PLANNING COMMISSION
PUBLIC HEARING
STAFF REPORT

SUBJECT: DOAM-2018-0002 Proposed Amendments to Chapters 4 and 8 of the Loudoun County Facilities Standards Manual

ELECTION DISTRICT: Countywide

CRITICAL ACTION DATE: At the pleasure of the Board

STAFF CONTACTS: Laura Edmonds, Facilities Standards Manual Public Review Committee Liaison, Building and Development
Mike Seigfried, Director, Building and Development

APPLICANT: Board initiated

PURPOSE: The purpose of Development Ordinance Amendment (DOAM) 2018-0002 is to amend Chapters 4, Transportation, and 8, Administrative Procedures, of the Loudoun County Facilities Standards Manual (FSM) in order to: 1) require Emergency Vehicle Preemption at signalized intersections to improve emergency response times; 2) make the Fire Apparatus Access Road standards consistent with the Loudoun County Fire Prevention Code; 3) make the Standard Curb and Gutter Individual Driveway Entrance Figure consistent with Virginia Department of Transportation (VDOT) requirements, and 4) amend Latent Defect Indemnification Agreement and bond standards to streamline the bonding process.

RECOMMENDATIONS:

Facilities Standards Manual Public Review Committee (PRC): The PRC supports the Planning Commission (Commission) approval of 1) FSM Chapter 4 (Transportation) with the proposed 22-foot 2-way Category B travelway widths presented in Attachment 1, Option 1 and the narrower Fire Apparatus Access Road widths presented in Attachment 2, Option 1 and 2) FSM Chapter 8 (Administrative Procedures).

Staff: Staff supports Commission approval of 1) FSM Chapter 4, maintaining the current 25-foot 2-way Category B travelway widths presented in Attachment 1, Option 2 for Fire Apparatus Access Roads and reducing the width to 22 feet for non-Fire Apparatus Access Roads and the wider Fire Apparatus Access Road widths presented in Attachment 2, Option 2 and 2) FSM Chapter 8.

PROPOSAL: The FSM amendments to Chapter 4 are provided in Attachment 3 and to Chapter 8 in Attachment 4. Strikethrough language (to be deleted) is red, while proposed text is blue. Existing hyperlinks are green.
A summary of the Amendments is as follows:

**Emergency Vehicle Preemption (FSM Chapter 4, Section 4.810 E)**

Emergency Vehicle Preemption (EVP) is a traffic control system that gives priority at traffic signals to fire and rescue vehicles responding to emergency calls. The system improves emergency vehicle response times, while reducing the risk of accidents at intersections.

In Fiscal Year 2016, the Board allocated $1.6 million toward a Capital Improvement Project to install EVP at 70 existing intersections and install related equipment in emergency vehicles. The proposed amendments to Chapter 4 of the FSM would implement concurrent amendments to Chapter 424 of the Codified Ordinances of Loudoun County (Codified Ordinance) requiring EVP to be installed for all new or modified signals. On March 5, 2019, the Board authorized the County Administrator to execute an agreement with VDOT to allow EVP to be installed at traffic signals, consistent with the draft FSM and Codified Ordinance amendments.

Fire and Rescue has not purchased any equipment yet with the capital infrastructure project funding and is awaiting a determination from VDOT on whether or not the GPS Opticom system will be permitted. They are planning to purchase dual emitters for the fire apparatus that will activate both the Infrared Opticom and the GPS Opticom systems since some signals in Loudoun and most signals in nearby jurisdictions with which Loudoun has mutual aid agreements have Infrared Opticom systems. The GPS Opticom system uses satellite-derived GPS coordinates to determine the location of emergency vehicles proximate to the intersection, while the Infrared Opticom system uses infrared light to communicate from the vehicle to the intersection.

**Fire Apparatus Access Roads (FSM Chapter 4 and Chapter 8)**

Fire Apparatus Access Roads provide access from a fire station to a facility, building, or portion thereof. In April 2017, the Fire Marshal presented the PRC a Fire Lane Matrix identifying issues discovered during the review of land development applications, including inconsistencies between the FSM and the Loudoun County Fire Prevention Code. The PRC and staff reviewed each issue in detail and prepared accompanying amendments to the Fire Apparatus Access Road standards in FSM Chapter 4, including, but not limited to, requirements pertaining to road width, number of access points, turn arounds, fire lane identification, and gates or barriers.

The Fire Marshal has issued a Code Modification, provided as Attachment 5, for Fire Service Features, Specifications, Dimensions, Section 503.2.1 of the Loudoun County Fire Prevention Code, 2015 Edition, as referenced in FSM 4.810.B.1.a. The Code Modification authorizes the current practice of allowing shoulders that are compacted/treated to support emergency vehicles to be included in the minimum unobstructed width of 20 feet for specific low volume Fire Apparatus Access Roads.

The PRC and staff also prepared amendments to FSM Section 8.106 and FSM Section 8.107 to require Fire Apparatus Access Roads and Signs to be depicted on construction plans and profiles and site plan applications in accordance with FSM Chapter 4.
Standard Curb and Gutter Individual Driveway Entrance Figure (FSM Chapter 4, Figure 6)

In April 2018, VDOT staff asked the Department of Building and Development to revise the Standard Curb and Gutter Individual Driveway Entrance Figure (Chapter 4, Figure 6) to require six inches of aggregate under the concrete driveway apron consistent with VDOT standards. The Department of Building and Development issued a Residential Driveway Standards Technical and Procedural Newsletter on May 31, 2018, requiring the six inches of aggregate for all new projects, pending a future FSM amendment. This amendment revises the Figure consistent with the VDOT standards.

Latent Defect Indemnification Agreements (FSM Chapter 8, Section 8.305)

Latent Defect Indemnification Agreements (LDIAs) and bonds ensure that the developer will be responsible for correcting any defects arising from construction deficiencies associated with privately maintained roads and stormwater infrastructure not maintained by VDOT for a period of fifteen (15) months following the original performance bond release.

Currently, the County requires applicants post a separate LDIA Bond and the amount is to be a minimum of 10 percent of all private roadway and stormwater system construction components of the original performance bond estimate.

In June 2018, staff presented FSM amendments developed in cooperation with industry that would streamline the bonding process by allowing the original performance bond posted for a land development application to be reduced to the LDIA amount. This eliminates the need to execute a separate LDIA agreement and post a separate LDIA bond. The amendments also refine the bond reduction amounts to address two different types of agreements:

1) When only privately maintained improvements are bonded, the LDIA bond amount is established at a minimum of 5% of the overall performance bond.

2) When both privately maintained and publicly maintained improvements are bonded, the LDIA bond amount is established at a minimum of 10% of the cost of the private improvements. In this case, 5% of the overall performance bond would be too high, as it would include the cost of the public improvements.

The resulting LDIA bond amounts are equivalent for both types of agreements.

BACKGROUND: Staff has been working with the PRC since March 1, 2017, to prepare the Amendments.

Staff Review – The Amendments were distributed on agency referral from December 20, 2018, to January 15, 2019. The agency referral comments received to date are provided as Attachment 6.

PRC Review – The PRC discussed the agency referral comments during the January 16, 2019, PRC meeting and amended the draft FSM text in response to the comments provided by the Fire Marshal’s Office. The PRC discussed Chapter 4, Table IV: Parking and Fire Lane Identification during the
February 6, 2019, PRC meeting. The PRC discussed Chapter 4, Table II: Minimum Standards for Category B Roadways during the April 3, 2019, PRC meeting.

At the March 5, 2019, Board Business Meeting, the Board adopted a Resolution of Intent to Amend (7-0-2: Randall and Higgins absent), provided as Attachment 7, directing staff to process the Amendments. A timeline for public review and adoption of DOAM-2018-0002 is provided as Attachment 8.

**ISSUES:** The PRC and the Fire Marshal are in agreement regarding the proposed amendments, with the exception of 1) Category B travelway widths (Chapter 4, Table II: Minimum Standards for Category B Roadways) and 2) Fire Apparatus Access Road widths with parking (Chapter 4, Table IV: Parking and Fire Lane Identification).

**Chapter 4, Table II: Minimum Standards for Category B Roadways**

The 22-foot and 25-foot discussion is limited to Category B Roadways pursuant to Chapter 4, Table II, Minimum Standards for Category B Roadways. Category B Roadways are private roadways that serve residential townhouse and multi-family areas (including condominiums) with a traffic volume of less than 1,000 vehicles per day.

The PRC and the Fire Marshal are not in agreement regarding the 2-way Category B travelway widths. The PRC recommends that the 2-way Category B travelway widths in Chapter 4, Table II, Minimum Standards for Category B Roadways, be reduced from 25 feet to 22 feet, as presented in Attachment 1, Option 1. Staff recommends retaining the existing 25-foot 2-way travelway widths for Fire Apparatus Access Roads and reducing the width to 22 feet for non-Fire Apparatus Access Roads, as presented in Attachment 1, Option 2.

**PRC Recommendation**

The PRC recommends that the 2-way Category B travelway widths be reduced from 25 feet to 22 feet, as proposed in Attachment 1, Option 1, to allow design flexibility. In order to evaluate the effect of reducing the road width, the PRC developed Turn Analysis Exhibits (Attachment 9) depicting the required SU-40 design vehicle navigating a 90-degree turn at both the 22-foot and 25-foot travelway widths. The exhibits assume that the vehicle starts two feet from the outside curb and depict the amount of room available on either side of the vehicle throughout the turn. The PRC notes that the turn analysis program is conservative and depicts sufficient room for the required turning movements with a 22-foot travelway width. As depicted in the exhibit, the driver of the emergency vehicle will have flexibility in negotiating the turn without “scuffing” the curb.

The PRC also notes that a cross-reference has been added to the text indicating that the travelway may be widened, if needed, in accordance with Fire Apparatus Access Road Requirements (Section 4.330.C: “Please note that a roadway built to these standards may not meet Fire Apparatus Access Road Requirements. If such roadway is deemed to be a Fire Apparatus Access Road, Section 4.810 shall apply, and additional travelway width may be required.”)
The PRC also notes the following benefits of reducing the travelway:

- Reduces construction costs.
- Reduces maintenance costs (e.g., signage, asphalt milling and overlay, snow removal, etc.).
- Reduces the amount of impervious area, which reduces stormwater runoff and environmental impacts.
- Reduces the amount of pavement and associated heat-island effects.
- Increases the ability to preserve existing trees and open space.
- Increases public safety, as narrower roadways result in decreased traffic speed.

Staff Recommendation

Staff is in agreement that the width may be reduced for non-Fire Apparatus Access Roads, but recommends that the 2-way Category B Travelway widths for Fire Apparatus Access Roads be maintained at 25 feet, as proposed in Attachment 1, Option 2, to ensure adequate turning movements and emergency response times.

The 25-foot travelway width has been an FSM requirement since June 8, 1992. Based on 27 years of operational experience under the current standard, Fire and Rescue has been able to make the necessary turning movements and ensure adequate emergency response in most cases. However, conflicts still occur due to obstructions such as trash cans, basketball hoops, snow, etc. While a turn analysis conducted in a controlled environment may depict the ability for the design vehicle to make the necessary turning movements, the analysis does not account for the actual seasonal, unpredictable, and random circumstances that impede emergency response. Staff notes that turning movements provided in the turn analysis exhibit for the 22-foot travelway (Attachment 9A) cannot be accomplished by an SU-40 design vehicle without completely traveling in the opposing lanes of traffic. Reducing the Category B travelway width will make it more difficult for fire apparatus to navigate densely populated townhouse and multi-family communities, adversely affecting response times. In addition, staff notes that the VDOT standard for public roadways with traffic volumes similar to a private B-2 or B-3 road (with a single consumer entrance) is 26 feet.

During the briefing, the Commission requested additional information pertaining to fire apparatus width. The maximum width of fire apparatus is 8.5 feet, not including mirrors, which can extend this width to 10.5 feet.

The Chapter 4 draft (Attachment 3) includes a placeholder for Table II to be inserted per the approved motion based on two alternate motions, one for adoption of the PRC-recommended Category B Travelway widths and the other for the staff-recommended Category B Travelway widths.
Chapter 4, Table IV: Parking and Fire Lane Identification

Table IV addresses road width requirements when parking is proposed on one or both sides of a Fire Apparatus Access Road. The PRC voted 6-4 during the February 6, 2019 PRC meeting to recommend the narrower Fire Apparatus Access Road widths in Chapter 4, Table IV, Parking and Fire Lane Identification, presented in Attachment 2, Option 1. Staff recommends the wider road widths presented in Attachment 2, Option 2. The difference between the PRC-recommended and staff-recommended road widths is two feet when parking is proposed on one side and four feet when parking is proposed on both sides.

PRC Recommendation

The PRC recommends the road widths in Attachment 2, Option 1, as they are consistent with Appendix D of the International Fire Code, which is provided as a resource for local governments in consideration of the adoption of local fire prevention regulations. These widths are also consistent with current FSM standards. During the PRC meetings, on numerous occasions, staff recommended that Appendix D be used to develop design criteria. However, in the case of minimum road widths required to accommodate parking, staff did not support the minimum widths provided in Appendix D.

The PRC also supports the existing road widths for the following reasons:

- In cases where parking is permitted on one or both sides of the roadway, it is unlikely that cars will be parked proximate to one another in a manner that results in a significant obstruction of the travelway.

- The fire lane criteria were previously only applied to private streets. The PRC recommends that the existing standards be implemented and the effect of the standards on public roads be evaluated prior to adopting wider road widths.

- The reasons previously noted above under “Chapter 4, Table II: Minimum Standards for Category B Roadways.”

Staff Recommendation

Staff recommends the road widths in Attachment 2, Option 2, as they comply with the Loudoun County Fire Prevention Code and accommodate the required minimum unobstructed road width of 20 feet, exclusive of shoulders. Staff consulted with the County Attorney’s Office and adoption of the PRC-recommended Fire Apparatus Access Road widths as provided in Appendix D will be in violation of the Loudoun County Fire Prevention Code because they do not maintain the minimum required unobstructed road width of 20 feet with parking. Therefore, the staff-recommended Fire Apparatus Access Road widths have been included in the Chapter 4 draft (Attachment 3).

In response to the PRC statement in its recommendation that “on numerous occasions, staff recommended that Appendix D be used to develop design criteria,” staff acknowledges that while
the Appendix was used as a justification for certain proposed requirements, there are also ample examples where standards agreed to by staff are less stringent than what the Appendix would require.

The extra 2-4 feet of road width is necessary when on-street parking is desired because:

- FSM 4.400.B.1 requires parallel parking spaces to be 8 feet wide.

- A road width of 26 feet, with 8-foot wide parallel parking spaces on one side, results in an 18-foot travelway, which is less than the required minimum unobstructed width of 20 feet. Similarly, a road width of 32 feet, with 8-foot wide parallel parking spaces on both sides, results in a 16-foot travelway.

- Section 46.2-889 of the Code of Virginia states that “No vehicle shall be stopped except close to and parallel to the right edge of the curb or roadway.” The Virginia Department of Motor Vehicles’ Virginia Drivers Manual indicates “you may not park more than one foot from the curb,” so drivers can park their vehicles up to one foot from the curb.

- The overall average width of the top-20 selling vehicles in 2018 in the United States, according to Business Insider, is over 6.9 feet (with mirrors).

- A 6.9-foot wide car, parked one foot from the curb, results in an eight-foot obstruction. Section 503.4 of the Statewide Fire Prevention Code, adopted as the Loudoun County Fire Prevention Code, states: “Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in Section 503.2.1 (an unobstructed width of not less than 20 feet) shall be maintained at all times.”

- In a February 25, 2019, e-mail to the Fire Marshal, a representative from the International Code Council (ICC) noted that Appendix D of the Statewide Fire Prevention Code was developed in 1997 based on existing model fire codes at the time, that they are not able to provide the technical criteria associated with Appendix widths, that the Appendix is not mandatory and the Statewide Fire Prevention Code requires a minimum unobstructed width of not less than 20 feet, and that the information provided by the Fire Marshal provides the technical justification for a code change proposal.

Additional information pertaining to road widths with parking, including the February 25, 2019 e-mail from the ICC, is included in a March 6, 2019 memo from the Fire Marshal’s Office, provided as Attachment 10.

There are no issues with the other amendments to FSM Chapter 4 (Attachment 3) or Chapter 8 (Attachment 4).
DRAFT MOTIONS:

[Use this motion for staff-recommended Chapter 4, Table II: Minimum Standards for Category B Roadways]

I move that the Planning Commission forward Chapter 4, Table II: Minimum Standards for Category B Roadways, to the Board of Supervisors with a recommendation of approval, as provided in Attachment 1, Option 2 to the Staff Report for the May 28, 2019, Planning Commission Public Hearing.

OR

[Use this motion for PRC-recommended Chapter 4, Table II: Minimum Standards for Category B Roadways]

I move that the Planning Commission forward Chapter 4, Table II: Minimum Standards for Category B Roadways, to the Board of Supervisors with a recommendation of approval, as provided in Attachment 1, Option 1 to the Staff Report for the May 28, 2019, Planning Commission Public Hearing.

AND

I further move that the Planning Commission forward DOAM-2018-0002, Proposed Amendments to the Loudoun County Facilities Standards Manual, to the Board of Supervisors with a recommendation of approval, as provided in Attachment 3 and Attachment 4 to the Staff Report for the May 28, 2019, Planning Commission Public Hearing.

OR

I move that the Planning Commission forward DOAM-2018-0002, Proposed Amendments to the Loudoun County Facilities Standards Manual, to a Planning Commission Work Session for further discussion.

OR

I move an alternate motion.

ATTACHMENTS:

1. Chapter 4, Table II: Minimum Standards for Category B Roadways – Comparison Table
2. Chapter 4, Table IV: Parking and Fire Lane Identification – Comparison Table
3. Draft FSM Chapter 4 Amendments
4. Draft FSM Chapter 8 Amendments
5. Code Modification Letter
6. Referral Comments
7. DOAM-2018-0002 Resolution of Intent to Amend
8. DOAM-2018-0002 Work Plan
9. Turn Analysis Exhibits
10. March 6, 2019 Fire Marshal’s Office Memo
Chapter 4, Table II: Minimum Standards for Category B Roadways – Comparison Table

Option 1: Draft Chapter 4, Table II: Minimum Standards for Category B Roadways (recommended by PRC)

<table>
<thead>
<tr>
<th>Type</th>
<th>Average Daily Traffic (in VPD)</th>
<th>Travelway Width (2-way)</th>
<th>Travelway Width (1-way)</th>
<th>Centerline Curve Radius</th>
<th>Stopping Sight Distance</th>
<th>Maximum Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>1-250</td>
<td>2225 ft.</td>
<td>20 ft.</td>
<td>36 ft.</td>
<td>90 ft.</td>
<td>8%</td>
</tr>
<tr>
<td>B2</td>
<td>251-750</td>
<td>2225 ft.</td>
<td>20 ft.</td>
<td>60 ft.</td>
<td>120 ft.</td>
<td>8%</td>
</tr>
<tr>
<td>B3*</td>
<td>751-1000</td>
<td>2225 ft.</td>
<td>20 ft.</td>
<td>60 ft.</td>
<td>120 ft.</td>
<td>8%</td>
</tr>
</tbody>
</table>

Option 2: Draft Chapter 4, Table II: Minimum Standards for Category B Roadways (recommended by staff)

<table>
<thead>
<tr>
<th>Type</th>
<th>Average Daily Traffic (in VPD)</th>
<th>Travelway Width (2-way)</th>
<th>Travelway Width for Fire Apparatus Access Road (2-way)</th>
<th>Travelway Width (1-way)</th>
<th>Centerline Curve Radius</th>
<th>Stopping Sight Distance</th>
<th>Maximum Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>1-250</td>
<td>22 25 ft.</td>
<td>25 ft.</td>
<td>20 ft.</td>
<td>36 ft.</td>
<td>90 ft.</td>
<td>8%</td>
</tr>
<tr>
<td>B2</td>
<td>251-750</td>
<td>22 25 ft.</td>
<td>25 ft.</td>
<td>20 ft.</td>
<td>60 ft.</td>
<td>120 ft.</td>
<td>8%</td>
</tr>
<tr>
<td>B3*</td>
<td>751-1000</td>
<td>22 25 ft.</td>
<td>25 ft.</td>
<td>20 ft.</td>
<td>60 ft.</td>
<td>120 ft.</td>
<td>8%</td>
</tr>
</tbody>
</table>

Attachment 1
### Option 1: Draft Chapter 4, Table IV: Parking and fire lane identification (recommended by PRC):

<table>
<thead>
<tr>
<th>Fire Apparatus Access Road Width</th>
<th>Aerial Fire Apparatus Access Road Width</th>
<th>On-Street Parking</th>
<th>Fire Lane Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 26 feet</td>
<td>&lt; 32 feet</td>
<td>No parking allowed on either side.</td>
<td>Both sides identified as fire lanes in accordance with Section 4.810.C.</td>
</tr>
<tr>
<td>≥ 26 feet and &lt; 32 feet</td>
<td>≥ 32 feet and &lt; 38 feet</td>
<td>Parallel parking allowed on one side.</td>
<td>One side identified as a fire lane in accordance with Section 4.810.C.</td>
</tr>
<tr>
<td>≥ 32 feet</td>
<td>≥ 38 feet</td>
<td>Parallel parking allowed on both sides.</td>
<td>No fire lane identification required.</td>
</tr>
</tbody>
</table>

Exception: Fire lane identification shall be provided for access to pools in accordance with Section 4.810.C.

### Option 2: Draft Chapter 4, Table IV: Parking and fire lane identification (recommended by staff):

<table>
<thead>
<tr>
<th>Fire Apparatus Access Road Width</th>
<th>Aerial Fire Apparatus Access Road Width</th>
<th>On-Street Parking</th>
<th>Fire Lane Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;28 feet</td>
<td>&lt; 34 feet</td>
<td>No parking allowed on either side.</td>
<td>Both sides identified as fire lanes in accordance with Section 4.810.C.</td>
</tr>
<tr>
<td>≥ 28 feet and &lt; 36 feet</td>
<td>≥ 34 feet and &lt; 42 feet</td>
<td>Parallel parking allowed on one side.</td>
<td>One side identified as a fire lane in accordance with Section 4.810.C.</td>
</tr>
<tr>
<td>≥ 36 feet</td>
<td>≥ 42 feet</td>
<td>Parallel parking allowed on both sides.</td>
<td>No fire lane identification required.</td>
</tr>
</tbody>
</table>

Exception: Fire lane identification shall be provided for access to pools in accordance with Section 4.810.C.

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**Attachment 2**
FSM Chapter 4 Amendments

4.200 TRANSPORTATION PLANNING

A. General Requirements

2. Facility Planning Guidelines

a. The streets within and contiguous to any development shall be designed and constructed so as to ensure coordination with other existing or planned streets within the general area as to width, grade, location, and drainage. Existing and planned streets shall be deemed to include, without limitation, streets depicted in the Countywide Transportation Plan and existing or planned streets in existing or future adjacent or contiguous to adjacent subdivisions. For purposes of this paragraph 2.a, "Streets" includes "Roadways" as described in this Chapter 4.

b. When a subdivision or other development site abuts one side of any public road in the State highway system, the subdivider shall be required to dedicate one-half of the total right-of-way or easements necessary to make such road conform to VDOT and County standards, including accommodations for pedestrians and bicycles. The subdivider may be required to dedicate more or less right-of-way or easement to make appropriate horizontal and vertical adjustments to such road.

c. Vehicular access from off road parking and service areas shall be so combined, limited, located, designed, and controlled so as to channel traffic from and to such areas conveniently, safely, and in a manner that minimizes traffic friction and promotes free traffic flow on roads without excessive interruption.

d. Whenever a proposed development contains or is adjacent to an arterial or major collector road, direct access shall be evaluated and the Director may require that provisions be made for the future elimination or reduction of direct access through methods such as the creation of a parallel road system, combined lot access, and other methodologies as determined appropriate.

e. Shoulder and ditch section roadways are encouraged and may be provided as a low-impact design measure, as defined in Chapter 5 of this manual. Curb and gutter roadway sections shall be provided for developments within the Route 28 Taxing District and within the following zoning districts: PD (excluding PD-RV and PD-CV), R and CLI. The low-impact drainage design within residential

Attachment 3
developments shall also meet the swale and open channel specifications, as set forth in Chapter 5. Shared-use trails shall be provided in conjunction with shoulder and ditch roadway sections in developments in the Suburban Policy Area, the Transition Policy Area, the Joint Land Management Area, and in Rural Villages. In developments where lot sizes of one acre or less are proposed, sidewalks may be provided in lieu of shared-use trails.

f. Reserve strips (spite strips) controlling access to public roads shall be prohibited as defined in the VDOT Road Design Manual.

g. Per the Zoning Ordinance, in Planned Development Housing Districts only, no more than eighty (80) or more dwelling units shall require more than be permitted to be served by a single point of access directly to publicly maintained roadways or indirectly to a publicly maintained roadway via an appropriate access easement. If the travelway is deemed a Fire Apparatus Access Road, Section 4.810 shall apply.

h. The transportation system proposed for subdivision or other development shall safely accommodate non-motorized users. Design shall address both internal circulation as well as connections to existing and planned contiguous roads and bike and pedestrian facilities. In the absence of existing and planned contiguous bike and pedestrian facilities, reservations are encouraged to the most logical access points for adjacent parcels.

i. Where required by the Zoning Ordinance, interparcel connections for both vehicular and non-motorized users shall be provided.

4.310 GENERAL DESIGN REQUIREMENTS

A. Roads shall be configured to avoid floodplain unless no other alternative alignment is feasible, and to limit stream crossings.

B. Roads shall be laid out in such a manner as to intersect as nearly as possible at right angles. No roadway shall intersect a public roadway or Category A private roadway at less than 80 degrees except as may be permitted by the Director, where existing topographic conditions and/or design constraints prohibit meeting this requirement.

C. Road jogs with center lines offsets of less than 225 feet shall not be allowed in Category A private roadways, except as may be permitted by the Director. A road jog is defined as a through traffic movement in an urban or high volume road situation which may make two changes of directions at successive intersections.
See Figure 1 at the end of this chapter. Public street intersection spacing shall be accordance with VDOT standards.

D. Public roadways and Category A private roadway intersections shall be designed to align with existing or planned roadway intersections.

E. A road which permanently ends with a cul-de-sac or turn-around (not including dead end roads which end at a temporary turn-around) shall not exceed the lengths set forth below. Measurement of the length shall be taken along the centerline from the road’s intersection with an existing or proposed through road, or an accessway for emergency vehicles only in accordance with Section 4.810, to the center of the cul-de-sac or turn around or the improved portion of any private access easement serving more than two lots.

<table>
<thead>
<tr>
<th>Development Type</th>
<th>Allowable Maximum Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial, retail, industrial, office</td>
<td>1500 feet</td>
</tr>
<tr>
<td>Rural Non-residential</td>
<td>3500 feet</td>
</tr>
<tr>
<td>Multi-family residential</td>
<td>1000 feet</td>
</tr>
<tr>
<td>Single family residential</td>
<td></td>
</tr>
<tr>
<td>Townhouse</td>
<td>1500 feet</td>
</tr>
<tr>
<td>Detached</td>
<td></td>
</tr>
<tr>
<td>Zoned 1 unit per acre or greater density</td>
<td>2500 feet</td>
</tr>
<tr>
<td>Zoned less than 1 unit or lot per acre</td>
<td>3500 feet</td>
</tr>
</tbody>
</table>

**Table: Criteria for cul-de-sacs or turn-arounds**

Additional criteria for cul-de-sacs or turn-arounds include:

1. Grades for cul-de-sac turnarounds shall not exceed 6 percent measured along face of curb or edge of pavement.

2. The geometry for a cul-de-sac or turn-around shall have a radius of no less than 40 feet at the property line and no less than 30 feet at the face of curb or edge of pavement. Other types of turn arounds may be considered.
3. Developments with a single point of ingress/egress shall provide a secondary point of access for emergency vehicle use if the length of road, measured along the centerline from the point of beginning of the ingress/egress to the front of the most remote lot, exceeds the maximum allowable length as may be permitted by the FSM. Such emergency vehicle access easement shall be an 18 foot wide easement, which shall contain a 14 foot wide graded and compacted travelway, centered in the easement. The grade or slope of the emergency vehicle access travelway shall not exceed 10 percent at any point along the centerline in the travelway. A typical section of the proposed emergency vehicle access easement and travelway shall be included in the land development submission. Horizontal curves must be adequate for emergency vehicles matching AASHTO design standard WB-50 design vehicle.

Multi-phased developments, with an approved concept development plan or preliminary plat showing more than one ultimate point of access, shall not be required to meet this requirement for individual phases, sections or plats, on ultimately planned through roads.

4. Length criteria as contained within this section shall not be applicable for divided roadways with medians and the above criteria shall apply beyond the point where the divided section ends.

5. The County encourages the use of landscaped islands within cul-de-sacs shall accommodate the turning radius of an SU-40 design vehicle.

6. Additional points of access may also be required pursuant to Section 4.810.

F. Landings shall be provided for public roadways and Category A private roadways at intersections to ensure adequate grade and sight distance at intersections. The maximum grade along the landing for Category A private roadways shall not exceed 3% or the cross slope of the intersecting road, whichever is greater. Breakover shall not exceed 6%. The minimum length of landing shall be 50 feet. Landings for public streets shall meet VDOT standards.

Landings shall be provided for Category B private roadways at intersections. The maximum grade along the landing shall not exceed 6% for 25 feet.

Landing shall be defined as that section of a roadway which is adjacent to an intersection and utilized for vehicle stacking.

Breakover is the difference between the centerline grade of an intersection roadway and the cross slope of the intersecting roadway.
G. Excepting driveway access to single residential lots, roadways intersecting with a public or Category A private roadway shall have a minimum length of 50 feet between curb returns and/or curb cuts. See Figure 2 at the end of this chapter.

H. On curb and gutter sections, except for Category B and C private roadways, the roadway right-of-way, or easement where applicable, shall extend a minimum of six feet beyond the face of curb so that drainage structures can be accommodated.

I. Signage and fire lane identification shall be in accordance with Section 4.800 of this Chapter.

J. Pavement designs will be done in accordance with Section 4.340.

K. Residential driveway entrances in curb and gutter road sections shall be constructed in accordance with the figures located at the end of this chapter.

L. On segments of proposed roadways with ultimate projected traffic counts of more than 2000 Vehicles Per Day (VPD), there shall be no direct access from any driveway or pipestem that serves three (3) or fewer dwelling units unless traffic calming measures approved by the Director are employed. On segments of proposed roadways with ultimate projected traffic counts of more than 4000 Vehicles Per Day (VPD), there shall be no direct access from any driveway or pipestem that serves three (3) or fewer dwelling units.

M. Vehicles Per Day (VPD) shall be calculated in accordance with the latest version of the ITE Trip Generation Manual.

4.330 PRIVATE ROADWAY STANDARDS

A. General

The following shall apply to the categories of private roadways, except as noted herein:

1. Traffic control signage and lane markings provided on private roadways shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). When a signal is warranted, signalization shall meet VDOT standards.

2. Private roadways may be designed with a curb and gutter section or a shoulder section. Shoulder sections shall have stabilized shoulders which may be a paved, gravel, or sodded grass surface. Shoulders shall meet VDOT slope requirements.
3. Private roadways shall be designed to accommodate an SU-30 design vehicle (AASHTO) and to accommodate emergency vehicles in accordance with the design criteria contained within Tables I, II and III of this chapter. The travelway inside radius at an intersection shall be a minimum of 25 feet, except for alleys. **If the roadway is deemed a Fire Apparatus Access Road, Section 4.810 shall apply.**

4. Where parking is provided on the roadway, pavement width shall be increased appropriately. Parking geometry designs shall meet the requirements of this chapter.

5. An entrance permit shall be secured from the Virginia Department of Transportation in order to tie into an existing VDOT maintained road.

6. Sidewalks shall be placed within the public access easements. Handicap accessible ramps and provisions, in accordance with State and Federal requirements, shall be provided at roadway intersections with curb gutter.

7. Roadway design details which are not standard designs used by VDOT, such as CG-6R or YI-1 components, shall be submitted as detailed drawings to the Director for approval.

8. All private roadways and access easements identified in this chapter that serve 3 or more lots, require construction plans and profiles and an approved Performance Bond prior to record plat approval for the subdivision the roadways or access easements are to serve.

B. **Category A Roadways**

1. Category A private roads may be utilized in locations as permitted in the Zoning Ordinance, LSDO, and in locations where private roads have been permitted through a Zoning Ordinance Modification for residential and/or non-residential applications.

2. The width of the access easement within which a private roadway is located shall extend to the property lines and along the entire length of the property lines along the frontage of the individual lots to which it provides access. However, this requirement does not always require the construction of the frontage improvements along the entire property line. The following minimum criteria shall apply:

   Roadway Cross Section Easement Limit
   Curb and Gutter - Six feet behind the face of curb.
   Shoulder Section - The edge of shoulder and as necessary to accommodate roadside drainage.
3. Category A private roadways shall have a paved surface. For minimum standards regarding pavement section, widths, etc., refer to Table I. Please note that a roadway built to these standards may not meet Fire Apparatus Access Road Requirements. If such roadway is deemed to be a Fire Apparatus Access Road, Section 4.810 shall apply, and additional travelway width may be required.

4. Utility easements shall be provided, as necessary.

5. Category A roadways shall require construction plans and profiles for review and approval.

<table>
<thead>
<tr>
<th>Type</th>
<th>Average Daily Traffic (in VPD)</th>
<th>Lane Width</th>
<th>One-Way Width *</th>
<th>Shoulder Width *</th>
<th>Curve Radius (Min.)</th>
<th>Stopping Sight Distance</th>
<th>Maximum Grade</th>
<th>Vertical Curve Design</th>
<th>Minimum Intersection Sight Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>1-250</td>
<td>9 ft</td>
<td>16 ft</td>
<td>2 ft **</td>
<td>110 ft</td>
<td>150 ft</td>
<td>12%</td>
<td>20 mph</td>
<td>200 ft</td>
</tr>
<tr>
<td>A2</td>
<td>251-999</td>
<td>10 ft</td>
<td>N/A</td>
<td>4 ft</td>
<td>165 ft</td>
<td>150 ft</td>
<td>12%</td>
<td>25 mph</td>
<td>250 ft</td>
</tr>
<tr>
<td>A3</td>
<td>1000-3000</td>
<td>11 ft</td>
<td>N/A</td>
<td>6 ft</td>
<td>165 ft</td>
<td>150 ft</td>
<td>10%</td>
<td>25 mph</td>
<td>250 ft</td>
</tr>
<tr>
<td>A4</td>
<td>3001-5500</td>
<td>12 ft</td>
<td>N/A</td>
<td>6 ft</td>
<td>338 ft</td>
<td>200 ft</td>
<td>10%</td>
<td>30 mph</td>
<td>300 ft</td>
</tr>
<tr>
<td>A5</td>
<td>5500+</td>
<td>12 ft</td>
<td>N/A</td>
<td>6 ft</td>
<td>478 ft</td>
<td>275 ft</td>
<td>8%</td>
<td>35 mph</td>
<td>350 ft</td>
</tr>
</tbody>
</table>

Table I: Minimum Standards regarding pavement section, widths, etc., for Category A Roadways

* Does not include gutter pan.
** Shoulders shall be compacted/treated/compacted to support emergency vehicles

Notes:

1. Minimum travelway width from face of curb to face of curb shall be 20 feet.

2. Turn lanes shall be required at entrance locations with Average Daily Traffic in excess of 5500 VPD, if warranted based on the peak hour traffic volumes, per Appendix C of the VDOT Road Design Manual. Such turn lanes may be required on both the public and private legs of an intersection, if applicable.

3. Roadways in excess of 3,000 VPD shall be superelevated in accordance with the VDOT Road Design Manual.
4. Required thickness of subbase, base course, and top or surface course for private roads shall be determined based on projected Average Daily Traffic volumes for the roadway or segment, using the VDOT Road Design Manual, if Average Daily Traffic exceeds 250 VPD.

5. The minimum pavement section for private roadways with a projected Average Daily Traffic of less than or equal to 250 VPD shall consist of 6 inch aggregate base course and a 2 inch bituminous surface course on a properly compacted subgrade.

C. Category B Roadways

Locations permitting Category B facilities shall include townhouse and multi-family uses. Category B facilities are defined as private vehicular facilities in residential townhouse and multi-family areas (including condominiums) which serve the following functions: 1) provide individual lot frontage or access, 2) provide for parking, and 3) carry predominantly on-site traffic. Category B roadways shall be used only where a volume of less than 1,000 VPD is anticipated. Where 1,000 VPD or greater are anticipated, use design standards specified for Category A roadways. Design of Category B roadways shall meet the minimum standards as defined for Type B1, B2 and B3 below and shall require construction plans and profiles or site plan submissions, whichever is applicable. Please note that a roadway built to these standards may not meet Fire Apparatus Access Road Requirements. If such roadway is deemed to be a Fire Apparatus Access Road, Section 4.810 shall apply, and additional travelway width may be required.

Table II: Minimum Standards for Category B Roadways

<table>
<thead>
<tr>
<th>Type</th>
<th>Minimum Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td></td>
</tr>
<tr>
<td>B3</td>
<td>Angle (ie. “head-in”) parking is not allowed on Type B3 roadways. Parallel parking is allowed on Category B private roadways with additional pavement in accordance with the standards established in this chapter.</td>
</tr>
</tbody>
</table>

Notes:

1. Roadways and parking areas shall have a curb section and shall be contained within an access easement. The width of the access easement in which a Category B private roadway is located shall extend to the property lines and along the entire frontage of the individual lots to which it provides legal access. However, this requirement does not always require the construction of the frontage improvements along the entire property line. On sections of the roadway where this requirement is not applicable, the easement shall be
established one foot behind the face of curb or six inches behind the sidewalk.

2. For Type B2 and B3 roadways, intersections shall be spaced at least 50 feet apart, measured from the flow line of the gutter pan. See Figure 3 at the end of this chapter.

3. An intersection is defined as the juncture of at least three segments of roadways at a common point.

4. Category B private roadway intersections onto a public or Category "A" private roadway shall not be placed closer than 100' at centerline. See Figure 4 at the end of this chapter.

5. No parking shall occur for a minimum distance of 30 feet from an intersection, measured from the flow line of the gutter pan. For 3-segment intersections, parking is allowed along the through roadway opposite the intersecting roadway. See Figure 5 at the end of this chapter.

6. Category B private roadways shall not have a posted speed in excess of 15 mph.

7. Travelway widths excluding parking shall be measured from face of curb to face of curb.

8. The minimum pavement section for Category B private roadways and parking areas shall be based on the projected Average Daily Traffic volumes using the VDOT Road Design Manual if the Average Daily Traffic exceeds 250 VPD.

9. The minimum pavement section for Category B private roadways and parking areas with a projected Average Daily Traffic of less than 250 VPD shall consist of 6 inch aggregate base course and a 2 inch bituminous surface course.

10. If a roadway is not deemed a Fire Apparatus Access Road, a permanent turn-around shall be required when a dead-end roadway exceeds a distance of five hundred (500) feet in length, measured along the centerline from the last intersection with a public or private roadway to the end of the roadway center of the turn-around.

D. Category C Roadways

1. Category C private roadways shall be provided for the following:

   a. Private access easement roads as permitted by the Land Subdivision Development Ordinance (LSDO) and the Zoning Ordinance (ZO).
b. Class III roads serving 25 or less lots, as permitted by the LSDO and ZO.

c. Pipestem drives as permitted by modification of the ZO. For the purposes of this manual, pipestem drives are defined as a means of access to a lot or several lots which do not have direct access to an abutting roadway other than by the pipestem driveway.

d. Alleys as permitted in the ZO.

2. Category C private roadways shall be designed to meet the minimum standards as defined for each Roadway Type C1, C2, C3 and C4 below including the referenced supplemental design criteria. Please note that a roadway built to these standards may not meet Fire Apparatus Access Road Requirements. If such roadway is deemed to be a Fire Apparatus Access Road, Section 4.810 shall apply, and additional travelway width may be required.
<table>
<thead>
<tr>
<th>Subdivision Size</th>
<th>Easement Width *1</th>
<th>Travel-Way Width</th>
<th>Shoulder Width *7</th>
<th>Paved</th>
<th>Gravel</th>
<th>Maximum Grade *4 *5</th>
<th>Centerline Curve Radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1 (up to 2 lots)</td>
<td>24'</td>
<td>12'</td>
<td>4' grass</td>
<td>2&quot; over 4&quot; base (opt.) *3</td>
<td>6&quot;</td>
<td>10%</td>
<td>30'</td>
</tr>
<tr>
<td>C2 (3-7 lots)</td>
<td>30'</td>
<td>14'</td>
<td>3' grass</td>
<td>2&quot; over 4&quot; base *3</td>
<td>6&quot;</td>
<td>10%</td>
<td>75'</td>
</tr>
<tr>
<td>C3 (8 or more lots)</td>
<td>40'</td>
<td>18' *2</td>
<td>2' gravel</td>
<td>2&quot; over 6&quot; base</td>
<td>6&quot;</td>
<td>10%</td>
<td>110'</td>
</tr>
<tr>
<td>C4 (alley) *8</td>
<td>20'</td>
<td>14'</td>
<td>2' grass</td>
<td>2&quot; over 6&quot; base</td>
<td>N/A</td>
<td>12%</td>
<td>N/A</td>
</tr>
<tr>
<td>C4 (Curb and Gutter alley) *8</td>
<td>20’</td>
<td>14’ (One-Way) *6</td>
<td>18’ (Two-Way) *6</td>
<td>N/A</td>
<td>2&quot; over 6” base</td>
<td>N/A</td>
<td>12%</td>
</tr>
</tbody>
</table>

**Table III: Minimum Standards for Category C Roadways**

Footnotes:

*1 Additional easement width may be required at specific locations to accommodate slope maintenance, drainage, sight distance, etc.

*2 Travelway widths are permitted to step-down to a Type C1 facility, where the number of lots served is 2 or less.

*3 All pipestem drives shall be paved and shall be limited to serving 7 lots. Refer to Figure 7 for Pipestem Driveway Entrance Standards.

*4 12 percent for pipestems or Category C roads that require paving.

*5 Steeper grades may be considered where there are topographic or environmental constraints which prohibit the maintenance of the 10% grade criteria.

*6 Measured from face of curb to face of curb.

*7 Shoulders shall be compacted/treated to support emergency vehicles.

*8 Refer to Figure 15 for alley entrance to public street.
3. Supplemental Criteria

a. Permanent dead-end Type C3 and C4 roadways which exceed four hundred (400) feet in length, measured along the centerline from the centerline of the last intersection with a public or private roadway to the center of the dead-end, shall include appropriate design provision to permit vehicular turnarounds. If a Type C3 or C4 roadway is not deemed a Fire Apparatus Access Road, a permanent turn-around shall be required when a dead-end roadway exceeds four hundred (400) feet in length, measured along the centerline from the last intersection with a public or private roadway to the end of the roadway.

b. Type C3 and C4 roadways located within Class III and Class IV soils, as identified by the Interpretive Guide to Soils Maps, Loudoun County, Virginia; shall provide a field determination of CBR values based on actual sub-grade conditions. Quantities of borings required shall be in accordance with Chapter 6 of this manual.

c. Type C3 roadways constructed of gravel must include a fifty (50) foot paved apron only when accessing an existing paved road.

d. Type C3 and C4 roadways shall include signage for roadway names, private road identification, and traffic control, as may be appropriate.

e. The following criteria shall be applicable to the design of Type C1 and C2 roadways constructed as pipestem drives:

i. Lots which share a pipestem driveway shall provide a minimum of three parking spaces per residential dwelling outside of the travelway. In addition, these driveways shall be clearly labeled or noted "no parking along driveway" on all plats and plans submitted.

ii. The design for pipestems which are to serve more than one lot shall be shown in typical section and on the grading plan of the construction plans, together with turnaround and required utilities, and shall be included in the performance bond for the project.

iii. Each pipestem shall be clearly identified as a private drive. A single sign, not to exceed two square feet in area, shall be posted at the entrance of each such driveway, displaying only the words "Private Drive" and the addresses of any residences utilizing the common driveway.
iv. No pipestem shall extend a distance of more than 400 feet from the public road to the property which the pipestem serves, or exceed a total length of 800 feet if a loop configuration, measured along the center line between the two intersections with a public or private road.

f. Alleys are a means of secondary access, and properties served by an alley shall have separate frontage on a public or private roadway.

4.400 PARKING GEOMETRIC STANDARDS

A. General Criteria

1. There shall be three types of passenger vehicle parking spaces which can be used in parking facilities for automobiles.


b. Handicap accessible head-in parking.

c. Parallel parking.

2. Where four or more spaces are required by the Zoning Ordinance, parking areas shall be graded, well drained and provided with a surface of bituminous concrete or equivalent paving materials. All parking spaces shall be delineated and striped in accordance with this chapter.

3. Gravel, grasscrete, reinforced grass or gravel systems, or other suitable materials may be used for access and parking areas for agricultural and rural economy uses. Elsewhere, such materials may be used for temporary and overflow parking areas, low volume access ways and, when site conditions warrant, standard parking areas. The parking areas shall be well drained with defined travel aisles and designated parking bays. If, due to the rural nature of the facility, it is not feasible or practical to provide defined travel aisles and designated parking bays, the land development application shall provide a note explaining how this requirement shall be met (i.e., parking attendants, signs, etc.).

4. The County permits and encourages the use of pervious materials.

5. Rain gardens and other low-impact design options, in accordance with Chapter 5 of this manual, may be used to satisfy the landscaping requirements for parking areas, such as landscaped islands and peripheral parking lot landscaping, as set forth in this section and the Zoning Ordinance.
B. Geometrics

1. The following table shall represent the minimum size requirements for automobile parking spaces, except as specifically modified herein. (See the Zoning Ordinance for the required number of parking spaces per use.)

<table>
<thead>
<tr>
<th>Standard Head-In Parking</th>
<th>9'</th>
<th>18'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parallel Parking</td>
<td>8'</td>
<td>22'</td>
</tr>
</tbody>
</table>

Geometrics for angle parking shall be measured as shown in Figure 14.

2. Travelway aisle widths for standard car parking lots shall be provided in accordance with the following: 90 degrees - 22 feet; 60 degrees - 20 feet; and 45 degrees - 18 feet. **A minimum travelway aisle width of 25 feet shall be maintained adjacent to buildings.** The minimum travelway aisle width is 18 feet. Travelway aisle width shall be measured from the face of curb where there is no parking and from the back of the parking space where there is parking. **If the travelway is deemed a Fire Apparatus Access Road, Section 4.810 shall apply.**

3. The stall width for standard parking spaces when measured between stall striping may be reduced to 8 feet when spaces are separated by double line stripes set one foot apart. (i.e., the pavement area of each space shall remain 9 feet.)

4. Where wheel stops or curbing are provided for parking spaces, a 1 foot reduction in the stall length will be allowed, providing the resulting overhang does not encroach on the required open space areas and/or pedestrian access system.

5. Parking spaces for handicapped persons and related access aisles, accessibility routes and signage for physically handicapped persons shall be provided in accordance with State and Federal requirements.

6. Parking lots shall provide for safe and functional traffic circulation.
   a. Entrances to parking bays shall be located along the site accessway to avoid blockage of the public right of way by vehicles entering the site. No parking shall be allowed within 30 feet of the entrance, measured from the flow line of the gutter pan. See Figure 5 at the end of this chapter.
   b. The major site accessways shall be clearly defined, with a minimum aisle width of 25 feet measured from face of curb to face of curb at curb returns, and no direct angle parking shall be allowed where anticipated Average Daily Traffic exceeds 1500 VPD. Major site
accessways shall accommodate SU-30 and WB-40 design vehicle movements without requiring change of direction. A hierarchy of onsite travelways shall be maintained. **If the travelway is deemed a Fire Apparatus Access Road, Section 4.810 shall apply.**

c. Retaining walls, screen, landscaping and building walls shall be protected from vehicle contact.

d. "Overhang" areas which are a part of the required parking space must be graded no higher than 2 inches above the top of the curb, and must not be encroached upon by landscape plantings, signs or other obstructions.

e. Loading spaces and dumpster pads shall be accessible by the design vehicle with all parking spaces occupied.

f. Where drive-through facilities are proposed, the travelway width shall be a minimum of 10 feet and shall be designed to address safe vehicle stacking.

7. Parking areas shall provide for safe pedestrian travel.

8. A permanent turn-around shall be required when the dead-end aisle exceeds 500 feet, measured along the centerline of the dead-end aisle, from the last aisle or public roadway.

C. Loading Spaces

Commercial building sites shall provide for loading space in accordance with the Zoning Ordinance. An AASHTO-WB-50 design vehicle shall be accommodated on all commercial sites where the proposed use warrants the same except as may be permitted by the Director where the applicant can show just cause for modification.

1. Single Unit Loading Space

   a. A single unit loading space shall be a minimum of 15 feet in width and 30 feet in length and provide a minimum horizontal clearance of 15 feet; provided, however, that when loading spaces are located alongside each other, additional loading spaces need only be a minimum of 12 feet in width.

   b. Uses which are required to provide a single unit loading space shall provide an entrance and circulation system which can accommodate an American Association of State Highway and Transportation Officials (AASHTO) SU-30 Design Vehicle.
2. **Semi-Trailer Standard Loading Space**

   a. Semi-trailer loading spaces shall be a minimum of 15 feet in width and 55 feet in length and provide a minimum horizontal clearance of 15 feet.

   b. Uses which are required to provide a standard or semi-trailer loading space shall utilize an AASHTO WB-50 design vehicle for planning the entrance and on-site circulation system.

3. Loading spaces shall be accessible to the design vehicle with no more than two backing movements. The circulation pattern for the design vehicle should provide for forward movement only and shall discourage backing movements.

4. Per the Zoning Ordinance, no off-roadway loading area shall be located within any required front yard. Furthermore, no off-roadway loading area shall be used to satisfy the requirements for parking or stacking spaces. Loading areas shall be designed and located in a manner which does not interfere with the free circulation of vehicles within parking or stacking areas.

5. In accordance with the Zoning Ordinance, loading spaces may be provided cooperatively for two or more uses, subject to the approval of the Director, where it is demonstrated that adjacent land uses can be adequately served by a shared loading facility and legal instruments ensuring the permanent availability of off-roadway loading for all such uses are recorded in the land records of Loudoun County.

4.800 **FIRE APPARATUS ACCESS ROADS AND SIGNS**

4.810 **FIRE APPARATUS ACCESS ROAD REQUIREMENTS**

Pursuant to the [Virginia Statewide Fire Prevention Code](https://www.loudoun.gov/safety/fireprevention) (the “SFPC”), and the [Loudoun County Fire Prevention Code](https://www.loudoun.gov/safety/fireprevention) (the “LCFPC”), as adopted in Chapter 1602 of the [Codified Ordinances](https://www.loudoun.gov/safety/fireprevention) of Loudoun County, Loudoun County [has adopted](https://www.loudoun.gov/safety/fireprevention) is authorized to adopt the following written policy to establish where Fire Apparatus Access Roads are required, and the Loudoun County Fire Marshal, or his/her designee, is authorized to designate public and private Fire Apparatus Access Roads, as deemed necessary for the efficient and effective operation of fire and/or rescue apparatus. This written policy is intended to supplement, and does not replace, the separate requirements of Chapter 5 of the LCFPC. In case of conflict between this section and standards of another applicable regulation, ordinance, code or law, the more stringent standards shall prevail. The Fire Marshal administers the LCFPC and is the designated official charged with the administration of the standards and requirements contained in this section, including approval of modifications to the standards in this section.
A. Definitions

For purposes of this Section:

1. a. “Fire Apparatus Access Road” shall mean a travelway that provides primary fire apparatus access from a fire station to a facility, building, or portion thereof, where “travelway” shall be construed to generally include and shall mean all public roads, private roadways as defined regulated under by Chapter 4 of this Manual, and certain parking lot major site-accessways, certain driveways, and, and shall include shoulders, other accessways for emergency vehicles only. Driveways serving one single family detached residence are typically not classified as Fire Apparatus Access Roads unless a change in use under the Zoning Ordinance or the Uniform Statewide Building Code is proposed.

2. “Aerial Fire Apparatus Access Road” shall mean a section of a Fire Apparatus Access Road located adjacent to a building 50 feet in height or greater. For the purposes of this definition, height shall be measured from the average finished grade at the face of the building located adjacent to a Fire Apparatus Access Road to the highest eave of a pitched roof, intersection of the roof to an exterior wall, or top of a parapet wall, whichever is greater.

B. Fire Apparatus Access Road Standards Provisions of this Section 4.810 may be waived in consultation with the Fire Marshal, only if in compliance with the SFPC.

1. Minimum Specifications

a. Fire Apparatus Access Roads shall have a minimum unobstructed width of 20 feet, inclusive of shoulders that are compacted/treated to support emergency vehicles. [Fire Marshal Code Modification for Fire Service Features, Specifications, Dimensions, Section 503.2.1 of the Loudoun County Fire Prevention Code, 2015 Edition]

i. Exception: The Fire Marshal may reduce this width to 18 feet for travelways exclusively serving certain sprinklered single family detached and single family attached dwellings.

ii. Exception: The Fire Marshal may approve the installation of security gate(s) across a Fire Apparatus Access Road in accordance with section 4.810.D.

b. Fire Apparatus Access Roads shall have a minimum unobstructed vertical clearance of 13 feet 6 inches.
c. Fire Apparatus Access Roads shall extend to within 150 feet of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

i. Exception: The Fire Marshal may allow up to an 80-foot wide continuous portion of the exterior wall to be located beyond 150 feet of the Fire Apparatus Access Road where sprinklers are provided as required by the Uniform Statewide Building Code.

ii. Exception: The Fire Marshal also may increase the dimension of 150 feet where:

a) Sprinklers are provided that exceed the minimum requirements of the Uniform Statewide Building Code or type of construction warrants such increase; or

b) Topography, waterways, and/or non-negotiable grades warrant such increase and an approved alternative means of fire protection is provided.

d. Additional requirements for Aerial Fire Apparatus Access Roads:

i. Shall have a minimum unobstructed width of 26 feet, exclusive of shoulders.

ii. Shall be located a minimum of 15 feet from the building and positioned along one entire side of the building. The side of the building on which the aerial fire apparatus access road is positioned shall be approved by the Fire Marshal, with a preference for the addressed side of the building.

iii. Shall only be required on one side of the building.

iv. Shall extend 30 feet beyond each end of the building, unless otherwise approved by the Fire Marshal.

v. Overhead utility and power lines shall not be located over an Aerial Fire Apparatus Access Road or between the Aerial Fire Apparatus Access Road and the building.

e. Additional requirements for Fire Apparatus Access Roads designated as accessways for emergency vehicles only:
i. Shall be located within a minimum 22-foot wide easement, which shall encompass the accessway and demarcation measures.

ii. A typical section of the proposed accessway shall be included in the associated land development application.

2. Parking

<table>
<thead>
<tr>
<th>Fire Apparatus Access Road Width</th>
<th>Aerial Fire Apparatus Access Road Width</th>
<th>On-Street Parking</th>
<th>Fire Lane Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;28 feet</td>
<td>&lt;34 feet</td>
<td>No parking allowed on either side.</td>
<td>Both sides identified as fire lanes in accordance with Section 4.810.C.</td>
</tr>
<tr>
<td>≥ 28 feet and &lt; 36 feet</td>
<td>≥ 34 feet and &lt; 42 feet</td>
<td>Parallel parking allowed on one side.</td>
<td>One side identified as a fire lane in accordance with Section 4.810.C.</td>
</tr>
<tr>
<td>≥ 36 feet</td>
<td>≥ 42 feet</td>
<td>Parallel parking allowed on both sides.</td>
<td>No fire lane identification required.</td>
</tr>
</tbody>
</table>

3. Load Bearing Capacity

a. Emergency access, and shoulders included in Fire Apparatus Access Road width measurements, shall be compacted/treated to support emergency vehicles.

b. Compacted/treated to support emergency vehicles shall mean capable of supporting H-20 loading in all weather conditions. Travelways with a minimum of six inches aggregate subbase or a minimum of four inches aggregate subbase and two inches of bituminous surface course over a compacted subgrade shall be deemed to meet load bearing requirements.
4. Number of Access Points

a. The following development types shall have more than one Fire Apparatus Access Road into the development:

   i. Residential Developments: More than one point of access is required for the following development types:

      a) Single family detached and single family attached dwelling units, including townhomes, with greater than 50 dwelling units.
      
      b) Multi-family developments greater than 100 units (not sprinklered).
      
      c) Multi-family developments greater than 200 units (sprinklered).

   ii. Commercial and Industrial Developments: More than one point of access is required for the following development types:

      a) Any buildings in the development exceeds 30 feet or three stories in height. Building Height shall be as defined in the Revised 1993 Zoning Ordinance.
      
      b) The gross building area of all buildings in the development is greater than 62,000 square feet (if any building is not sprinklered) or 124,000 square feet (all buildings shall be sprinklered).
      
      c) Institutional uses are considered to be commercial and industrial development.

   ii. Mixed Use Developments: The number of points of access shall be determined based on the following equivalent values. When the total value for a development is greater than 200, more than one point of access shall be required.

      • Each single family detached/attached dwelling unit, including townhome = 4

      • Each multi-family dwelling unit (not sprinklered) = 2

      • Each multi-family dwelling unit (sprinklered) = 1
• Each building exceeding 30 feet or three stories in height, containing commercial or industrial uses (with or without dwelling units) = 200. Building Height shall be as defined in the Revised 1993 Zoning Ordinance.

• Every 620 square feet of building containing commercial or industrial uses (if any building is not sprinkled) = 2

• Every 620 square feet of building containing commercial or industrial uses (if all buildings are sprinkled) = 1

iv. The Fire Marshal may also require more than one Fire Apparatus Access Road into the development if there is the potential for impairment of such Fire Apparatus Access Road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

b. Where more than one fire apparatus access road is required, distance between the access points also will be evaluated. Considerations shall include, without limitation, median divided roadways, sprinkler systems, and non-combustible construction materials.

5. Turn Aroun
d

a. Dead end fire apparatus access roads in excess of 150 feet in length, as measured along the center line from the curb line to the end of the fire apparatus access road, shall be provided with an approved turn around for fire apparatus within 150 feet of the end of the fire apparatus access road, unless otherwise approved by the Fire Marshal.

b. Approved turn arounds in Figure 18 depict minimum dimensions and do not require any further analysis. Other turn around geometry that can accommodate an SU-40 design vehicle (AASHTO) may be approved by the Fire Marshal.

c. Approved turn arounds depicted in Figure 18 require fire lane identification.

6. Geometric Standards

a. Turning radii shall be designed to accommodate an SU-40 design vehicle (AASHTO).

b. The grade or slope shall not exceed 14 percent along the centerline of the Fire Apparatus Access Road.
C. Fire Lane Identification

1. Timing:
   a. Prior to the issuance of a certificate of occupancy permit for any residential, mixed use or non-residential facility, building, or portion of a building hereafter constructed, the Fire Apparatus Access Road serving said facility, building, or portion of a building shall meet the following Fire Lane Identification requirements shall be provided along any Fire Apparatus Access Road serving such facility, building, or portion of a building.

1. Where Fire Lane Identification is Required:
   a. Travelways with a total width less than twenty-six (26) feet shall be identified as a Fire Lane on both sides of the travelway, in accordance with this Section.

   b. Travelways with a total width of twenty-six (26) feet or greater, and less than or equal to thirty-two (32) feet shall be identified as a Fire Lane on one side of the travelway, in accordance with this Section.

   e. Commercial/Non-residential buildings shall require Fire Lane Identification, as specified by the Fire Marshal, along the frontage of the building and at other building access points, as designated by the Fire Marshal.

   d. Public pools shall provide Fire Lane Identification, as specified by the Fire Marshal, at any entrance for emergency vehicles.

2. Fire Lane Identification Specifications for Residential Developments:
   a. Fire Lane signs required by Chapter 486 of the Codified Ordinances of Loudoun County shall meet the design and installation standards set forth in Figure 16. Fire Lane signs shall be installed at the beginning of a designated Fire Lane and at the end of a designated fire lane with directional arrows pointing in. In addition, curbing shall be painted yellow with "Fire Lane" stenciled in black on the curbing every 50 feet of the fire lane in 4 inch letters.
b. Fire Lane Identification shall be provided as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Signage</th>
<th>Curb/Edge of Pavement Painting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of Curb or Shoulder ≤ 30 feet</td>
<td>One D sign installed on center.</td>
<td>In lieu of the D sign, curbing or edge of pavement may be painted with a 6-inch yellow stripe with &quot;FIRE LANE&quot; stenciled in black in 4 inch letters on center.</td>
</tr>
<tr>
<td>Length of Curb or Shoulder ≥ 30 feet</td>
<td>One A sign installed at one end and one C sign installed at the other end with directional arrows pointing in. and Where the space between the A and the C sign exceeds eighty (80) feet, intermediate B sign(s) shall be installed. Spacing between signs shall not exceed eighty (80) feet.</td>
<td>In lieu of intermediate B signs, curbing or edge of pavement may be painted with a 6-inch yellow stripe with &quot;FIRE LANE&quot; stenciled in black every 50 feet in 4 inch letters.</td>
</tr>
<tr>
<td>Any entrance for emergency access to public pools</td>
<td>One A sign and one C sign on each side of the entrance with directional arrows pointing in.</td>
<td>As approved by the Fire Marshal.</td>
</tr>
<tr>
<td>Accessways for emergency vehicles only.</td>
<td>One sign installed on the barrier securing the accessway that states “No Parking Emergency Vehicles Only.” In lieu of signage along the accessway, the edges of the accessway shall be demarcated by shrubs, boulders, fencing, or other measures approved by the Fire Marshal located within the easement. The typical section of the proposed accessway shall include demarcation.</td>
<td></td>
</tr>
</tbody>
</table>

**Table V: Fire Lane Signage and Painting**

b. In lieu of curb markings in paragraph (a) above, Fire Lanes seventy-five (75) feet or greater in length, may have intermediate “Fire Lane” signs installed, with double directional arrows that point away from the center of the sign and towards the opposing ends of the Fire Lane, such that the spacing of signs is no greater than eighty (80) feet between signs in residential areas.
e. Fire Lane signs shall comply with the design requirements and installation specifications for Fire Lane signage set forth in Chapter 486 of the Codified Ordinances of Loudoun County, except as modified by Figure 16.

3. Exceptions:

   a. Fire Lane Identification shall not be required if a travelway has a total width greater than thirty-two (32) feet.

   ba. Fire Lane Identification shall not be required within the AR-1, AR-2, and A-3 Zoning Districts if parking along private streets and/or private access easements has been prohibited through owner’s association documents or deed restrictions and the applicable Home Owners Association or Property Owners Association maintains “No Parking” signage at appropriate intervals. Spacing between signs may be increased in Non-Suburban Zoning Districts, subject to approval by the Fire Marshal.

   eb. Fire Lane Identification shall not be required if the travelway is part of a residential development where all proposed lots are three (3) acres in size or greater.

   d. Fire Lane Identification shall not be required within attached and multi-family developments if parking along private streets and/or private access easements has been prohibited through owner’s association documents or deed restrictions and the applicable Home Owners Association or Property Owners Association maintains “No Parking” signage at appropriate intervals.

D. Fire Apparatus Access Road Gates or Barriers

1. Gates securing fire apparatus access roads shall comply with all of the following criteria:

   a. For a two-way travelway, the minimum unobstructed gate opening width shall be 20 feet. For a one-way travelway, the minimum unobstructed gate opening width shall be 12 feet.

   b. Construction of gates shall be of materials that allow manual operation by one person.

   c. Electric gates shall be equipped with a means of opening the gate by public safety personnel for emergency access. Emergency opening devices shall be approved by the Fire Marshal.
d. Manual opening gates shall not be locked with a padlock or chain and padlock unless they are capable of being opened by means of forcible entry tools or when a key box containing the key(s) to the lock is installed at the gate location.

e. Locking device specifications shall be submitted for approval by the Fire Marshal.

f. Electric gate operators, where provided, shall be listed in accordance with UL 325.

g. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

2. Barriers securing accessways for emergency vehicles only shall comply with all of the following criteria:

a. Shall be constructed out of high-visibility plastic chain, delineators, or materials as approved by the Fire Marshal.

b. Shall not be locked with a padlock or chain and padlock unless they are capable of being opened by means of forcible entry tools or when a key box containing the key(s) to the lock is installed at the location.

E. Traffic Signal – VDOT and Loudoun County Fire and Rescue (LCFR) Preemption Systems

New traffic signals and modifications to existing signalized intersections shall include preemption systems that are approved by both VDOT and LCFR pursuant to Chapter 420 of the Codified Ordinances of Loudoun County.

4.820 STREET NAME SIGNS

Permanent street name signs shall be installed and maintained in accordance with the specifications contained within the Codified Ordinances.

Temporary street names signs are required and shall be installed within 24 hours of completion of clearing and in close proximity to each intersection location. Temporary street name signs shall meet the specifications contained within the Codified Ordinances (Chapter 1021) with the exception that a temporary post may be used in lieu of the 2" x 2" square galvanized steel post required by the Ordinance. Temporary signs shall be maintained until permanent signs are installed.

If the construction entrance for a work site is not at the location of a future street, it shall be marked with a street name sign for the nearest future street no later than the day of the preconstruction conference.
All new or modified mast arm traffic signal structures shall incorporate mast arm-mounted street name signage and all required regulatory signage. The street name signage shall be capable of properly identifying all intersection legs.

4.821 STREET EXTENSION SIGNS

Where a future street extension is anticipated to provide access to adjacent property, a sign shall be installed indicating possible extension of the street. The sign shall be installed at the terminus of the street or temporary cul-de-sac anticipated to be extended. The sign shall be installed prior to installation of the base asphalt. The sign shall be in conformance with Figure 17.

4.830 HANDICAP SIGNS

Handicap signs shall be provided on the plans in accordance with the specifications set forth in the Americans With Disabilities Act of 1990, as amended.

4.900 PUBLIC TRANSIT BUS SHELTER STANDARDS

When a public transit bus shelter is proffered or otherwise provided, the shelter shall be designed consistent with the policies in the Countywide Transportation Plan.
**NOTE:** CONTROL JOINTS MAY BE USED IN PLACE OF EXPANSION JOINTS ON PRIVATE STREETS.

<table>
<thead>
<tr>
<th>ENTRANCE TYPE</th>
<th>MINIMUM APRON WIDTH (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOWNHOUSE DRIVEWAY ENTRANCE</td>
<td>10'</td>
</tr>
<tr>
<td>SINGLE CAR GARAGE DRIVEWAY ENTRANCE</td>
<td>12'</td>
</tr>
<tr>
<td>MULTICAR GARAGE DRIVEWAY ENTRANCE (1) GREATER THAN 35' IN LENGTH</td>
<td>12'</td>
</tr>
<tr>
<td>MULTICAR GARAGE DRIVEWAY ENTRANCE (1) 35' OR LESS IN LENGTH</td>
<td>18' (2)</td>
</tr>
</tbody>
</table>

**NOTE:**
1. DRIVEWAY LENGTH IS MEASURED FROM THE CENTER OF THE BACK OF THE CONCRETE APRON TO THE CENTER OF THE GARAGE FACE WHERE THE DOOR(S) ARE LOCATED.
2. MINIMUM WIDTH SHALL BE THE GREATER OF 18' OR THE WIDTH ACHIEVED BY NECKING THE DRIVEWAY AT A 10:1 ANGLE STARTING 18' OUTSIDE THE GARAGE DOOR.
3. SIDEWALK AND PROPERTY LINE LOCATIONS MAY VARY FOR TOWNHOUSE DRIVEWAYS.
Fire Lane Sign Type and Specifications

(1) Each such sign shall be of metal construction, with dimensions of at least twelve by eighteen inches.

(2) Each such sign shall show red letters on a white background, with a three-eighths inch red trim strip around the entire outer edge of the sign, the lettering to be "No Parking or Standing" in at least two-inch high letters and "Fire Lane" in at least two and one-half inch high letters and containing red arrows on such signs to point to and indicate the fire lane area.

(3) Posts for such signs, where required by the Fire Marshal, shall be securely mounted.

(4) (Intentionally omitted)

(5) Each sign shall be mounted seven feet from grade level to the bottom of the sign and must be within seven feet of the parking curb or curb line.

*Fire Lane signs without directional arrows are not acceptable

SPECIFICATIONS (Section 486.02(b) of the Codified Ordinances):

FIGURE 16
Street Extension Sign Type and Specifications

THIS STREET MAY BE EXTENDED IN THE FUTURE

FOR INFO CALL LOUDOUN COUNTY
(703) 737-8624

(1) Each such sign shall be made of aluminum, with dimensions of at least eighteen by twenty-four inches.

(2) Each such sign shall show black letters on a white background.

(3) Each such sign shall be mounted five feet from grade level to the bottom of the sign on a four-inch by four-inch post.

FIGURE 17
FIGURE 18

NOTE:
THESE TURN AROUNDS REQUIRE FIRE LANE IDENTIFICATION
8.106 CONSTRUCTION PLANS AND PROFILES (CPAP)

A. The construction plans and profiles shall be prepared by a Licensed Professional Engineer (P.E.) or Surveyor. The plans shall contain the following data, legibly drawn, on sheets of 24 inches by 36 inches in size, with appropriate match lines (if necessary).

34 Fire Apparatus Access Roads and Signs in accordance with Chapter 4.

8.107 SITE PLANS (STPL) AND RURAL ECONOMY SITE PLANS (REST)

Rural Economy Site Plans shall meet all the requirements of Section 8.107 except as modified as a result of a pre-submission meeting pursuant to Section 8.000 of this manual.

A. The site plan shall be sealed by a Licensed Professional Engineer (P.E.) or Surveyor. The site plan shall contain the following applicable data, legibly drawn, on sheets of 24 inches by 36 inches in size, with appropriate matchlines, (as necessary).

35 Fire Apparatus Access Roads and Signs in accordance with Chapter 4.

8.305 BOND PROCEDURES AND REQUIREMENTS

A. Performance Agreement

A Performance Agreement, which shall be supported by an acceptable form of performance bond, shall be required on projects which obligate the developer to construct required improvements pursuant to approved subdivisions, site plans, special exceptions or proffer conditions in a timely manner. Such Agreement shall specify the manner and date by which the required improvements shall be completed. __Performance Agreements, and associated performance bonds, solely for construction of physical improvements not maintained by VDOT, shall guarantee completion of construction of such physical improvements by the developer in accordance with approved Plans, as well as a guarantee against latent defects and deficiencies in accordance with Section 8.305.F._ An agreement format approved by the Bond Committee will be provided by the Director to all developers requesting same for use in preparation of the Performance Agreement. If the developer acts, or fails to act, in a manner which would constitute a breach of the Performance Agreement, or all the noted improvements are not completed within the specified time period and no extension has been obtained or replacement agreement and performance bond submitted and approved with a new expiration date, the Performance Agreement shall be in default.

Attachment 4
B. Extensions and Rebonding of Performance Agreements

It shall be the sole responsibility of the developer to keep the Performance Agreement current.

Approximately sixty (60) days prior to the expiration of a Performance Agreement, the Director may review the project records to determine if the developer has initiated the process for final release of the Performance Agreement and associated performance bond and to determine if the Performance Agreement and associated performance bond may reasonably be eligible for release within sixty (60) days. If it is determined that the project Performance Agreement and performance bond is not reasonably expected to be released within such sixty (60) days, the developer and entity which issued the performance bond may be notified in writing, and may be required to provide for the extension of the Performance Agreement and performance bond within such sixty (60) days. If the Performance Agreement and performance bond cannot be released or if no extension agreement and bond extension have been submitted in approved form by the agreement expiration date, the Performance Agreement shall be in default.

1. Except as provided in this paragraph, no Performance Agreement will be automatically extended beyond five (5) years from the date of the original Agreement. Thus, if the initial period of completion was 2 years, no more than three 1-year extensions or one 2-year and one 1-year extension will be granted. If the initial period was 3 years, no more than two 1-year extensions or one 2-year extension will be granted. However, upon recommendation by the Bond Committee, the Director may, at the expiration of the extension in the fifth year and at the request of the developer, grant extensions beyond the five (5) year limit, if the Bond Committee determines that such additional extensions are reasonably justified due to the magnitude of the bonded project, the reasonableness of the construction schedule and the diligence of the developer in carrying out the schedule, a reasonable estimate of the time necessary to satisfy VDOT public need requirements, and such other factors as may be deemed relevant by the Bond Committee.

2. As a part of the initial Performance Agreement extension for non-site plan Performance Agreements, the developer may be required to submit a Preliminary Street Acceptance Package (PSAP) to the County depending on the status of the project at the time of the initial extension request. The County will provide notice to the developer whether a PSAP is required and what documents are necessary at the time of the County’s notice that an extension is required or after developer’s first extension request. An extension request shall not be approved if a PSAP is required but has not
been submitted to the County. A list of what documents generally are a part of the PSAP can be found at www.loudoun.gov (Home > Government > County > Departments and Offices > Departments A-G > Building & Development > Quality Assurance > Infrastructure Compliance > Bond Release / Street Acceptance > Preliminary Street Acceptance Package (PSAP)). This list is not exhaustive and is subject to adjustment based upon the status of the project. A developer may be required to augment a PSAP at a subsequent extension or, if not previously required to submit a PSAP, submit a PSAP at a subsequent extension.

3. The developer may make a formal request to the Director for an extension of the completion date at the first request for extension for a maximum period of extension for two (2) years. The developer shall indicate the reasons and conditions which have prevented completion of the required improvements. The developer shall furnish to the Director an Extension Agreement, a written consent to the extension by the surety and an extension of the performance bond. All signatures shall be notarized. The two year extension is only available at the first request for extension and where the extension request comes within the time period required herein such that the project was not previously deemed to be in default by the Board of Supervisors or designee. All other extension requests shall be for one (1) year only, including any and all subsequent extension requests and shall also indicate the reasons and conditions which have prevented completion of the required improvements.

4. Performance Agreement Extension Submission Requirements: The Performance Agreement Extension request shall not be processed unless the following items have been submitted as one complete package:

a. Fee check. The fee check entitles the developer to one submission of the extension documents and, if needed, one correction. If two or more correction reviews are needed, an additional fee equal to the original fee must be remitted.

b. Letter of request with justification from the developer.

c. Performance Agreement Extension executed by the developer, Consent to Extension executed by the developer and surety, and extension of, or confirmation of continuation of, the performance bond.

d. Performance Agreement Extension and Consent to Extension must be prepared on forms approved by the Bond Committee.

e. If such Performance Agreement Extension request seeks to extend the completion date for a fifth year, such request will not be
considered nor approved unless accompanied by documentation that indicates the road acceptance Performance Agreement release process has been initiated. Such documentation shall include the punch list generated by the official inspection, submitted by the developer, and a practical work schedule reasonably designed to complete the punch list within a year. This requirement may be postponed to the next extension request if the Bond Committee has recommended and the Director has approved an extension beyond the fifth year.

5. In situations where the developer has requested an extension or a new Performance Agreement and performance bond, the Bond Committee will review the Director's report on the project and the reasons provided by the developer. Factors to be considered by the Bond Committee include, without limitation:

   a. Percentage of project already completed.

   b. Number of homes or buildings completed, occupied, and served by public facilities.

   c. Rate of construction activity.

   d. Developer's history relating to completion of public improvements in the County and in neighboring jurisdictions.

   e. Current projected completion cost: Dependent upon the amount of work yet to be completed and the currently estimated cost to complete construction of the project, the Bond Committee may require an increase in the amount of the existing bond to cover the completion of such outstanding improvements and obligations.

   f. Current rating of the bank or corporate surety providing the performance bond for the Performance Agreement.

6. In the event the developer does not respond to the letter sent by the Director cautioning of potential default or in the event the agreement is in default, the matter will be referred to the County Attorney's Office for guidance and possible legal action.

7. No Performance Agreement Extension request for a bonded Stormwater Management Agreement shall be accepted for processing until the Bond Committee has determined that such Agreement is qualified for an extension. If such Agreement is not determined to qualify for extension, no extension shall be granted.
C. Effects of Default on the Performance Agreement

It shall be the sole responsibility of the developer to keep the Performance Agreement current.

While the Performance Agreement is in default, the developer shall not be entitled to any bond reduction, release, permits or inspections for the project covered by that Performance Agreement. If the default can be cured by the approval of an extension of the Performance Agreement, then, upon fulfilling the Performance Agreement Extension Submission Requirements set forth above, including payment of the appropriate fees for bond extension and, if applicable, bond reduction, the inspections necessary for such bond extension and, if applicable, bond reduction, will then be performed. The denial of permits and inspections by the Director shall be in addition to any other remedy available to the Board of Supervisors under the Performance Agreement.

D. Performance Bond Reductions

1. Bond Reduction Requirements: Partial releases of bonds, referred to herein as Bond Reductions, shall be granted based upon Completion of specific, identifiable portions of the project and shall be subject to the following limitations:
   a. No corporate surety bond shall be reduced until Completion of at least 30% of the physical improvements secured by such bond.
   b. No cash bond shall be reduced until Completion of at least 50% of the physical improvements secured by such bond.
   c. No letter of credit shall be reduced until Completion of at least 25% of the physical improvements secured by such bond.
   d. The Board of Supervisors or designee shall not be required to consider more than three (3) Bond Reductions within any twelve (12) month period during the life of the bond.
   e. No bond shall be reduced to an amount less than 10% of the original Bond Estimate.
   f. For the purposes of this subsection D, Performance Bond Reductions, "Completion" shall mean construction of any identifiable section of a specified bonded improvement or facility in accordance with the approved site plans, construction plans and profiles, and/or specifications, and the provisions of this Facilities
Standards Manual. For example, for a specific section of public roadways to be eligible to be considered for Bond Reduction, the grading, subbase, base paving, curb and gutter, including all compaction and lab tests, and all other aspects of construction, with Exceptions as defined herein, shall be completed and all work in place must be in good condition. The "good condition" requirement shall not be deemed satisfied for any such section where there exists any failing pavement.

g. "Exceptions" to the Completion requirement may include final surface pavement and any other ancillary, uncompleted improvements such as sidewalks, driveway aprons and lot grading which the Director or designee determines would probably suffer excessive damage during construction upon the property abutting the bonded improvement or facility.

h. The reduction of any performance bond shall not be considered acceptance of the bonded improvements or facility for which such reduction has been requested, and the developer shall have a continuing responsibility for maintaining such bonded improvements or facility in good condition, including without limitation the repair of deterioration and damage, until they have been formally accepted by the County, VDOT, or other appropriate agency. Failure to perform such maintenance within thirty (30) days of being so directed by the Director or designee shall constitute default of the Performance Agreement.

i. When any Exception to the Completion requirement is permitted, the amount of the bond as reduced shall include the cost of constructing or repairing such final surface pavement or other uncompleted bonded improvements or facility. In no event shall any bond be reduced to an amount less than the amount deemed necessary by the Board of Supervisors or designee to cover (i) the total estimated cost of achieving total completion of the project without exceptions, plus (ii) the entire ten percent (10%) Contingency Factor included in the original approved Bond Estimate, plus (iii) the inflation factor referenced above in Section 8.304.A, applied to (i) and (ii).

j. When a developer has achieved completion of a portion of a project subject to a Performance Agreement and performance bond, and such portion has been accepted into the state system for maintenance by VDOT, such developer may revise the approved site plans and/or construction plans and profiles to exclude such accepted portion and submit such revised plans to the Director along with a revision of the original Bond Estimate to cover
only the portion not yet accepted. The Board of Supervisors or designee, may, upon recommendation of the Bond Committee, approve such revised Bond Estimate and any consequent Bond Reduction in accordance with the foregoing Bond Reduction requirements as applied to such revised Bond Estimate.

k. No bond shall be reduced for a Performance Agreement that is in default.

2. Bond Reduction Procedures: A request for a reduction of the bond amount shall be deemed to have been made when the developer has provided notice to the Director in the following manner. The Bond Reduction Request shall not be deemed to have been made until the following items have been submitted as one complete package. Such notice shall include:

a. A written request for reduction of the bond amount, signed and acknowledged by the developer who executed the Performance Agreement. When applicable, such written request shall include a certification by the developer that the installation of all underground utilities located within the bounds of any public or private roadway covered by such bond has been inspected and approved by the utility provider.

b. An estimate prepared by a Licensed Professional Engineer (P.E.) or Surveyor that shows the quantities of all bonded improvements in place, complete, and in good condition.

c. Written consent, signed and acknowledged by a duly authorized officer or agent of the corporate surety, banking institution, or other approved surety which provided the performance bond.

d. The applicable processing fee; and

e. Inspection reports in accordance with this Chapter.

f. If applicable, a recorded Stormwater Maintenance Agreement as defined in Chapter 1096 of the Loudoun County Codified Ordinances and as referenced in the Performance Agreement to establish the mutual responsibilities of the County and the property owner for maintenance of such facility. Such Stormwater Maintenance Agreement shall be in a form approved by the County Attorney and executed by the Director of the Department of General Services.

3. After a Bond Reduction is approved, an amendment to the performance bond shall be submitted to reflect the reduced amount. A Bond Reduction
shall not be deemed final and in effect until the Director has issued a letter of approval and the appropriate amendment to the performance bond is received by the County.

E. Acceptance of Public Improvements and Release of Performance Agreement and Bond

1. Upon meeting criteria for release of the Performance Agreement and Bond, the developer shall submit to the Director:

a. A set of Record Drawings certified as to construction by a Licensed Professional Engineer (P.E.) or Surveyor in accordance with this Chapter.

b. If requested by the County, third party inspection reports in accordance with this Chapter.

c. A request, in writing, that a joint inspection to be made by VDOT and the Director.

d. If applicable, a recorded Stormwater Maintenance Agreement as defined in Chapter 1096 of the Loudoun County Codified Ordinances and as referenced in the Performance Agreement to establish the mutual responsibilities of the County and the property owner for maintenance of such facility. Such Stormwater Maintenance Agreement shall be in a form approved by the County Attorney and executed by the Director of the Department of General Services.

e. If applicable, a Letter of Map Revision (LOMR) from FEMA.

2. In addition to the above and as may be required:

a. As for Roadway Improvements to be accepted by VDOT:

i. Upon acceptance and approval by VDOT of the complete street acceptance package, the Director shall request an inspection with VDOT. Once VDOT has scheduled the inspection, the Director shall provide notice to developer. Representatives for the developer, County and VDOT shall be present at the inspection. Subsequent to such inspection, a punch list of those items requiring correction will be prepared. The Director shall notify the developer, in writing, of the items requiring correction or revision by providing a copy of such punch list within 15 days of the inspection date.
ii. The developer shall complete all of the corrective work shown on the punch list within 30 days. This punch list shall not relieve the developer of any latent defects which might become apparent prior to roadway acceptance by VDOT. If punch list corrections are not completed within the allotted time, the entire project may be subject to re-inspection.

iii. The developer shall notify the Director, in writing, upon completion of the punch list items and shall request final inspection. The Director shall set a date for joint inspection with VDOT and the developer within 30 days of the request. Subsequent to final inspection, the Director shall await written notification from VDOT as to whether the road, as constructed, meets the applicable construction standards of VDOT as of the date of inspection. If not, the procedures herein may be repeated, as applicable.

iv. If all criteria for acceptance by VDOT have been met, the Board of Supervisors or designee shall cooperate with the developer to obtain acceptance into the State system, as provided in this Chapter.

v. If final inspection indicates that the developer has fully performed as to construction, but that the road(s), due to factors other than quality of construction, are not acceptable into the state system, the developer shall enter a maintenance and indemnification agreement with maintenance and indemnification bond, in form approved by the County Attorney and executed by the Board of Supervisors or designee, guaranteeing that the developer shall maintain the roads in the same condition as existed at final inspection until such time as VDOT road acceptance occurs. Such maintenance and indemnification bond shall be in an amount as recommended by the Bond Committee and approved by the Board of Supervisors or designee. Maintenance responsibility for the road(s) shall remain with the developer until such time as the road(s) are accepted by VDOT.

vi. When the road(s) have been accepted by VDOT or when the maintenance and indemnification agreement required herein is approved by the Board of Supervisors or designee, the Bonding requirements, except for any ancillary improvements outside the right of way, for such road(s) shall be deemed satisfied for the purposes of record plat approval.
b. As for public improvements to be accepted by the County, a homeowners association, a property owners association or other entity or agency:

i. After the developer has requested the release of a performance agreement and performance bond pursuant to the provisions of this section, the Director will schedule an inspection of such bonded improvements for which the release is requested within 30 days. (This inspection may occur at the same time as the VDOT inspection.)

ii. The Director shall notify the developer in writing of any items requiring correction or revision within 15 days of receipt of the request for a release.

iii. A request by, or the consent of, the developer to reschedule an inspection shall constitute a waiver of the 15-day period for the Director to notify the developer of the items requiring correction.

iv. Developer shall complete all of the corrective work shown on the punch list within 30 days. If punch list corrections are not completed within the allotted time, the entire project may be subject to re-inspection.

3. A request for final and complete release of a performance agreement and associated performance bond, or request to reduce the amount of a performance bond associated with a Performance Agreement that includes a guarantee against latent defects and deficiencies in accordance with Section 8.305.F, to the LDIA bond amount shall be deemed to have been made when the developer has provided written notice to the Director or Director’s Designee. Such notice shall include:

a. A written request for final release from of a Performance Agreement and final release of the associated performance bond, or request to reduce the amount of a performance bond to an LDIA bond amount, signed and acknowledged by the Performance Agreement’s developer or developer’s representative.

b. If requested by County and to the extent not previously submitted pursuant to bond reduction request, copies of inspection and test reports if work was inspected and tested by a third-party inspector. If previously submitted, reference must be provided as to when submission was made.
c. Certification that all bonded improvements, other than improvements accepted by VDOT, have been completed in accordance with the approved plans, profiles, and specifications and the requirements of this manual. For improvements to be accepted for maintenance by VDOT, such certification shall state that the improvements have been installed and inspected in accordance with VDOT requirements.

d. The applicable processing fee(s).

e. A copy of the County approval of the record drawings as required for facilities within public rights-of-way or easements submitted pursuant to Section 8.108 of this Facilities Standards M.

f. For subdivisions, a letter from a Licensed Professional Engineer (P.E.) or Surveyor certifying that property corners have been set.

g. Documentation of acceptance by VDOT of public roadways and rights-of-way or a maintenance and indemnification agreement secured by adequate maintenance and indemnification bond in accordance with this Section 8.300.

h. For private roadways, a letter of acceptance by the entity responsible for maintenance. A letter of acceptance by the entity responsible for maintaining physical improvements requiring private maintenance and a Latent Defects Indemnification Agreement secured by adequate bond (LDIA Bond) in accordance with this Section 8.300.

4. Within 30 days of receiving a release request which meets the requirements of this Subsection, unless such 30 days is waived as provided herein, the Director shall inform the developer in writing of any construction defects, deficiencies, or omissions. Failure of the Director to respond within such 30 days, unless waived, shall be governed by the provisions of Section 15.2-2245 of the Virginia Code, for which purposes the County Administrator serves as the Chief Administrative Officer of the Board of Supervisors and the Department of Building and Development as its designated administrative agency.

5. No bond shall be released for a Performance Agreement that is in default.

F. Latent Defect Indemnification Agreement and Bonds

Before a Performance Agreement and performance bond guaranteeing private roadway or stormwater management system construction of physical improvements not maintained by VDOT is released, a Latent Defect Indemnification Agreement secured by an adequate bond (LDIA Bond) shall be provided by the developer and
approved by the Board of Supervisors or designee. **For purposes of this Section F.**

“physical improvements” shall mean roadways and associated sidewalks/trails, and stormwater drainage or stormwater management facilities. The guarantee provided by such Agreement and LDIA Bond shall be for a period of fifteen (15) months following the date of release of the performance agreement and performance bond.

Such guarantee shall provide that the developer will be responsible for repairs to all physical improvements not maintained by VDOT arising from construction deficiencies discovered and as determined by the Director within a period of fifteen (15) months following the date of written approval of such physical improvements, with such repairs to be made within thirty (30) days after notification by the Director, or designee, that such repairs are needed, or such longer time as the Director or designee approves. If repairs are not accomplished within that time, the developer shall be deemed to be in default of the Performance Agreement and LDIA Bond, and the Director may take any appropriate action provided for in such Agreement, including calling upon the LDIA Bond securing such Agreement in order to perform the repairs.

The LDIA bond amount shall be established as follows:

1. If only physical improvements not maintained by Virginia Department of Transportation (VDOT) are included in the original Performance Agreement and performance bond, and shall be in an the LDIA bond amount shall be equal to no less than five (5) percent of all private roadway and stormwater management system construction under the original approved Bond Estimate, as determined by the Director.

2. If physical improvements maintained by Virginia Department of Transportation (VDOT) are included in the original Performance Agreement and performance bond, the LDIA bond amount shall be equal to no less than ten (10) percent of the cost of all physical improvements not maintained by VDOT. The LDIA Bond amount shall be calculated by a Licensed Professional Engineer (P.E.) or Surveyor and submitted to the Director for approval.

Such guarantee must provide that the developer will be responsible for pavement, concrete or stormwater management system repairs arising from construction deficiencies as determined by the Director for a period of fifteen (15) months after performance agreement and bond release, with such repairs to be made within thirty (30) days after notification by the Director, or his agent, that such repairs are needed. If repairs are not accomplished within that time, the developer shall be deemed to be in default of the Agreement and LDIA Bond, and the Director may take any appropriate action provided for in such Agreement, including calling upon the LDIA Bond securing such Agreement in order to perform the repairs.

The Loudoun County Fire Prevention Code (LCFPC) Section 202 Fire Apparatus Access Road defines a fire apparatus access road as a road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as fire lane, public street, private street, parking lot lane and access roadway.

Section 503.2.1 of the LCFPC states that fire apparatus access roads shall have an unobstructed width of not less than 20 feet, exclusive of shoulders. Further, fire apparatus access roads are required to be all weather surfaced roadways that are designed for the weight and type of emergency vehicle that may use the road. No specific surface material is required for a fire apparatus access roadway. It is up to the fire code official to decide whether the surface will support the load of the anticipated emergency vehicles in accordance with section 503.2.3. It should be noted that this is a general term intended to include any private roadway providing the required access to a building. As such, private driveways could be included and subject to the provisions.

In addition, section 106.5 of the LCFPC empowers the fire official so that he/she may grant modification to a provision of the LCFPC upon application by the owner or the owner’s agent provided the spirit and intent of the LCFPC are observed and public health, welfare, and safety are assured.

The Loudoun County Public Review Committee (PRC), which drafts the Facility Standards Manual (FSM), has requested a fire code modification to be considered for fire apparatus access roads that are also deemed to be Category A1 private roads servicing 1-250 vehicles per day and Category C 1, 2, 3, and 4 private roadways serving 25 or less single family detached lots.

As defined Category A1 private roads are utilized in locations as permitted in the Zoning Ordinance, LSDO, and in locations where private roads have been permitted through a Zoning ordinance Modification for residential and/or non-residential applications.

Category C 1, 2, 3, and 4 private roadways are roadways which provide one of the following:

- Private access easement roads permitted by the Land Subdivision Development Ordinance (LSDO) and the Zoning Ordinance (ZO)
- Category III roads serving 25 or less lots
- Pipe stem drives as permitted by modification of the ZO
- Alleys

For these specific roadways, when the shoulders are desired to be utilized as a portion of the required fire apparatus road, the shoulders shall be designed, compacted, maintained to meet or exceed the requirements for H-20 loading. Further the shoulders will continue to meet or exceed the slope requirements dictated by roadway standards as they will be included as a portion of the required fire apparatus access road. Finally, the adjoining, perimeter area shall be maintained free of physical obstructions which would limit or impair fire apparatus from opening, accessing, and utilizing compartment doors when parked on the shoulder.
This code modification continues to meet the spirit and intent of the code by narrowly defining the limited daily traffic, and assuring that hard boundaries such as physical barriers are not encountered to encroach on fire apparatus’s ability to continue to access existing roadways and to open compartment doors when operating on an emergency incident.

In accordance with the specifics outlined in this code modification approval letter I will approve the submitted code modification to allow the previously defined fire apparatus access roads known as Category A1 (1-250) and C 1-4 roadways to utilize shoulders compacted to accommodate H-20 loading, and duly delineated, to be included in the minimum required road width for fire apparatus access road.

Sincerely,

Linda Hale
Chief Fire Marshal
Loudoun County Fire Marshal’s Office

cc: Tim Hemstreet, Loudoun County Administrator
    Mike Seigfried, Loudoun County Director of Building and Development
    Keith Johnson, Loudoun County Fire and Rescue System Chief
    File
DATE: December 28, 2018

TO: Laura Edmonds, Dept. of Building & Development

FROM: Dennis Cumbie, Water & Environmental Programs Division Mgr.

SUBJECT: DOAM-2018-0002 Chapter 4 & 8 Facilities Standards Manual Amendments

REFERRAL: The Department of General Services has no comments regarding the above referenced application.
Laura,

Thank you for sharing. I have no comments. I did share this with the Code Enforcement Division to determine if they have any comments or at least, that they are aware of the pending changes.

Evan
Hello all,

I have attached the agency referral cover memo and draft Chapter 4 and Chapter 8 Facilities Standards Manual (FSM) amendments for DOAM-2018-0002. The amendments pertain to Fire Apparatus Access Roads, Latent Defect Indemnification Agreement (LDIA) bonds, and the driveway detail, which is being amended consistent with VDOT standards.

The Facilities Standards Manual Public Review Committee is planning to review agency comments during the January 16, 2019 meeting; therefore, comments are requested via e-mail by January 15, 2019.

Thank you for your assistance in reviewing the draft amendments.

Laura
DATE: January 15, 2019

TO: Laura Edmonds, Loudoun County Department of Building and Development

FROM: Ryan Reed, Natural Resources Team Leader / County Soil Scientist


The Natural Resources Team (NRT) reviewed the DOAM received 1/3/2019 and offers the following comments:

**Floodplain Manager**

No Comments

**County Urban Forester**

No Comments

**Natural Resources**

No Comments
MEMORANDUM

DATE: January 15, 2019
TO: Public Review Committee (PRC)
FROM: Linda Hale, Chief Fire Marshal
SUBJECT: Facility Standards Manual Agency Referral

The PRC and the LC FMO have been working for the past two (2) years in a collaborative approach to assure Fire Code compliance and the health safety and welfare of LC. During the last PRC meeting held on December 13, 2018 I expressed a few final concerns with the proposed changes to the Facility Standards Manual (FSM). I will take a moment to bullet these final areas for considerations and/or re-consideration and thank you for your continued support:

- FSM 4.810.B.2 Parking, designates the street widths for allowable on-street parking. FSM 4.400.B.1 requires parallel parking to be 8 feet wide x 22 feet long. This results in the need for a 28-foot wide roadway with parking on one side of the street, as opposed to 26 feet, as referenced in “Table IV: Parking and fire lane identification.” Previous discussions assumed a 6-foot wide parking space. In consult with other jurisdictions in the region, it is noted that 8-foot wide parking space is also used, and not 6-foot. Further the Fire Code refers to twenty feet exclusive of shoulder. The shoulder allows for apparatus doors to open, crews to exit and operate with a SCBA on their back as well as to remove equipment without hitting an immovable object such as a parked car. The roadway width is for the apparatus wheels and outriggers. A six foot wide parking space does not allow for the necessary space, and the minimum width for an on-street parking should be eight feet.

- FSM 4.810.B.5 does not stipulate fire lane identification for required turn arounds to include cul-de-sacs. Required turn arounds should be appropriately marked as fire lanes unless the dimensions are increased to within the FSM requirements of 4.400.B.1 to allow for a parked vehicle. The currently space allocated for the required turnaround is needed for apparatus making the turns.

- FSM 4.810.C.2.b Fire Lane Identification (“Table V: Fire Lane signage and painting”) does not allow for edge of pavement stripping and stenciling to designate a fire lane. This is a current request we have been receiving for hard surface roads without curbs, in lieu of installing signs. This request has been granted on a case by case basis with a 6 inch yellow stripe and the current 4 inch “FIRE LANE” marked every 50 feet. The request has also been for a “reverse stencil” on black top which requires the yellow strip to be wider than the lettering or the letters would not be
legible. An “L” would look like an “I” as it blends into the roadway. I recommend adding a 3rd option for fire lane marking to include a 6 inch wide yellow stripe at the edge of pavement with the words “FIRE LANE” marked in 4 inch black letters, every 50 feet.

- FSM 4.400.B.4 allows for a 1-foot parking reduction with the use of wheel stops. We have provided examples of a standard bed pickup truck parked at Stone Ridge on a 20-foot wide roadway, set back in the space to accommodate a wheel stop, which results in the truck extending into the required fire apparatus access road, and creating an obstruction of the minimally required 20 feet. One potential way to address this is to not allow the stall length reduction if the parking is adjacent to a Fire Apparatus Access Road that is in sufficient to allow for the required 20-feet exclusive of shoulder.

- FSM 4.810.E Traffic Signal – VDOT and LCFR Pre-Emption Systems. New traffic signals and modifications to existing signalized intersections shall include pre-emption systems that are approved by both VDOT and LCFR pursuant to Section 420 of the Codified Ordinances of Loudoun County. This brief statement would require emergency vehicle traffic signal pre-emption devices to be installed on all new traffic signals as acceptable to the Loudoun County Department of Fire and Rescue Services (LCDFRS). The design and construction of traffic signal pre-emption equipment would be coordinated with the LCDFRS and the VDOT. LCDFRS would be consulted, subject to VDOT approval, to establish the pre-emption sequence and signal indications desirable upon receipt of a pre-emption command. Traffic signal pre-emption equipment would meet the minimum standards set forth by the LCDFRS and the VDOT. This policy would be applicable to all traffic signals currently under design, planned for future design, or under construction, but have not yet reached substantial completion by contract definition on or before a specific date in 2019. This would be in line with the current Capital Improvement Projects (CIP) that have been allocated by the BOS to include emergency vehicle pre-emption devices and concurrence with grant monies that have been authorized and received.

CC: Keith Johnson, Loudoun County Fire and Rescue Fire Chief
Maria Taylor, Loudoun County Fire and Rescue Planner
At a business meeting of the Board of Supervisors of Loudoun County, Virginia, held in the County Government Center, Board of Supervisors Meeting Room, 1 Harrison Street, S.E., Leesburg, Virginia, on March 5, 2019 at 5:00 p.m.

IN RE: DOAM-2018-0002: Resolution of Intent to Amend Chapters 4 and 8 of the Loudoun County Facilities Standards Manual and Notice of Intention to Propose for Passage Amendments to Chapter 424 of the Codified Ordinances of Loudoun County (Countywide)

Supervisor Buffington moved that the Board of Supervisors adopt the Resolution of Intent to Amend the Loudoun County Facilities Standards Manual provided as Attachment 1 to the March 5, 2019, Board of Supervisors Business Meeting Action Item.

Supervisor Buffington further moved that the Board of Supervisors direct staff to provide notice of its intention to propose for passage the amendments to Chapter 424, Authority of Fire Departments, of the Codified Ordinances of Loudoun County, provided as Attachment 2 to the March 5, 2019, Board of Supervisors Business Meeting Action Item, and bring such amendments forward to a future Board of Supervisors Public hearing for Board consideration and action.

Seconded by Supervisor Volpe.

Voting on the Motion: Supervisors Buffington, Buona, Letourneau, Meyer, Saines, Umstattd. and Volpe – Yes; None – No; Supervisors Higgins and Randall – Absent for the Vote.

A COPY TESTED:

[Signature]

DEPUTY CLERK TO THE LOUDOUN COUNTY BOARD OF SUPERVISORS

Item 7. DOAM-2018-0002: Resolution of Intent to Amend Chapters 4 and 8 of the Loudoun County Facilities Standards Manual and Notice of Intention to Propose for Passage Amendments to Chapter 424 of the Codified Ordinances of Loudoun County

Attachment 7
March 5, 2019

BOARD OF SUPERVISORS OF LOUDOUN COUNTY

RESOLUTION OF INTENT TO AMEND CHAPTERS 4 AND 8 OF THE LOUDOUN COUNTY FACILITIES STANDARDS MANUAL IN REGARD TO EMERGENCY VEHICLE PREEMPTION, FIRE APPARATUS ACCESS ROADS, STANDARD CURB AND GUTTER INDIVIDUAL DRIVEWAY ENTRANCES, AND LATENT DEFECT INDEMNIFICATION AGREEMENTS AND BONDS

WHEREAS, the Board of Supervisors wishes to initiate amendments to the Loudoun County Facilities Standards Manual ("FSM") to further achieve the purposes listed in §15.2-2200 of the Code of Virginia and to assure the orderly subdivision of land and its development; and

WHEREAS, the Board of Supervisors intends to enter an Agreement for Traffic Signal Preemption for Emergency Purposes (Signal Preemption Agreement), and is considering proposed amendments to Chapter 424, Authority of Fire Departments, of the Codified Ordinances of Loudoun County (the "Codified Ordinances") necessary to implement said Signal Preemption Agreement, in regard to the installation of preemption devices and systems on traffic signals in order to improve emergency vehicle response times and reduce the risk of accidents at intersections; and

WHEREAS, certain inconsistencies have been identified between the existing standards provided by the FSM and the existing requirements provided by the Loudoun County Fire Prevention Code, Chapter 1602 of the Codified Ordinances, in regard to Fire Apparatus Access Roads; and

WHEREAS, amendments to the FSM are necessary in order to establish new standards in regard to the preemption of traffic signals in accordance with the Signal Preemption Agreement and the proposed amendments to Chapter 424 of the Codified Ordinances, to revise and clarify existing standards in regard to Fire Apparatus Access Roads so that such standards are consistent with Chapter 1602 of the Codified Ordinances, and to implement separate revisions to the Curb and Gutter Individual Driveway Entrance Figure and Latent Defect Indemnification Agreement and bond requirements that were developed in coordination with the FSM Public Review Committee ("PRC").

NOW, THEREFORE, BE IT RESOLVED, that the Board of Supervisors states its intention to amend the Loudoun County Facilities Standards Manual as follows:

1. Amend Chapter 4 in order to establish new requirements in regard to the preemption of traffic signals.

2. Amend Chapters 4 and 8 in order to establish new, and revise, clarify, and/or delete existing, standards in regard to Fire Apparatus Access Roads.

3. Amend Chapter 4 in order to revise and clarify the existing Curb and Gutter Individual Driveway Entrance Figure.

4. Amend Chapter 8 in order to revise and clarify existing requirements in regard to Latent Defect Indemnification Agreements and bonds.

Attachment 1
5. Amend such other Chapters, Sections, Subsections, and provisions of the Codified Ordinances and FSM as necessary to fully implement and maintain consistency with the foregoing amendments, or as otherwise necessary to correct typographical errors, section and subsection numbering, and formatting within, update cross-references to, and further clarify the requirements of, the above-mentioned Chapters, Sections, Subsections and provisions of the FSM.

BE IT FURTHER RESOLVED that (1) these amendments are in furtherance of the orderly subdivision of land and its development, and the public necessity, convenience, and general welfare, including emergency vehicle response (2) Staff is directed to prepare draft amendments for consideration; and (3) the proposed amendments on these matters are to be brought forward for notice, hearing, Planning Commission recommendation, and Board of Supervisors' action.
Chapter 424 Codified Ordinance Amendment:

424.01 TRAFFIC CONTROL.

(a) While any fire department or fire company in the County, under the provisions of Chapter 2 of Title 27 of the Code of Virginia of 1950, as amended, is in the process of answering an alarm of fire or extinguishing a fire and returning to a station, the chief or other officer in charge of such fire department or company at that time shall have the authority to: maintain order at the fire or its vicinity; direct the actions of the firemen at the fire; keep bystanders or other persons at a safe distance from the fire and fire equipment; facilitate the speedy movement and operation of fire-fighting equipment and firemen until the arrival of a law enforcement officer; direct and control traffic in person or by deputy; and facilitate the movement of traffic. The fire chief or other officer in charge shall display his fireman's badge or other proper means of identification. Notwithstanding any other provision of law, this authority shall extend to the activation of traffic control signals designed to facilitate the safe egress and ingress of fire-fighting equipment at a fire station.

(b) No person shall refuse to obey the orders of the fire chief or any of his deputies or any other law enforcement officer in charge at that time.

(c) Pursuant to the agreement entered into with VDOT dated xxx, to facilitate emergency response of Fire and Rescue personnel under appropriate emergency conditions in accordance with Sections 27-15.1 and 46 2-920 of the Code of Virginia, as amended, all new or modified signals shall include preemption control devices or signal plans submitted to VDOT for new traffic signals and modifications to existing signalized intersections, and shall install said preemption control devices.

424.99 PENALTY.
(EDITOR’S NOTE: See Section 428.99 for general Traffic Code penalty if no specific penalty is provided.)
WORK PLAN FOR AMENDMENTS:
Chapter 424 Codified Ordinances and Chapters 4 & 8 of the Facilities Standards Manual

To implement Emergency Vehicle Preemption and amendments to Fire Apparatus Access Roads, the Chapter 4, Figure 6 Standard Curb and Gutter Individual Driveway Entrance Figure, and Latent Defect Indemnification Agreements (LDIAs) and bonds proposed by staff and the Facilities Standards Manual Public Review Committee.

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| 2. Referrals – 14 day turn around (December/January holidays) | Referral Agencies:  
  • B&D: Engineering, Nat. Res., Subdivision, Permits  
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  • Health Department  
  • Loudoun County Extension  
  • Loudoun County Public Schools  
  • Loudoun SWCD  
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  • ZOAG | December 20, 2018 – January 15, 2019 |
| 3. Revise Draft Based on Comments | Project Team / PRC | January 16 & February 6, 2019 |
| 4. Resolution of Intent to Amend | Board of Supervisors | March 5, 2019  
  2/14 Title & Blurb Due  
  2/21 Draft Item Due  
  2/28 Packet  
  3/1 Presentations Due |
| 5. Planning Commission Public Hearing | Planning Commission | May 28, 2019  
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  4/30 Draft Item Due  
  5/21 Packet |
| 6. Board of Supervisors Public Hearing | (tentatively scheduled) | July 10, 2019  
  6/5 Blurb/Ad Due  
  6/20 Draft Item Due  
  6/27 Packet  
  7/8 Presentation Due |
| 7. Board of Supervisors Business Meeting | (tentatively scheduled) | July 18, 2019 |
DATE: March 6, 2019
FROM: Linda Hale, Chief Fire Marshal
SUBJECT: Fire Lanes

As you know, development in Loudoun County is one of the highest in the nation, we are experiencing commercial and residential growth at an alarming rate. The once vast land areas for development have slowly been built up and land values are at a premium. Affordable housing is a critical need and developers are designing and building more residential complexes on less land area and building more units within these complexes. Space is at a premium, space for parking, roadways, sidewalks, “green” areas, and recreation areas all are competing. Balancing the space needs (high density housing) and maintaining the needs of public safety is a real and definite challenge.

These challenges have resulted in three areas of grave concern which are: difficult access to residential structures, the ability to rescue victims within these structures and firefighter safety within these structures. These three areas are separate but interrelated and need to be addressed. Fire suppression apparatus and personnel must be able to quickly gain access to a structure during a fire incident, enter the structure to perform rescue and extinguishment and finally the ability to safely operate in and around the structure.

Common issues presented by the end users (fire department) that need to be immediately addressed are the fire apparatus access road widths, hose line reach around structures, safe and adequate turn around for apparatus and in some cases space between buildings.

The Fire Marshal’s Office took over the complete review, approval and inspection/verification process for fire apparatus access roads (cradle to grave approach) in early 2017. Over the last two year we have come to realize that in many cases there was a general lack of knowledge concerning the actual Fire Code requirements. This combined with the fact that the LC Facilities Standards Manual (FSM) just did not keep up with the fire code requirements drove the recent reworking of the FSM. I can assure you that as the Fire Marshal I am enforcing the spirit and intent of the Fire Code and have attempted to find solutions.

The Loudoun County Combined Fire and Rescue System and the Fire Marshal Division have addressed some of the more immediate issues: marking of fire apparatus access roads to ensure the end customer is informed of parking restrictions, hose line reach around structures, safe and adequate turn around for apparatus. These issues have been addressed by informing developers of the Loudoun County and the Loudoun County Fire Prevention Code requirements (Chapter 5). The Fire Code is law and it is not optional.

Teamwork * Integrity * Professionalism * Service
Attachment 10
The one area that the Public Review Committee and I have not agreed is the road widths that require marking to allow/disallow 1 side or 2 sided parallel parking on the roadway, and continue to assure the minimum fire apparatus access width of 20 feet is maintained.

A few salient points:

- According to the Virginia Department of Fire Programs, to date there have been 6 fire fatalities in Virginia in 2019 (as of 2/28/19). There were 60 fire fatalities in 2018, 51 in 2017 and 60 in 2016.

- COV §46.2-889 Location of parked vehicles stipulates that no vehicle shall be stopped except close to and parallel to the right edge of the curb or roadway...The VA Department of Motor Vehicles’, Virginia Drivers Manual has further defined this in it education and testing materials that “you may not park more than one foot from the curb.” Nationwide this education ranges from 12”-18”.

- The average midsize car is 6’ wide, larger sports utility is 6.5’ wide and compact sedan is 5.75’ wide, all without mirrors. The overall average of the top 20 selling vehicles in 2018 the US today, according to Business Insider, is over 6.9’ wide (see reference list)

- The average citizen and visitor is not familiar with the Loudoun County Fire Prevention Code and relies upon LC Government to ensure that fire lanes are properly marked to allow for their safety.

- The recommendations for fire lane markings has been in the IFC since its first edition was released December 1999.
  - As noted in the Preface to the 2000 edition of the IFC, the production of the International Fire Code began in 1997 with the development of a first draft by a development committee consisting of representatives of Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International, Inc. (SBCCI). The committee drafted a comprehensive set of fire safety regulations that was consistent with existing model fire codes at the time. Since these sections are in the earliest edition of the IFC, and came from the existing model fire codes at that time, ICC does not have the original technical criteria for the specific minimum widths that are required by these sections.

- ICC acknowledges that there is technical justification for a code change proposal to change the recommended requirements found in appendix D (ICC Staff Engineer Keith Enstrom)

- IFC Section 503.2.1 states that fire apparatus access roads shall have an unobstructed width of not less than 20 feet, exclusive of shoulders...

- IFC Section 503.2.2 states that the fire code official shall have the authority to require or permit modifications to the required access widths where they are inadequate for fire or rescue operations or where necessary to meet the public safety objectives of the jurisdiction.
• The location for the measurement of the minimum width would be dependent on the practical and actual ability of the fire apparatus to reasonably pass between the edges during normal response driving operation. It is expected that the some allowable clearance would be necessary to be available and that the pavement edges would be the reasonable point of measurement (ICC Staff Engineer Keith Enstrom)

• IFC Section 503.3 gives the authority to the fire code official to require approved signs or other approved notices or markings that include the words NO PARKING—FIRE LANE shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. The means by which fire lanes are designated shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility.

• IFC Section 503.4 states that fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in Sections 503.2.1 and 503.2.2 shall be maintained at all times.

• Jurisdictions that are senior to Loudoun County in growth (e.g. have already experienced LC’s growing pains) have since adopted 28’ as the minimum requirement for 1-sided parking (20’ + 8’) and 36’ for 2-sided parking (20’ +8’ + 8’) to assure fire apparatus access, set up, and operation.

• Loudoun County Fire Prevention Code section106.5 Modifications allows the fire official to grant modifications to any provision of the fire code upon application by the owner or the owner’s agent provided the spirit and intent of the fire code are observed and public health, welfare, and safety are assured.
  o I am unable to articulate that a 26 foot wide road, with a parked car, would not provide an obstruction and compromise section 503.4.

• Loudoun County Fire Prevention Code section 101.5 Local regulations, allows a local governing body to adopt fire prevention regulations that are more restrictive or more extensive in scope than the fire code...
  o Adopting a 26 foot wide road that allows a “typical” vehicle bought in the US today, to park within 12” of the curb (in accordance with DMV educational standards). And only on one side of the road. Would not provide the required 20 feet for a fire apparatus access road. And is more relaxed than the minimalist Virginia Statewide Fire Prevention Code. And hence not in accordance with section 101.5 of the Statewide Fire Prevention Code.

• Chapter 486.02 of the Loudoun County Ordinances indicates that he Fire Marshal, or his/her designated agent, shall designate certain public and private roadways as Fire Apparatus Access Roads and may require such roadways to be identified as fire lanes.

Therefore, the minimum travel way width to allow for parking on one side must be 28 feet. And 36 feet for two sided parking. This will assure the Loudoun County Fire Prevention Code minimum requirements are met, citizens are well informed of where they may or may not parallel park on a street, and fire and life safety is afforded to the citizens and visitors of Loudoun County.

Teamwork * Integrity * Professionalism * Service
Attachments:
20 best-selling cars and trucks in America in 2018
VA Department of Motor Vehicle’s Driver’s Manual 2018
International Code Council email from Keith Enstrom, ICC Staff Engineer
These are the 20 best-selling cars and trucks in America in 2018 (businessinsider.com Aug. 20, 2018 by Brian Pascus) with the manufacturer widths in parenthesis taken from the manufacturers websites.

1. Ford F-Series (79.9"=6.7'w/o mirrors; 96.8"=8.1' with mirrors)
2. Chevrolet Silverado (80.0"=6.7' w/o mirrors; 96.1"=8.05' with mirrors)
3. Ram Pickup (82.1"=6.8' w/o mirrors; 103"=8.6' with mirrors)
4. Nissan Rogue (72.4"=6.03' w/o mirrors; 82.4"=6.9' with mirrors)
5. Toyota RAV4 (63.7"=5.3' w/o mirrors; 72.6"=6.1' with mirrors)
6. Honda CR-V (73"=6.1' w/o mirrors; 80"=6.7' with mirrors)
7. Toyota Camry (71.7"=6' w/o mirrors; 81.7"=6.9' with mirrors)
8. Honda Civic (70.9"=5.9' w/o mirrors; 77.9"=6.5' with mirrors)
9. Chevrolet Equinox (72.5"=6.' w/o mirrors; 79.2"=6.6' with mirrors)
10. Toyota Corolla (69.9"=5.8' w/o mirrors; 76.525"=6.4' with mirrors)
11. Ford Escape (72.5"=6' w/o mirrors; 75"=6.3' with mirrors)
12. Honda Accord (73.3"=6.1' w/o mirrors; 79.925"=6.7' with mirrors)
13. Jeep Wrangler (73.7"=6.1' w/o mirrors; 83.7"=7' with mirrors)
14. Ford Explorer (78.9"=6.6' w/o mirrors; 90.2"=7.5' with mirrors)
15. Nissan Altima (72.9"=6.1' w/o mirrors; 82.9"=6.9' with mirrors)
16. Toyota Tacoma (74.4"=6.2' w/o mirrors; 84.4"=7 with mirrors)
17. Nissan Sentra (69.3"=5.8' w/o mirrors; 76"=6' with mirrors)
18. Toyota Highlander (75.8"=6.3' w/o mirrors; 82.5"=6.8' with mirrors)
19. Jeep Cherokee (73.2"=6.1' w/o mirrors; 79.9"=6.7' with mirrors)
20. Jeep Grand Cherokee (76.5"=6.4' w/o mirrors; 83.2"=6.9' with mirrors)

Average of 73.83" or 6.15' wide without mirrors
83.20" or 6.9' wide with mirrors
the electrical plug is properly installed
brake lights, turn signals, and license plate lights are functioning properly.

Before pulling a trailer on public roads, find a location such as a vacant parking lot to practice and get the feel for how your vehicle and trailer will handle.

When driving a vehicle with a light to medium trailer attached:

- always allow for the added length of the trailer when you change lanes
- if your trailer starts to sway, slow down
- when backing up, place your hand on the bottom of the steering wheel. If you cannot see where you are backing up, have someone outside to help guide you. To back the trailer to the left, use your left hand to move the wheel left. To back the trailer to the right, use your right hand to move the wheel to the right.

Back ing

The most common mistake that drivers make when backing up is failing to look both ways behind them. Mirrors do not give you a full view. To see as much as possible, turn your body and head to the right and look out through the rear window. Back up slowly and check for pedestrians and approaching traffic by glancing quickly to either side.

Parking

When parking on a public road, move as far from traffic as possible. If you park on a shoulder, pull over as far on the shoulder as possible. If you park next to a curb, pull close to it. You may not park more than one foot from the curb. On a two-way street, park on the right side of the road. On a one-way road, park on either side.

Parking on a hill

With a curb: Turn the front wheels of your vehicle to prevent it from rolling into the street.

Without a curb: Turn the front wheels so that if the vehicle rolls, the rear of the vehicle will roll away from traffic.

Be aware of other traffic when exiting your vehicle. Look for other cars, bicyclists, and pedestrians before opening the door.

You may not park:

- beside another parked vehicle (double parking)
- on crosswalks or sidewalks
- in front of driveways
- within areas where parking is prohibited by curbs painted yellow or No Parking signs
- in a parking space reserved for disabled persons
- on the hard surface of a road when no curb is present
- within 15 feet of a fire hydrant
- within 20 feet of an intersection
- in a bike lane
- within 15 feet of the entrance to a fire, ambulance or rescue squad station
- within 500 feet of where fire trucks or equipment are stopped answering an alarm
- within 50 feet of a railroad crossing
- in such a way that you block or create a hazard for other vehicles in a designated traffic lane

Visibility

Most of what you do while driving depends on what you see. To be a good driver, you need to know what to look for, where to look, and how to adjust to possible problems. The single biggest contributor to crashes is failing to identify a risk. Always know where other vehicles are positioned around you. You must look down the road, to the sides, and behind your vehicle. You must also be alert for unexpected events, especially pedestrians and bicyclists. You must use your headlights at night and at other times when it's hard to see. You must be alert and pay attention to what is going on around you.
Linda,

Here is the response to your code opinion request:

**Code: 2015 IFC Appendix D**

**Question:** I am trying to ascertain how ICC came up with the fire lane marking guidance in Appendix D of the IFC. Appendix D Fire Apparatus Access Roads has a recommendation for fire lane signs. Specifically D103.6.1 Roads 20 to 26 feet in width. Fire lane signs as specified in Section D103.6 shall be posted on both sides of fire apparatus access roads that are 20 to 26 feet wide. This has been the recommendation in the appendix since 2000. And ICC has designated 20 feet as the minimum width (exclusive of shoulders) of a fire apparatus access road since that time as well. The transportation parking width in most states is 8 feet for a commercial vehicle and recently it has been reduced to 7 feet for a residential vehicle in Virginia. My questions is, if 8 (or 7) feet is the standard parking width, why does appendix D not recommend a fire lane of 20-28 (or 27) feet be posted on both sides? This would allow for the 20 feet required for fire department access in Chapter 5 of the IFC and the 8 feet for parking. And of course this logic could be extrapolated out to 28-36 feet for parking on 1 side and anything 36 feet or more would allow for parking on both sides (‘20’+ ‘8’+ ‘8’). The average citizen is not aware of a requirement for fire apparatus access and assumes that anything, that is not clearly a travel way with lines on the street, without a posted/marked fire lane, they are able to park. When a 26’ wide street has parking by a box truck, dually pick up, other large SUVs, etc. 20 feet is not remaining and apparatus is forced to be single file. This is causing delays and obstructions to fire department access. The majority of the top 10 vehicles sold in the US today are 5 3/4’-6 1/2’ wide, these parked cars are causing problems. I understand that fire lane posting is a jurisdictional decisions. My jurisdiction is wishing to follow the national guidelines, in adopting fire lane posting unless there is a reason not to. So I am trying to understand why it stipulates 26’ and not 28’, if there is any plan to amend, and any history to help explain.

As he answers my initial question would he also have an answer or opinion as to from where the recommended measurements found in appendix D 103.6 are recommended to be taken from? Such as on a road with curb and guttering is it from the edge of pavement or the curb face(s)? That distance/measurement shift could change the overall space by 2-4 feet (gutter pan(s)).

**Answer:** The provisions contained in Appendix D are not mandatory unless specifically referenced in the adopting ordinance or legislation of the jurisdiction. As you have noted, Appendix D Fire Apparatus Access Roads has been in the IFC since the 2000 edition. As noted in the Preface to the 2000 edition of the IFC, the production of the International Fire Code began in 1997 with the development of a first draft by a development committee consisting of representatives of Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International, Inc. (SBCCI). The committee drafted a comprehensive set of fire safety regulations that was consistent with existing model fire codes at the time. Those codes were the then-current editions of the BOCA National Fire Prevention Code, the Uniform Fire Code and the Standard Fire Prevention Code. The 2000 edition of the International Fire Code was developed by utilizing the formal ICC Code Development Process for two successive annual code change cycles. During each cycle, public hearings were held to consider proposed changes in conjunction with hearings on proposed changes to other International Codes and in accordance with the ICC Code Development Procedures.
IFC Section 503.2.1 states that fire apparatus access roads shall have an unobstructed width of not less than 20 feet, exclusive of shoulders, except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches. Additionally IFC Section 503.2.2 states that the fire code official shall have the authority to require or permit modifications to the required access widths where they are inadequate for fire or rescue operations or where necessary to meet the public safety objectives of the jurisdiction. In accordance with IFC Section 104.1, the fire code official is authorized to enforce the provisions of the code and the fire code official has the authority to render interpretations and to adopt policies, procedures, rules and regulations in order to clarify the application of its provisions.

In regards to the location for the measurement of the minimum width being from the pavement edge or curb edge, it would depend on the practical and actual ability of the fire apparatus to reasonably pass between the edges during normal response driving operation. It is expected that the some allowable clearance would be necessary to be available and that the pavement edges would be the reasonable point of measurement.

IFC Section 503.3 gives the authority to the fire code official to require approved signs or other approved notices or markings that include the words NO PARKING—FIRE LANE shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. The means by which fire lanes are designated shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility.

IFC Section 503.4 states that fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in Sections 503.2.1 and 503.2.2 shall be maintained at all times.

Since these sections are in the earliest edition of the IFC, and came from the existing model fire codes at that time, ICC does not have the original technical criteria for the specific minimum widths that are required by these sections. The information you have provided provides the technical justification for a code change proposal to change the requirements of these sections. You are highly encouraged to submit it through the ICC code development process. Currently the next available opportunity for code change proposals to be considered for the IFC will be as a part of the Group A changes to be heard by the IFC Committee in 2021. The expected available date for the opening for submission of new code change proposals is in the fall of 2020 through the ICC online submission program cdpACCESS.

Code opinions issued by ICC staff are based on ICC-published codes and do not include local, state or federal codes, policies or amendments. This opinion is based on the information which you have provided. We have made no independent effort to verify the accuracy of this information nor have we conducted a review beyond the scope of your question. This opinion does not imply approval of an equivalency, specific product, specific design, or specific installation and cannot be published in any form implying such approval by the International Code Council. As this opinion is only advisory, the final decision is the responsibility of the designated authority charged with the administration and enforcement of this code.

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Please contact me if you have any more questions.

Sincerely,

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