler system that meets the requirements of the National Fire Protection Association and includes protection of eaves where not required by code;
- c) Increased flammable vegetation clearance areas for buildings;
- d) Increased flammable vegetation clearance areas for roads and driveways;
- e) Use of fire-resistive vegetation;
- f) Installation of fire-resistive exterior siding;
- g) Use of fire-resistive deck and eave construction;
- h) Construction of additional turnouts and turnarounds;
- i) Creation of areas of safe refuge;
- j) Installation of a centrally monitored fire alarm system;
- k) Provision of a secondary means of ingress and egress to the parcel.
- l) Increased width and surface for emergency vehicle access.

Sec. 13-63. Additional fire protection measures.

When the County Fire Chief determines that access constraints, hazard severity or topography and terrain adversely affect the ability of emergency fire equipment and personnel to respond to an emergency on a parcel, the County Fire Chief may require additional fire protection measures as follows:

- (a) Where conditions delay, limit or prohibit access by emergency fire equipment and personnel to a parcel, the County Fire Chief may require any of the following fire protection measures in addition to the other standards specified in this article:

- (1) Increased emergency water supply;
- (2) Installation of an automatic sprinkler system that meets the requirements of the National Fire Codes and local regulations where not required by code;
- (3) Increased flammable vegetation clearance areas for buildings;
- (4) Use of fire-resistive vegetation;
- (5) Use of fire-resistive deck and eave construction;
- (6) Installation of fire-resistive exterior siding;
- (7) Installation of a centrally monitored fire alarm system;
- (8) Creation of areas of safe refuge;
- (9) Vegetation management plan.

(b) Where a parcel is located within a very high fire hazard severity zone as defined by the California Department of Forestry and Fire Protection, the County Fire Chief may require any of the following fire protection measures in addition to the other standards specified in this article:

- (1) Any of the fire protection measures specified in subsection (a);
- (2) Construction of additional turnouts and turnarounds;
- (3) Provision of a secondary means of ingress and egress to the parcel;
- (4) Vegetation management plan.

(c) Where features of topography or terrain create conditions on a parcel which the County Fire Chief determines warrant additional fire protection measures, the County Fire Chief may consider the parcel to be an area of high or very high fire hazard severity and require any of the fire protection measures specified in subsection (b) in addition to the other standards specified in this article.

