Tualatin Valley Fire & Rescue

New Construction: Policy Intent Guide

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TITLE: FIRE APPARATUS ACCESS GRADE

DATE: July, 2009 (Revised: / /)

PURPOSE: To define the requirements for determining adequacy of fire apparatus access grade.

SCOPE: This policy shall apply to all areas served by Tualatin Valley Fire & Rescue.

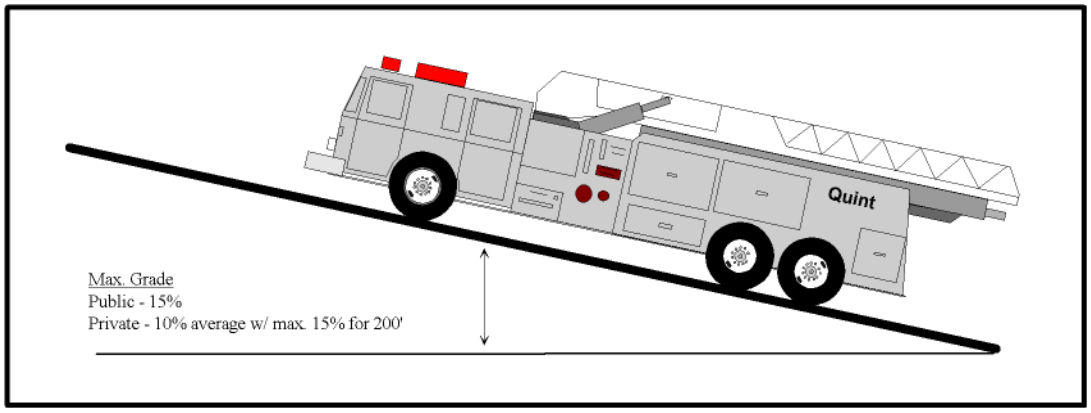
CODE REFERENCES: Tualatin Valley Fire & Rescue Ordinance 07-01; OFC 503.2.7; OFC Appendix D103.2.

POLICY: Fire Apparatus Access Grade

Fire apparatus access roadways in Tualatin Valley Fire & Rescue's jurisdiction shall not exceed a ten percent grade. Intersections and turnarounds shall be level (maximum 5 percent) with the exception of crowning for water run-off.

EXCEPTION: When an approved automatic fire sprinkler system is installed, a maximum grade of 15 percent may be allowed. Conditions exceeding 15 percent will be reviewed on a case-by-case basis and will require additional fire protection features. In no case shall the grade exceed 18 percent. The approval of fire sprinklers as an alternate shall be accomplished in accordance with the provisions of ORS 455.610(6).

NOTE: Pre-existing/non-conforming public streets or private streets not directly related to the proposed development shall not be taken into consideration.



TITLE: RURAL WATER SUPPLIES

DATE: September, 2009 (Revised: / /)

PURPOSE: To define the requirements for firefighting water supply in rural areas outside of municipal water systems.

SCOPE: This policy shall apply to all areas served by Tualatin Valley Fire & Rescue.

CODE REFERENCES: 2007 OFC Chapter 5, Section 503; Appendix B, Section B107; SOG 7.8.1J

POLICY: Rural Water Supplies

The fire code references NFPA 1142 to determine the amount of firefighting water supply required in rural areas. This policy will serve to establish the threshold for requiring a firefighting water supply.

Residential (R-3) and Accessory Structures (U)

If the structure is less than 3,600 sq. ft., including all floors, attached garage and basement, no water supply is required.

If the structure is 3,600 sq. ft. or greater, including all floors, attached garage and basement, a water supply calculated using NFPA 1142 is required.

NOTE: Structures protected by an approved automatic fire sprinkler system are not required to have a water supply other than that required to supply the sprinkler system.

Commercial Structures

All commercial structures shall have a water supply calculated using NFPA 1142.

NOTE: Structures protected by an approved automatic fire sprinkler system are not required to have a water supply other than that required to supply the sprinkler system.

TITLE: HIGH-PILED COMBUSTIBLE STORAGE: EXTERIOR DOOR HARDWARE

DATE: July, 2009 (Revised: / /)

PURPOSE: To define the requirements for exterior door hardware on fire department access doors serving buildings containing high-piled combustible storage.

SCOPE: This policy shall apply to all areas served by Tualatin Valley Fire & Rescue.

CODE REFERENCES: 2007 OFC Article 23, 2306.6.1.3

POLICY: High-Piled Combustible Storage: Exterior Door Hardware

Exterior door locking mechanisms must be readily operable form the exterior side by use of key located within the Knox Box; handles or knobs may be eliminated.

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TITLE: HIGH-PILED COMBUSTIBLE STORAGE: SMALL HOSE STATIONS

DATE: July, 2009 (Revised: / /)

PURPOSE: To define the requirements for the installation of hose, nozzles, hose racks and cabinets or covers in buildings containing high-piled combustible storage.

SCOPE: This policy shall apply to all areas served by Tualatin Valley Fire & Rescue.

CODE REFERENCES: 2007 OFC Article 23, 2306.4 NFPA 13

POLICY: High-Piled Combustible Storage: Small Hose Stations

Hoses, nozzles, and hose racks cabinets or covers are not required when small hose stations are installed.

TITLE: FIRE APPARATUS ACCESS: MULTIPLE ACCESS ROAD SEPARATION

DATE: September, 2009 (Revised: / /)

PURPOSE: To define the separation requirements for multiple fire apparatus access road separation.

SCOPE: This policy shall apply to all areas served by Tualatin Valley Fire & Rescue.

CODE REFERENCES: 2007 OFC Sections D106, D107, D107.1 & D104.3; ORS 455.610(5)

POLICY: Fire Apparatus Access: Multiple Access Road Separation

Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

Developments of one and two-family dwellings where the number of dwelling units exceeds 30, multiple-family residential projects having more than 100 dwelling units, and where vehicle congestion, adverse terrain conditions or other factors that could limit access as determined by the fire code official, shall be provided with no less than two approved means of access. Exceptions may be allowed for approved automatic sprinkler systems. The approval of fire sprinklers as an alternative shall be accomplished in accordance with the provisions of ORS 455.610(5) and OFC D106 & D107.

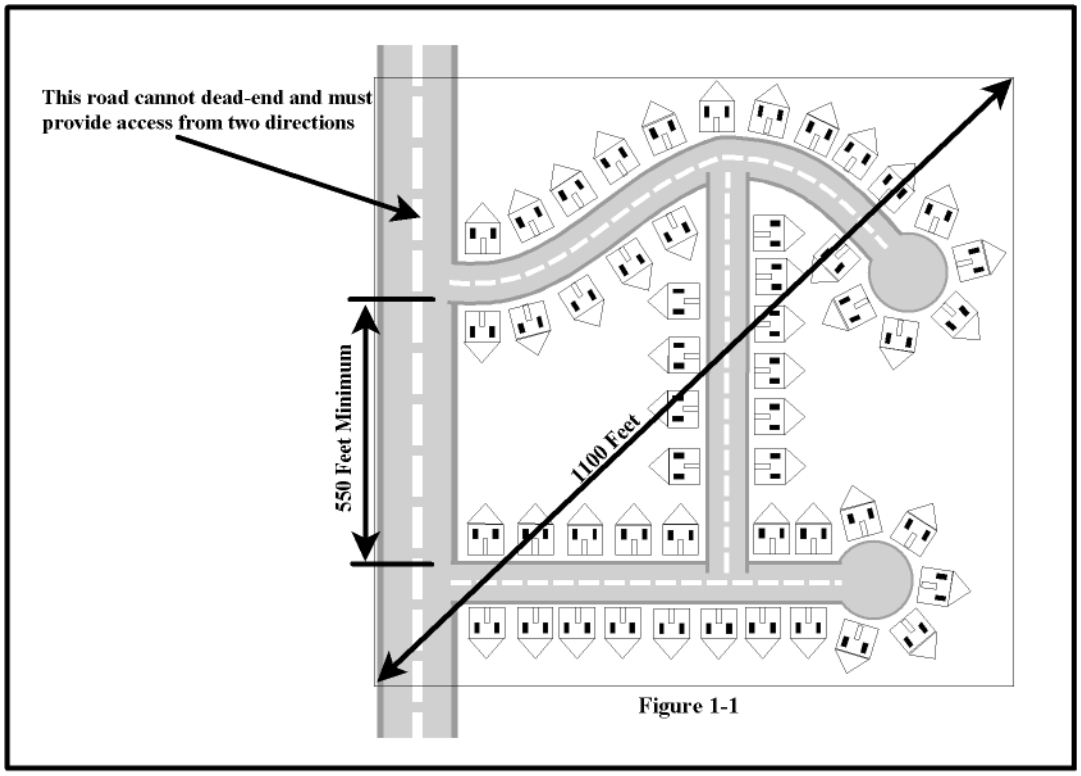


Figure 1-1

TITLE: FIRE HYDRANT and FDC PLACEMENT

DATE: September, 2009 (Revised: / /)

PURPOSE: To define the requirements for FDC placement and fire hydrant placement for hydrants serving non-sprinklered buildings.

SCOPE: This policy shall apply to all areas served by Tualatin Valley Fire & Rescue.

CODE REFERENCES: 2007 OFC Section 508, Appendix C

POLICY: Fire Hydrant and FDC Placement

Due to the likelihood of building collapse during a working structure fire, for safety reasons apparatus should not be staged within the fall zone. The likelihood of collapse in a building protected by automatic fire sprinklers is significantly reduced, therefore hydrants and FDCs are allowed in the fall zone.

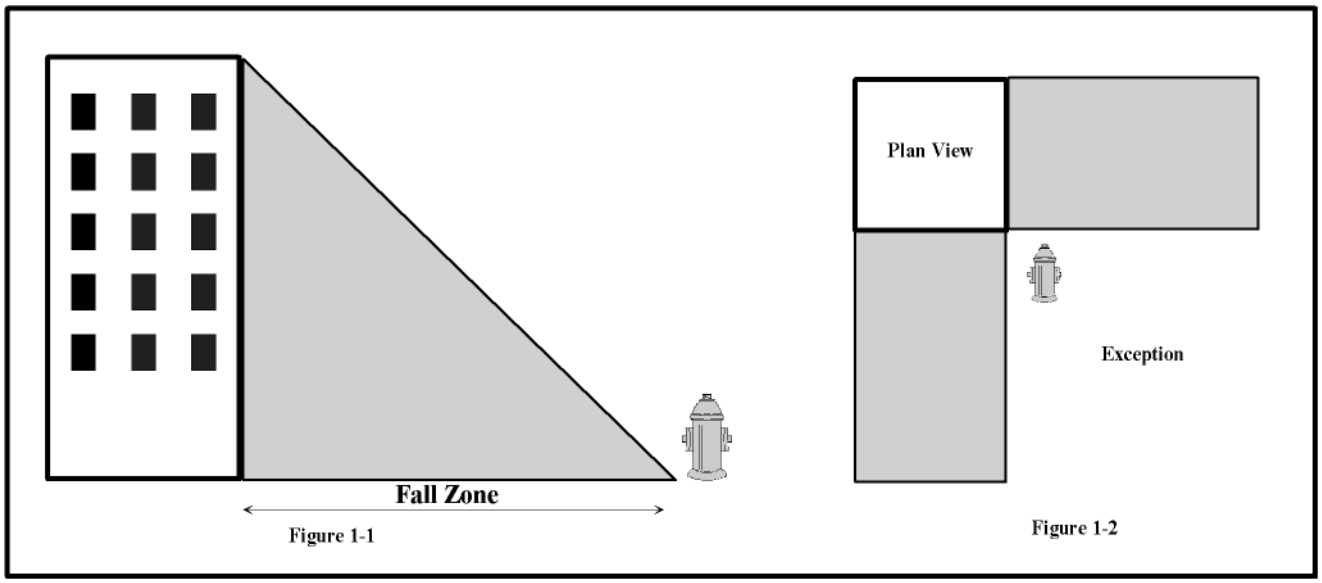
Location

Fire hydrants shall be located outside the fall zone of non-sprinklered buildings constructed using concrete tilt-up panels (Figure 1-1).

EXCEPTION: Hydrants & FDCs may be located within the fall zone when installed adjacent to building corner(s) (Figure 1-2).

Definition

Fall Zone: The fall zone shall be the area adjacent to building walls. The fall zone shall be measured from the base of the wall out to a distance equal to the wall height.



TITLE: FDC PIPING AND PRIVATE HYDRANTS

DATE: September, 2009 (Revised: / /)

PURPOSE: To define the requirements for the installation of Fire Department Connection (FDC) piping when private hydrants are installed.

SCOPE: This policy shall apply to all areas served by Tualatin Valley Fire & Rescue.

CODE REFERENCES: 2010 Uniform Fire Code Article 9, Section 903.3.1.1; NFPA 13

POLICY: FDC Piping and Private Hydrants

Without Private Hydrants

When no private fire hydrants are installed on the same private water main as the fire sprinkler system, the fire department connection may be connected to the private water main at any location (Figure 1-1).

With Private Hydrants

When private fire hydrants are installed on the same private water main as the fire sprinkler system, the fire department connection shall connect directly to the riser, above all control valves (Figure 1-2). The FDC piping shall be provided with a check valve.

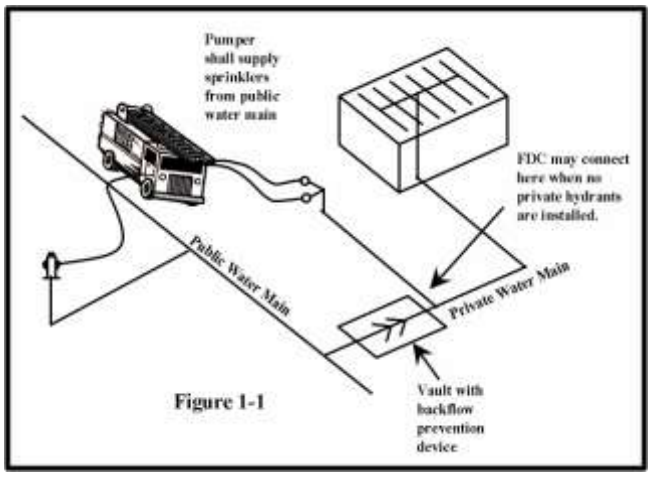


Figure 1-1

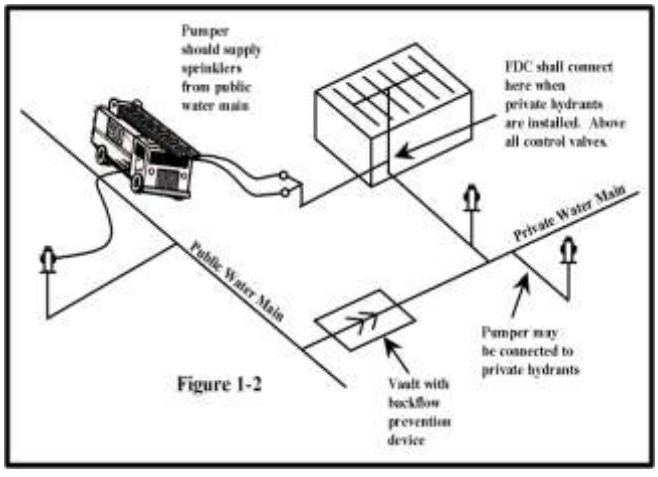


Figure 1-2

TITLE: KEY BOXES

DATE: October, 2009 (Revised: / /)

PURPOSE: To define the requirements for installation of key boxes.

SCOPE: This policy shall apply to all areas served by Tualatin Valley Fire & Rescue.

CODE REFERENCES: 2007 OFC Section 506

POLICY: Key Boxes

Tualatin Valley Fire & Rescue requires key boxes on buildings that meet certain parameters. When key boxes are required by this policy, Knox brand key boxes shall be used.

Required Installation - Key boxes shall be installed on buildings and structures when:

- ✓ An elevator is installed.
- ✓ Equipped with a fire alarm system.
- ✓ Equipped with an automatic fire extinguishing system.
- ✓ Access is restricted due to security arrangements.

EXCEPTION: Buildings and structures open and supervised twenty-four hours a day, seven days a week or constantly attended.

Installation Details - Key boxes shall be installed in an approved location. The bottom of the key box shall not be more than six feet (6') above the walking surface unless approved by the Chief or authorized representative.

EXCEPTIONS: In multi-tenant buildings (each with their own outside entrance) the key box shall be located at the door that will best and most easily gain access to automatic sprinkler system controls alarm system controls, etc.

Contents - Key boxes typically may contain the following keys and critical information necessary to gain access:

- ✓ Building or structure keys
- ✓ Alarm systems keys and instructions
- ✓ Elevator recall key
- ✓ Emergency personnel contact numbers
- ✓ Multiple sets of keys when required
- ✓ Gate key
- ✓ Elevator door key
- ✓ Automatic fire extinguishing system control valve keys
- ✓ Hazardous materials safety data sheets

Required Labeling - All keys shall be labeled as to their use, i.e., main entrance, alarm control panel, sprinkler room door, etc.

Key Box Size - The size of the key box shall be sufficient to contain all necessary keys and/or equipment.

TITLE: SMOKE AND HEAT VENTS

DATE: November, 2009 (Revised: / /)

PURPOSE: To define the requirements for heat responsive device temperature and manual operation of smoke and heat vents.

SCOPE: This policy shall apply to all areas served by Tualatin Valley Fire & Rescue.

CODE REFERENCES: OFC 2007 2306.7 & Section 910

POLICY: Smoke and Heat Vents

Due to the potential for an open vent to keep the temperature around nearby sprinkler heads low enough to keep them from activating because of the cooler air passing to the opened vent, a minimum temperature for the heat responsive device is necessary. In addition, current interpretation indicates the need for smoke and heat vents is mitigated when Early Suppression Fast Response (ESFR) sprinkler heads are used. Furthermore, the fire code requirement for manual release is non-specific.

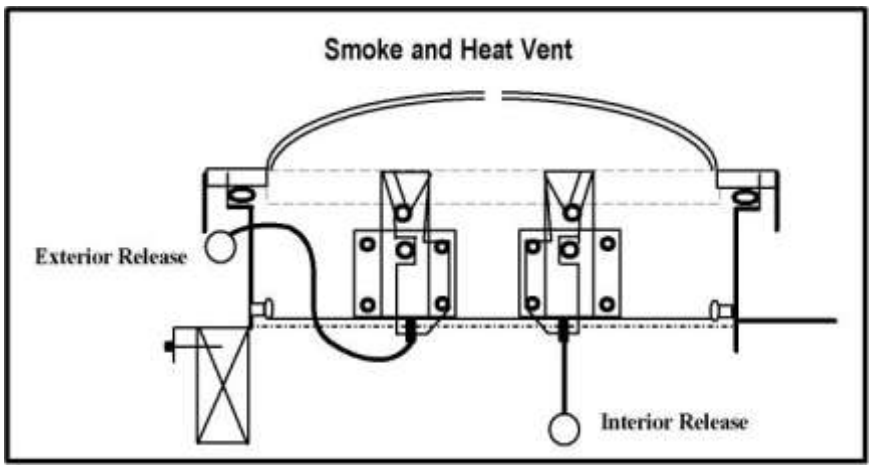
Electro-Thermal Link

Electro-thermal links shall be rated at one temperature level higher than that of the automatic sprinkler head temperature rating. In some cases, at higher temperature ratings, there are no listings for these devices at the required temperature.

Manual Operation

Manual releases shall be provided for use during fire suppression operations. Individual exterior release mechanisms shall be provided for each vent.

NOTE: When ESFR sprinkler heads are installed, smoke and heat vents are not required.



TITLE: SPRINKLER DEMAND AND FIRE FLOW

DATE: October, 2009 (Revised: / /)

PURPOSE: To define the requirements for calculating the fire flow for sprinklered buildings.

SCOPE: This policy shall apply to all areas served by Tualatin Valley Fire & Rescue.

CODE REFERENCES: 2007 OFC Chapter 5, Section 508

POLICY: Sprinkler Demand and Fire Flow

The OFC does not provide guidance with regard to whether or not to add the fire sprinkler system demand to the required fire flow calculation. The policy of Tualatin Valley Fire & Rescue is as follows:

- Automatic Fire Sprinkler demand shall be added to the calculated fire flow.
- The sprinkler demand shall be added to the fire flow calculation after applying credits to fire flow. The resulting total demand may exceed 3,000 GPM.
- Required number of fire hydrants shall be calculated based on the fire flow calculation prior to adding the sprinkler demand.

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TITLE: FIRE APPARATUS ACCESS: DIVIDED PRIVATE ROADWAYS

DATE: November, 2009 (Revised: / /)

PURPOSE: To define the requirements for fire apparatus access where roadways are divided.

SCOPE: This policy shall apply to all areas served by Tualatin Valley Fire & Rescue.

CODE REFERENCES: 2007 OFC 503.2.2

POLICY: Fire Apparatus Access: Divided Private Roadways

Minimum Width

- Where fire apparatus access roadways are divided into two travel lanes, the minimum clear width of each lane shall be 10 feet and may extend a maximum of 30 feet.
- A minimum distance of 30 feet shall be provided between divided areas.

Minimum Radius

- Where a curve is present along the divided section, the inside and outside turning radius shall not be less than 28 feet and 48 feet respectively, as measured from the same center point.

Gates

- Where installed, gates shall be set back a minimum of 30 feet from the intersecting roadway.