



Riverside County Fire Department

Office of the Fire Marshal

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Technical Policy

Title: Fire Apparatus Access Road Supplement for Commercial, Industrial, Multi-Family Residential and Residential Subdivision Development

Technical Policy: # TP 22-002

Effective Date: 12/17/22

Revised Date: n/a

Code References: Ordinance 787.9; 2019 California Fire Code, Sections 102.9, 104.1, 503 & California Code of Regulations Title 14 Fire Safe Regulations

Purpose

The Riverside County Fire Department (RCFD) Office of the Fire Marshal (OFM) has prepared this policy to provide guidance to building officials, contractors, architects, business owners, consultants and the general public on local interpretations and practices in conjunction with the California Fire Code (CFC). The purpose is to provide fire apparatus access technical guidance as a supplement to CFC Section 503 where that section is amended by Ordinance 787.9 or indicates "shall be determined by the Fire Code Official" or "the Fire Code Official is authorized to" or similar language. The intent is to clarify aspects of the code that are non-specific by addressing selected code sections utilizing information regarding apparatus and practices currently used by the RCFD under normal conditions. The requirements of this policy shall not be construed as altering any existing code, law or regulation which may require fire protection features not covered or alluded to in these requirements, nor shall they waive any requirements of any code, law or regulation. The reader is cautioned that the guidance detailed in this policy may or may not apply to their specific situation, and that the OFM retains final authority to determine compliance.

Scope

This policy is applicable to new, reconstructed or relocated one- and two-family residential subdivisions, multi-family residential, commercial and industrial buildings, facilities and/or additions. These are minimum standards. Within the unincorporated County, additional more restrictive Transportation and Land Management Agency (TLMA) requirements may apply. For partner cities, please check with the local jurisdiction for any requirements above and beyond what is included in this policy. This technical policy is a supplement to CFC Section 503. Please refer to CFC Section 503 for additional requirements. Select California Code of Regulations Title 14 Fire Safe Regulations (FSR) access requirements have been incorporated into this policy where applicable. For development within State Responsibility Areas (SRA) and within Local Responsibility Area (LRA) Very High Fire Hazard Severity Zones (VHFHSZ) see the FSR for additional requirements. For access and water supply requirements for individual one-and-two family dwelling parcels, see OFM Technical Policy 16-001.

Requirements

Additional Access (CFC 503.1.2)

Unless otherwise approved by the OFM, dead end fire apparatus access roads shall not exceed:

- For Very High Fire Hazard Severity Zone and High Fire Hazard Severity Zone areas – 660 feet
- For Moderate Fire Hazard Severity Zone areas – 800 feet
- For all other areas – 1320 feet

Secondary egress/access fire apparatus access roads shall provide independent egress/access from/to the area or as otherwise approved by the OFM. Secondary egress/access fire apparatus access roads shall be as remote as practical from the primary fire apparatus access road to reduce the possibility that both routes will be obstructed by a single emergency.

Additional fire apparatus access roads based on the potential for impairment by vehicle congestion, condition of terrain, climatic conditions, anticipated magnitude of a potential incident, or other factors that could limit access may be required by the Fire Marshal.

Dimensions (CFC 503.2.1, Ord. 787.9)

Fire apparatus access roads shall have an unobstructed width of not less than 24 feet, exclusive of shoulders, and an unobstructed vertical clearance of not less than 13 feet 6 inches. If a center median is present, the required unobstructed width of not less than 24 feet shall be provided on one or both sides of the median. If provided on one side of the median then the opposite side shall have an unobstructed width of not less than 14 feet. At development entrances where there is a Guard Booth separating an entry and an exit access, each access lane may be a minimum of 14 feet wide for the length of the Guard Booth as approved by the OFM.

Authority (CFC 503.2.2, Ord. 787.9)

The Fire Marshal shall be the only authority authorized to designate fire apparatus access roads and fire lanes and to modify the minimum fire lane access widths for fire or rescue operations.

Surface (CFC 503.2.3)

Fire apparatus access roads shall be designed and maintained to support 75,000 lbs and shall be surfaced so as to provide all weather driving capabilities. Certification of compliance may be required by a California Registered Engineer.

Turning Radius (CFC 503.2.4)

The minimum required turning radius of a fire apparatus access road is 38 feet outside radius and 14 feet inside radius. For development within the SRA and within the LRA VHFHSZ, the minimum required turning radius of a fire apparatus access road is 74 feet outside radius and 50 feet inside radius.

Dead Ends (CFC 503.2.5)

Dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with a bulb turnaround at the terminus measuring a minimum of 38 feet outside radius and 14 feet inside radius. For development within the SRA and within the LRA VHFHSZ, the bulb turnaround at the terminus shall be 40 feet outside radius and 16 feet inside radius. Parallel parking around the perimeter of the bulb is acceptable provided the bulb outside turning radius is increased by 8 feet. In-lieu of a bulb, a hammer-head type turnaround is acceptable where the top of the "T" dimension is 120 feet with the stem in the center. Additional turnaround designs may be acceptable as approved by the OFM. For development within the SRA and within the LRA VHFHSZ, turnarounds shall be provided at a maximum of 1320 feet intervals along the dead end fire apparatus access road.

Bridges and Elevated Surfaces (CFC 503.2.6)

Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO HB-17. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces that are not designed for such use, barriers, or signs, or both, as approved by the OFM, shall be installed and maintained.

Grade (CFC 503.2.7)

Unless otherwise approved, the grade of a fire apparatus access road shall not exceed 16 percent and the cross slope shall not exceed 2.5 percent.

Angles of Approach and Departure (CFC 503.2.8)

The angles of approach and departure for fire apparatus access roads shall be a maximum of 6 percent grade change for 25 feet of approach/departure.

Marking (CFC 503.3)

Where parking is not permitted along one OR both sides of a fire apparatus access road, the no parking area shall be identified by painted red curbing or by installation of signs along one or both sides of the fire apparatus access road as applicable.

Painted Curb

Where approved by OFM, curbing shall be painted red and shall also be provided with "NO PARKING – FIRE LANE – CVC 22500.1" painted on top of the curb in minimum 3" white lettering at a spacing of 30 feet on center. Where no curb exists, minimum 8 inch red painted striping at the edge of the fire apparatus access road with "NO PARKING – FIRE LANE – CVC 22500.1" in white lettering centered within the stripe at a spacing of 30 feet on center is acceptable.

Signs

Where approved by OFM, signs shall meet the following requirements:

- All signs shall state, "NO PARKING – FIRE LANE – CVC 22500.1" and have a minimum dimension of 12 inches wide by 18 inches high and have red lettering on a white retroreflective background. Signs shall be made of durable material, installed on a sturdy metal pole and have no less than a 7 foot clearance from the bottom of the sign to finish grade.
- Signs shall be posted at a spacing not to exceed 50 feet when installed on one side of the fire apparatus access road and at a spacing not to exceed 100 feet when installed on both sides of the fire apparatus access road. Consideration for curved roads and obstructions may require reduced spacing intervals. Signs shall be installed to ensure a clear view of the signs.

Obstruction of Fire Apparatus Access Roads (CFC 503.4)

Parallel parking is permitted on both sides of a required fire apparatus access road when the clear width (face of curb to face of curb) is a minimum of 36 feet. Parallel parking is permitted on one side of a required fire apparatus access road when the clear width is a minimum of 30 feet (face of curb to face of curb).

Security Gates (CFC 503.6)

Security gates obstructing a required fire apparatus access road shall be a minimum of one foot wider than the fire apparatus access road on each side and a minimum of 14 feet wide. Gates serving fire apparatus access roads 24 feet or wider are not required to open more than 24 feet unless required to clear turning apparatus. Manual gates shall not be locked unless a Knox Box containing the key to the lock is installed in an approved location on the approach side of the gate. If there is a potential for fire apparatus to approach the locked gate from both sides, the Knox Box shall be accessible from both sides or a Knox Box shall be installed on both sides of the gate. In lieu of a Knox Box a Knox Padlock accessible from the approach side and capable of unlocking the gate may be utilized. If there is potential for fire apparatus to approach the locked gate from both sides, the Knox Padlock shall be accessible from both sides.

For vehicle access gates located across required fire apparatus access roadways, NO PARKING – FIRE LANE – CVC 22500.1 signs may be required on both sides of the vehicle access gate(s). The signs shall have a minimum dimension of 12 inches wide by 18 inches high and have red lettering on a white retroreflective background. Signs shall be made of durable material.

New motorized gates shall be provided with access to gate equipment or another method to open the gate if there is a power failure. A pedestrian gate, if used to provide access, shall be a minimum 3 feet wide and provided with a Knox Box/Padlock if locked.

Automatic Opener (CFC 503.6.1, Ord. 787.9)

New motorized gates shall be provided with optical receiver(s) to remotely open the gate when approached by emergency vehicle and Key Switch (with the ability to be locked open) on the right side of the gate to permit opening via RCFD Knox key. The optical receiver(s) shall be compatible with Riverside County emergency vehicle preemption devices from, but not limited to, the following manufacturers: Federal Signal, Whelen, and Tomar. Automatic openers shall be installed to be initiated by Riverside County Fire Department apparatus (clear view/adequate height of receiver) and keep the gate open for at least 30 seconds. A satisfactory function test witnessed by OFM is required prior to final acceptance.

Loading Areas and Passenger Drop-Off Areas (CFC 503.7, Ord. 787.9)

On private properties, where fire apparatus access roads are utilized for loading or unloading or utilized for passenger drop-off or pick-up, an additional 8 feet of width shall be added to the minimum required width for the fire apparatus access road.